

# CARRIAGES AND WAGONS AND MATERIALS.

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## SUMMARY AND ANALYSIS.

**Scope of the industry.**—This report presents statistics for establishments engaged in building all varieties of carriages and wagons, sleighs, and sleds (except children's carriages and sleds); also for those making carriage and wagon bodies, tops, hubs, felloes, spokes, wheels, axles, whiffletrees, eveners, neck yokes, poles, reaches, cushions, lamp brackets, whip sockets, etc. Some of the establishments that manufacture materials and parts for sale as such also make complete vehicles. Statistics for a few establishments engaged exclusively in repair work are also included.

Table 1 summarizes the statistics for the industry as a whole, and for the three classes of establishments separately, for 1914.

While establishments engaged in the manufacture of the completed vehicles form the most important branch of the industry, those devoted to the production of parts and materials used in the industry reported products valued at \$24,849,560 in 1914, or 18.9 per cent of the total.

**Table 1**

	Total for the industry.	ESTABLISHMENTS ENGAGED PRIMARILY IN—		
		Manufacturing carriages and wagons.	Manufacturing carriage and wagon materials.	Repair work only.
Number of establishments.....	5,057	4,056	456	545
Persons engaged.....	64,446	49,468	12,533	2,445
Proprietors and firm members.....	5,629	4,644	340	645
Salaried employees.....	6,426	5,183	1,106	137
Wage earners (average number).....	52,391	39,641	11,067	1,663
Primary horsepower.....	112,549	71,896	38,215	2,438
Capital.....	\$177,643,015	\$147,943,114	\$26,845,261	\$2,854,640
Salaries and wages.....	40,331,426	31,549,422	7,481,811	1,300,193
Salaries.....	7,773,964	6,232,473	1,422,593	118,898
Wages.....	32,557,462	25,316,949	6,059,218	1,181,295
Paid for contract work.....	209,393	180,096	24,307	4,990
Rent and taxes (including internal revenue).....	2,359,532	1,904,620	302,775	152,137
Cost of materials.....	65,718,795	51,075,607	13,546,273	1,096,915
Value of products.....	131,546,997	103,283,005	24,849,560	3,414,432
Value added by manufacture (value of products less cost of materials).....	65,828,202	52,207,398	11,303,287	2,317,517

**Comparison with earlier censuses.**—Table 2 summarizes the statistics of establishments engaged in the manufacture of carriages and wagons and materials for each census from 1899 to 1914, and gives percentages of increase.

**Table 2**

	NUMBER OR AMOUNT.				PER CENT OF INCREASE. <sup>1</sup>		
	1914	1909	1904	1899	1909-1914	1904-1909	1899-1904
Number of establishments.....	5,057	5,492	5,588	6,792	-7.9	-1.7	-17.7
Persons engaged.....	64,446	82,944	90,751	( <sup>2</sup> )	-22.3	-8.6	
Proprietors and firm members.....	5,629	6,213	6,575	( <sup>2</sup> )	-9.4	-5.5	
Salaried employees.....	6,426	6,803	6,294	5,026	-5.5	8.1	25.2
Wage earners (average number).....	52,391	69,928	77,882	78,812	-25.1	-10.2	5.5
Primary horsepower.....	112,549	126,032	106,159	83,771	-10.7	18.7	26.7
Capital.....	\$177,643,015	\$175,473,728	\$152,344,657	\$128,961,660	1.2	15.2	18.1
Salaries and wages.....	40,331,426	45,555,126	44,943,700	38,324,427	-11.5	1.4	17.3
Salaries.....	7,773,964	7,980,207	6,581,021	4,759,114	-2.3	21.0	38.3
Wages.....	32,557,462	37,594,919	38,362,679	33,565,313	-13.4	-2.0	14.3
Paid for contract work.....	209,393	253,512	249,327	( <sup>2</sup> )	-17.4	1.7	
Rent and taxes (including internal revenue).....	2,359,532	2,096,877	* 2,081,834	( <sup>2</sup> )	12.5		
Cost of materials.....	65,718,795	81,951,288	77,527,911	66,771,919	-19.8	5.7	16.1
Value of products.....	131,546,997	159,892,547	155,868,849	138,261,763	-17.7	2.6	12.7
Value added by manufacture (value of products less cost of materials).....	65,828,202	77,941,259	78,340,938	71,489,844	-15.5	-0.5	9.6

<sup>1</sup> A minus sign (—) denotes decrease.

<sup>2</sup> Figures not available.

\* Exclusive of internal revenue.

The growth of the industry was consistent and compared favorably with that of other industries up to 1904, but since then there has been a gradual decline, the decrease from 1909 to 1914 being 7.9 per cent in number of establishments and 17.7 per cent in value of products. The decline is due to the rapid development of the automobile industry. Many establishments formerly engaged in the manufacture of carriages and wagons and materials were reported as either engaged in the manufacture of automobiles or as having discontinued business.

**Summary, by states.**—Table 3 summarizes the more important statistics of the industry, by states, the states being arranged according to the value of products reported for 1914. The per cent distribution for 1914, the rank of the states in 1909 and 1914, and the per cent of increase for each five-year period from 1899 to 1914 are also shown. Several states, for which data can not be shown separately without disclosing the operations of individual establishments, ranked higher than some named in the table.

Table 3

CARRIAGES AND WAGONS AND MATERIALS: 1914.

PER CENT OF INCREASE.<sup>1</sup>

STATE.	Number of establishments.	Wage earners.			Value of products.			Value added by manufacture.			Wage earners (average number).			Value of products.			Value added by manufacture.		
		Average number.	Per cent distribution.	Rank.	Amount.	Per cent distribution.	Rank.	Amount.	Per cent distribution.	Rank.	1909-1914	1909-1909	1899-1904	1909-1914	1909-1909	1899-1904	1909-1914	1909-1909	1899-1904
United States..	5,057	52,391	100.0	---	\$131,546,997	100.0	---	\$65,823,202	100.0	---	-25.1	-10.2	5.5	-17.7	2.6	12.7	-15.5	-0.5	9.6
Indiana.....	193	7,306	13.9	1	21,568,651	16.4	1	10,844,033	16.5	1	-17.6	-5.7	7.9	-0.4	12.4	21.8	-17.9	9.6	15.6
Ohio.....	341	6,997	11.4	3	16,192,449	12.3	2	7,631,487	11.6	2	-32.0	-20.1	-5.4	-26.2	-8.6	5.3	-27.6	-5.5	4.9
Illinois.....	296	4,861	9.3	4	15,192,466	11.5	3	6,824,089	10.4	3	-16.9	13.5	18.6	-0.7	47.7	28.5	-7.2	30.2	21.4
Pennsylvania.....	687	6,370	12.2	2	12,261,637	9.3	4	6,818,802	10.4	4	-15.0	0.5	16.0	-2.8	10.9	9.9	-3.1	6.8	6.2
New York.....	604	3,911	7.5	5	8,759,119	6.7	5	5,182,296	7.9	5	-36.1	-22.5	5.4	-34.1	-9.2	4.6	-30.8	-11.4	4.4
Wisconsin.....	185	2,638	5.0	6	7,544,321	5.7	6	3,285,165	5.0	6	-23.2	-6.7	5.9	-15.2	10.0	15.0	-12.1	-6.5	10.4
Missouri.....	223	2,530	4.9	7	6,850,955	5.2	7	3,019,396	4.6	7	-22.5	4.4	5.8	-19.1	10.3	19.1	-16.3	5.6	2.3
Kentucky.....	130	1,897	3.6	8	4,647,467	3.5	8	2,093,308	3.2	8	-31.7	1.6	21.7	-9.6	-5.6	50.2	-13.8	-9.8	54.5
Michigan.....	177	1,417	2.7	10	3,774,827	2.9	9	1,846,976	2.8	9	-64.9	-37.0	4.7	-62.8	-31.8	15.5	-62.3	-24.1	20.8
Iowa.....	93	994	1.9	15	3,430,716	2.6	10	1,634,147	2.3	11	-31.0	11.0	-24.1	-28.2	42.0	-15.5	-24.8	20.8	-17.3
North Carolina.....	137	1,462	2.8	9	3,133,082	2.4	11	1,355,695	2.1	13	-10.3	.....	71.6	-4.6	.....	118.4	-2.4	.....	101.4
Massachusetts.....	175	1,348	2.6	12	2,821,874	2.1	12	1,682,217	2.6	10	-12.4	-39.2	-22.7	-11.4	-35.3	-21.7	-11.6	-34.2	-17.0
Virginia.....	119	1,246	2.4	13	2,748,083	2.1	13	1,208,791	1.8	15	-6.2	-0.2	38.2	10.6	-8.4	44.5	0.6	9.7	22.9
Tennessee.....	108	1,371	2.6	11	2,677,831	2.0	14	1,880,051	2.1	12	-19.6	-9.7	63.3	-11.9	-7.3	93.7	-13.8	-0.6	76.3
New Jersey.....	264	1,168	2.2	14	2,566,644	2.0	15	1,658,733	2.4	14	-27.0	-19.4	-6.2	-21.0	-6.1	-11.6	-20.9	-6.7	-8.4
Georgia.....	65	955	1.8	16	2,354,208	1.8	16	990,208	1.5	17	-9.8	-5.0	38.0	-8.0	11.2	74.9	-17.0	10.4	38.1
Minnesota.....	129	854	1.6	17	2,205,608	1.7	17	1,175,642	1.8	16	-1.6	-6.0	-20.9	1.4	16.4	-11.4	-1.3	19.1	-12.5
Maryland.....	130	723	1.4	18	2,041,580	1.1	18	1,091,666	1.2	18	-4.5	-20.0	23.0	4.1	-10.4	49.8	3.9	0.3	29.9
California.....	155	537	1.0	19	1,383,867	1.1	19	886,792	1.3	19	-29.3	-22.4	6.2	-32.6	-12.8	19.0	-26.3	-19.8	25.0
Arkansas.....	46	534	1.0	20	1,180,636	0.9	20	529,782	0.7	21	-45.1	111.5	32.2	-28.7	115.5	39.1	-37.3	98.1	74.6
Connecticut.....	84	452	0.9	21	995,508	0.8	21	584,896	0.9	20	-21.8	-61.6	-8.3	-7.5	-51.0	-30.6	-15.7	-50.5	-27.0
Maine.....	129	343	0.7	23	851,288	0.6	22	447,766	0.7	22	-27.3	2.8	33.4	-11.9	1.0	32.8	-21.3	2.3	25.5
Alabama.....	63	385	0.7	22	707,486	0.5	23	403,717	0.6	23	-9.2	11.6	-17.6	3.4	-7.6	23.3	6.0	5.0	4.3
Washington.....	27	150	0.3	34	524,348	0.4	25	258,450	0.4	28	-37.8	19.9	52.3	-27.2	49.4	70.3	-35.5	36.4	69.9
Louisiana.....	31	333	0.6	24	509,223	0.4	26	271,138	0.4	27	-7.0	.....	.....	-3.7	.....	.....	-16.0	.....	.....
Rhode Island.....	47	271	0.5	27	508,901	0.4	27	327,707	0.5	25	13.9	4.4	-22.4	20.6	14.1	-30.1	26.7	2.4	-25.4
South Carolina.....	18	209	0.4	29	499,591	0.4	28	226,354	0.3	32	-23.2	-21.4	1.8	7.8	-15.3	32.4	3.3	-14.7	24.0
Texas.....	32	205	0.4	30	488,741	0.4	29	332,429	0.5	24	-50.2	.....	.....	-41.1	.....	.....	-34.9	.....	.....
Mississippi.....	23	210	0.4	28	479,436	0.4	30	255,947	0.4	29	-42.5	14.8	39.5	-25.4	30.0	68.6	-30.5	31.0	64.3
Kansas.....	41	190	0.4	31	455,618	0.3	31	240,078	0.4	31	-22.8	.....	32.9	-14.1	.....	32.1	-16.0	.....	41.7
New Hampshire.....	35	298	0.6	25	437,962	0.3	32	244,799	0.4	30	-29.0	-19.4	-15.4	-40.3	-6.4	-13.5	-36.9	-21.3	-11.5
Florida.....	46	169	0.3	32	304,604	0.2	33	209,288	0.3	33	-26.5	.....	.....	-32.7	.....	.....	-13.6	.....	.....
Nebraska.....	16	109	0.2	36	265,479	0.2	34	166,231	0.3	35	-45.5	33.3	21.0	-54.0	81.4	28.7	-49.0	71.6	21.0
Colorado.....	18	149	0.3	34	236,881	0.2	35	180,473	0.3	34	20.2	-29.9	1.7	-9.0	-31.4	-1.0	3.2	-28.9	.....
Delaware.....	28	118	0.2	35	196,696	0.1	36	128,918	0.2	36	-27.6	-1.2	-40.6	-32.2	1.4	-26.1	-22.4	7.1	-37.2
Vermont.....	31	60	0.1	38	117,835	0.1	40	74,013	0.1	40	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Dakota.....	8	41	0.1	41	86,799	0.1	41	64,705	0.1	41	.....	.....	.....	.....	.....	.....	.....	.....	.....
Montana.....	5	20	(?)	42	55,989	(?)	42	39,200	0.1	42	.....	.....	.....	.....	.....	.....	.....	.....	.....
North Dakota.....	5	15	(?)	44	31,900	(?)	45	21,713	(?)	44	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wyoming.....	5	6	(?)	46	15,876	(?)	46	11,167	(?)	46	.....	.....	.....	.....	.....	.....	.....	.....	.....
All other.....	110	509	1.0	---	1,080,388	0.8	---	670,937	1.0	---	.....	.....	.....	.....	.....	.....	.....	.....	.....

<sup>1</sup> Percentages are based on figures in Table 18; a minus sign (—) denotes decrease; percentages are omitted where base is less than 100 for wage earners or less than \$100,000 for value of products of value added by manufacture, or where comparable figures can not be given.

<sup>2</sup> Less than one-tenth of 1 per cent.

In 1914, as in 1909, the carriage and wagon industry reported establishments in every state except Arizona, Idaho, and Nevada. In both years Pennsylvania ranked first in number of establishments and Indiana in number of wage earners. In 1914 Indiana ranked first in value of products and value added by manufacture, while in 1909 Ohio held first place in these two items. The 10 leading states remained practically the same in 1914 as in 1909, although the total value of products decreased in each state, the losses ranging from four-tenths of 1 per cent for Indiana to 62.8 per cent for Michigan, as compared with 17.7 per cent for the industry as a whole. The decrease in Michigan is due primarily to the large increase in the automobile industry.

In 1909, 24 of the 40 states shown separately in the tables reported increases in value of products as compared with 1904, whereas the comparison of 1914 with 1909 shows that in 33 of the 40 states there was a decrease. The percentages of increase of the 7 states

that reported gains in 1914 range from 1.4 in Minnesota to 68.9 in North Dakota. Although a large percentage of increase is shown for North Dakota, the amounts are comparatively small, as there were only 25 vehicles of all kinds, valued at \$2,905, manufactured in the state during 1914.

**Persons engaged in the industry.**—Table 4 shows, for 1914 and 1909, the number of persons engaged in the industry as a whole and in each branch separately, distributed by sex, the average number of wage earners being distributed also by age. The sex and age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the "Explanation of terms."

While the total number of persons engaged in the industries decreased 22.3 per cent from 1909 to 1914, the males and females represented approximately the same per cent of the total in 1914 as in 1909. Of the total females reported, 1,367, or 60.2 per cent, were employed as clerks, while only 30, or 3.1 per cent, were

salaries of officers of corporations. There were on the average only 136 boys under 16 years of age employed as wage earners during 1914.

The average number of wage earners in each state, as reported at the censuses of 1914, 1909, and 1904, is given in Table 18. The distribution of the average

number by sex and age is not shown for the individual states, but Table 19 gives, for 1914, a distribution of the number employed on December 15, or the nearest representative day. Female wage earners were reported from 25 states, the largest number, 229, being employed in Ohio.

Table 4

Table 4		PERSONS ENGAGED IN THE INDUSTRY.						PERSONS ENGAGED IN THE INDUSTRY.					
INDUSTRY AND CLASS.	Cen- sus year.	Total.	Male.	Fe- male.	Per cent of total.		INDUSTRY AND CLASS.	Cen- sus year.	Total.	Male.	Fe- male.	Per cent of total.	
					Male.	Fe- male.						Male.	Fe- male.
CARRIAGES AND WAGONS AND MATERIALS.	1914 1909	64,446 82,944	62,173 80,536	2,273 2,408	96.5 97.1	3.5 2.9	CARRIAGES, WAGONS, AND REPAIRS—continued.						
Proprietors and officials.....	1914 1909	7,716 8,844	7,583 8,706	133 138	98.3 98.4	1.7 1.6	Clerks and other subordinate sala- ried employees.	1914 1909	3,739 3,440	2,550 2,494	1,180 946	68.4 72.5	31.6 27.5
Proprietors and firm members..	1914 1909	5,629 6,213	5,526 6,103	103 110	98.2 98.2	1.8 1.8	Wage earners (average number).....	1914 1909	41,304 52,540	40,807 51,812	497 728	98.8 98.6	1.2 1.4
Salaried officers of corporations..	1914 1909	981 1,166	951 1,143	30 23	96.9 98.0	3.1 2.0	16 years of age and over.....	1914 1909	41,220 52,213	40,723 51,489	497 724	98.8 98.6	1.2 1.4
Superintendents and managers..	1914 1909	1,106 1,465	1,106 1,460	0 5	100.0 99.7	0.0 0.3	Under 16 years of age.....	1914 1909	84 327	84 323	0 4	100.0 98.8	0.0 1.2
Clerks and other subordinate sala- ried employees.	1914 1909	4,339 4,172	2,972 2,991	1,367 1,181	68.5 71.7	31.5 28.3	CARRIAGE AND WAGON MATE- RIALS.	1914 1909	12,533 19,337	12,053 18,709	480 628	96.2 96.8	3.8 3.2
Wage earners (average number)....	1914 1909	52,391 69,928	51,618 68,839	773 1,089	98.5 98.4	1.5 1.6	Proprietors and officials.....	1914 1909	837 1,217	820 1,155	17 92	98.0 97.4	2.0 2.6
16 years of age and over.....	1914 1909	52,253 69,397	51,482 68,315	771 1,082	98.5 98.4	1.5 1.6	Proprietors and firm members...	1914 1909	340 512	328 490	12 22	96.5 95.7	3.5 4.3
Under 16 years of age.....	1914 1909	138 531	136 524	2 7	98.6 98.7	1.4 1.3	Salaried officers of corporations...	1914 1909	229 313	224 306	5 7	97.8 97.8	2.2 2.2
CARRIAGES, WAGONS, AND REPAIRS.	1914 1909	51,913 63,607	50,120 61,827	1,793 1,780	96.5 97.2	3.5 2.8	Superintendents and managers...	1914 1909	268 392	268 389	0 3	100.0 99.2	0.0 0.8
Proprietors and officials.....	1914 1909	6,879 7,627	6,763 7,521	116 106	98.3 98.6	1.7 1.4	Clerks and other subordinate sala- ried employees.	1914 1909	609 732	422 497	187 235	69.3 67.9	30.7 32.1
Proprietors and firm members..	1914 1909	5,289 5,701	5,198 5,613	91 88	98.3 98.5	1.7 1.5	Wage earners (average number).....	1914 1909	11,087 17,358	10,811 17,027	276 361	97.5 97.9	2.5 2.1
Salaried officers of corporations..	1914 1909	752 853	727 837	25 16	96.7 98.1	3.3 1.9	16 years of age and over.....	1914 1909	11,033 17,184	10,759 16,826	274 358	97.5 97.9	2.5 2.1
Superintendents and managers..	1914 1909	838 1,073	838 1,071	0 2	100.0 99.8	0.0 0.2	Under 16 years of age.....	1914 1909	54 204	52 201	2 3	96.3 98.5	3.7 1.5

Table 5 shows the per cent of increase or decrease in the number of persons engaged in the industry, by oc-

cupational status and sex, for 1914 and 1909, together with the per cent distribution for the two years.

Table 5

Table 5	CLASS.	PERSONS ENGAGED IN THE INDUSTRY.								
		Per cent of increase, <sup>1</sup> 1909-1914.			Per cent distribution.					
		Total.	Male.	Female.	Total.		Male.		Female.	
					1914	1909	1914	1909	1914	1909
		-22.3	-22.8	-5.6	100.0	100.0	100.0	100.0	100.0	100.0
	All classes.....	-22.3	-22.8	-5.6	100.0	100.0	100.0	100.0	100.0	100.0
	Proprietors and officials.....	-12.8	-12.9	-3.6	12.0	10.7	12.2	10.8	5.9	5.7
	Proprietors and firm members.....	-9.4	-9.5	-6.4	8.7	7.5	8.9	7.6	4.5	4.6
	Salaried officers of corporations.....	-15.9	-16.8	.....	1.5	1.4	1.5	1.4	1.3	1.0
	Superintendents and managers.....	-24.5	-24.2	.....	1.7	1.8	1.8	1.8	.....	0.2
	Clerks and other subordinate salaried employees.....	4.0	-0.6	15.7	6.7	5.0	4.8	3.7	60.2	49.0
	Wage earners (average number).....	-25.1	-25.0	-29.0	81.3	84.3	83.0	85.5	34.0	45.2
	16 years of age and over.....	-24.7	-24.6	-28.7	81.1	83.7	82.8	84.8	33.9	44.9
	Under 16 years of age.....	-74.0	-74.0	.....	0.2	0.6	0.2	0.7	0.1	0.3

<sup>1</sup> A minus sign (-) denotes decrease; percentages are omitted where base is less than 100.

While the largest percentage of decrease was for wage earners under 16 years of age, this class formed only two-tenths of 1 per cent of the total number in 1914 and six-tenths of 1 per cent in 1909.

In order to compare the distribution of persons engaged in the industry in 1914 with that shown at the census of 1904, it is necessary to use the classification employed at the earlier census (see "Explanation of terms"). Table 6 makes this comparison by occupational status.

Table 6

CLASS.	PERSONS ENGAGED IN THE INDUSTRY.							
	Number.			Per cent distribution.			Per cent of increase. <sup>1</sup>	
	1914	1909	1904	1914	1909	1904	1909-1914	1904-1909
Total.....	64,446	82,944	90,751	100.0	100.0	100.0	-22.3	-8.6
Proprietors and firm members.....	5,629	6,213	6,575	8.7	7.5	7.2	-9.4	-5.5
Salaried employees.....	6,426	6,803	6,294	10.0	8.2	6.9	-5.5	8.1
Wage earners (average).....	52,391	69,928	77,882	81.3	84.3	85.8	-25.1	-10.2

<sup>1</sup> A minus sign (-) denotes decrease.

Every class shows a decrease in 1914, and in some cases the decrease is more than double that shown in 1909. The greatest decrease, 25.1 per cent, was in number of wage earners. There were slight increases at each census in the percentage that proprietors and firm members and salaried employees form of the total number engaged in the combined industries and a corresponding decrease in the proportion of wage earners.

**Wage earners employed, by months.**—Table 7 gives for the industry the total number of wage earners employed on the 15th of each month, or the nearest representative day, for 1914 and 1909 and the average number employed during each month in 1904, together with the percentage which the number reported for each month forms of the greatest number reported for any month.

The greatest number of wage earners employed in the industry at each census was reported for the spring months. In 1914 and 1904 April was the month of maximum employment, while in 1909 the largest number was employed during May. November was the month of minimum employment in 1914 and 1904 and January in 1909. The greatest differ-

ence between the maximum and minimum months in any one of the three census years was 12,302, or 21.5 per cent of the maximum, in 1914.

MONTH.	WAGE EARNERS IN THE INDUSTRY.					
	Number. <sup>1</sup>			Per cent of maximum.		
	1914	1909	1904	1914	1909	1904
January.....	52,594	66,567	75,519	91.8	90.9	90.2
February.....	55,272	69,390	77,846	96.4	94.7	92.9
March.....	56,729	71,775	81,839	99.0	98.0	97.7
April.....	57,316	72,892	83,753	100.0	99.5	100.0
May.....	56,386	73,240	83,374	98.4	100.0	99.5
June.....	55,459	72,181	82,157	96.8	98.6	98.1
July.....	53,942	69,618	78,524	94.1	95.1	93.8
August.....	52,871	68,326	74,929	92.2	93.3	89.5
September.....	50,202	67,894	74,880	87.6	92.7	89.4
October.....	47,357	67,949	73,772	82.6	92.8	88.1
November.....	45,014	68,857	73,413	78.5	94.0	87.7
December.....	45,550	70,427	74,578	79.5	96.2	89.0

<sup>1</sup>The figures for 1914 and 1909 represent the number employed on the 15th of each month, or the nearest representative day; those for 1904, the average number employed during the month.

Table 8 gives the total average number of wage earners employed in the industry during 1914, together with the total number employed on the 15th of each month, or the nearest representative day, for each state in which the average number of wage earners employed during the year was 500 or more.

STATE.	Average number employed during year.	Number employed on 15th day of the month or nearest representative day.												Per cent minimum is of maximum.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
United States.....	52,391	52,594	55,272	56,729	57,316	56,386	55,459	53,942	52,871	50,202	47,357	<i>45,014</i>	45,550	78.5
Arkansas.....	534	534	596	600	624	591	607	<b>625</b>	603	502	441	<i>337</i>	348	53.9
California.....	537	508	519	548	562	675	569	562	549	525	525	503	501	87.1
Georgia.....	955	1,106	1,154	1,153	1,095	1,054	1,131	1,110	1,041	814	601	618	583	50.5
Illinois.....	4,861	5,252	5,387	5,406	5,309	5,068	4,839	4,668	4,682	4,625	4,393	<i>4,209</i>	4,394	79.7
Indiana.....	7,306	7,035	7,617	7,823	7,712	7,628	7,639	7,645	7,790	7,647	6,858	<i>6,769</i>	6,512	73.7
Iowa.....	994	1,032	1,004	1,109	1,108	1,046	1,064	1,027	1,047	909	897	<i>837</i>	848	75.5
Kentucky.....	1,897	2,031	2,140	2,236	2,231	2,229	2,132	2,075	1,820	1,647	1,393	<i>1,379</i>	1,451	61.7
Maryland.....	723	709	724	725	743	743	755	745	745	717	705	691	674	89.3
Massachusetts.....	1,348	1,255	1,321	1,417	1,527	1,548	1,494	1,369	1,278	1,277	1,254	1,226	<i>1,210</i>	78.2
Michigan.....	1,417	1,493	1,534	1,550	1,512	1,439	1,433	1,440	1,381	1,332	1,273	1,283	1,334	82.1
Minnesota.....	854	890	946	948	914	856	854	870	870	800	756	<i>751</i>	795	79.4
Missouri.....	2,560	2,445	2,519	2,664	2,998	3,000	2,940	2,763	2,585	2,384	2,220	2,142	<i>2,080</i>	68.7
New Jersey.....	1,168	1,110	1,129	1,154	1,229	1,252	1,276	1,223	1,172	1,160	1,132	1,064	<i>1,085</i>	85.0
New York.....	3,911	3,976	4,056	4,164	4,320	4,305	4,230	3,948	3,829	3,654	3,539	3,463	<i>3,398</i>	78.7
North Carolina.....	1,462	1,565	1,609	1,658	1,643	1,641	1,653	1,599	1,701	1,237	1,174	1,104	<i>960</i>	56.4
Ohio.....	5,997	6,198	6,514	6,765	6,771	6,543	6,243	5,814	5,704	5,515	5,389	<i>5,280</i>	5,288	77.1
Pennsylvania.....	6,370	6,509	6,544	6,652	6,753	6,761	6,563	6,512	6,315	6,156	5,994	<i>5,632</i>	5,849	86.3
Tennessee.....	1,371	1,423	1,470	1,501	1,493	1,473	1,424	1,434	1,469	1,390	1,194	1,130	<i>1,051</i>	70.0
Virginia.....	1,246	1,287	1,285	1,330	1,355	1,329	1,437	1,396	1,297	1,182	1,085	<i>974</i>	995	67.8
Wisconsin.....	2,638	<i>2,043</i>	2,934	2,994	2,941	2,798	2,679	2,689	2,657	2,563	2,502	2,515	2,341	68.2

Of the 20 states for which separate totals are shown, 8 reported the largest number as employed in March, and 9, the smallest number as employed in December. Indiana reported the largest number of any individual state, 7,823, in March, and Arkansas, the smallest, 337, in November.

**Prevailing hours of labor.**—In Table 9 the average number of wage earners reported for 1914 and 1909

for the industry has been classified according to the number of hours of labor per week prevailing in the establishments in which they were employed. The number employed in each establishment was classified as a total, even though a few employees worked a greater or smaller number of hours.

In 1909 establishments operating 60 hours a week employed the greatest number of wage earners, but



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in 1914 those operating between 54 and 60 hours a week reported the greatest number. The two groups, "between 54 and 60" and "60," represent the most common working time for 15 of the 20 states shown in the table for 1914 and 18 of those shown for 1909.

Of the total number of wage earners employed in 1909, 72 per cent were in establishments working over 54 hours per week, whereas the same groups of establishments in 1914 employed 65 per cent of the total.

**Table 9**

Table 9		AVERAGE NUMBER OF WAGE EARNERS.										AVERAGE NUMBER OF WAGE EARNERS.											
STATE.	Cen- sus year.	In establishments where the prevailing hours of labor per week were—										STATE.	Cen- sus year.	In establishments where the prevailing hours of labor per week were—									
		Total.	48 and under.	Be- tween 48 and 54.	54.	Be- tween 54 and 60.	60.	Be- tween 60 and 72.	72	Over 72.	Total.			48 and under.	Be- tween 48 and 54.	54.	Be- tween 54 and 60.	60.	Be- tween 60 and 72.	72.	Over 72.		
United States	1914	52,391	3,209	5,360	9,780	20,986	12,953	27	71	.....	Minnesota	1914	854	12	27	164	411	249	.....	.....	.....		
	1909	69,928	3,204	4,875	11,659	21,954	27,771	406	41	18		1909	868	3	25	36	182	622	.....	.....	.....		
Arkansas	1914	534	49	1	68	38	327	.....	53	.....	Missouri	1914	2,560	96	501	363	921	679	.....	.....	.....		
	1909	973	10	34	180	746	3	.....	.....	.....		1909	3,302	471	182	881	417	1,220	130	1	.....		
California	1914	537	227	1	260	17	32	.....	3	.....	New Jersey	1914	1,168	15	94	352	504	201	2	.....	.....		
	1909	700	270	48	327	40	72	.....	.....	.....		1909	1,601	51	116	407	699	339	18	1	.....		
Georgia	1914	955	12	2	42	109	730	.....	3	.....	New York	1914	3,911	167	1,049	1,039	903	751	2	.....	.....		
	1909	1,059	50	14	142	847	3	.....	.....	.....		1909	6,116	224	1,410	1,329	1,235	1,918	.....	.....			
Illinois	1914	4,861	434	240	922	2,487	778	.....	4	.....	North Carolina	1914	1,462	8	4	50	410	989	1	.....	.....		
	1909	5,852	114	82	1,133	3,077	1,442	.....	.....	.....		1909	1,629	19	8	32	252	1,306	4	8	.....		
Indiana	1914	7,306	300	492	399	5,144	960	.....	11	.....	Ohio	1914	5,997	828	589	1,115	2,013	1,452	.....	.....	.....		
	1909	8,867	198	850	997	4,447	2,375	.....	.....	.....		1909	8,815	641	651	1,634	1,993	3,896	.....	.....			
Iowa	1914	994	123	142	256	124	349	.....	.....	.....	Pennsylvania	1914	6,370	119	532	974	3,653	1,080	12	.....	.....		
	1909	1,441	49	157	287	63	765	120	.....	.....		1909	7,498	44	165	826	3,686	2,752	19	1	5		
Kentucky	1914	1,897	269	235	418	282	693	.....	.....	.....	Tennessee	1914	1,371	85	30	248	387	616	1	4	.....		
	1909	2,777	667	37	508	678	886	1	.....	.....		1909	1,706	102	89	100	201	1,211	1	2	.....		
Maryland	1914	723	2	114	301	157	149	.....	.....	.....	Virginia	1914	1,246	33	209	206	283	515	.....	.....	.....		
	1909	757	3	54	276	87	337	.....	.....	.....		1909	1,329	3	7	343	168	788	9	11	.....		
Massachusetts	1914	1,348	31	598	617	94	8	.....	.....	.....	Wisconsin	1914	2,638	16	78	89	1,921	534	.....	.....	.....		
	1909	1,539	18	498	704	172	147	.....	.....	.....		1909	3,437	8	.....	119	1,241	2,069	.....	.....	.....		
Michigan	1914	1,417	66	29	196	526	598	.....	2	.....													
	1909	4,034	55	.....	53	2,105	1,821	.....	.....	.....													

**Character of ownership.**—Table 10 presents statistics concerning the character of ownership, or legal organization, of establishments in the industry for

1914 and 1909 in the United States as a whole, and for 1914, in 20 selected states.

**Table 10**

Table 10		NUMBER OF ESTABLISHMENTS OWNED BY—			AVERAGE NUMBER OF WAGE EARNERS.									VALUE OF PRODUCTS.								
STATE.	Cen- sus year.				Total.			In establishments owned by—			Per cent of total.			Total.			Of establishments owned by—			Per cent of total.		
								Indi- vid- uals.	Cor- pora- tions.	All oth- ers.	Indi- vid- uals.	Cor- pora- tions.	All oth- ers.				Indi- vid- uals.	Cor- pora- tions.	All oth- ers.	Indi- vid- uals.	Corpora- tions.	All others.
United States.....	1914 1909	3,191 3,322	748 884	1,118 1,286	52,391 69,928	11,886 15,476	33,473 44,628	7,032 9,824	22.7 22.1	63.9 63.8	13.4 14.0	\$131,546,997 159,892,547	\$23,676,952 29,460,382	\$92,100,236 109,348,007	\$15,769,809 21,084,168	18.0 18.4	70.0 68.4	12.0 13.2				
Arkansas.....	1914	19	15	12	534	50	402	82	9.3	75.3	15.4	1,186,636	75,497	963,122	148,017	6.3	81.2	12.5				
California.....	1914	108	13	34	537	272	128	137	50.7	23.8	25.5	1,383,867	688,497	815,074	380,296	49.7	22.8	27.5				
Georgia.....	1914	32	17	16	955	223	586	146	23.4	61.4	15.3	2,354,208	440,601	1,658,510	255,097	18.7	70.4	10.8				
Illinois.....	1914	173	55	68	4,801	491	4,023	347	10.1	82.8	7.1	15,192,466	1,074,655	13,302,150	815,661	7.1	87.6	5.4				
Indiana.....	1914	94	64	35	7,306	401	6,657	248	5.5	91.1	3.4	21,568,651	714,956	20,274,995	578,700	3.3	94.0	2.7				
Iowa.....	1914	43	20	30	994	146	552	296	14.7	55.5	29.8	3,436,716	300,938	1,968,844	1,166,934	8.8	57.3	34.0				
Kentucky.....	1914	71	33	26	1,897	274	1,523	100	14.4	80.3	5.3	4,647,467	484,689	3,930,932	231,846	10.4	84.6	5.0				
Maryland.....	1914	99	10	21	723	334	258	131	46.2	35.7	18.1	1,384,580	621,495	492,228	270,857	44.9	35.6	19.6				
Massachusetts.....	1914	129	13	33	1,348	333	280	435	47.0	20.8	32.3	2,821,874	1,326,753	570,307	924,814	47.0	20.2	32.8				
Michigan.....	1914	111	24	42	1,417	629	853	235	23.2	60.2	16.6	3,774,827	742,965	2,543,444	488,418	19.7	67.4	12.9				
Minnesota.....	1914	84	15	30	854	219	496	139	25.6	58.1	16.3	2,205,608	503,833	1,409,174	292,601	22.8	63.9	13.3				
Missouri.....	1914	120	50	53	2,560	383	2,029	148	15.0	79.3	5.8	6,850,955	779,822	5,678,839	392,294	11.4	82.9	5.7				
New Jersey.....	1914	211	9	44	1,168	752	166	250	64.4	14.2	21.4	2,566,644	1,618,868	445,808	501,968	63.1	17.4	19.6				
New York.....	1914	431	53	120	3,911	1,700	1,509	702	43.5	38.6	17.9	8,759,119	3,515,157	3,805,221	1,438,741	40.1	43.4	16.4				
North Carolina.....	1914	71	29	37	1,462	407	771	284	27.8	52.7	19.4	3,133,082	596,542	1,946,969	588,571	19.0	62.1	18.8				
Ohio.....	1914	146	105	90	5,997	817	4,516	664	13.6	75.3	11.1	16,192,449	1,739,475	12,454,694	1,998,280	10.7	76.9	12.3				
Pennsylvania.....	1914	496	45	146	6,370	2,011	3,235	1,124	31.6	50.8	17.6	12,261,637	3,663,959	6,468,984	2,128,694	29.9	52.8	17.3				
Tennessee.....	1914	45	25	38	1,371	167	906	298	12.2	66.1	21.7	2,677,381	267,059	1,932,603	477,719	10.0	72.2	17.8				
Virginia.....	1914	70	21	28	1,246	204	815	167	21.2	65.4	13.4	2,748,063	422,900	1,980,188	344,975	15.4	72.1	12.6				
Wisconsin.....	1914	106	25	54	2,638	302	2,120	216	11.4	80.4	8.2	7,544,321	639,369	6,350,783	554,169	8.5	84.2	7.3				

The establishments under corporate ownership formed only 14.8 per cent of the total in 1914 and 16.1 per cent in 1909, yet the value of products of these establishments represented 70 per cent of the total for the industry in 1914 and 68.4 per cent in 1909.

Indiana ranked first in this respect, corporations reporting 94 per cent of the products, while New Jersey reported the smallest proportion for establishments under this form of ownership, 17.4 per cent.

## MANUFACTURES.

**Size of establishments.**—Table 11 gives, for 1914 and 1909, the number of establishments, average number of wage earners, value of products, and value added by manufacture, with per cent distribution, for establishments grouped according to the value of their products.

<b>VALUE OF PRODUCT.</b>	<b>Census year.</b>	<b>Number of establishments.</b>	<b>Average number of wage earners.</b>	<b>Value of products.</b>	<b>Value added by manufacture.</b>
<b>Total.....</b>	1914	5,057	52,391	\$131,546,997	\$65,828,202
	1909	5,492	69,928	159,892,547	77,941,259
<b>Less than \$5,000.....</b>	1914	2,255	2,842	5,713,772	3,869,385
	1909	2,114	2,964	5,458,031	3,530,630
<b>\$5,000 to \$20,000.....</b>	1914	1,879	9,638	18,376,368	11,867,599
	1909	2,222	12,708	22,138,144	13,930,594
<b>\$20,000 to \$100,000.....</b>	1914	676	12,933	28,580,230	15,003,673
	1909	845	17,187	35,281,090	18,420,065
<b>\$100,000 to \$1,000,000.....</b>	1914	237	19,480	55,409,188	24,060,845
	1909	298	27,915	73,089,147	32,662,798
<b>\$1,000,000 and over.....</b>	1914	10	7,498	23,467,439	11,026,700
	1909	13	9,164	23,926,135	9,397,172
<b>Percent distribution:</b>					
<b>Less than \$5,000.....</b>	1914	44.6	5.4	4.3	5.9
	1909	38.5	4.2	3.4	4.5
<b>\$5,000 to \$20,000.....</b>	1914	37.2	18.4	14.0	18.0
	1909	40.5	18.2	13.8	17.9
<b>\$20,000 to \$100,000.....</b>	1914	13.4	24.7	21.7	22.8
	1909	15.4	24.6	22.1	23.6
<b>\$100,000 to \$1,000,000....</b>	1914	4.7	37.2	42.1	36.5
	1909	5.4	39.9	45.7	41.9
<b>\$1,000,000 and over.....</b>	1914	0.2	14.3	17.8	16.8
	1909	0.2	13.1	15.0	12.1

The largest number of wage earners and value of products for both 1914 and 1909 were reported by the group of establishments with products valued at \$100,000 to \$1,000,000. This group, however, represented only 4.7 per cent of the number of establishments in 1914 and 5.4 per cent in 1909. While the small establishments—those having products less than

\$5,000 in value—represented 44.6 per cent of the total number of establishments in 1914 as compared with 38.5 per cent in 1909, they reported only 5.4 per cent of the total average number of wage earners and 4.3 per cent of the total value of products in 1914 as compared with 4.2 per cent and 3.4 per cent, respectively, in 1909.

Table 12 classifies the establishments and wage earners in the industry, for the United States as a whole and for the 20 states reporting over 500 wage earners, according to the number employed per establishment in 1914 and 1909.

There were 509 establishments in 1914 and 440 in 1909, for which no wage earners were reported. These are small establishments in which the work is done by the proprietors and firm members. If wage earners were employed the number was so small and the period of employment so short that in computing the average, as described in the "Explanation of terms," the number was less than one, and the establishment was classed as one having "no wage earners." There was little variation during the five-year period in the proportion that the number in establishments employing over 100 wage earners each formed of the total. Both in 1914 and 1909 the largest group of establishments was that employing 1 to 5 wage earners, but they gave employment to only 13.8 per cent of the total average number of wage earners in 1914 and 10 per cent in 1909. The largest number of wage earners in any group is that shown for establishments employing 6 to 20 wage earners. Among the states the highest percentages of the total number of wage earners reported by establishments employing more than 100 wage earners each in 1914 are shown for Indiana, 72.6; Illinois, 61; and Wisconsin, 58.7.

STATE.	Cen- sus year.	TOTAL.		ESTABLISHMENTS EMPLOYING—																
				No wage earners.		1 to 5 wage earners.		6 to 20 wage earners.		21 to 50 wage earners.		51 to 100 wage earners.		101 to 250 wage earners.		251 to 500 wage earners.		501 to 1,000 wage earners.		Over 1,000 wage earners.
		Estab- lish- ments.	Wage earners (average number).	Estab- lish- ments.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.
United States..	1914	5,057	52,391	509	3,006	7,244	1,087	11,291	271	8,625	113	7,911	55	8,145	11	3,729	3	1,648	2	3,798
	1909	5,492	69,928	440	2,990	7,690	1,466	15,451	325	10,645	159	11,120	81	12,178	17	5,551	6	3,339	2	3,954
Arkansas.....	1914	46	534	1	25	52	14	179	4	136	1	53	1	114						
	1909	58	973	2	23	52	18	199	11	341	2	132	2	249						
California.....	1914	155	537	21	109	240	23	241	2	56										
	1909	155	760	5	110	294	37	392	3	74										
Georgia.....	1914	65	955	1	29	87	24	297	6	179	4	288	1	106						
	1909	83	1,059	3	37	108	28	307	11	356	4	288								
Illinois.....	1914	296	4,861	33	175	390	50	479	19	686	5	345	9	1,304	5	1,657				
	1909	325	5,852	25	191	496	68	709	17	539	11	729	7	1,217	5	1,642	1	520		
Indiana.....	1914	193	7,306	11	88	230	53	575	22	759	7	436	8	1,191	2	869	1	538	1	2,708
	1909	221	8,867	11	86	230	65	711	27	877	15	1,018	11	1,552	4	1,185	1	682	1	2,612
Iowa.....	1914	93	994	10	46	104	24	256	11	355			2	279						
	1909	119	1,441	13	59	156	34	367	7	280	3	193	3	445						
Kentucky.....	1914	130	1,897	12	72	181	28	288	8	259	6	479	3	426	1	264				
	1909	161	2,777	4	87	213	40	479	11	395	7	423	5	750			1	517		
Maryland.....	1914	130	723	10	88	212	24	232	7	226	1	53								
	1909	126	757	11	78	183	28	259	7	189	2	126								

Table 12—  
Continued.

Table 12— Continued.	STATE.	Cen- sus year.	ESTABLISHMENTS EMPLOYING—																			
			TOTAL.		No wage earn- ers.		1 to 5 wage earners.		6 to 20 wage earners.		21 to 50 wage earners.		51 to 100 wage earners.		101 to 250 wage earners.		251 to 500 wage earners.		501 to 1,000 wage earners.		Over 1,000 wage earners.	
			Estab- lish- ments.	Wage earn- ers (average number).	Estab- lish- ments.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	
Massachusetts....	1914 1909	175 177	1,348 1,539	12 10	99 85	235 249	49 65	553 697	12 15	361 446	3 2	199 147										
Michigan.....	1914 1909	177 212	1,417 4,034	22 31	104 115	216 247	37 36	365 343	7 9	208 288	6 12	439 825	1 4	189 582		4 1,245		1 504				
Minnesota.....	1914 1909	129 134	854 868	22 22	84 89	189 200	14 13	137 133	4 6	133 201	4 3	289 221	1 1	106 113								
Missouri.....	1914 1909	223 243	2,560 3,302	32 22	124 130	305 334	45 61	450 643	15 16	479 555	2 9	151 629	4 4	617 603				1 1	558 533			
New Jersey.....	1914 1909	264 256	1,168 1,601	23 7	188 169	438 432	44 70	464 733	9 6	266 181												
New York.....	1914 1909	604 610	3,911 6,116	61 55	388 349	955 913	126 154	1,304 1,612	15 26	499 819	11 18	740 1,288	3 7	413 1,116		1 368						
North Carolina...	1914 1909	137 138	1,462 1,629	4 7	81 70	166 150	35 38	372 412	11 17	327 557	4 5	323 408	2 1	274 102								
Ohio.....	1914 1909	341 407	5,997 8,815	16 9	149 167	451 511	106 135	1,153 1,449	40 48	1,309 1,706	21 27	1,515 1,983	8 21	1,313 3,166		1 256						
Pennsylvania.....	1914 1909	687 685	6,370 7,498	88 56	415 343	1,056 953	136 203	1,339 2,038	24 31	700 975	15 14	977 953	7 6	949 932		1 1	259 255			1 1	1,090 1,342	
Tennessee.....	1914 1909	108 129	1,371 1,706	3 2	56 65	143 168	31 43	341 513	11 12	351 404	7 6	536 498										
Virginia.....	1914 1909	119 130	1,246 1,329	16 10	53 71	112 164	37 37	373 431	7 4	185 144	4 7	286 473	2 1	290 117								
Wisconsin.....	1914 1909	185 280	2,638 3,437	25 65	116 163	241 341	27 38	303 411	8 11	275 355	4 1	269 68	3 5	574 828		1 2	424 856		1 1	552 578		

Engines and power.—Table 13 shows, for 1914, 1909, and 1904, for the industry, the number and horsepower of engines or motors employed in generating power (including electric motors operated by

purchased current). It also shows separately the number and horsepower of electric motors operated by current generated in the establishments reporting.

Table 13

POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.					
				Amount.			Per cent distribution.		
	1914	1909	1904	1914	1909	1904	1914	1909	1904
Primary power, total.....	9,159	6,501	2,496	112,549	128,032	106,159	100.0	100.0	100.0
Owned.....	1,985	2,647	2,406	79,782	100,715	96,144	70.9	79.9	90.6
Steam engines and turbines <sup>1</sup> .....	782	1,217	1,481	66,093	82,928	82,438	58.7	65.8	77.7
Internal-combustion engines.....	1,109	1,294	853	10,557	13,120	9,739	9.4	10.4	9.2
Water wheels, turbines, and motors.....	94	136	147	3,132	4,687	3,917	2.8	3.7	3.7
Rented.....	7,174	3,854	(?)	32,767	25,317	10,015	29.1	20.1	9.4
Electric.....	7,174	3,854	(?)	32,654	24,969	8,780	29.0	19.8	8.3
Other.....				113	348	1,235	0.1	0.3	1.2
Electric.....	8,233	4,805	(?)	46,384	39,424	16,434	100.0	100.0	100.0
Rented.....	7,174	3,854	(?)	32,654	24,969	8,780	70.4	63.3	53.4
Generated by establishments reporting.....	1,064	951	507	13,730	14,455	7,654	29.6	36.7	46.6

<sup>1</sup> Figures for horsepower include for 1909 and 1904 the amounts reported under the head of "other" owned power.

<sup>2</sup> Figures not available.

While the total primary power reported for 1914 shows an increase of 6 per cent over the total for 1904, there was a decrease of 10.7 per cent for the period 1909–1914. Although steam furnishes the bulk of power used, its relative importance greatly diminished at the last two censuses. This decrease in relative importance is due to the increasing use of rented electric power, which represented 8.3 per cent of the total in 1904, 19.8 per cent in 1909, and 29 per cent

in 1914. When it is considered that there was a decrease in the number of establishments, average number of wage earners, and value of products of this industry, the increase in the use of electric power is especially noticeable.

Table 19 shows that electric power was used in the manufacture of carriages and wagons and materials in every state in 1914, ranging from 5 horsepower in Wyoming to 7,412 horsepower in Illinois.

Fuel.—Table 14 shows, for 1914, the quantity of each kind of fuel used, for which data were obtained, for the industry as a whole, and for 20 selected states.

Bituminous coal was the most important fuel used

in the industry in 1914. Indiana consumed the greatest amount of this class of fuel and of coke and oil, while Pennsylvania ranked first in the consumption of anthracite coal and of gas.

STATE.	COAL.		Coke (tons, 2,000 lbs.).	Oil, including gasoline (barrels).	Gas (1,000 cubic feet).
	Anthracite (tons, 2,240 lbs.).	Bituminous (tons, 2,000 lbs.).			
United States.....	47,516	379,432	12,269	64,567	234,191
Arkansas.....	6	3,014	24	30	400
California.....	474	830	26	551	1,065
Georgia.....	25	3,414	189	921	12
Illinois.....	1,207	47,874	1,592	8,856	7,346
Indiana.....	169	82,752	2,966	22,511	8,313
Iowa.....	39	10,760	118	211	997
Kentucky.....	13	30,525	609	144	1,840
Maryland.....	435	2,327	.....	101	561
Massachusetts.....	867	5,240	71	141	2,999
Michigan.....	133	11,006	193	142	490

STATE.	COAL.		Coke (tons, 2,000 lbs.).	Oil, including gasoline (barrels).	Gas (1,000 cubic feet).
	Anthracite (tons, 2,240 lbs.).	Bituminous (tons, 2,000 lbs.).			
Minnesota.....	130	6,332	320	2,109	.....
Missouri.....	675	7,504	163	379	4,129
New Jersey.....	2,367	2,961	40	596	4,099
New York.....	3,694	21,137	137	1,854	14,228
North Carolina.....	95	3,320	438	330	10
Ohio.....	306	57,563	1,238	11,521	62,457
Pennsylvania.....	34,768	29,641	1,431	9,066	100,508
Tennessee.....	211	6,792	540	156	544
Virginia.....	91	4,962	3	215	240
Wisconsin.....	154	23,422	1,656	1,269	1,436
All other states.....	1,657	18,056	625	3,404	22,517

### SPECIAL STATISTICS RELATING TO PRODUCTS.

The United States as a whole.—Table 15 presents statistics, with the per cent of increase or decrease, for 1914 and 1909, regarding the number and value of vehicles and the value of all other products and repairs reported by establishments assigned to the industry, together with similar statistics for establishments in other industries which incidentally reported the manufacture and repair of carriages and wagons or parts of these.

In addition to the \$131,546,997 reported as the value of products of the 5,057 establishments engaged primarily in the manufacture of carriages and wagons and parts and supplies, similar products, to the value of \$4,492,615, were reported by 229 establishments engaged primarily in other branches of industry in 1914. Thus the total value of these products for the year amounted to \$136,039,612, as compared with \$164,420,558 for 1909, a decrease of 17.3 per cent. There were 1,177,415 vehicles of all kinds manufactured during 1914, including those made as subsidiary products of establishments engaged primarily in other industries, as compared with 1,584,571 in 1909, a decrease of 25.7 per cent.

The establishments which manufactured carriages and wagons and materials as a subsidiary product were engaged chiefly in the automobile, agricultural implement, and foundry and machine-shop industries. These subsidiary products are probably not so large as they would be if a more definite segregation could be obtained when reports are secured. There are many articles which can be used as parts or materials in the carriage and wagon industry which are also equally adapted for use in other industries and have been classified with such industries, it being impossible to obtain separate reports for those used in the manufacture of vehicles.

At the census of 1904 detailed statistics were not secured regarding vehicles or parts manufactured by establishments outside of the carriage and wagon

industry proper, but the total value of vehicles reported as made by such establishments was \$612,173.

KIND.	PRODUCTS.					
	Number.			Value.		
	1914	1909	Per cent of increase, 1909-1914.	1914	1909	Per cent of increase, 1909-1914.
Establishments reporting.....	5,286	5,613	-5.8	.....	.....	.....
All products.....	.....	.....	.....	\$136,039,612	\$164,420,558	-17.3
All vehicles.....	1,177,415	1,584,571	-25.7	72,283,608	94,037,900	-23.1
Carriages.....	550,401	943,319	-34.7	34,193,368	48,835,053	-30.0
Wagons.....	572,409	829,797	-9.1	36,533,152	42,026,198	-13.1
Public conveyances.....	1,284	2,347	-45.3	325,164	944,882	-65.6
Sleighs and sleds.....	53,321	109,108	-51.1	1,232,014	2,231,767	-44.8
All other products, parts, repairs, etc.....	.....	.....	.....	63,755,914	70,382,658	-9.4
Made by establishments in the industry.	.....	.....	.....	.....	.....	.....
Establishments reporting.....	5,057	5,492	-7.9	.....	.....	.....
All products.....	.....	.....	.....	131,546,997	159,892,547	-17.7
All vehicles.....	1,124,903	1,519,238	-26.0	69,324,182	90,694,145	-23.6
Carriages.....	538,071	828,411	-35.0	33,329,879	47,756,118	-30.2
Wagons.....	533,601	857,685	-9.2	34,500,942	39,932,910	-13.6
Public conveyances.....	1,221	2,243	-45.6	279,656	939,267	-70.2
Sleighs and sleds.....	52,010	100,899	-48.5	1,207,705	2,065,850	-41.5
All other products, parts, repairs, etc.....	.....	.....	.....	62,222,815	69,198,402	-10.1
Made by establishments in other industries.	.....	.....	.....	.....	.....	.....
Establishments reporting.....	229	121	89.3	.....	.....	.....
All products.....	.....	.....	.....	4,492,615	4,528,011	-0.8
All vehicles.....	52,512	65,333	-19.6	2,959,516	3,343,755	-11.5
Carriages.....	12,330	14,908	-17.3	863,489	1,078,035	-20.0
Wagons.....	38,808	42,112	-7.8	2,026,210	2,093,288	-3.2
Public conveyances.....	63	104	-39.4	45,508	5,615	710.5
Sleighs and sleds.....	1,311	8,209	-84.0	24,309	165,917	-85.3
All other parts, materials, and repair work.....	.....	.....	.....	1,533,099	1,184,256	29.5

<sup>1</sup> A minus sign (-) denotes decrease.

Table 16 presents, for 1914, 1909, and 1904, statistics showing the kind, number, and value of all products manufactured by establishments engaged in the

industry. The product of establishments manufacturing parts and materials, such as bodies, tops, cushions, hubs, felloes, spokes, wheels, and all materials used in the production of the completed vehicle, is combined with the product of establishments manufacturing the completed vehicle. This combination gives a complete product for the industry, though it involves a certain amount of duplication, due to the fact that a large part of the product of factories manufacturing parts and supplies is used as material in the factories making carriages and wagons. The receipts for repair work and the value of products of carriage and wagon materials are included in the United States total and in the detail under "all other products."

Table 16	1914	1909	1904
Products, total value.....	\$131,546,997	\$159,892,547	\$155,868,849
Complete vehicles of all classes:			
Number.....	1,126,026	1,519,782	1,711,529
Value.....	\$69,899,107	\$91,263,264	\$97,190,693
Carriages (family and pleasure):			
Number.....	538,071	828,411	937,409
Value.....	\$33,329,879	\$47,756,118	\$55,750,276
Wagons:			
Number.....	533,601	587,685	643,755
Value.....	\$34,506,942	\$39,932,910	\$37,195,230
Business—			
Number.....	139,621	154,631	133,422
Value.....	\$13,022,860	\$16,440,816	(1)
Light and package commodity, number.....	81,393	107,190	71,733
Heavy and bulky commodity, number.....	31,458	32,780	31,956
Pushcarts, number.....	14,937	7,330	6,089
Hearses, number.....	402	807	642
Street sprinklers, number.....	197	1,053	157
Other business wagons, number.....	11,234	5,471	22,845
Farm (including carts or trucks)—			
Number.....	384,663	429,952	505,025
Value.....	\$19,708,423	\$22,615,875	(1)
Government, municipal, etc.—			
Number.....	9,317	3,102	5,308
Value.....	\$1,775,659	\$876,219	(1)
Ambulances, number.....	346	598	245
Mail and mail-carriers' wagons and carts, number.....	5,549	1,912	4,703
Patrol (fire and police), hose wagons, and prison vans, number.....	3,422	592	360
Public conveyances:			
Number.....	1,221	2,243	2,711
Value.....	\$279,656	\$939,267	\$1,314,952
Sleighs and sleds:			
Number.....	52,010	100,899	127,455
Value.....	\$1,207,705	\$2,065,850	\$2,694,560
Automobiles: <sup>2</sup>			
Number.....	1,123	544	199
Value.....	\$574,925	\$569,119	\$235,675
All other products, including parts and amount received for repair work, value.....	\$61,647,890	\$68,629,283	\$58,678,156

<sup>1</sup> Not reported separately.

<sup>2</sup> Manufactured in establishments devoted primarily to the manufacture of carriages and wagons.

In 1914 the total value of products reported by establishments engaged primarily in the industry amounted to \$131,546,997, of which the value of completed vehicles, including automobiles, was \$69,899,107, or 53.1 per cent; the value of materials manufactured, \$24,849,560, or 18.9 per cent; the amount received for repair work by establishments doing repair work only, \$3,414,432, or 2.6 per cent; and \$33,383,898, or 25.4 per cent, was received by establishments doing repair

work in conjunction with the manufacture of carriages and wagons. The total value of vehicles includes \$574,925, representing the value of automobiles made by establishments engaged primarily in the manufacture of carriages and wagons.

Of the total value of vehicles produced in 1914, that of wagons of all kinds represented 49.4 per cent; family and pleasure carriages, 47.7 per cent; sleighs and sleds, 1.7 per cent; and public conveyances, four-tenths of 1 per cent.

The height of development of the carriage and wagon industry was attained in 1904, and since then there has been a steady decline. It decreased 11.2 per cent in number and 6.1 per cent in value from 1904 to 1909 and 25.9 per cent in number and 23.4 per cent in value from 1909 to 1914. Family and pleasure carriages decreased in output 42.6 per cent during the decade and 11.6 per cent during the five-year period 1904-1909 and 35 per cent from 1909 to 1914. The number of wagons manufactured has decreased steadily from census to census, the loss for the decade being 17.1 per cent, while the output of public conveyances decreased 55 per cent and sleighs and sleds, 59.2 per cent during the same period.

Automobiles manufactured by establishments engaged primarily in the manufacture of carriages and wagons increased from 199 in 1904 to 544 in 1909 and to 1,123 in 1914. The value of the automobiles increased from \$235,675 in 1904 to \$569,119 in 1909 and \$574,925 in 1914.

Vehicles, by states.—Table 17 shows, by states, the number of the different kinds of vehicles, segregated into four principal classes, for establishments engaged primarily in the carriage and wagon industry during 1914, 1909, and 1904, and the value of those manufactured in 1914.

The decrease in the carriage and wagon industry, due almost entirely to the increased use of the automobile, is greater in respect to pleasure vehicles than to those used for business purposes. While 38 states reported the manufacture of carriages in 1914, as compared with 44 in 1909, 381,968, or 71 per cent of these vehicles, were made in 5 states—Indiana, Illinois, Ohio, Missouri, and Kentucky.

Only three states—Arizona, Idaho, and Nevada—did not report the manufacture of vehicles of any description in 1914. In every state reporting vehicles, wagons (business, farm, government, etc.) were manufactured. Illinois, Wisconsin, Indiana, and Pennsylvania, in the order named, were the four leading states in the industry in this class of vehicles in 1914. These states manufactured 307,953 wagons, or 57.7 per cent of the total.

Table 17

Table 17 CLASS OF VEHICLE AND STATE.	NUMBER.			Value: 1914.	CLASS OF VEHICLE AND STATE.	NUMBER.			Value: 1914.
	1914	1909	1904			1914	1909	1904	
CARRIAGES (FAMILY AND PLEASURE).					WAGONS (BUSINESS, FARM, GOVERNMENT, ETC.)—CON.				
United States.....	538,071	828,411	937,409	\$33,329,879	Michigan.....	11,454	28,720	52,273	\$730,293
California.....	22	386	2,160	2,850	Minnesota.....	12,315	17,231	15,059	278,821
Connecticut.....	55	277	2,381	9,697	Mississippi.....	1,115	1,683	2,012	145,554
Georgia.....	20,071	21,974	20,919	1,192,715	Missouri.....	21,456	20,140	25,281	1,350,569
Illinois.....	81,477	101,875	66,075	5,024,032	Nebraska.....	431	1,074	916	52,420
Indiana.....	143,042	177,194	178,962	8,385,700	New Hampshire.....	769	1,049	1,188	106,687
Iowa.....	13,844	29,809	16,498	1,349,644	New Jersey.....	3,687	4,337	5,647	493,718
Kentucky.....	31,925	24,259	27,195	1,719,724	New York.....	19,656	21,937	19,879	1,963,171
Maine.....	1,389	2,551	2,802	87,841	North Carolina.....	20,030	26,248	23,553	882,533
Maryland.....	827	1,708	2,945	86,967	Ohio.....	25,417	28,882	40,905	2,384,122
Massachusetts.....	307	2,311	8,106	46,451	Pennsylvania.....	32,983	33,634	35,395	2,849,777
Missouri.....	53,552	97,444	74,650	3,118,458	Tennessee.....	8,126	12,499	20,241	606,829
New York.....	15,220	25,474	42,249	1,232,564	Texas.....	1,681	1,243	718	131,734
North Carolina.....	29,098	31,813	25,157	1,774,043	Virginia.....	20,575	18,835	19,195	914,908
Ohio.....	71,972	135,877	199,428	4,611,603	West Virginia.....	3,819	2,906	5,117	235,848
Pennsylvania.....	15,551	23,395	33,467	1,101,307	Wisconsin.....	81,238	92,011	83,916	4,276,339
Tennessee.....	3,067	2,470	5,374	258,893	All other states.....	3,714	4,714	5,686	366,025
Virginia.....	15,144	13,720	19,366	769,279	PUBLIC CONVEYANCES.				
Wisconsin.....	5,314	24,726	23,466	450,882	United States.....	1,221	2,243	2,711	279,656
All other states.....	36,194	111,148	196,209	2,107,229	New York.....	42	219	742	11,094
WAGONS (BUSINESS, FARM, GOVERNMENT, ETC.).					Ohio.....	63	657	217	29,706
United States.....	533,601	587,685	643,755	34,506,942	Wisconsin.....	35	90	103	11,636
Alabama.....	3,537	4,588	12,512	206,373	All other states.....	1,081	1,277	1,649	227,220
Arkansas.....	5,726	7,415	1,625	292,597	SLEIGHS AND SLEDS.				
California.....	1,868	3,347	3,045	212,939	United States.....	52,010	100,899	127,455	1,207,705
Connecticut.....	1,139	1,786	1,944	128,775	Maine.....	1,549	2,169	2,802	50,740
Florida.....	843	1,578	2,652	52,916	Michigan.....	12,205	32,751	53,180	267,967
Georgia.....	7,805	15,708	18,848	376,095	Minnesota.....	10,270	10,954	10,003	170,949
Illinois.....	118,202	85,097	72,033	5,027,568	New York.....	6,801	10,823	19,433	216,220
Indiana.....	75,530	97,844	92,893	5,516,587	Pennsylvania.....	2,404	3,210	5,551	75,247
Iowa.....	16,865	26,495	22,815	799,831	Wisconsin.....	11,221	17,720	15,365	252,811
Kansas.....	847	1,166	1,004	89,730	All other states.....	7,560	23,272	21,121	134,271
Kentucky.....	23,434	25,911	49,266	1,219,594					
Louisiana.....	1,170	1,269	1,246	127,049					
Maine.....	2,226	2,259	1,764	277,390					
Maryland.....	2,861	2,719	1,849	318,421					
Massachusetts.....	3,082	3,360	3,278	587,670					



## DETAIL STATE TABLES.

Table 18 shows, for 1914, 1909, and 1904, by states, the number of establishments, average number of wage earners, primary horsepower, wages, cost of materials, and value of products for the industry as

a whole. Table 19 presents, by states, more detailed statistics for the industry as a whole and for each industry separately, for 1914 only.

TABLE 18.—COMPARATIVE SUMMARY, BY STATES: 1914, 1909, AND 1904.

STATE.	Cen- sus year.	Num- ber of estab- lish- ments.	Wage earners (aver- age num- ber).	Primary horse- power.	Wages.			Cost of ma- terials.	Value of prod- ucts.
					Expressed in thousands.				
United States.....	1914	5,057	52,391	112,549	\$32,557	\$65,719	\$131,547		
	1909	5,492	69,928	126,032	37,595	81,951	159,893		
	1904	5,588	77,882	106,159	38,303	77,528	155,869		
Alabama.....	1914	63	385	1,051	233	304	707		
	1909	35	424	991	194	303	684		
	1904	26	380	554	165	377	740		
Arkansas.....	1914	46	534	2,838	257	657	1,187		
	1909	58	973	3,749	405	820	1,664		
	1904	33	460	1,632	174	346	772		
California.....	1914	155	537	1,149	457	497	1,384		
	1909	155	760	957	610	849	2,052		
	1904	198	980	782	715	852	2,352		
Colorado.....	1914	16	149	168	109	56	237		
	1909	21	124	125	87	85	230		
	1904	135	177	84	130	133	379		
Connecticut.....	1914	84	452	945	311	411	996		
	1909	92	578	957	372	383	1,077		
	1904	109	1,507	1,329	767	793	2,196		
Delaware.....	1914	28	118	181	67	68	107		
	1909	25	163	204	81	124	290		
	1904	25	165	204	85	131	286		
Florida.....	1914	46	169	203	115	95	305		
	1909	39	230	354	136	210	453		
	1904	131	196	169	102	124	344		
Georgia.....	1914	65	955	1,565	466	1,364	2,354		
	1909	83	1,059	1,353	489	1,367	2,560		
	1904	75	1,115	1,110	426	1,222	2,303		
Illinois.....	1914	296	4,861	12,285	3,405	8,368	15,192		
	1909	325	5,852	9,684	3,588	9,479	16,831		
	1904	324	5,155	7,238	2,778	5,746	11,392		
Indiana.....	1914	193	7,306	15,257	4,886	10,725	21,569		
	1909	221	8,867	13,790	4,355	12,458	21,655		
	1904	252	9,406	13,352	4,184	10,869	19,259		
Iowa.....	1914	93	994	2,120	636	1,903	3,437		
	1909	119	1,441	2,387	828	2,748	4,786		
	1904	113	1,298	1,915	602	1,684	3,371		
Kansas.....	1914	41	190	335	118	216	456		
	1909	46	246	266	134	245	530		
	1904	238	214	96	105	117	321		
Kentucky.....	1914	130	1,897	5,748	999	2,554	4,647		
	1909	161	2,777	6,617	1,164	2,713	5,141		
	1904	131	2,734	4,971	1,104	2,814	5,505		
Louisiana.....	1914	31	333	849	178	238	509		
	1909	40	358	568	196	206	529		
	1904	240	293	220	159	151	436		
Maine.....	1914	129	343	816	205	404	851		
	1909	150	472	1,121	257	397	966		
	1904	158	459	790	247	400	956		
Maryland.....	1914	130	723	1,245	412	565	1,385		
	1909	126	757	1,379	372	541	1,330		
	1904	119	946	985	415	698	1,485		
Massachusetts.....	1914	175	1,348	1,953	781	1,140	2,822		
	1909	177	1,539	2,038	986	1,282	3,185		
	1904	305	2,530	2,807	1,541	2,030	4,822		
Michigan.....	1914	177	1,417	2,739	982	1,928	3,775		
	1909	212	4,034	6,362	2,240	5,262	10,159		
	1904	218	6,400	8,411	3,053	8,440	14,889		
Minnesota.....	1914	129	854	2,004	568	1,030	2,206		
	1909	134	868	1,657	529	983	2,175		
	1904	141	923	1,825	454	867	1,868		
Mississippi.....	1914	23	210	1,074	101	223	479		
	1909	41	365	1,350	154	274	642		
	1904	24	318	1,003	132	213	494		
Missouri.....	1914	223	2,560	4,523	\$1,036	\$3,832	\$6,851		
	1909	213	3,302	5,858	1,781	4,860	8,469		
	1904	248	3,163	3,431	1,726	4,261	7,678		
Montana.....	1914	5	20	26	23	17	56		
	1909	4	28	19	32	29	79		
	1904	6	23	21	20	37	107		
Nebraska.....	1914	16	109	280	83	99	265		
	1909	22	200	224	131	251	577		
	1904	20	150	101	87	128	318		
New Hampshire.....	1914	35	298	1,265	167	193	438		
	1909	44	420	1,231	240	346	734		
	1904	48	521	1,253	297	291	784		
New Jersey.....	1914	264	1,168	1,532	816	1,008	2,567		
	1909	256	1,601	1,645	1,019	1,280	3,250		
	1904	213	1,986	1,631	1,116	1,349	3,460		
New York.....	1914	604	3,911	8,530	2,711	3,577	8,759		
	1909	610	6,116	10,029	3,740	5,809	13,293		
	1904	635	7,891	8,524	4,406	6,201	14,644		
North Carolina.....	1914	137	1,462	2,176	644	1,777	3,133		
	1909	138	1,629	2,910	603	1,894	3,283		
	1904	2125	1,373	1,310	482	1,229	2,304		
North Dakota.....	1914	5	15	25	12	10	32		
	1909	3	9	14	7	7	19		
Ohio.....	1914	241	5,997	13,381	3,839	8,561	16,192		
	1909	407	8,815	14,771	4,647	11,414	21,949		
	1904	456	11,027	16,936	5,269	12,866	24,003		
Pennsylvania.....	1914	687	6,370	10,906	2,780	5,442	12,262		
	1909	655	7,498	11,544	3,861	5,707	12,748		
	1904	656	7,461	9,197	3,647	4,902	11,493		
Rhode Island.....	1914	47	271	487	180	181	509		
	1909	40	238	387	152	163	422		
	1904	30	228	158	140	117	370		
South Carolina.....	1914	18	209	313	110	273	500		
	1909	23	272	272	104	244	464		
	1904	38	346	320	118	290	548		
South Dakota.....	1914	8	41	111	27	22	87		
	1909	10	43	94	38	60	131		
	1904	3	19	16	13	10	31		
Tennessee.....	1914	108	1,371	4,221	674	1,297	2,677		
	1909	129	1,706	4,537	993	1,439	3,040		
	1904	97	1,889	4,408	759	1,668	3,278		
Texas.....	1914	32	205	446	140	156	489		
	1909	50	412	374	267	319	830		
	1904	234	211	118	124	130	368		
Vermont.....	1914	31	60	349	36	44	118		
	1909	38	94	429	50	58	158		
	1904	32	108	324	59	55	164		
Virginia.....	1914	119	1,246	2,229	586	1,539	2,748		
	1909	130	1,329	2,032	529	1,283	2,485		
	1904	102	1,332	1,735	473	1,196	2,292		
Washington.....	1914	27	150	289	147	266	524		
	1909	37	241	254	203	319	720		
	1904	25	201	130	168	188	482		
Wisconsin.....	1914	185	2,638	5,502	1,827	4,259	7,544		
	1909	286	3,437	6,426	1,930	5,163	8,899		
	1904	330	3,682	5,374	1,811	4,092	8,080		
Wyoming.....	1914	5	6	5	5	5	16		
	1909	10	8	10	8	22	42		
All other states.....	1914	110	509	1,423	328	415	1,085		
	1909	97	638	1,363	383	555	1,332		
	1904	95	606	1,695	320	521	1,186		

<sup>1</sup> Excludes statistics for one establishment, to avoid disclosure of individual operations.

<sup>2</sup> Excludes statistics for two establishments, to avoid disclosure of individual operations.

<sup>3</sup> Apparently an error, figures should be 2,603.

TABLE 19.—DETAIL STATISTICS, BY

STATZ.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS—NUMBER DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.	
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.			Total.	16 and over.		Under 16.		
					Male.	Female.	Average number.	Number, 15th day of—			Male.	Female.	Male.		Female.
								Maximum month.	Minimum month.						

## CARRIAGES AND WAGONS AND MATERIALS.

1	United States.....	5,037	64,446	5,629	2,087	2,972	1,367	52,391	Ap	57,316	No	45,014	51,223	50,335	753	133	2	\$177,643,015
2	Alabama.....	63	517	67	43	20	2	385	Je	440	No	287	367	364	1	2		707,075
3	Arkansas.....	46	633	49	30	18	2	534	Jy	625	No	337	460	460				1,589,402
4	California.....	155	760	178	22	10	13	537	My	575	De	501	519	517	1	1		1,231,464
5	Colorado.....	16	175	11	8	2	5	149	Jy	161	De	137	152	152				225,438
6	Connecticut.....	84	570	87	17	7	7	452	My	484	Oc	420	436	436				1,046,268
7	Delaware.....	28	164	35	5	3	3	118	Je	127	De	111	113	113				307,455
8	Florida.....	46	233	55	3	5	1	169	Jy	176	De	150	164	162		2		352,996
9	Georgia.....	65	1,135	66	57	43	14	955	Fe	1,154	De	583	1,082	1,067	7	8		2,630,256
10	Illinois.....	296	6,095	315	181	345	423	4,861	Mh	5,406	No	4,309	4,706	4,635	70	1		26,483,549
11	Indiana.....	193	5,519	173	185	650	205	7,306	Mh	7,823	No	5,766	7,236	7,062	165	9		40,360,328
12	Iowa.....	93	1,403	117	47	201	44	994	Mh	1,109	No	837	944	920	22	2		4,591,873
13	Kansas.....	41	250	63	2	4	1	190	Jy	233	Ja	162	181	180	1			448,500
14	Kentucky.....	130	2,239	133	73	97	39	1,897	Mh	2,236	No	1,379	1,727	1,688	35	4		5,889,387
15	Louisiana.....	31	397	32	22	9	1	333	Oc	349	Ja	314	350	347		3		505,114
16	Maine.....	129	511	137	18	8	5	343	My	370	Oc	327	364	364				807,103
17	Maryland.....	130	918	144	26	16	9	723	Je	755	De	674	714	710	1	3		1,255,439
18	Massachusetts.....	175	1,656	201	43	34	30	1,348	My	1,548	De	1,210	1,254	1,250	3	1		3,039,167
19	Michigan.....	177	1,767	202	56	68	44	1,417	Mh	1,550	Oc	1,273	1,354	1,319	32	3		4,284,111
20	Minnesota.....	129	1,088	146	32	37	19	854	Mh	946	No	751	842	837	5			2,909,011
21	Mississippi.....	23	258	21	14	12	1	210	Ja	261	No	157	213	213				520,361
22	Missouri.....	223	3,095	236	122	128	49	2,560	My	3,000	De	2,060	2,690	2,644	40	6		6,523,120
23	Montana.....	5	26	4	1	1		20	Je	23	De	16	17	17				76,204
24	Nebraska.....	16	144	15	9	3		109	Ja	146	Oc	84	85	83	2			455,180
25	New Hampshire.....	35	356	38	12	5	3	298	My	323	Se	273	288	287	1			765,719
26	New Jersey.....	264	1,542	308	27	28	11	1,168	Je	1,276	De	1,085	1,141	1,137		4		2,416,940
27	New York.....	604	4,985	635	143	179	67	3,911	Ap	4,320	De	3,398	3,680	3,624	53	3		10,563,825
28	North Carolina.....	137	1,763	155	76	55	15	1,462	Au	1,701	De	960	1,662	1,639	15	8		4,258,821
29	North Dakota.....	5	20	5				15	Ap	17	Au	13	17	17				51,273
30	Ohio.....	341	7,299	339	360	404	199	5,997	Ap	6,771	No	5,220	5,730	5,494	227	7	2	17,728,827
31	Pennsylvania.....	687	7,683	821	179	255	58	6,370	My	6,761	No	5,832	6,127	6,072	16	39		13,493,274
32	Rhode Island.....	47	349	47	16	6	9	271	Ap	293	De	251	255	254	1			444,638
33	South Carolina.....	18	259	18	16	9	7	209	Fe	250	Oc	141	218	205	5	8		565,554
34	South Dakota.....	8	56	6	5	3	1	41	Jy	60	Ja	31	50	50				97,575
35	Tennessee.....	108	1,620	134	69	40	15	1,371	Mh	1,501	De	1,051	1,392	1,378	10	4		3,244,077
36	Texas.....	32	279	41	20	11	2	205	Jy	232	Ja	167	209	200				569,402
37	Vermont.....	31	94	34				60	De	72	Ap	51	72	72				157,133
38	Virginia.....	119	1,524	133	63	70	12	1,246	Je	1,437	No	974	1,118	1,107	4	7		3,434,402
39	Washington.....	27	196	30	6	7	3	150	Ap	166	No	126	133	133				547,948
40	Wisconsin.....	185	3,133	222	80	158	35	2,638	Mh	2,994	Ja	2,043	2,618	2,579	35	4		11,700,017
41	Wyoming.....	5	11	5				6	Je	8	Ja	5	6	6				16,020
42	All other states*.....	110	685	121	29	16	10	509					537	532	1	4		1,028,669

## CARRIAGES, WAGONS, AND REPAIRS.

1	United States.....	4,601	51,913	5,289	1,590	2,550	1,180	41,304	Ap	44,946	No	35,480	40,458	39,889	487	82		\$150,797,754
2	Alabama.....	56	472	63	38	18	2	351	Je	409	No	263	315	312	1	2		644,312
3	Arkansas.....	29	255	37	8	6		204	Jy	252	No	109	124	124				1,004,773
4	California.....	144	705	169	21	10	13	492	My	529	De	458	472	470	1	1		1,187,452
5	Colorado.....	16	175	11	8	2	5	149	Jy	161	De	137	152	152				225,438
6	Connecticut.....	79	481	82	12	3	4	380	My	409	Oc	351	367	367				820,412
7	Delaware.....	28	164	35	5	3	3	118	Je	127	De	111	113	113				307,455
8	Florida.....	46	233	55	3	5	1	169	Au	176	De	150	164	162		2		352,996
9	Georgia.....	59	1,004	61	49	40	13	841	Mh	1,028	De	478	957	948	5	4		2,457,129
10	Illinois.....	272	5,447	297	131	327	417	4,275	Mh	4,742	No	3,811	4,173	4,106	68	1		24,924,638
11	Indiana.....	153	7,023	153	138	613	178	5,941	Au	6,432	No	4,531	5,800	5,706	152	2		36,979,939
12	Iowa.....	78	1,180	102	34	196	39	809	Mh	904	No	682	764	744	18	2		4,000,430
13	Kansas.....	37	203	58	1	2	1	141	My	149	No	133	143	142	1			379,140
14	Kentucky.....	107	1,597	119	46	84	31	1,317	Ap	1,563	No	953	1,202	1,191	9	2		4,811,873
15	Louisiana.....	28	324	31	17	8	1	267	Se	281	Ja	248	274	273		1		412,278
16	Maine.....	123	476	130	17	8	4	317	My	340	Au	301	336	336				712,351
17	Maryland.....	126	815	142	19	14	8	632	Je	664	De	596	636	632	1	3		1,031,033
18	Massachusetts.....	161	1,447	184	38	28	26	1,173	My	1,351	De	1,050	1,083	1,089	3	1		2,090,628
19	Michigan.....	163	1,600	190	45	68	41	1,233	Mh	1,388	Oc	1,119	1,178	1,148	27	3		3,993,261
20	Minnesota.....	123	1,065	141	31	36	19	838	Mh	930	No	734	825	824	1			2,869,759
21	Mississippi.....	15	150	17	6	12	1	114	Ja	132	No	65	96	96				392,554
22	Missouri.....	197	2,478	223	91	115	39	2,010	My	2,389	De	1,565	2,135	2,110	21	4		5,274,707
23	Montana.....	5	26	4	1	1		20	Au	23	De	16	17	17				76,204
24	Nebraska.....	11	132	11	8	3		103	Ja	140	Oc	78	79	78	1			436,857
25	New Hampshire.....	31	232	36	7	2	1	186	My	207	Oc	165	174	174				418,246
26	New Jersey.....	255	1,395	299	19	20	11	1,046	Je	1,140	De	966	1,020	1,017		3		2,089,876

\* All other states embrace: District of Columbia, 2 establishments; New Mexico, 6; Oklahoma, 16; Oregon, 21; Utah, 12; and West Virginia, 53.  
 † Owned power only.  
 ‡ Includes rented power, other than electric.

## CARRIAGES AND WAGONS AND MATERIALS.

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STATES AND INDUSTRIES: 19 14.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.					
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, including internal revenue and corporation income.	Principal materials.	Fuel and rent of power.			Total.	Steam engines. <sup>1</sup>	Internal-combustion engines. <sup>2</sup>	Water wheels and motors. <sup>1</sup>	Electric (rented).	

## CARRIAGES AND WAGONS AND MATERIALS.

\$3,894,500	\$3,870,464	\$32,557,402	\$209,303	\$1,286,215	\$1,073,317	\$63,875,930	\$1,842,865	\$131,546,007	\$65,828,202	112,549	66,093	10,070	3,132	32,654	13,730	1
45,450	19,741	233,251	150	10,043	5,505	291,007	11,762	707,398	403,717	1,051	722	111	.....	218	.....	2
47,020	18,814	250,770	384	5,151	11,467	645,561	11,203	1,180,030	529,782	2,838	2,538	123	.....	177	15	3
28,693	16,294	457,110	6,705	52,557	9,275	430,284	36,791	1,383,807	880,792	1,149	7	102	4	1,036	.....	4
8,668	2,400	109,054	3,250	4,590	1,709	53,056	3,352	236,881	180,473	168	.....	62	.....	106	.....	5
31,713	11,750	311,402	4,812	10,402	9,059	304,767	15,845	995,508	594,896	945	410	77	180	298	3	6
5,022	3,332	60,684	648	4,378	1,895	65,268	2,510	190,690	128,918	181	.....	97	.....	84	.....	7
3,800	5,720	115,307	.....	11,717	2,812	83,704	6,552	304,004	209,288	203	23	53	.....	122	.....	8
89,934	66,452	466,577	225	25,079	19,414	1,330,076	27,024	2,354,208	990,208	1,565	790	108	.....	607	16	9
374,343	477,523	3,404,823	41,588	148,455	115,493	8,182,598	185,779	15,182,400	6,824,089	12,285	7,347	274	300	4,364	3,048	10
404,383	845,560	4,385,839	5,560	10,009	185,370	10,440,938	277,630	21,593,051	10,844,033	15,257	8,458	435	.....	6,304	1,394	11
100,870	204,427	635,023	1,030	24,702	23,877	1,867,074	35,495	3,436,716	1,534,147	2,120	1,269	192	.....	659	90	12
3,900	3,540	115,020	.....	17,542	4,580	210,001	5,539	455,618	240,078	335	135	60	.....	140	.....	13
140,225	140,158	908,008	3,064	18,601	41,554	2,502,184	51,975	4,647,467	2,093,308	5,748	4,913	178	.....	657	1,798	14
20,514	7,480	177,000	1,450	9,344	3,470	230,101	7,984	509,223	271,138	849	577	85	.....	187	.....	15
20,121	11,083	204,083	2,470	10,140	6,784	387,570	15,943	851,288	447,766	816	62	201	124	339	44	16
36,584	17,284	411,727	1,900	22,008	10,351	544,198	20,716	1,384,580	819,660	1,245	510	173	4	558	16	17
40,072	45,424	781,102	6,803	59,046	20,060	1,085,650	54,007	2,821,874	1,382,217	1,053	546	271	18	1,118	52	18
115,502	160,140	981,004	2,202	29,311	40,782	1,870,351	51,600	3,774,827	1,846,976	2,739	1,211	215	42	1,271	32	19
50,008	48,738	697,718	125	20,684	20,144	990,070	78,987	2,205,008	1,175,642	2,004	1,189	250	.....	559	138	20
18,020	10,330	101,173	950	1,855	5,893	218,517	4,972	479,436	255,947	1,074	960	30	.....	84	.....	21
236,914	188,270	1,035,538	12,692	121,867	40,885	3,779,713	51,846	6,850,955	3,019,396	4,528	3,018	317	.....	1,193	80	22
900	600	23,380	.....	600	1,055	15,339	1,450	55,989	39,200	26	.....	.....	.....	26	.....	23
13,680	8,016	82,946	.....	3,029	5,460	92,547	6,701	205,479	166,231	290	.....	25	.....	255	.....	24
14,930	7,722	100,001	150	1,719	5,524	179,101	14,062	437,062	244,709	1,265	529	117	512	107	.....	25
40,123	25,457	815,745	7,381	44,686	22,007	965,598	42,313	2,556,644	1,558,733	1,532	390	543	39	551	58	26
250,619	202,374	2,710,825	30,536	221,241	70,250	3,416,691	100,132	8,759,119	5,182,296	8,530	3,009	1,107	1,440	2,968	558	27
115,874	78,420	643,832	160	15,618	30,344	1,742,692	34,695	1,738,082	1,355,695	2,176	1,394	323	8	451	36	28
720,298	541,055	3,880,448	15,946	140,000	510	0,000	1,187	31,900	21,713	25	.....	0	.....	19	.....	29
206,674	264,505	3,780,127	23,445	65,143	68,361	5,197,140	244,005	12,261,637	6,819,802	10,906	6,446	2,150	103	2,202	2,070	31
17,780	7,018	170,670	2,125	12,278	3,584	100,056	12,138	508,901	327,707	487	58	62	.....	285	.....	32
19,493	11,552	100,060	208	3,008	4,140	287,764	5,473	499,591	220,354	313	82	36	.....	195	15	33
5,220	1,360	27,108	2,544	2,100	1,214	19,773	2,321	86,799	64,705	111	.....	27	.....	84	.....	34
124,277	54,370	674,350	2,196	24,182	21,897	1,206,070	30,351	2,677,381	1,380,051	4,221	3,420	100	.....	692	10	35
17,672	8,687	139,050	820	11,387	4,810	148,234	8,078	488,741	332,429	446	50	52	.....	344	.....	36
102,304	80,121	685,542	15,150	1,125	1,170	41,386	2,436	117,835	74,013	349	.....	102	172	75	.....	37
8,872	0,560	147,402	000	17,958	5,027	254,508	11,207	524,345	258,450	289	.....	19	.....	270	.....	38
143,524	205,890	1,820,077	4,708	12,112	84,379	4,158,357	100,790	7,544,321	3,285,165	5,502	4,287	444	80	691	2,250	40
38,632	17,800	830,030	1,331	30,817	7,064	393,020	21,822	1,086,388	670,037	1,423	703	328	16	370	26	42

## CARRIAGES, WAGONS, AND REPAIRS.

\$2,081,174	\$3,370,107	\$20,408,244	\$185,086	\$1,150,384	\$900,373	\$50,751,140	\$1,421,382	\$106,697,437	\$54,524,015	74,334	34,955	0,350	2,522	27,507	11,582	1
43,000	15,812	210,411	150	10,453	4,009	236,056	11,462	617,130	369,012	741	422	101	.....	218	.....	2
12,100	7,546	120,830	300	4,054	7,096	108,648	6,063	414,320	209,615	697	428	107	.....	162	.....	3
20,103	16,294	417,127	6,705	47,008	9,001	420,211	34,702	1,270,978	816,065	1,050	7	98	4	941	.....	4
8,668	2,400	109,054	3,250	4,590	1,709	53,056	3,352	236,881	180,473	168	.....	62	.....	103	.....	5
20,071	5,022	271,078	4,071	10,402	5,843	319,712	12,819	824,397	491,866	680	165	77	140	298	.....	6
5,022	3,332	60,684	648	4,378	1,895	65,268	2,510	190,690	128,918	181	.....	97	.....	84	.....	7
3,800	5,720	115,307	.....	11,717	2,812	83,704	6,552	304,004	209,288	203	23	53	.....	122	.....	8
70,456	68,760	423,092	225	21,352	17,515	1,182,250	24,247	2,100,143	893,646	1,365	705	98	.....	592	16	9
334,401	452,315	3,044,688	30,008	135,127	100,364	7,398,442	166,300	13,773,482	6,208,740	10,330	5,064	231	300	4,195	3,046	10
407,602	701,780	3,051,808	1,026	10,732	160,323	8,065,876	218,669	18,320,870	9,436,325	9,673	5,297	311	.....	4,065	1,339	11
78,805	250,423	533,241	1,020	21,352	19,959	1,535,752	28,806	2,893,185	1,328,627	1,574	894	167	.....	513	90	12
2,400	2,540	93,120	.....	6,802	3,837	117,701	4,811	317,518	195,006	210	35	55	.....	120	2	13
103,045	120,325	709,327	355	16,209	34,341	1,939,790	39,452	3,557,008	1,578,726	3,718	3,068	153	.....	507	1,698	14
10,314	6,660	145,125	250	8,244	2,044	971,450	7,084	127,421	247,978	324	52	85	.....	187	.....	15
18,821	10,355	187,540	2,470	8,566	6,358	350,201	13,854	706,821	402,766	605	37	248	71	339	44	16
28,164	15,334	302,102	1,059	21,708	0,042	451,819	18,375	1,197,596	727,402	870	135	173	4	558	16	17
45,500	37,000	602,520	6,608	40,430	20,742	707,402	45,518	2,325,377	1,482,377	1,563	214	232	.....	1,117	40	18
101,227	148,240	891,778	2,202	28,231	37,987	1,710,508	45,024	3,450,784	1,604,562	2,145	720	208	17	1,194	32	19
55,108	48,161	550,452	125	10,744	10,072	971,587	38,224	2,103,363	1,153,552	1,979	1,180	246	.....	544	138	20
9,700	10,330	90,787	150	1,380	4,786	86,013	4,737	261,872	171,122	423	320	30	.....	73	.....	21
185,547	167,768	1,367,100	10,137	103,372	36,300	3,244,263	47,408	5,714,382	2,422,711	2,430	1,035	290	.....	1,105	80	22
900	600	23,380	.....	600	1,055	15,339	1,450	55,989	39,200	26	.....	.....	.....	26	.....	23
12,000	8,310	67,615	.....	2,540	6,876	70,657	6,465	243,831	157,709	208	.....	14	.....	254	.....	24
8,010	3,484	108,314	150	1,710	2,008	96,657	7,075	270,004	164,622	509	239	117	112	101	.....	25
23,883	20,407	746,641	5,681	39,460	10,140	838,994	38,007	2,301,135	1,424,134	1,239	140	528	39	523	58	28

## MANUFACTURES.

TABLE 19.—DETAIL STATISTICS, BY

STATE.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.										WAGE EARNERS—NUMBER DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.			Total.	16 and over.		Under 16.			
					Male.	Female.	Average number.	Number, 15th day of—			Male.	Female.	Male.	Female.		
								Maximum month.	Minimum month.							
27 New York.....	575	4,462	662	117	165	51	3,467	My 3,794	De 3,108	3,277	3,259	15	3	\$9,309,633		
28 North Carolina.....	131	1,065	152	69	55	12	1,377	Au 1,579	De 939	1,540	1,517	15	8	4,087,913		
29 North Dakota.....	5	20	5				15	Ap 17	Au 13	17	17			51,273		
30 Ohio.....	277	4,410	312	239	305	129	3,425	Ap 3,794	No 2,963	3,236	3,199	84	3	11,199,573		
31 Oklahoma.....	13	64	17	1	1		45	Jy <sup>3</sup> 47	Ja <sup>3</sup> 43	47	47			65,389		
32 Oregon.....	18	77	24		4		49	Jy <sup>3</sup> 56	Ja 43	49	49			63,520		
33 Pennsylvania.....	633	5,244	760	124	122	44	4,194	My 4,458	De 3,845	4,080	4,049	16	15	8,728,531		
34 Rhode Island.....	47	349	47	16	6	9	271	Ap 293	De 251	255	254	1		444,638		
35 South Carolina.....	18	259	18	16	9	7	209	Fe 250	No <sup>3</sup> 141	218	205	5	8	565,554		
36 South Dakota.....	8	56	6	5	3	1	41	Jy 60	Ja <sup>3</sup> 31	50	50			97,575		
37 Tennessee.....	81	895	112	38	21	10	714	Mh 779	De 581	721	716	4	1	1,881,095		
38 Texas.....	29	241	37	15	7	1	181	Au 274	Ja 150	187	187			506,475		
39 Utah.....	11	88	11	6			71	My 74	Ja 66	72	71		1	128,533		
40 Vermont.....	31	94	34				60	De 72	Ap 51	72	72			157,133		
41 Virginia.....	113	1,327	130	57	63	11	1,066	Je 1,233	No 822	967	958	4	5	3,084,193		
42 Washington.....	27	196	30	6	7	3	150	Ap 166	No 126	133	133			547,948		
43 West Virginia.....	51	320	53	10	9	8	240	Au 250	No 230	248	244	1	3	416,311		
44 Wisconsin.....	179	3,016	215	76	145	32	2,548	Mh 2,892	Ja 1,936	2,534	2,495	35	4	11,483,961		
45 Wyoming.....	5	11	5				6	Je 8	De <sup>3</sup> 5	6	6			16,020		
46 All other states*.....	7	40	9	1		1	29			30	30			68,687		

CARRIAGES, WAGONS, AND REPAIRS—Continued.														
27 New York.....	575	4,462	662	117	165	51	3,467	My 3,794	De 3,108	3,277	3,259	15	3	\$9,309,633
28 North Carolina.....	131	1,065	152	69	55	12	1,377	Au 1,579	De 939	1,540	1,517	15	8	4,087,913
29 North Dakota.....	5	20	5				15	Ap 17	Au 13	17	17			51,273
30 Ohio.....	277	4,410	312	239	305	129	3,425	Ap 3,794	No 2,963	3,236	3,199	84	3	11,199,573
31 Oklahoma.....	13	64	17	1	1		45	Jy <sup>3</sup> 47	Ja <sup>3</sup> 43	47	47			65,389
32 Oregon.....	18	77	24		4		49	Jy <sup>3</sup> 56	Ja 43	49	49			63,520
33 Pennsylvania.....	633	5,244	760	124	122	44	4,194	My 4,458	De 3,845	4,080	4,049	16	15	8,728,531
34 Rhode Island.....	47	349	47	16	6	9	271	Ap 293	De 251	255	254	1		444,638
35 South Carolina.....	18	259	18	16	9	7	209	Fe 250	No <sup>3</sup> 141	218	205	5	8	565,554
36 South Dakota.....	8	56	6	5	3	1	41	Jy 60	Ja <sup>3</sup> 31	50	50			97,575
37 Tennessee.....	81	895	112	38	21	10	714	Mh 779	De 581	721	716	4	1	1,881,095
38 Texas.....	29	241	37	15	7	1	181	Au 274	Ja 150	187	187			506,475
39 Utah.....	11	88	11	6			71	My 74	Ja 66	72	71		1	128,533
40 Vermont.....	31	94	34				60	De 72	Ap 51	72	72			157,133
41 Virginia.....	113	1,327	130	57	63	11	1,066	Je 1,233	No 822	967	958	4	5	3,084,193
42 Washington.....	27	196	30	6	7	3	150	Ap 166	No 126	133	133			547,948
43 West Virginia.....	51	320	53	10	9	8	240	Au 250	No 230	248	244	1	3	416,311
44 Wisconsin.....	179	3,016	215	76	145	32	2,548	Mh 2,892	Ja 1,936	2,534	2,495	35	4	11,483,961
45 Wyoming.....	5	11	5				6	Je 8	De <sup>3</sup> 5	6	6			16,020
46 All other states*.....	7	40	9	1		1	29			30	30			68,687

\* All other states embrace District of Columbia, 2 establishments; and New Mexico, 5.

## CARRIAGE AND WAGON MATERIALS.

1 United States.....	456	12,533	340	497	422	187	11,037	Mh 12,445	No 9,534	10,765	10,446	266	51	2	\$26,845,261
2 Alabama.....	7	45	4	5	2		34	Se 42	No 24	52	52				62,763
3 Arkansas.....	17	378	12	22	12	2	330	Ap 333	De 227	336	336				584,629
4 California.....	11	55	9	1			45	Mh 47	No 43	47	47				64,012
5 Connecticut.....	5	89	5	5	4	3	72	Ap 75	Au 69	69	69				225,856
6 Georgia.....	6	131	5	8	3	1	114	Fe 134	Se 80	125	119	2	4		173,137
7 Illinois.....	24	648	18	20	18	6	536	Fe 694	No 498	533	529	4			1,558,911
8 Indiana.....	40	1,496	20	47	37	27	1,365	Ap 1,540	Oc 1162	1,376	1,356	13	7		3,380,389
9 Iowa.....	15	223	15	13	5	5	185	Ap 209	Oc 154	180	176	4			591,443
10 Kansas.....	4	57	5	1	2		49	Jy 85	Ja 27	38	38				69,450
11 Kentucky.....	23	642	14	27	13	8	530	Mh 699	Oc 418	525	497	26	2		1,077,514
12 Louisiana.....	3	73	1	5	1		66	Oc 76	Ap 56	76	74		2		92,536
13 Maine.....	6	35	7	1		1	26	Ap 30	Se 22	28	28				94,722
14 Maryland.....	4	103	2	7	2	1	91	Au 95	De 78	78	78				224,406
15 Massachusetts.....	14	209	17	7	6	4	175	Ap 204	Au 117	161	161				948,541
16 Michigan.....	14	187	12	8		3	164	Jy 187	Ap 141	176	171	5			290,850
17 Minnesota.....	6	23	5	1	1		16	De 17	Ap 15	17	13	4			39,252
18 Mississippi.....	8	108	4	8			96	Mh 134	Au 48	117	117				127,777
19 Missouri.....	26	617	13	31	13	10	550	Ap 642	Oc 467	555	534	19	2		1,248,413
20 Nebraska.....	5	12	4	1	1		6	( <sup>1</sup> ) 6	( <sup>2</sup> ) 6	6	5	1			18,328
21 New Hampshire.....	4	124	2	5	3	2	112	My 116	Se 90	114	113	1			347,473
22 New Jersey.....	9	147	9	8	8		122	Je 136	No 112	121	120		1		327,064
23 New York.....	29	523	23	26	14	16	444	Fe 583	De 290	403	365	38			1,554,192
24 North Carolina.....	6	98	3	7		3	85	Mh 129	Se 21	122	122				170,908
25 Ohio.....	64	2,889	27	121	99	70	2,572	Ap 2,977	No 2,257	2,444	2,295	143	4	2	6,529,254
26 Pennsylvania.....	54	2,439	61	55	133	14	2,176	Ja 2,399	No 1,979	2,047	2,023		24		4,764,743
27 Tennessee.....	27	734	22	31	19	5	657	Ja 725	De 470	671	662	6	3		1,362,982
28 Texas.....	3	38	4	5	4	1	24	Jy 29	Ja 17	22	22				62,927
29 Virginia.....	6	197	3	6	7	1	180	Je 204	De 150	151	149		2		350,209
30 Wisconsin.....	6	117	7	4	13	3	90	Ja 107	No 81	84	84				216,056
31 All other states*.....	10	96	7	11	2	1	75			91	91				286,229

\* All other states embrace: New Mexico, 1 establishment; Oklahoma, 3; Oregon, 3; Utah, 1; and West Virginia, 2.

<sup>1</sup> Owned power only.<sup>2</sup> Includes rented power, other than electric.

## CARRIAGES AND WAGONS AND MATERIALS.

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STATES AND INDUSTRIES: 1914—Continued.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.					
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, including internal revenue and corporation income.	Principal materials.	Fuel and rent of power.			Total.	Steam engines. <sup>1</sup>	Internal combustion engines. <sup>2</sup>	Water wheels and motors. <sup>1</sup>	Electric (rented).	

## CARRIAGES, WAGONS, AND REPAIRS—Continued.

\$200,174	\$179,124	\$2,426,352	\$35,336	\$215,429	\$62,753	\$2,835,353	\$137,031	\$7,617,543	\$1,645,169	7,251	2,314	1,071	1,421	2,445	400	27
107,849	77,154	601,793	160	15,618	29,743	1,634,758	32,349	2,956,926	1,289,819	1,810	1,049	302	8	451	36	28
451,780	389,264	2,334,201	13,733	101,728	81,940	4,748,498	101,281	9,704,077	4,854,318	5,622	2,857	1,210	22	1,553	1,494	29
1,800	600	32,072	.....	2,249	900	22,010	1,797	84,678	60,871	81	12	.....	.....	47	.....	31
2,780	42,630	351	.....	9,307	1,525	38,519	4,596	152,969	109,854	95	.....	5	.....	90	.....	32
204,607	147,372	2,581,202	22,290	89,991	42,523	3,347,195	120,046	8,177,360	4,710,119	5,877	2,316	1,571	54	1,906	844	33
17,786	7,918	179,676	2,125	12,278	3,581	169,055	12,138	508,901	327,707	487	58	82	62	285	.....	34
19,493	11,652	109,650	208	3,008	4,149	267,704	5,473	499,591	226,354	313	82	36	.....	195	15	35
5,220	1,850	27,108	2,544	2,100	1,214	19,773	2,321	89,799	64,705	111	.....	27	.....	84	.....	36
67,740	32,646	378,453	292	23,380	13,291	596,941	21,484	1,395,004	776,579	1,122	561	99	.....	462	10	37
11,622	4,032	119,715	820	9,147	4,422	128,087	7,146	418,563	283,330	418	50	51	.....	317	.....	38
8,700	.....	51,588	.....	6,096	867	27,627	2,589	120,756	90,540	51	.....	4	.....	47	.....	39
91,480	72,090	518,181	15,000	23,503	1,125	41,386	2,435	117,835	74,013	349	.....	102	172	75	.....	40
.....	.....	38,034	.....	1,125	1,176	41,386	2,435	117,835	74,013	349	.....	102	172	75	.....	40
8,872	9,560	147,402	600	17,958	5,627	254,598	11,297	524,345	258,450	289	.....	19	.....	270	.....	42
12,533	10,814	139,023	200	9,884	2,582	188,455	7,274	474,024	278,295	601	186	274	16	125	10	43
138,344	190,481	1,770,547	3,878	11,052	81,851	4,017,313	89,459	7,273,788	3,167,016	5,044	3,923	444	30	647	2,123	44
.....	.....	5,325	.....	.....	284	4,200	509	15,876	11,167	5	.....	.....	.....	5	.....	45
750	216	22,593	750	1,235	656	25,592	2,118	65,522	37,812	33	.....	.....	.....	33	16	46

## CARRIAGE AND WAGON MATERIALS.

\$913,326	\$509,267	\$6,059,218	\$24,307	\$129,831	\$172,944	\$13,124,790	\$421,483	\$24,849,560	\$11,303,287	38,215	31,138	1,320	610	5,147	2,148	1
2,450	3,929	13,840	.....	490	896	55,251	300	90,256	34,705	310	300	10	.....	.....	.....	2
35,820	11,268	135,937	84	1,097	3,771	446,913	5,230	772,310	320,167	2,141	2,110	16	.....	15	15	3
2,500	.....	39,983	.....	5,549	274	40,073	2,089	112,889	70,727	99	.....	4	.....	95	.....	4
11,642	5,827	40,324	741	.....	3,216	75,055	3,026	171,111	93,030	265	245	.....	20	.....	3	5
13,479	2,092	42,485	.....	3,727	1,899	154,726	2,777	254,065	96,562	200	85	10	.....	105	.....	6
39,852	25,208	360,135	2,578	13,328	9,129	784,156	19,479	1,418,984	615,349	1,955	1,743	43	.....	169	2	7
88,781	53,780	733,941	4,483	26,047	1,781,112	58,961	3,247,781	1,407,708	5,684	5,684	3,161	124	.....	2,299	55	8
975	8,004	102,382	10	3,350	3,918	331,322	6,689	543,531	205,820	546	375	25	.....	146	.....	9
1,500	1,000	24,900	.....	740	743	92,300	728	138,100	45,072	125	100	5	.....	20	.....	10
42,280	13,833	295,281	2,229	2,422	7,213	562,394	12,523	1,089,499	514,582	2,030	1,855	25	.....	150	100	11
7,200	900	29,571	1,200	1,100	526	58,642	.....	81,802	23,160	525	525	.....	.....	.....	.....	12
1,300	728	17,137	.....	1,580	426	37,378	2,089	84,407	45,000	121	25	43	53	.....	.....	13
8,420	1,950	49,565	250	300	1,309	92,379	2,341	186,984	92,294	375	375	.....	.....	.....	.....	14
19,373	7,824	118,642	165	10,216	8,924	288,158	8,439	496,487	199,840	390	332	39	13	1	12	15
14,275	1,900	89,886	.....	1,080	2,795	165,753	5,876	324,043	152,414	594	485	7	25	77	.....	16
1,800	547	11,266	.....	940	172	19,392	763	42,245	22,090	25	.....	10	.....	15	.....	17
9,220	.....	41,386	800	475	1,077	132,504	235	217,564	84,825	651	640	.....	.....	11	.....	18
51,367	20,502	268,432	2,555	18,495	4,685	535,450	4,438	1,196,573	596,685	2,098	1,983	27	.....	88	.....	19
1,080	300	3,331	.....	489	83	12,890	236	21,648	8,522	12	.....	11	.....	1	.....	20
6,020	4,238	58,347	.....	2,916	82,534	4,587	4,587	167,298	80,177	696	290	.....	400	6	.....	21
16,240	5,050	69,104	1,700	5,220	2,927	126,604	4,306	265,509	134,599	293	250	15	.....	28	.....	22
56,445	23,250	284,473	1,200	5,812	7,497	581,338	23,101	1,141,576	537,137	1,279	695	36	25	523	158	23
8,025	1,272	42,039	.....	1,201	107,934	2,346	2,346	176,156	65,876	366	345	21	.....	.....	.....	24
268,518	151,791	1,505,247	2,213	39,172	51,610	3,614,474	96,729	6,488,372	2,777,169	7,759	6,777	225	.....	757	444	25
92,067	117,133	1,198,925	1,155	5,152	15,835	1,849,945	124,640	4,084,277	2,109,683	5,029	4,129	585	19	296	1,226	26
58,537	21,724	295,903	1,904	802	8,606	670,033	8,867	1,282,377	603,472	3,099	2,859	10	.....	230	.....	27
5,950	3,755	19,935	.....	2,240	397	20,147	932	70,178	49,099	28	.....	1	.....	27	.....	28
10,884	8,031	67,361	150	12	1,810	173,458	4,909	284,506	106,139	600	585	5	.....	10	.....	29
5,180	9,415	56,430	890	1,060	2,528	141,044	11,340	270,533	118,149	458	334	.....	50	44	133	30
15,146	3,416	43,030	.....	2,043	1,114	91,426	3,448	138,439	93,565	562	535	23	.....	34	.....	31

\* Same number reported for one or more other months.

\* Same number reported throughout the year.

85497°—19—49

# STEAM AND ELECTRIC CARS, AND RAILROAD REPAIR SHOPS.

By FRANK ADAMS.

## SUMMARY AND ANALYSIS.

**Scope of the report.**—This report presents statistics for (1) establishments building cars for use on steam railroads; (2) those building cars for use on electric railroads; (3) the operations of repair shops by steam-railroad companies; and (4) the operations of repair shops by electric-railroad companies. The first two classes include the reports of car-manufacturing establishments not including the operations of railroad companies, while the last two classes include

the reports of railroad companies covering only the operations of their machine and repair shops. The value of products of the latter group is not a selling value, but a value equal to the operating expenses, such as salaries and wages, cost of materials, and miscellaneous expenses.

Table 1 summarizes the statistics of the four industries for 1914 and gives a comparison of the total with 1909, together with the percentages of increase.

	TOTAL.			CARS: 1914.		RAILROAD REPAIR SHOPS: 1914.	
	1914.	1909.	Per cent of increase. <sup>1</sup>	Steam.	Electric.	Steam.	Electric.
Number of establishments.....	2,128	1,810	17.6	103	14	1,362	649
Persons engaged.....	453,414	376,071	20.6	58,988	4,286	361,925	28,215
Proprietors and firm members.....	16	10	—	11	—	1	4
Salaried employees.....	29,368	24,800	18.4	4,089	446	22,406	1,827
Wage earners (average number).....	424,030	351,261	20.7	54,288	3,840	339,518	26,384
Primary horsepower.....	615,684	442,113	39.3	126,667	10,014	433,994	44,999
Capital.....	\$590,268,801	\$431,188,849	36.9	\$157,811,109	\$14,751,582	\$354,092,369	\$63,618,741
Salaries and wages.....	330,655,874	249,417,044	32.6	48,348,202	3,199,674	258,545,615	20,559,333
Salaries.....	33,645,325	24,274,568	38.6	6,954,623	732,647	24,643,617	1,914,533
Wages.....	297,010,549	225,142,476	31.9	41,393,579	2,467,027	234,505,038	18,644,845
Paid for contract work.....	355,875	866,151	-58.9	—	129,904	201,375	24,566
Rent and taxes (including internal revenue).....	3,329,777	2,272,873	46.5	906,069	108,718	1,730,343	581,657
Cost of materials.....	399,988,119	297,594,042	34.4	132,200,159	6,349,779	243,828,607	17,609,574
Value of products.....	757,888,412	569,102,781	33.2	194,775,069	10,494,953	514,041,225	38,576,565
Value added by manufacture (value of products less cost of materials).....	357,900,293	271,508,139	31.8	62,575,510	4,145,174	270,212,618	20,966,991

<sup>1</sup> A minus sign (—) denotes decrease; percentages are omitted where base is less than 100.

There were 2,128 establishments reported as engaged in the four branches of the industry at the census of 1914. They gave employment to 453,414 persons, of whom 424,030 were wage earners, and paid \$330,655,874 in salaries and wages. These establishments used materials valued at \$399,988,119 and turned out products valued at \$757,888,412. From 1909 to 1914 the number of establishments increased by 17.6 per cent, the average number of wage earners, by 20.7 per cent, and the value of products, by 33.2 per cent. Of the total number of wage earners, 13.7

per cent were employed in car construction shops and 86.3 per cent, in railroad repair shops. The products of the construction shops represented 27.1 per cent and the repair shops 72.9 per cent of the total value of products.

**Cars made.**—Table 2 shows, for 1914 and 1909, the number and value of cars of all kinds, whether for steam or for electric roads, made by establishments reporting them as a chief product, by railroad repair shops, or by establishments engaged primarily in other lines of manufacture.

INDUSTRY.	Census year.	CARS MADE: 1914 AND 1909.					
		Total.		For steam railroads.		For electric railroads.	
		Number.	Value.	Number.	Value.	Number.	Value.
Total.....	1914	137,823	\$164,959,665	134,960	\$154,796,515	2,863	\$10,163,150
	1909	101,243	102,147,806	98,471	94,884,287	2,772	7,263,109
Cars, steam-railroad, not including operations of railroad companies.....	1914	120,278	140,868,781	120,084	140,157,583	194	711,198
	1909	75,381	77,545,354	74,778	75,521,432	603	2,025,922
Cars, electric-railroad, not including operations of railroad companies.....	1914	2,365	8,150,382	17	72,034	2,348	8,078,348
	1909	2,059	4,714,248	167	111,813	1,922	4,602,435
Cars and general shop construction and repairs by steam-railroad companies.....	1914	10,745	11,999,983	10,745	11,999,983	—	—
	1909	14,549	13,326,171	14,549	13,326,171	—	—
Cars and general shop construction and repairs by electric-railroad companies.....	1914	304	811,104	—	—	304	811,104
	1909	243	626,752	—	—	243	626,752
All other industries.....	1914	4,131	3,129,415	4,114	2,568,915	17	562,500
	1909	8,981	5,934,871	8,977	5,924,871	4	10,000



There were 137,823 cars, valued at \$164,959,665, built in 1914, as compared with 101,243 cars, valued at \$102,147,396, in 1909, showing an increase of 36.1 per cent and 61.5 per cent, respectively. The table shows a decrease in the number of cars built in railroad repair shops and as subsidiary products of other industries. The average value of steam-railroad cars increased from \$965 in 1909 to \$1,147 in 1914, and electric-railroad cars from \$2,620 in 1909 to \$3,550 in 1914.

Table 3 gives, for 1914, the number of the different classes of cars, distributed according to material used, and the total value of each class.

Ten per cent of the cars constructed in 1914 were all wood; 47.7 per cent, steel underframe; 3.9 per cent, steel body with wood interior; and 38.5 per cent, all steel. Fewer of the all-wood cars and more

of the heavier type all-steel cars are being built than formerly.

Table 3

CLASS.	NUMBER.					Value.
	Total.	All wood.	Steel under-frame.	Steel body with wood interior.	All steel.	
Total <sup>1</sup> .....	133,602	13,372	63,705	5,154	51,461	\$161,830,250
Steam-railroad cars.....	130,840	12,841	62,333	4,535	51,137	152,229,600
Passenger.....	3,568	62	174	335	2,997	45,245,184
Freight and all other...	127,278	12,779	62,159	4,200	48,140	106,984,416
Electric-railroad cars.....	2,846	531	1,372	619	324	9,600,650
Passenger.....	2,570	445	1,247	570	209	8,813,636
Freight and all other...	276	80	125	40	25	787,014

<sup>1</sup> Does not include 4,131 cars, valued at \$3,120,415, made as subsidiary products by establishments engaged primarily in other lines of manufacture.

## CARS, STEAM-RAILROAD, NOT INCLUDING OPERATIONS OF RAILROAD COMPANIES.

**Scope of the industry.**—This classification includes establishments engaged in the manufacture of all kinds of cars for use on steam railroads. It does not include, however, the manufacture of steam cars in railroad repair shops or in establishments engaged primarily in the manufacture of electric-railroad cars or other products. Some establishments, besides making finished cars, reported the manufacture, for sale as such, of car materials and parts, such as brake beams, axles, underframes, trucks, car wheels, bolsters, castings, and car bodies; there is thus some duplication in value of products within the industry. Most concerns making exclusively or primarily parts or materials for cars are, however, reported under other classifications, such as "brass, bronze, and copper products," "foundry and machine-shop products,"

"lumber and timber products," and "springs, steel, car and carriage," for which statistics are shown in the general report on manufactures.

**Comparison with earlier censuses.**—Statistics of establishments engaged in the manufacture of steam-railroad cars were first reported separately in 1889. The growth of the industry is not shown so much in the number of establishments as in the average number of wage earners and value of products. During the decade 1904-1914 the number of establishments increased 41.1 per cent; average number of wage earners, 59.4 per cent; and value of products, 75.2 per cent.

Table 4 summarizes the statistics of establishments engaged in the manufacture of steam-railroad cars for each census from 1889 to 1914 and gives percentages of increase.

Table 4

	NUMBER OR AMOUNT.					PER CENT OF INCREASE. <sup>1</sup>			
	1914	1909	1904	1899	1889	1909-1914	1904-1914	1899-1909	1889-1899
Number of establishments.....	103	110	73	65	71	-6.4	.....	.....	.....
Persons engaged.....	58,988	47,094	30,307	34,826	(3)	25.3	62.2	85.2	.....
Proprietors and firm members.....	11	7	6	7	(3)	.....	.....	.....	.....
Salaries and wages.....	4,680	4,001	2,303	1,906	(3)	17.2	103.6	102.9	.....
Wage earners (average number).....	54,288	43,086	34,068	33,453	31,854	26.0	59.4	28.8	6.7
Primary horsepower.....	126,087	97,707	55,904	33,395	27,304	20.5	120.3	102.8	22.3
Capital.....	\$157,811,109	\$139,804,667	\$88,179,047	\$88,323,852	\$48,641,210	12.9	79.0	58.3	102.4
Salaries and wages.....	48,348,202	32,272,977	23,102,511	18,525,426	16,836,531	40.8	100.3	74.2	10.0
Salaries.....	6,954,023	5,137,755	2,854,690	1,538,132	(3)	35.4	143.0	234.0	.....
Wages.....	41,393,579	27,135,222	20,247,821	16,987,294	(3)	52.5	104.4	59.7	.....
Paid for contract work.....	.....	344,127	31,449	405,634	(3)	.....	.....	-15.2	.....
Rent and taxes (including internal revenue).....	909,050	680,385	340,694	191,037	(3)	32.4	122.5	250.3	.....
Cost of materials.....	132,200,150	78,752,801	75,057,126	61,742,747	44,674,486	67.0	74.7	27.6	38.2
Value of products.....	104,775,600	123,720,627	111,175,810	90,510,180	70,083,737	57.4	75.2	30.7	20.1
Value added by manufacture (value of products less cost of materials).....	62,575,510	44,970,766	35,518,184	28,767,433	25,409,251	30.1	70.2	56.3	13.2

<sup>1</sup> A minus sign (—) denotes decrease; percentages are omitted where base is less than 100.

<sup>2</sup> Figures not available.

<sup>3</sup> Exclusive of internal revenue.

**Summary, by states.**—Table 5 summarizes the more important statistics of the industry, by states, the states being arranged according to the value of products reported for 1914, together with the percentages of increase for the three five-year periods from 1899 to 1914. Two of the states (Michigan and Missouri) for which data could not be shown separately

without disclosing the operations of individual establishments, rank higher than some named in the table.

Illinois was the most important state in the industry in 1914, the value of products of the establishments located in this state representing 31.5 per cent of the total for the United States in that year; Pennsylvania

ranked second, with 20.4 per cent, and Indiana third, with 11.1 per cent. At the 1909 census Pennsylvania ranked first in value of products and Illinois second. The greatest per cent of increase from 1909 to 1914 in

value of products was shown for Illinois and Indiana, 127.1 per cent for each state, while in average number of wage earners for the same period Illinois shows a gain of 64.5 per cent and Indiana 42 per cent.

Table 5

Table 5	STATE.	CENSUS OF 1914.										PER CENT OF INCREASE. <sup>1</sup>										
		Number of establish- ments.	Wage earners.			Value of products.			Value added by manufacture.			Wage earners (average number).			Value of products.			Value added by manufacture.				
			Average num- ber.	Per cent dis- tribu- tion.	Rank.	Amount.	Per cent dis- tribu- tion.	Rank.	Amount.	Per cent dis- tribu- tion.	Rank.	1909- 1914	1904- 1909	1899- 1904	1909- 1914	1904- 1909	1899- 1904	1909- 1914	1904- 1909	1899- 1904		
																					1914	1909
United States...	103	54,288	100.0	....	....	\$194,775,669	100.0	....	....	\$62,575,510	100.0	....	....	26.0	26.5	1.8	57.4	11.3	22.8	39.1	26.6	23.5
Illinois.....	23	18,000	33.2	1	1	61,315,638	31.5	1	2	20,886,871	33.4	1	1	61.5	21.1	-3.0	127.1	-12.7	24.5	79.1	19.6	25.5
Pennsylvania.....	12	9,955	18.3	2	2	39,831,095	20.4	2	1	10,454,404	16.7	2	2	28.2	42.2	-6.5	44.8	41.6	0.9	22.9	51.7	-20.7
Indiana.....	10	5,800	10.7	3	4	21,570,441	11.1	3	5	7,859,370	12.6	3	5	42.0	25.6	-2.5	127.1	-5.4	11.4	146.5	-0.1	17.4
Ohio.....	5	2,885	5.3	5	7	11,795,726	6.1	5	6	3,237,432	5.2	5	7	26.4	10.5	11.4	82.8	16.5	40.5	43.5	3.5	89.6
New York.....	4	2,595	4.8	6	6	9,066,920	4.7	6	7	2,695,291	4.3	6	6	8.7	49.0	-23.4	52.6	39.7	-18.7	7.2	68.1	0.9
Delaware.....	3	2,110	3.9	7	8	4,944,309	2.5	8	8	2,161,459	3.5	7	8	25.7	7.7	-23.3	36.3	0.8	9.9	26.0	3.4	18.6
All other states.....	46	12,943	23.8	....	....	46,251,540	23.7	....	....	15,280,683	24.4	....	....	-7.2	25.8	22.7	5.8	16.9	49.9	1.0	30.1	12.2

<sup>1</sup> Percentages are based on figures in Table 16; a minus sign (-) denotes decrease.

**Persons engaged in the industry.**—Table 6 shows, for 1914 and 1909, the number of persons engaged in the industry, distributed by sex, the average number of wage earners being distributed also by age. The sex and age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the "Explanation of terms."

Table 6

CLASS.	Census year.	PERSONS ENGAGED IN THE INDUSTRY.					
		Total.	Male.	Female.	Per cent of total.		Per cent of total.
					Male.	Female.	
All classes.....	1914	58,988	58,487	501	99.2	0.8	
	1909	47,094	46,715	379	99.2	0.8	
Proprietors and officials.....	1914	980	975	5	99.5	0.5	
	1909	1,041	1,041	.....	100.0	.....	
Proprietors and firm members.....	1914	11	7	4	63.6	36.4	
	1909	7	7	.....	100.0	.....	
Salaried officers of corporations.....	1914	209	208	1	99.5	0.5	
	1909	241	241	.....	100.0	.....	
Superintendents and managers.....	1914	760	760	.....	100.0	.....	
	1909	793	793	.....	100.0	.....	
Clerks and other subordinate salaried employees.....	1914	3,720	3,419	301	91.9	8.1	
	1909	2,967	2,729	238	92.0	8.0	
Wage earners (average number).....	1914	54,288	54,093	195	99.6	0.4	
	1909	43,086	42,945	141	99.7	0.3	
16 years of age and over.....	1914	54,273	54,078	195	99.6	0.4	
	1909	43,058	42,917	141	99.7	0.3	
Under 16 years of age.....	1914	15	15	.....	100.0	.....	
	1909	28	28	.....	100.0	.....	

Of the 58,988 persons engaged in the industry during 1914, 54,288, or 92 per cent, were wage earners, practically all of whom were males; only 195, or four-tenths of 1 per cent, of the wage earners were women. The number of children employed decreased from 28 in 1909 to 15 in 1914.

**Wage earners employed, by months.**—The following table gives, for the industry, the total number of wage earners employed on the 15th of each month, or the nearest representative day, for 1914 and 1909, and the

average number employed during each month in 1904, together with the percentage which the number reported for each month forms of the greatest number reported for any month.

Table 7

MONTH.	WAGE EARNERS IN THE INDUSTRY.					
	Number. <sup>1</sup>			Per cent of maximum.		
	1914	1909	1904	1914	1909	1904
January.....	63,678	43,218	33,219	100.0	74.3	85.7
February.....	59,077	40,817	28,720	88.1	70.2	74.1
March.....	55,339	38,290	28,212	86.9	65.8	72.9
April.....	51,060	38,370	29,898	80.2	65.9	77.1
May.....	50,532	34,425	27,388	79.4	59.2	86.4
June.....	53,214	38,979	28,062	83.6	67.0	88.2
July.....	50,893	38,531	36,577	89.3	66.2	100.0
August.....	58,529	37,363	38,774	91.9	64.2	83.4
September.....	56,184	40,329	32,245	88.2	77.9	89.6
October.....	54,707	48,368	34,743	85.9	83.1	89.6
November.....	50,050	55,166	34,466	78.6	94.8	88.7
December.....	45,133	58,183	36,349	70.9	100.0	93.7

<sup>1</sup> The figures for 1914 and 1909 represent the number employed on the 15th of each month, or the nearest representative day; those for 1904, the average number employed during the month.

Table 8 gives the total average number of wage earners employed in the industry during 1914, together with the total number employed on the 15th of each month, or the nearest representative day, for six of the leading states in which an average of 500 or more wage earners were employed during the year. There were, however, seven other states (Iowa, Kansas, Massachusetts, Michigan, Missouri, New Hampshire, and Tennessee) each reporting over 500 wage earners which are not included in the table because the general statistics can not be shown without disclosing the operations of individual establishments.

In 1914 the largest number of wage earners was employed in January and the smallest number in December, the minimum number being only 70.9 per cent of the maximum. The greatest difference between the maximum and minimum number employed in the different states is shown for Delaware and Ohio.

Table 8

WAGE EARNERS: 1914.  
[Month of maximum employment for each state is indicated by boldface figures and that of minimum by *italic* figures.]

STATE	Average number employed during year.	Number employed on 15th day of the month or nearest representative day.												Per cent minimum is of maximum.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
United States.....	54,288	<b>63,678</b>	56,077	55,359	51,080	50,532	53,214	56,893	58,529	56,184	54,707	50,050	<i>45,153</i>	70.9
Delaware.....	2,110	2,763	2,693	2,951	2,596	2,585	2,448	2,111	1,522	1,548	1,375	1,403	<i>1,325</i>	44.9
Illinois.....	18,000	20,104	17,102	16,751	15,057	15,151	16,987	17,695	21,460	19,660	21,297	17,993	16,743	70.2
Indiana.....	5,800	7,190	6,292	6,295	6,428	6,400	6,005	6,725	6,048	5,301	4,916	4,180	<i>3,820</i>	53.1
New York.....	2,595	2,799	2,662	2,537	2,557	2,765	2,614	<i>2,155</i>	2,198	2,383	2,902	<b>2,913</b>	2,655	74.0
Ohio.....	2,885	3,915	3,445	3,811	3,042	3,440	3,055	3,073	2,132	2,304	2,281	2,614	<i>2,008</i>	51.5
Pennsylvania.....	9,955	<b>13,060</b>	10,646	10,733	8,447	7,962	9,475	10,594	10,119	10,425	9,470	9,560	8,969	61.0

Prevailing hours of labor.—In table 9 the average number of wage earners reported for 1914 and 1909 for the industry has been classified according to the number of hours of labor per week prevailing in the establishments in which they were employed. The number employed in each establishment was classified as a total, even though a few employees worked a greater or smaller number of hours.

Table 9

STATE.	Census year.	AVERAGE NUMBER OF WAGE EARNERS.						
		Total.	In establishments where the prevailing hours of labor per week were—					
			48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72 and over.
United States...	1914 1909	54,288 43,098	341 3	5,294 711	19,291 12,111	16,885 14,235	12,477 14,585	1,418 25
Delaware.....	1914 1909	2,110 1,679	.....	.....	2,110 1,679	.....	.....	.....
Illinois.....	1914 1909	18,000 10,945	.....	1,009 3	12,949 5,926	1,115 2,520	2,927 1,953	..... 13
Indiana.....	1914 1909	5,800 4,084	.....	1,591 .....	95 458	818 410	3,296 3,216	.....
New York.....	1914 1909	2,595 2,387	.....	807 .....	1,130 956	.....	658 1,431	.....
Ohio.....	1914 1909	2,885 2,282	.....	929 121	98 279	1,858 1,830	..... 52	.....
Pennsylvania.....	1914 1909	9,955 7,766	.....	.....	222 286	9,353 5,504	380 500	1,418 .....

Of the different groups shown in the table, the largest in 1914 was made up of wage earners in establishments where the prevailing hours were 54 per week and in 1909, 60 per week. Seventy-seven per cent of the wage earners in 1914 were employed in establishments working less than 60 hours per week, as compared with 62.8 per cent in 1909. An increase is shown in 1914, as compared with 1909, for each group in establishments where the hours of labor were less than 60 per week.

Size of establishments.—The tendency of the industry to become concentrated in large establishments is indicated by the statistics given in Table 10.

There was a marked decrease during the five-year period 1909-1914 in the number of establishments, wage earners, and value of products of establishments where the output was valued at more than \$20,000 but less than \$1,000,000, while for those establishments

where the value of products was \$1,000,000 and over the number of wage earners increased by 43.9 per cent and value of products by 74.7 per cent.

Table 10.

VALUE OF PRODUCT.	Census year.	Number of establishments.	Wage earners (average number).	Value of products.	Value added by manufacture.
All classes.....	1914 1909	103 110	54,288 43,098	\$194,775,669 123,729,627	\$32,575,510 44,976,766
Less than \$20,000.....	1914 1909	5 5	25 19	50,919 32,657	31,927 13,837
\$20,000 to \$100,000.....	1914 1909	16 29	478 1,099	859,503 1,796,326	425,297 888,406
\$100,000 to \$1,000,000.....	1914 1909	46 51	7,484 9,781	19,459,398 22,058,927	7,921,895 10,063,316
\$1,000,000 and over.....	1914 1909	36 25	46,301 32,187	174,405,849 99,841,717	54,196,391 34,011,207
Percent distribution:					
Less than \$20,000.....	1914 1909	4.9 4.5	(1) (1)	(1) (1)	0.1 (1)
\$20,000 to \$100,000.....	1914 1909	15.5 26.4	0.9 2.6	0.4 1.5	0.7 2.0
\$100,000 to \$1,000,000 ..	1914 1909	44.7 46.4	13.8 22.7	10.0 17.8	12.6 22.4
\$1,000,000 and over....	1914 1909	35.0 22.7	85.3 74.7	89.5 80.7	86.6 75.6

<sup>1</sup> Less than one-tenth of 1 per cent.

Table 11 shows the size of establishments, in 1914 and 1909, as measured by the number of wage earners employed, for the industry as a whole and for six of the leading states.

Of the 103 establishments reported for the industry in 1914, 10.7 per cent employed from 1 to 20 wage earners each; 27.2 per cent, from 21 to 100; 35 per cent, from 101 to 500; 12.6 per cent, from 501 to 1,000; and 14.6 per cent, or 15 establishments, employed over 1,000 wage earners each. From 1909 to 1914 there was a decrease in the number of wage earners in each of the groups of establishments employing less than 1,000 wage earners, with the exception of the groups with 1 to 5 and 51 to 100 wage earners, while there was an increase of 59.3 per cent in the group reporting over 1,000.

Of the establishments employing over 1,000 wage earners each in 1914, for which figures are presented in Table 11, four were located in Illinois, three in Pennsylvania, two in Indiana, and one each in Delaware, New York, and Ohio.

Table 11

Table 11	STATE.	Census year.	TOTAL.		ESTABLISHMENTS EMPLOYING—																	
					No wage earners.		1 to 5 wage earners.		6 to 20 wage earners.		21 to 50 wage earners.		51 to 100 wage earners.		101 to 250 wage earners.		251 to 500 wage earners.		501 to 1,000 wage earners.		Over 1,000 wage earners.	
					Establish-ments.	Wage earners (average number).	Establish-ments.	Wage earners.	Establish-ments.	Wage earners.	Establish-ments.	Wage earners.	Establish-ments.	Wage earners.	Establish-ments.	Wage earners.	Establish-ments.	Wage earners.	Establish-ments.	Wage earners.	Establish-ments.	Wage earners.
United States.....	1914	103	54,288	.....	5	20	6	72	13	440	15	1,214	20	2,943	16	5,821	13	9,154	15	34,624		
	1909	110	43,080	1	3	7	9	123	22	803	14	1,083	21	3,430	18	6,239	13	9,670	9	21,731		
Delaware.....	1914	3	2,110	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	406	1	536	1	1,168		
	1909	3	1,679	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	137	.....	.....	2	1,542	.....	.....		
Illinois.....	1914	23	18,000	.....	1	5	1	9	5	162	4	310	1	180	5	2,023	2	1,603	4	13,708		
	1909	28	10,945	1	1	3	3	51	5	209	2	146	8	1,385	4	1,640	3	2,509	1	5,002		
Indiana.....	1914	10	5,800	.....	.....	.....	.....	2	30	1	44	1	95	3	474	.....	1	788	2	4,369		
	1909	7	4,084	.....	.....	.....	.....	.....	.....	.....	.....	1	98	1	199	3	1,062	.....	2	2,725		
New York.....	1914	4	2,595	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	658	1	807	1	1,130	
	1909	4	2,387	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	741	2	1,646	.....	.....	
Ohio.....	1914	5	2,885	.....	.....	.....	.....	.....	1	36	2	162	.....	.....	.....	.....	1	929	1	1,758		
	1909	6	2,282	.....	.....	.....	.....	.....	2	48	1	52	1	121	1	252	.....	.....	1	1,809		
Pennsylvania.....	1914	12	9,955	.....	.....	.....	.....	.....	1	28	1	93	2	326	4	1,240	1	531	3	7,737		
	1909	13	7,766	.....	.....	.....	1	14	2	57	3	236	3	521	1	286	.....	.....	3	6,653		

Engines and power.—Table 12 shows, for 1914, 1909, and 1904, for the industry, the number and horsepower of engines or motors employed in generating power (including electric motors operated by

purchased current). It also shows separately the number and horsepower of electric motors operated by current generated in the establishments reporting.

Table 12

POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.					
				Amount.			Per cent distribution.		
				1914	1909	1904	1914	1909	1904
Primary power, total.....	1,772	929	422	126,687	97,797	55,994	100.0	100.0	100.0
Owned.....	438	504	390	105,921	91,341	55,678	83.6	93.4	99.4
Steam engines and turbines.....	410	484	379	99,934	89,823	55,260	78.9	91.8	98.7
Internal-combustion engines.....	24	12	6	5,757	1,148	193	4.5	1.2	0.3
Water wheels, turbines, and motors.....	4	8	5	230	370	225	0.2	0.4	0.4
Rented.....	1,334	425	32	20,766	6,456	316	16.4	6.6	0.6
Electric.....	1,334	425	32	20,416	6,456	316	16.1	6.6	0.6
Other.....	.....	.....	.....	350	.....	.....	0.3	.....	.....
Electric.....	7,263	3,710	749	115,479	61,060	14,505	100.0	100.0	100.0
Rented.....	1,334	425	32	20,416	6,456	316	17.7	10.6	2.2
Generated by establishments reporting.....	5,929	3,285	717	95,063	54,604	14,189	82.3	89.4	97.8

<sup>1</sup> Figures for horsepower include for 1909 and 1904 the amounts reported under the head of "other" owned power.

Over three-fourths of the power used in the industry in 1914 was generated by steam, but the proportion which this class forms of the total decreased from 98.7 per cent in 1904 to 78.9 per cent in 1914. This decrease is due principally to the increasing use of rented electric power, which represented six-tenths of 1 per cent of the total in 1904, 6.6 per cent in 1909, and 16.1 per cent in 1914. The actual and relative importance of internal-combustion engines also increased during this period. While the number and horsepower of electric motors operated by current generated in the establishments reporting show large increases at each census the proportion which this power forms of the total electric power used decreased from 97.8 per cent in 1904 to 89.4 per cent in 1909 and 82.3 per cent in 1914.

Fuel.—Table 13 shows, for 1914, the quantity of each kind of fuel used, for which data were obtained, for the industry as a whole and for nine separate states.

Table 13

STATE.	COAL.		Coke (tons, 2,000 lbs.).	Oil, including gasoline (barrels).	Gas (1,000 cubic feet).
	Anthracite (tons, 2,240 lbs.).	Bituminous (tons, 2,000 lbs.).			
United States.....	34,978	698,097	70,886	294,826	1,221,695
California.....	.....	.....	.....	9,050	.....
Delaware.....	103	16,449	211	1,627	2,783
Illinois.....	2,815	149,472	10,608	138,369	10,661
Indiana.....	.....	124,221	11,453	41,115	133
Massachusetts.....	68	7,304	5	1,415	.....
Missouri.....	32	99,909	11,874	42,883	.....
New York.....	223	15,098	1,666	4,616	2,715
Ohio.....	53	34,153	1,375	22,361	126,309
Pennsylvania.....	30,915	185,044	15,220	14,377	963,885

Pennsylvania used 88.4 per cent of the anthracite coal and 78.9 per cent of the gas consumed in the industry in 1914, while Illinois used the greatest amount of oil—47 per cent. California was the only state using oil exclusively for fuel.

## SPECIAL STATISTICS RELATING TO PRODUCTS.

Table 14 shows in detail the statistics of cars built for use on steam railroads by establishments engaged primarily in their manufacture, for 1914, 1909, 1904, and 1899.

Table 14 PRODUCT.	1914	1909	1904	1899
Total value <sup>1</sup> .....	\$101,775,600	\$123,729,627	\$111,175,310	\$90,510,180
Steam-railroad cars:				
Number.....	120,084	74,778	102,646	117,509
Value.....	\$140,157,583	\$75,521,432	\$87,280,248	\$60,520,312
Passenger service <sup>2</sup> —				
Number.....	3,434	1,601	2,030	070
Value.....	\$43,955,798	\$13,820,607	\$18,140,293	\$7,308,209
Baggage and express—				
Number.....	438	216	190	72
Value.....	\$3,642,020	\$1,105,779	\$800,185	\$238,554
Mail—				
Number.....	145	95	95	42
Value.....	\$1,497,824	\$600,012	\$576,230	\$107,465
Passenger <sup>3</sup> —				
Number.....	1,045	957	428	331
Value.....	\$10,577,880	\$7,209,425	\$2,955,517	\$1,975,409
Chair, dining and buffet, parlor, sleeping, and all other—				
Number.....	1,204	333	1,308	534
Value.....	\$19,237,459	\$4,013,491	\$13,712,361	\$4,956,811
Freight service—				
Number.....	116,650	73,177	100,610	110,500
Value.....	\$90,261,785	\$61,691,825	\$60,148,955	\$62,161,013
Box—				
Number.....	50,481	29,728	38,184	47,838
Value.....	\$40,952,538	\$23,982,446	\$28,508,932	\$20,562,893
Caboose—				
Number.....	340	537	160	193
Value.....	\$120,508	\$525,605	\$150,977	\$184,865
Flat—				
Number.....	4,781	3,232	5,412	4,525
Value.....	\$3,120,084	\$2,033,801	\$2,893,154	\$1,923,525
Gondolas—				
Number.....	25,077	19,007	0,518	11,821
Value.....	\$22,808,750	\$18,128,180	\$5,518,084	\$0,873,145
Hopper <sup>4</sup> —				
Number.....	0,754	11,473	27,098	28,857
Value.....	\$10,708,407	\$0,419,055	\$21,367,218	\$18,414,718
Refrigerator—				
Number.....	5,800	2,618	3,353	2,354
Value.....	\$8,077,062	\$2,747,057	\$3,042,835	\$1,956,007
Stock—				
Number.....	3,029	2,340	4,235	2,760
Value.....	\$2,587,005	\$1,586,008	\$2,453,123	\$1,420,800
Tank—				
Number.....	1,250			
Value.....	\$1,255,107			
Other varieties—				
Number.....	15,238	3,033	11,760	18,242
Value.....	\$40,272,144	\$3,208,107	\$5,214,032	\$4,818,970
Electric-railroad cars:				
Number.....	194	603	418	935
Value.....	\$711,198	\$2,023,922	\$604,654	\$1,000,854
Passenger—				
Number.....	161	558	331	602
Value.....	\$635,804	\$1,903,317	\$630,701	\$1,002,172
Other—				
Number.....	33	45	87	633
Value.....	\$75,394	\$120,605	\$63,853	\$228,682
All other products, value.	\$53,900,888	\$40,184,273	\$22,801,408	\$19,800,014

<sup>1</sup> In addition, 14,876 cars, valued at \$14,638,932, and parts and repairs, valued at \$680,074, were reported in 1914, and 23,693 cars, valued at \$10,362,855, and parts and repairs, to the value of \$210,487, were reported in 1909, by establishments engaged primarily in other industries.

<sup>2</sup> Includes gasoline motor cars for use as passenger cars by steam railroads for 1914 and 1909.

<sup>3</sup> Reported as coal and coke cars in 1909, 1904, and 1899.

<sup>4</sup> Includes 6,737 logging, mining, industrial, and dump cars, valued at \$1,825,093.

<sup>5</sup> Includes 26 cable cars, valued at \$21,232.

There was an increase of 2.1 per cent in the number of steam-railroad cars built in 1914, as compared with 1899, while the value for the same period shows an increase of 101.6 per cent. The average value of passenger-service cars increased from \$7,526 in 1899 to \$12,800 in 1914, and freight-service cars from \$533 in 1899 to \$825 in 1914. This increased cost per car is due largely to the more extensive use of steel

in the construction of cars and the building of larger cars. The report of the Interstate Commerce Commission "Statistics of Railways in the United States, 1914," pages 21 and 22, shows that the average capacity per car of the 2,325,647 freight cars in service on June 30, 1914, was 78,000 pounds, as compared with 62,000 pounds in 1905. The greatest increase in the number of cars built in 1914, as compared with 1899, was in gondolas, and the greatest decrease for the same period was in hopper cars. The number of electric cars reported by this industry in 1914 shows a decrease when compared with the earlier censuses.

In addition to the cars manufactured by establishments assigned to this industry in 1914, there were 17 steam-railroad cars, valued at \$72,034, built by establishments engaged primarily in the manufacture of electric-railroad cars; 10,745 cars, valued at \$11,999,983, by repair shops of steam-railroad companies; and 4,114 cars, valued at \$2,566,915, by establishments engaged primarily in other industries, making a total of 14,876 cars, valued at \$14,638,932, as compared with 23,693 cars, valued at \$19,362,855 in 1909.

Table 15 shows, for 1914, the number and class of cars, distributed according to character of construction, together with the value.

Table 15 CLASS.	NUMBER.					Value.
	Total.	All wood.	Steel underframe.	Steel body with wood interior.	All steel.	
Aggregate.....	120,278	11,800	57,500	3,080	46,080	\$140,808,781
Steam-railroad cars.....	120,084	11,770	57,427	3,034	46,063	140,157,583
Passenger service, total..	3,434	48	141	332	2,913	43,955,798
Baggage and express..	438		23		415	3,642,020
Mail.....	145			4	141	1,497,824
Passenger.....	1,045	30	78	288	1,249	10,577,880
All other passenger.....	1,206	18	40	40	1,108	19,237,459
Freight service, total....	116,650	11,722	57,280	3,002	44,040	90,261,785
Box.....	50,481	6,948	40,047	2,533	63	40,952,538
Flat.....	4,781	466	4,130		185	3,120,084
Gondola.....	25,077	300	2,617		22,070	22,808,750
Refrigerator.....	5,800	2,071	3,079		650	8,077,062
Stock.....	3,029	0	3,047		273	2,587,005
All other freight.....	26,582	1,838	2,866	1,000	20,800	18,050,280
Electric-railroad cars.....	194	30	73	55	36	711,198
Passenger.....	161	16	60	55	30	635,804
Other.....	33	14	13		6	75,394

Of the total number of steam-railroad cars reported in 1914, 9.8 per cent were all wood; 47.8 per cent, steel underframe; 3.3 per cent, steel body with wood interior; and 39.1 per cent, all steel. A larger percentage of the passenger-service than of the freight-service cars were steel; 84.8 per cent of the passenger-service cars were all steel, and 9.7 per cent were steel body with wood interior. Of the freight-service cars, 49.1 per cent were steel underframe, of which 71.5 per cent were box cars; and 37.8 per cent were all steel, of which 50.1 per cent were gondolas.

## DETAIL STATE TABLES.

The principal statistics secured by the census inquiry concerning the construction of steam-railroad cars are presented, by states, in Tables 16 and 17.

Table 16 gives, for 1914, 1909, and 1904, by states, the number of establishments, average number of

wage earners, primary horsepower, wages, cost of materials, and value of products for the industry "cars, steam-railroad, not including operations of railroad companies," and Table 17 presents, for 1914, by states, more detailed statistics for the industry.

TABLE 16.—COMPARATIVE SUMMARY, BY STATES, FOR 1914, 1909, AND 1904.

STATE.	Cen- sus year.	Num- ber of estab- lish- ments.	Wage earn- ers (aver- age num- ber).	Pri- mary horse- power.	Wages.	Cost of mater- ials.	Value of prod- ucts.	STATE.	Cen- sus year.	Num- ber of estab- lish- ments.	Wage earn- ers (aver- age num- ber).	Pri- mary horse- power.	Wages.	Cost of mater- ials.	Value of prod- ucts.
					Expressed in thousands.								Expressed in thousands.		
United States.....	1914	103	54,288	126,687	\$41,304	\$132,200	\$194,776	New York.....	1914	4	2,595	4,784	\$2,072	\$6,372	\$9,067
	1909	110	43,080	97,797	27,135	78,753	123,730		1909	4	2,357	3,345	1,577	3,426	5,940
	1904	73	34,058	55,994	20,248	75,657	111,175		1904	4	1,602	2,470	984	2,755	4,251
Delaware.....	1914	3	2,110	3,833	1,504	2,783	4,944	Ohio.....	1914	5	2,885	6,420	2,434	8,558	11,796
	1909	3	1,679	3,388	1,131	1,913	3,628		1909	6	2,282	4,410	1,304	4,195	6,451
	1904	3	1,559	1,717	1,031	1,942	3,600	Pennsylvania.....	1904	5	2,065	1,725	1,198	3,358	5,539
Illinois.....	1914	23	18,000	37,622	15,686	40,429	61,316		1914	12	9,955	26,462	6,635	29,377	39,531
	1909	28	10,945	18,651	7,824	15,336	27,001		1909	13	7,766	31,732	4,819	19,002	27,510
	1904	10	9,030	14,830	5,031	21,173	30,923		1904	9	5,461	13,842	3,061	13,821	19,428
Indiana.....	1914	10	5,800	13,171	3,981	13,711	21,570	All other states.....	1914	46	12,943	34,395	9,082	30,970	46,252
	1909	7	4,084	10,690	1,991	6,309	9,498		1909	49	13,943	25,572	8,480	28,572	43,702
	1904	6	3,252	4,760	1,928	6,844	10,036		1904	30	11,053	16,650	6,115	25,764	37,395

TABLE 17.—DETAIL STATISTICS FOR CARS, STEAM-RAILROAD, NOT INCLUDING OPERATIONS OF RAILROAD COMPANIES, BY STATES: 1914.

STATE.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.									WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.					EXPENSES.		
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.			Total.	16 and over.		Under 16.		Capital.	Salaries and wages.		
					Male.	Female.	Average number.	Number, 15th day of—			Male.	Female.	Male.	Female.		Officials.	Clerks, etc.	
								Maximum month.	Minimum month.									
United States.....	103	58,088	11	000	3,419	301	54,288	Ja 63,678	De 45,153	57,811	57,587	208	16	.....	\$157,811,109	\$2,637,710	\$4,316,913	
Delaware.....	3	2,273	.....	62	99	2	2,110	Mh 2,951	De 1,325	2,212	2,172	37	3	.....	3,651,269	124,408	130,057	
Illinois.....	23	19,101	.....	215	811	75	18,000	Aug 21,480	Ap 15,057	21,035	20,972	63	.....	.....	40,308,714	577,780	966,058	
Indiana.....	10	6,294	.....	106	362	26	5,800	Ja 7,190	De 3,820	6,601	6,592	.....	9	.....	26,291,080	273,505	409,816	
New York.....	4	2,705	.....	48	118	4	2,595	No 2,913	Jy 2,155	2,758	2,741	17	.....	.....	6,716,739	82,493	123,612	
Ohio.....	5	3,085	.....	51	142	7	2,885	Ja 3,915	De 2,008	2,983	2,978	5	.....	.....	7,080,427	191,695	195,071	
Pennsylvania.....	12	11,205	11	164	901	84	9,955	Ja 13,060	My 7,962	9,449	9,422	24	3	.....	32,446,140	522,870	1,421,493	
All other states <sup>1</sup> .....	40	14,265	.....	323	896	103	12,943	.....	.....	12,773	12,710	62	1	.....	41,316,751	864,759	1,070,806	

STATE.	EXPENSES—continued.						Value of products.	Value added by manufacture.	POWER.					Electric horse-power generated in establishments reporting.
	Salaries and wages—Contd.	For contract work.	Rent and taxes.		For materials.				Primary horsepower.					
			Rent of factory.	Taxes, including internal revenue and corporation income.	Principal materials.	Fuel and rent of power.			Total.	Steam engines. <sup>2</sup>	Internal-combustion engines. <sup>3</sup>	Water wheels and motors. <sup>2</sup>	Electric (rented).	
United States.....	\$41,303,579	.....	\$125,034	\$784,025	\$129,450,309	\$2,749,760	\$194,775,669	\$62,575,510	126,687	99,934	6,107	230	20,416	95,063
Delaware.....	1,503,021	.....	.....	19,168	2,728,772	54,078	4,944,309	2,161,459	3,833	1,961	.....	.....	1,872	3,234
Illinois.....	15,685,651	.....	39,660	209,526	39,773,640	655,127	61,315,638	20,886,871	37,622	30,336	4,440	55	2,791	25,736
Indiana.....	3,980,893	.....	.....	109,510	13,260,064	445,067	21,570,441	7,850,370	13,171	10,775	.....	.....	2,396	12,827
New York.....	2,071,707	.....	.....	35,844	6,302,979	68,650	9,066,920	2,695,291	4,784	3,105	.....	.....	1,679	153
Ohio.....	2,433,894	.....	17,444	56,472	8,433,897	124,397	11,795,726	3,237,432	6,420	4,690	920	.....	1,410	5,086
Pennsylvania.....	6,035,350	.....	13,375	141,089	28,721,396	655,205	39,831,095	10,454,404	26,462	24,007	715	.....	1,740	23,523
All other states <sup>1</sup> .....	9,082,373	.....	60,555	211,516	30,223,711	747,146	46,251,540	15,280,683	34,395	25,660	32	175	8,528	24,504

<sup>1</sup> All other states embraces: Alabama, 1 establishment; California, 5; Georgia, 2; Iowa, 2; Kansas, 2; Kentucky, 2; Maryland, 1; Massachusetts, 3; Michigan, 2; Minnesota, 1; Mississippi, 1; Missouri, 9; Nebraska, 2; New Hampshire, 1; New Jersey, 2; Oklahoma, 1; Tennessee, 2; Texas, 1; Virginia, 1; Washington, 2; West Virginia, 1; and Wisconsin, 2.

<sup>2</sup> Owned power only.

<sup>3</sup> Includes rented power, other than electric.



## CARS, ELECTRIC-RAILROAD, NOT INCLUDING OPERATIONS OF RAILROAD COMPANIES.

**Scope of the industry.**—This industry includes establishments engaged primarily in the construction of street or electric railroad cars, and was first reported separately at the census of 1889. In addition to the cars reported for this industry in 1914, there were 194 electric-railroad cars, valued at \$711,198, built by establishments engaged primarily in the manufacture of steam-railroad cars; 304 cars, valued at \$811,104, by repair shops of electric-railroad companies; and 17 cars, valued at \$562,500, by establishments engaged primarily in other industries, making a total of 515 cars, valued at \$2,084,802, as compared with 850 cars, valued at \$2,660,574 in 1909.

**Comparison with earlier censuses.**—Table 18 summarizes the statistics of establishments engaged in the manufacture of electric-railroad cars for each census from 1889 to 1914, and gives percentages of increase.

There has been very little change in the number of establishments in the industry since 1889, but the number of wage earners, horsepower, capital, and value of products, have increased very materially. For the decade 1904-1914 there was a decrease in the average number of wage earners and in value of products of 18.8 per cent and 3.2 per cent, respectively.

**Table 18**

	NUMBER OR AMOUNT.					PER CENT OF INCREASE. <sup>1</sup>			
	1914	1909	1904	1899	1889	1909-1914	1904-1914	1899-1909	1889-1899
Number of establishments.....	14	14	14	20	17				
Persons engaged.....	4,286	4,005	4,997	3,736	( <sup>2</sup> )	7.0	-14.2	7.2	
Proprietors and firm members.....	1	1	3	7	( <sup>2</sup> )				
Salaried employees.....	446	421	264	144	( <sup>2</sup> )	5.9	68.9	192.4	
Wage earners (average number).....	3,840	3,583	4,730	3,585	1,785	7.2	-18.8	-0.1	100.8
Primary horsepower.....	10,014	15,161	7,054	4,865	1,326	-33.9	42.0	211.6	226.9
Capital.....	\$14,751,582	\$14,167,999	\$12,975,703	\$7,615,397	\$2,468,315	4.1	13.7	86.0	208.5
Salaries and wages.....	3,199,674	2,770,566	3,237,825	2,185,379	1,174,790	15.5	-1.2	26.8	86.0
Salaries.....	732,647	593,617	398,246	234,503	( <sup>2</sup> )	23.4	84.0	153.1	
Wages.....	2,467,027	2,176,949	2,839,579	1,950,876	( <sup>2</sup> )	13.3	-13.1	11.6	
Paid for contract work.....	129,904	233,508		3,000	( <sup>2</sup> )	-44.4			
Rent and taxes (including internal revenue).....	108,718	55,495	\$40,177	\$78,962	( <sup>2</sup> )	95.9	170.6		
Cost of materials.....	6,349,779	4,260,470	5,341,444	3,966,863	1,699,235	49.0	18.9	7.4	133.4
Value of products.....	10,494,953	7,809,866	10,844,196	7,305,368	3,302,115	34.4	-3.2	6.9	121.2
Value added by manufacture (value of products less cost of materials).....	4,145,174	3,549,396	5,502,752	3,338,505	1,602,880	16.8	-24.8	6.3	108.8

<sup>1</sup> A minus sign (-) denotes decrease; percentages are omitted where base is less than 100.

<sup>2</sup> Figures not available.

<sup>3</sup> Exclusive of internal revenue.

**Persons engaged in the industry.**—Table 19 shows, for 1914 and 1909, the number of persons engaged in the industry, distributed by sex, the average number of wage earners being distributed also by age. The sex and age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the "Explanation of terms."

**Table 19**

CLASS.	Census year.	PERSONS ENGAGED IN THE INDUSTRY.					
		Total.	Male.	Female.	Per cent of total.		
					Male.	Female.	
All classes.....	1914	4,286	4,228	58	98.6	1.4	
	1909	4,005	3,949	56	98.6	1.4	
Proprietors and officials.....	1914	189	189		100.0		
	1909	158	157	1	99.4	0.6	
Proprietors and firm members.....	1914						
	1909	1		1		100.0	
Salaried officers of corporations.....	1914	39	39		100.0		
	1909	36	36		100.0		
Superintendents and managers.....	1914	150	150		100.0		
	1909	121	121		100.0		
Clerks and other subordinate salaried employees.....	1914	257	224	33	87.2	12.5	
	1909	204	231	33	87.5	12.8	
Wage earners (average number).....	1914	3,840	3,815	25	99.3	0.7	
	1909	3,583	3,561	22	99.4	0.6	
16 years of age and over.....	1914	3,819	3,794	25	99.3	0.7	
	1909	3,569	3,547	22	99.4	0.6	
Under 16 years of age.....	1914	21	21		100.0		
	1909	14	14		100.0		

There were only 58 females engaged in the industry during 1914 and 56 in 1909. More than half of the females were clerks and other subordinate salaried employees.

**Wage earners employed, by months.**—The following table gives, for the industry, the total number of wage earners employed on the 15th of each month, or the nearest representative day, for 1914 and 1909 and the average number employed during each month in 1904, together with the percentage which the number reported for each month forms of the greatest number reported for any month.

**Table 20**

MONTH.	WAGE EARNERS IN THE INDUSTRY.					
	Number. <sup>1</sup>			Per cent of maximum.		
	1914	1909	1904	1914	1909	1904
January.....	4,754	3,113	5,394	100.0	77.2	100.0
February.....	4,182	3,106	5,297	88.0	77.1	98.2
March.....	3,889	3,415	5,005	81.8	84.7	92.8
April.....	3,914	3,704	5,103	82.3	91.9	94.6
May.....	3,748	3,878	5,150	78.8	96.2	95.5
June.....	3,833	4,031	5,109	81.9	100.0	94.7
July.....	4,047	3,444	4,973	85.1	85.4	92.2
August.....	4,069	3,600	4,767	85.6	89.3	88.4
September.....	3,857	3,354	4,572	81.1	83.2	84.8
October.....	3,676	3,495	4,220	77.5	86.7	78.2
November.....	3,158	3,858	3,761	66.4	95.7	69.7
December.....	2,883	4,002	3,409	60.6	99.3	63.2

<sup>1</sup> The figures for 1914 and 1909 represent the number employed on the 15th of each month, or the nearest representative day; those for 1904, the average number employed during the month.

January was the month of maximum employment in 1914 and 1904 and June in 1909. December was the month of minimum employment in 1914 and 1904 and February in 1909. The minimum was 60.6 per cent of the maximum in 1914, 77.1 per cent in 1909, and 63.2 per cent in 1904.

**Engines and power.**—Table 21 shows, for 1914, 1909, and 1904, for the industry, the number and horsepower of engines or motors employed in generating power (including electric motors operated by pur-

chased current). It also shows separately the number and horsepower of electric motors operated by current generated in the establishments reporting.

Although over one-half of the power used in the industry in 1914 was generated by steam, the proportion which this class of power formed of the total decreased from 96.8 per cent in 1904 to 51.5 per cent in 1914. This was due to the increase in the proportion of rented electric power used, from 3.2 per cent in 1904 to 44 per cent in 1914.

POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.					
	1914	1909	1904	Amount.			Per cent distribution.		
				1914	1909	1904	1914	1909	1904
Primary power, total.....	223	237	46	10,014	15,161	7,054	100.0	100.0	100.0
Owned—Steam engines and turbines.....	31	67	35	5,156	11,032	6,825	51.5	72.8	96.8
Rented.....	192	170	11	4,858	4,129	229	48.5	27.2	3.2
Electric.....	192	170	11	4,405	4,089	229	44.0	27.0	3.2
Other.....				453	40		4.5	0.2	
Electric.....	399	325	168	8,483	7,984	2,938			
Rented.....	192	170	11	4,405	4,089	229	51.9	51.2	7.8
Generated by establishments reporting.....	207	155	157	4,078	3,895	2,709	48.1	48.8	92.2

## SPECIAL STATISTICS RELATING TO PRODUCTS.

Table 22 shows the number and value of cars constructed in the industry, by class, for 1914, 1909, and 1904.

PRODUCT.	1914	1909	1904
Total value <sup>1</sup> .....	\$10,494,953	\$7,809,866	\$10,844,196
Electric-railroad cars:			
Number.....	2,348	1,922	3,966
Value.....	\$8,078,348	\$4,602,435	\$8,302,512
Passenger—			
Number.....	2,174	1,787	3,677
Value.....	\$7,439,906	\$4,346,098	\$7,878,470
Closed—			
Number.....	1,876	1,323	2,621
Value.....	\$6,802,764	\$3,500,781	\$5,777,257
Combination—			
Number.....	143	369	502
Value.....	\$383,694	\$704,309	\$1,240,884
Open—			
Number.....	155	95	554
Value.....	\$253,448	\$141,008	\$860,349
Freight, express, and mail—			
Number.....	66	92	16
Value.....	\$174,334	\$179,293	\$24,022
Other varieties—			
Number.....	108	43	273
Value.....	\$464,108	\$77,044	\$400,020
Steam-railroad cars:			
Number.....	17	167	136
Value.....	\$72,034	\$111,813	\$59,663
All other products, value.....	\$2,344,571	\$3,095,618	\$2,482,021

<sup>1</sup> In addition, 515 cars, valued at \$2,084,802, in 1914; 850 cars, valued at \$2,660,674, in 1909; and 413 cars, valued at \$991,654, in 1904, were made as a subsidiary product by establishments engaged primarily in other industries.

<sup>2</sup> Includes 38 horse cars, valued at \$29,182.

There were fewer electric-railroad cars built in 1914 than in 1904, a decrease of 40.8 per cent, while the value of these cars shows a decrease of only 2.7 per cent. The average value of electric-railroad cars in 1904 was \$2,093 and in 1914, \$3,441. In 1914, 12.2 per cent of the electric-railroad cars were all steel; 23.7 per cent were steel body with wood interior; 46.1 per cent, steel underframes; and 17.9 per cent, all wood.

Table 23 shows, by character of construction, the number of each class of cars built in 1914, together with the value.

CLASS.	NUMBER.					Value.
	Total.	All wood.	Steel under-frame.	Steel body with wood interior.	All steel.	
Aggregate.....	2,365	434	1,063	560	288	\$8,150,382
Electric-railroad cars, total.....	2,348	421	1,063	557	287	\$8,078,348
Passenger.....	2,174	360	1,022	523	269	\$7,439,906
Freight.....	66	34	18	6	8	\$174,334
Other varieties.....	108	27	43	28	10	\$464,108
Steam-railroad cars.....	17	13		3	1	\$72,034

## DETAIL STATE TABLE.

Table 24 presents the detailed statistics secured by the census inquiry concerning construction of electric-railroad cars for the United States as a whole, for the state of Ohio, and for all other states combined.

Table 24	Total.	Ohio.	All other states. <sup>1</sup>		Total.	Ohio.	All other states. <sup>1</sup>
Number of establishments.....	14	4	10	Salaries and wages.....	\$3,199,674	\$782,083	\$2,417,591
Persons engaged.....	4,286	1,013	3,273	Officials.....	\$420,956	\$112,226	\$308,730
Proprietors and firm members.....				Clerks, etc.....	\$311,691	\$57,613	\$254,078
Salaried officers, superintendents, and managers.....	189	48	141	Wage earners.....	\$2,467,027	\$612,244	\$1,854,783
Clerks and other subordinate salaried employees.....	257	49	208	Contract work.....	\$129,904	\$52,619	\$77,285
Male.....	224	42	182	Rent and taxes.....	\$108,718	\$44,315	\$64,403
Female.....	33	7	26	Rent of factory.....	\$19,401	\$15,880	\$3,521
Wage earners—				Taxes (including internal revenue).....	\$89,317	\$28,435	\$60,882
Average number.....	3,840	916	2,924	Cost of materials.....	\$6,349,779	\$2,289,330	\$4,060,449
Number 15th day of month—				Principal materials.....	\$6,164,918	\$2,263,183	\$3,901,735
Maximum month and number.....	Jan., 4,754	Aug., 1,077		Fuel and rent of power.....	\$184,861	\$26,147	\$158,714
Minimum month and number.....	Dec., 2,883	Dec., 679		Value of products.....	\$10,494,953	\$3,594,163	\$6,900,790
Wage earners Dec. 15, or nearest representative day.....	3,425	969	2,456	Value added by manufacture.....	\$4,145,174	\$1,304,833	\$2,840,341
16 years of age and over.....	3,408	969	2,437	Power:			
Male.....	3,384	966	2,418	Primary horsepower.....	10,014	4,213	5,801
Female.....	22	3	19	Steam engines and turbines <sup>2</sup> .....	5,156	2,165	2,991
Under 16 years of age, male.....	19		19	Internal-combustion engines <sup>2</sup> .....	453		453
Capital.....	\$14,761,582	\$3,017,199	\$11,734,383	Electric (rented).....	4,405	2,048	2,357
				Electric horsepower generated by establishments reporting.....	4,078	618	3,460

<sup>1</sup> All other states embrace: California, 1 establishment; Colorado, 1; Illinois, 1; Massachusetts, 1; Missouri, 2; New York, 1; North Carolina, 1; Pennsylvania, 2.

<sup>2</sup> Owned power only.

<sup>3</sup> Includes rented power, other than electric.

## RAILROAD REPAIR SHOPS.

Scope of the combined industry.—This industry is divided for census purposes into two classes—cars and general shop construction and repairs by steam-railroad companies, and cars and general shop construction and repairs by electric-railroad companies.

Every steam or electric railroad company of any magnitude operates one or more repair shops, chiefly for the purpose of maintaining the efficiency of the rolling stock. Such shops often manufacture complete cars and some of them manufacture complete locomotives. While the bulk of the work of the repair shops is on the rolling stock, they also do shopwork in connection with the construction and repair of bridges, buildings, etc. Most of the work done is on rolling stock operated by the company, but some companies do work of this character for others. The products are not ordinarily given a selling or contract value. The amount reported as the value for 1914 usually represented the cost of materials, salaries, wages, rent, and taxes. At prior censuses a miscellaneous expense item was reported, which to that extent increased the value of products. For steam-railroad repair shops this

item amounted to \$3,946,043 in 1904 and \$5,886,066 in 1909, and for electric-railroad repairshops \$285,483 in 1904 and \$702,536 in 1909. The steam-railroad repair shops are far more important than the electric-railroad repair shops. In fact, measured by the number of persons employed, they constitute one of the important industries covered by the statistics of manufactures.

## STEAM-RAILROAD REPAIR SHOPS.

Some idea of the magnitude of work required to keep the rolling stock of steam railroads in proper working condition can be gained by consulting the reports of the Interstate Commerce Commission "Statistics of Railways in the United States, 1914," page 25. This report shows there were 64,760 locomotives, 53,466 passenger-service cars, 2,325,647 freight-service cars, and 124,709 company-service cars in use on June 30, 1914.

Comparison with earlier censuses.—Table 25 summarizes the statistics of steam-railroad repair shops for each census from 1899 to 1914 and gives percentages of increase.

Table 25	NUMBER OR AMOUNT.				PER CENT OF INCREASE. <sup>1</sup>		
	1914	1909	1904	1899	1909-1914	1904-1909	1899-1904
Number of establishments.....	1,362	1,145	1,140	1,292	19.0	0.4	-11.8
Persons engaged.....	361,925	301,273	250,199	180,689	20.1	20.4	38.5
Proprietors and firm members.....	1	2					
Salaried employees.....	22,406	19,097	13,329	7,094	17.0	43.3	87.9
Wage earners (average number).....	339,518	282,174	236,870	173,595	20.3	19.1	26.4
Primary horsepower.....	433,994	293,361	167,973	95,087	47.9	74.6	76.7
Capital.....	\$354,092,369	\$238,317,497	\$146,886,479	\$119,473,042	48.6	62.2	22.9
Salaries and wages.....	258,548,615	198,683,273	154,072,306	102,214,817	30.1	29.0	50.7
Salaries.....	24,043,517	17,338,977	11,919,558	6,208,247	38.7	45.5	92.0
Wages.....	234,505,098	181,344,296	142,152,748	96,006,570	29.3	27.6	45.1
Paid for contract work.....	201,375	265,036	(2)	(2)	-24.0		
Rent and taxes (including internal revenue).....	1,730,343	1,178,887			46.8		
Cost of materials.....	243,828,607	199,413,412	151,104,801	109,472,353	22.3	32.0	38.0
Value of products.....	514,041,225	405,600,727	309,775,089	218,113,658	26.7	30.9	42.0
Value added by manufacture (value of products less cost of materials).....	270,212,618	206,187,315	158,670,288	108,641,305	31.1	29.9	46.0

<sup>1</sup> A minus sign (—) denotes decrease; percentages are omitted where base is less than 100.

<sup>2</sup> Figures not available.

The growth of the industry is indicated by Table 25, where, with the exception of the number of establishments and amount paid for contract work, a large increase is shown from census to census. The decrease in the number of establishments in 1904 and 1909, as compared with the number in 1899, was probably due to the concentration of repair work in large repair shops.

**Persons engaged in the industry.**—Table 26 shows, for 1914 and 1909, the number of persons engaged in the industry, distributed by sex, the average number of wage earners being distributed also by age. The sex and age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the "Explanation of terms."

CLASS.	Census year.	PERSONS ENGAGED IN THE INDUSTRY.					
		Total.	Male.	Female.	Per cent of total.		
					Male.	Female.	
All classes.....	1914	361,925	360,842	1,083	99.7	0.3	
	1909	301,273	300,454	819	99.7	0.3	
Proprietors and officials.....	1914	6,825	6,825	.....	100.0	.....	
	1909	6,974	6,973	1	100.0	.....	
Proprietors and firm members..	1914	1	1	.....	100.0	.....	
	1909	2	2	.....	100.0	.....	
Salaried officers of corporations..	1914	133	133	.....	100.0	.....	
	1909	1,877	1,877	.....	100.0	.....	
Superintendents and managers..	1914	6,691	6,691	.....	100.0	.....	
	1909	5,095	5,094	1	100.0	.....	
Clerks and other subordinate salaried employees.	1914	15,582	14,935	647	95.8	4.2	
	1909	12,125	11,732	393	96.8	3.2	
Wage earners (average number).....	1914	339,518	339,082	436	99.9	0.1	
	1909	282,174	281,749	425	99.8	0.2	
16 years of age and over.....	1914	339,438	339,002	436	99.9	0.1	
	1909	281,993	281,568	425	99.8	0.2	
Under 16 years of age.....	1914	80	80	.....	100.0	.....	
	1909	181	181	.....	100.0	.....	

Of the 361,925 persons reported for the industry in 1914, 360,842, or 99.7 per cent, were males, and 1,083, or three-tenths of 1 per cent, females, the same proportions, respectively, as in 1909. About 60 per cent of the females were employed as clerks in 1914. Wage earners represented 93.8 per cent of the total for all classes; clerks and other salaried employees, 4.3 per cent; and superintendents and managers, 1.9 per cent. The decrease in the number of salaried officers of corporations since 1909 is due to the fact that the reports for several large companies were not prepared on the same basis at the two censuses.

**Wage earners employed, by months.**—The following table gives, for the industry, the total number of wage earners employed on the 15th of each month, or the nearest representative day, for 1914 and 1909, and the average number employed during each month in 1904, together with the percentage which the number reported for each month forms of the greatest number reported for any month.

MONTH.	WAGE EARNERS IN THE INDUSTRY.					
	Number. <sup>1</sup>			Per cent of maximum.		
	1914	1909	1904 <sup>2</sup>	1914	1909	1904
January.....	343,590	278,795	239,687	99.0	92.5	96.7
February.....	340,925	273,678	242,114	98.2	90.8	97.7
March.....	340,933	273,622	244,673	98.2	90.7	98.8
April.....	333,423	269,502	245,540	96.1	89.4	97.9
May.....	332,026	268,700	235,723	95.7	89.1	95.1
June.....	332,735	272,165	224,620	95.9	90.3	90.7
July.....	343,576	276,061	223,998	99.0	91.6	90.4
August.....	345,275	284,253	227,509	99.5	94.3	91.8
September.....	347,031	292,042	232,670	100.0	96.9	93.9
October.....	345,195	296,302	238,753	99.5	98.3	96.4
November.....	338,300	293,351	242,716	97.5	99.3	98.0
December.....	331,207	301,538	247,767	95.4	100.0	100.0

<sup>1</sup> The figures for 1914 and 1909 represent the number employed on the 15th of each month, or the nearest representative day; those for 1904 the average number employed during the month.

<sup>2</sup> Includes wage earners in one establishment in Alaska.

The degree of fluctuation in employment of wage earners in this industry was very small, the greatest variation in the numbers employed being 10.9 per cent in 1909. The percentage which the number reported for the minimum month formed of the maximum was 90.4 in 1904, 89.1 in 1909, and 95.4 in 1914.

**Prevailing hours of labor.**—In Table 28 the average number of wage earners reported for 1914 and 1909 for steam-railroad repair shops has been classified according to the number of hours of labor per week prevailing in the shops in which they were employed. The number employed in each establishment was classified as a total, even though a few employees worked a greater or smaller number of hours.

PREVAILING HOURS OF LABOR PER WEEK.	WAGE EARNERS IN ESTABLISHMENTS WITH SPECIFIED NUMBER OF HOURS.			
	Average number.		Per cent of total.	
	1914	1909	1914	1909
Total.....	339,518	282,174	100.0	100.0
48 and under.....	74,431	21,151	21.9	7.5
Between 48 and 54.....	50,616	22,230	14.9	7.9
54.....	100,759	100,363	29.7	35.6
Between 54 and 60.....	40,375	56,850	13.7	20.1
60.....	16,767	43,977	4.9	15.6
Between 60 and 72.....	46,466	31,743	13.7	11.2
72.....	270	.....	0.1	.....
Over 72.....	3,834	5,880	1.1	2.1

In 1914, 66.5 per cent of the wage earners employed in the industry were in establishments where the prevailing hours of labor were 54 or fewer per week, as compared with 51 per cent in 1909. A tendency toward a shorter working-day is shown by the fact that the number employed in establishments operating less than 54 hours per week represented 36.8 per cent of the total in 1914, as against 15.4 per cent in 1909. There was a slight increase in the proportion employed in establishments where the working hours were over 60 per week, from 13.3 per cent in 1909 to 14.9 per cent in 1914.

**Size of establishments.**—The tendency of the industry to become concentrated in large establishments is indicated by the statistics given in Table 29.

Table 29 VALUE OF PRODUCT.	Census year.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.
All classes.....	1914 1909	1,362 1,145	339,518 282,174	\$514,041,225 405,600,727	\$270,212,618 206,187,315
Less than \$5,000.....	1914 1909	44 52	115 152	133,531 103,034	81,776 98,548
\$5,000 to \$20,000.....	1914 1909	154 149	1,584 1,515	1,865,296 1,760,898	1,202,354 1,124,545
\$20,000 to \$100,000.....	1914 1909	358 286	14,430 12,059	19,548,203 14,701,803	12,158,925 8,963,187
\$100,000 to \$1,000,000.....	1914 1909	684 564	168,586 152,534	237,177,633 199,863,116	133,085,665 109,493,358
\$1,000,000 and over.....	1914 1909	122 94	154,803 115,914	255,810,562 189,111,816	122,783,898 86,507,677
Per cent distribution: Less than \$5,000.....	1914 1909	3.2 4.5	(1) 0.1	(1) (1)	(1) (1)
\$5,000 to \$20,000.....	1914 1909	11.3 13.0	0.5 0.5	0.4 0.4	0.4 0.5
\$20,000 to \$100,000.....	1914 1909	26.3 25.0	4.3 4.3	3.8 3.6	4.5 4.3
\$100,000 to \$1,000,000.....	1914 1909	50.2 49.3	49.7 51.1	46.1 49.3	49.6 53.1
\$1,000,000 and over.....	1914 1909	9.0 8.2	45.6 41.1	49.7 46.6	45.4 42.0

<sup>1</sup> Less than one-tenth of 1 per cent.

During the five-year period 1909-1914 a marked increase (35 per cent) took place in the value of products of establishments in the class "\$1,000,000 and over." In 1914 this class represented 49.7 per cent of the total, while in 1909 it was 46.6 per cent. The class "\$100,000 to \$1,000,000" was the most important in 1909, but the proportion which the value of products of this group represented of the total decreased from 49.3 per cent in that year to 46.1 per cent in 1914.

Table 30 shows the size of establishments in 1914 and 1909 as measured by the number of wage earners employed in the industry.

Table 30 WAGE EARNERS PER ESTABLISHMENT.	NUMBER OF ESTABLISHMENTS.				AVERAGE NUMBER OF WAGE EARNERS.			
	1914		Per cent of total.		1914		Per cent of total.	
	1914	1909	1914	1909	1914	1909	1914	1909
All establishments.....	1,362	1,145	100.0	100.0	339,518	282,174	100.0	100.0
1 to 5 wage earners.....	76	87	5.6	7.6	234	281	0.1	0.1
6 to 20 wage earners.....	194	164	14.2	14.3	2,503	2,128	0.7	0.8
21 to 50 wage earners.....	202	148	14.8	12.9	6,840	4,993	2.0	1.8
51 to 100 wage earners.....	213	162	15.6	14.1	15,634	11,848	4.6	4.2
101 to 250 wage earners.....	287	238	21.1	20.8	45,788	37,247	13.5	13.2
251 to 500 wage earners.....	197	180	14.5	15.7	67,492	63,821	19.9	22.6
501 to 1,000 wage earners.....	131	122	9.6	10.7	91,041	84,619	26.8	30.0
Over 1,000 wage earners.....	62	44	4.6	3.8	109,986	77,237	32.4	27.4

Of the 1,362 establishments reported for the industry in 1914, 19.8 per cent employed from 1 to 20 wage earners each; 30.4 per cent, from 21 to 100; 35.6 per cent, from 101 to 500; 9.6 per cent, from 501 to 1,000; and 4.6 per cent, over 1,000. Of the total number of wage earners, eight-tenths of 1 per cent were reported by establishments employing from 1 to 20 wage earners; 6.6 per cent by establishments employing from 21 to 100; 33.4 per cent by establishments employing from 101 to 500; 26.8 per cent by establishments employing from 501 to 1,000; and 32.4 per cent by establishments employing over 1,000.

**Engines and power.**—Table 31 shows, for 1914 and 1909, for the industry, the number and horsepower of engines or motors employed in generating power (including electric motors operated by purchased current). It also shows separately the number and horsepower of electric motors operated by current generated in the establishments reporting.

Table 31 POWER.	NUMBER OF ENGINES OR MOTORS.		HORSEPOWER.			
			Amount.		Per cent distribution.	
	1914	1909	1914	1909	1914	1909
Primary power, total.....	8,245	4,195	433,994	293,361	100.0	100.0
Owned.....	2,716	2,366	331,342	259,430	76.3	88.4
Steam engines and turbines.....	2,514	2,220	323,634	265,840	74.6	87.2
Internal-combustion engines.....	175	130	5,916	3,140	1.4	1.1
Water wheels, turbines, and motors.....	27	16	1,792	450	0.4	0.2
Rented.....	5,529	1,829	102,652	33,931	23.7	11.6
Electric.....	5,529	1,829	102,562	33,786	23.6	11.5
Other.....			90	145	(2)	(2)
Electric.....	19,056	9,468	325,054	161,288	100.0	100.0
Rented.....	5,529	1,829	102,562	33,786	31.6	20.9
Generated by establishments reporting.....	13,527	7,639	222,492	127,502	68.4	79.1

<sup>1</sup> Figures for horsepower include for 1909 the amounts reported under the head of "other" owned power.

<sup>2</sup> Less than one-tenth of 1 per cent.

Seventy-four and six-tenths per cent of the power used in steam-railroad repair shops in 1914 was generated by steam, as compared with 87.2 per cent in 1909. During the five-year period 1909-1914 this class of power increased by 26.5 per cent; the capacity of internal-combustion engines, by 88.4 per cent; rented electric power, by 203.6 per cent; and electric power generated in the establishments, by 74.5 per cent.

**Fuel.**—Coal is the principal class of fuel used in steam-railroad repair shops. In 1914, 506,696 tons of anthracite, and 5,486,405 tons of bituminous coal were consumed in this industry. The other fuel used was coke, 79,597 tons; oil, 2,508,703 barrels; and gas, 1,829,902,000 cubic feet.

## SPECIAL STATISTICS.

Table 32 gives in detail the statistics of steam-railroad repair shops for 1914, 1909, 1904, and 1899.

The table shows fewer locomotives and cars built in steam-railroad repair shops in 1914 than during some of the earlier census years. The number of locomotives decreased by 85, or 31.2 per cent, from 1899 to 1914, and the number of cars built, by 16,188, or 60.1 per cent, but the total value of work done in these

shops shows an increase of 135.5 per cent for the fifteen years.

In 1914 the motive power and machinery department reported 46.1 per cent of the total value of products; car department, 47.3 per cent; bridge and building department, six-tenths of 1 per cent; and all other, or unclassified products, 6.1 per cent.

Table 32									
CLASS OF WORK.	1914	1909	1904	1899 <sup>1</sup>	CLASS OF WORK.	1914	1909	1904	1899 <sup>1</sup>
Total value.....	\$514,041,225	\$405,600,727	\$309,775,050	\$218,238,277	Car department, value—Contd.				
Motive power and machinery department, value.....	\$236,723,724	\$184,971,870	\$149,643,953	\$94,447,260	Cars built, value—Continued.				
Locomotives built—					Other—				
Number.....	187	215	148	272	Number.....	308	359	2,000	(?)
Value.....	\$3,594,003	\$3,289,140	\$1,853,939	\$3,276,393	Value.....	\$253,003	\$267,153	\$645,392	(?)
Repairs to locomotives, motors, etc.....	\$109,057,932	\$127,928,773	\$101,326,805	\$57,383,143	Repairs to cars of all kinds.....	\$183,753,538	\$147,194,065	\$105,319,032	\$74,665,500
Work for other corporations.....	\$7,053,430	\$4,735,004	\$5,681,307	\$3,338,589	Work for other corporations.....	\$14,819,954	\$9,784,239	\$6,946,990	\$7,084,837
All other products or work.....	\$57,018,359	\$49,018,953	\$40,781,902	\$30,449,135	All other products or work.....	\$32,403,269	\$30,464,464	\$24,492,787	\$20,104,843
Car department, value.....	\$242,976,774	\$199,768,939	\$149,748,820	\$118,376,552	Bridge and building department (shopwork), value.....	\$3,127,644	\$2,799,898	\$5,096,141	\$5,414,465
Cars built, value.....	\$11,999,983	\$13,326,171	\$12,990,011	\$16,521,352	Repairs and renewals.....	\$2,449,821	\$1,906,737	\$4,351,487	\$3,937,170
Passenger—					Work for other corporations.....	\$37,061	\$46,496	\$40,581	\$241,626
Number.....	123	218	414	390	All other products or work.....	\$640,762	\$346,663	\$704,073	\$1,235,669
Value.....	\$1,233,302	\$1,291,354	\$2,337,977	\$1,441,733	All other products and work not classified, value.....	\$31,213,083	\$18,060,020	\$5,288,175	(?)
Freight—									
Number.....	10,314	13,972	14,742	26,543					
Value.....	\$10,513,676	\$11,767,664	\$10,006,642	\$15,079,619					

<sup>1</sup> Includes \$124,619 reported for Alaska.

<sup>2</sup> Not reported.

## DETAIL STATE TABLE.

The principal statistics secured by the census inquiry concerning steam-railroad repair shops are presented in detail, by states, for 1914, in Table 33 on the following pages.



## MANUFACTURES.

TABLE 33.—DETAIL STATISTICS FOR CARS AND GENERAL SHOP CONSTRUCTION

STATE.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.						Capital.
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.			Total.	16 and over.		Under 16.			
					Male.	Female.	Average number.	Number, 15th day of—			Male.	Female.	Male.	Female.		
								Maximum month.	Minimum month.							
1 United States.....	1,362	361,925	1	6,824	14,935	647	339,518	Se 347,031	De 331,207	336,316	335,805	432	79	.....	\$354,092,369	
2 Alabama.....	22	8,328	.....	157	251	12	7,908	Ja 8,190	No * 7,203	7,820	7,799	8	13	.....	5,731,096	
3 Arizona.....	7	1,476	.....	30	69	.....	1,377	Ja 1,477	Oc 1,284	1,368	1,368	.....	.....	.....	1,347,347	
4 Arkansas.....	19	3,949	.....	101	208	6	3,634	Jy 3,800	Ap 3,482	3,617	3,616	.....	1	.....	2,113,430	
5 California.....	39	12,130	.....	204	358	5	11,563	Au 12,718	My 10,812	11,313	11,311	.....	2	.....	5,527,290	
6 Colorado.....	25	4,689	.....	131	196	13	4,349	Au 4,702	Ap 4,005	4,332	4,329	2	1	.....	5,855,507	
7 Delaware.....	3	2,172	.....	9	104	.....	2,059	Ja 2,145	Oc 1,987	2,068	2,068	.....	.....	.....	1,815,167	
8 Florida.....	13	2,427	.....	28	87	1	2,311	Jy 2,494	No 2,147	2,145	2,141	3	1	.....	1,477,920	
9 Georgia.....	34	7,380	.....	185	231	21	6,943	Jy 7,142	No 6,648	6,616	6,605	10	1	.....	4,635,912	
10 Idaho.....	7	1,053	.....	46	30	.....	977	De 1,234	My 765	1,248	1,245	.....	3	.....	2,266,435	
11 Illinois.....	94	30,484	.....	504	1,214	84	28,682	Se 30,231	Ap 27,312	28,050	28,027	19	4	.....	84,676,821	
12 Indiana.....	49	15,410	.....	216	765	31	14,398	Se 14,891	Je 13,787	14,161	14,151	10	.....	.....	11,100,025	
13 Iowa.....	36	8,616	.....	254	317	21	8,024	Oc 8,562	Ja 7,527	8,121	8,118	2	1	.....	11,097,561	
14 Kansas.....	37	9,505	.....	199	423	18	8,885	Jy 9,777	Fe 8,036	9,113	9,110	2	1	.....	13,946,882	
15 Kentucky.....	23	8,928	.....	138	287	18	8,485	Oc 8,754	My 8,253	8,246	8,242	4	.....	.....	7,081,470	
16 Louisiana.....	26	2,839	.....	54	87	1	2,697	Ja 2,830	De 2,481	2,500	2,483	17	.....	.....	2,185,583	
17 Maine.....	13	1,431	.....	25	54	8	1,344	De 1,420	Je 1,274	1,383	1,383	.....	.....	.....	2,056,118	
18 Maryland.....	20	6,321	.....	27	319	6	5,969	Fe 6,474	De 5,073	6,033	6,004	22	7	.....	4,409,948	
19 Massachusetts.....	15	6,597	.....	107	206	20	6,264	Je 6,951	No 5,797	7,106	7,080	19	7	.....	9,136,136	
20 Michigan.....	26	6,171	.....	141	214	13	5,803	De 6,066	Fe 5,457	6,312	6,312	.....	.....	.....	4,950,533	
21 Minnesota.....	38	11,096	.....	248	266	31	10,551	Mh 11,005	De 10,100	10,372	10,366	2	4	.....	18,693,994	
22 Mississippi.....	15	3,515	.....	74	150	13	3,278	Ja 3,508	De 2,845	2,836	2,819	17	.....	.....	2,016,004	
23 Missouri.....	39	10,273	.....	251	281	20	9,721	Jy 10,178	Fe 9,405	9,479	9,475	4	.....	.....	11,269,469	
24 Montana.....	16	3,801	.....	108	70	12	3,611	Ja 3,887	Fe 3,292	3,467	3,465	.....	2	.....	5,033,793	
25 Nebraska.....	18	4,401	.....	141	138	11	4,111	Oc 4,272	Ap 3,924	4,185	4,185	.....	.....	.....	7,335,318	
26 Nevada.....	9	1,523	.....	15	39	1	1,468	Au 1,530	Je 1,393	1,400	1,400	.....	.....	.....	890,156	
27 New Jersey.....	30	7,493	.....	182	466	10	6,835	Ja 7,260	My 6,629	6,759	6,758	2	1	.....	7,398,089	
28 New Mexico.....	15	2,088	.....	67	96	1	1,922	De 2,063	Je 1,833	2,063	2,063	.....	.....	.....	2,118,659	
29 New York.....	107	22,306	.....	672	1,382	18	20,234	Ja 21,073	Je 19,471	20,311	20,307	1	3	.....	21,326,776	
30 North Carolina.....	16	2,995	.....	32	132	25	2,806	Ap 2,964	No 2,620	2,629	2,606	23	.....	.....	2,299,423	
31 North Dakota.....	7	831	.....	29	28	3	871	Jy 983	De 788	788	788	.....	2	.....	1,879,058	
32 Ohio.....	88	23,240	.....	334	1,238	29	21,639	Se 22,637	Je 20,207	21,105	21,081	19	5	.....	16,912,157	
33 Oklahoma.....	13	1,833	1	39	69	6	1,718	Au 2,005	Ja 1,390	1,653	1,649	4	.....	.....	1,622,741	
34 Oregon.....	14	1,705	.....	49	53	2	1,601	Au 1,724	Mh 1,403	1,654	1,653	.....	1	.....	1,348,651	
35 Pennsylvania.....	163	58,079	.....	978	2,831	41	54,729	Ja 58,495	Je 53,397	53,805	53,645	147	13	.....	53,098,200	
36 South Carolina.....	9	1,601	.....	39	119	12	1,431	Ja 1,471	Oc 1,372	1,373	1,363	10	.....	.....	1,527,899	
37 South Dakota.....	6	620	.....	27	13	1	579	Se 619	Ja 542	591	591	.....	.....	.....	327,542	
38 Tennessee.....	17	7,610	.....	102	293	14	7,201	Au 7,420	No 6,734	7,221	7,206	15	4	.....	6,028,029	
39 Texas.....	63	11,750	.....	299	496	40	10,915	Au 11,190	My 10,410	11,068	11,063	4	1	.....	28,465,388	
40 Utah.....	8	2,322	.....	48	75	6	2,193	Ja 2,282	My 2,095	2,075	2,073	2	.....	.....	2,557,684	
41 Vermont.....	5	1,399	.....	23	25	6	1,345	Mh 1,411	Se 1,253	1,380	1,380	.....	.....	.....	710,439	
42 Virginia.....	32	11,027	.....	130	512	10	10,375	Mh 10,613	Au 10,050	10,429	10,419	10	.....	.....	6,258,149	
43 Washington.....	26	4,822	.....	149	109	21	4,543	Se 4,747	De 4,198	4,443	4,443	.....	.....	.....	7,176,047	
44 West Virginia.....	37	8,845	.....	86	315	7	8,437	Se 9,006	De 7,523	8,266	8,250	11	5	.....	3,787,791	
45 Wisconsin.....	35	9,627	.....	63	540	13	9,011	Ja 9,299	De 8,649	9,155	9,149	6	.....	.....	6,722,008	
46 Wyoming.....	12	1,841	.....	26	87	6	1,722	Oc 1,784	My 1,616	1,669	1,669	.....	.....	.....	2,841,856	
47 All other states.....	16	5,278	.....	57	192	10	5,019	.....	.....	4,588	4,551	37	.....	.....	3,035,878	

\* Owned power only.

\* Includes rented power, other than electric.

\* Same number reported for one or more other months.

## RAILROAD REPAIR SHOPS.

785

AND REPAIRS BY STEAM-RAILROAD COMPANIES, BY STATES: 1914.

EXPENSES.										POWER.						
Salaries and wages.			For contract work.	Rent and taxes.		For materials.		Value of products.	Value added by manufacture.	Primary horsepower.					Electric horse-power generated in establishments reporting.	
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, including internal revenue and corporation income.	Principal materials.	Fuel and rent of power.			Total.	Steam engines. <sup>1</sup>	Internal-combustion engines. <sup>2</sup>	Water wheels and motors. <sup>1</sup>	Electric (rented).		
\$10,075,794	\$13,967,723	\$234,505,093	\$201,375	\$24,820	\$1,705,523	\$231,346,237	\$12,482,370	\$514,041,225	\$270,212,618	433,994	323,634	6,006	1,792	102,562	222,492	1
226,031	222,471	5,188,645			23,575	6,693,602	147,864	12,521,643	5,690,117	7,861	5,381	12		2,468	1,521	2
55,505	91,763	1,186,604	13,223		8,032	808,870	112,892	2,295,132	1,373,370	2,401	1,463			938	324	3
149,930	184,208	2,449,705	12,501	10	11,820	2,049,324	90,035	4,971,093	2,831,734	3,182	3,106	26		50	2,268	4
252,558	426,525	9,616,034	621		27,763	6,458,633	546,613	17,199,717	10,194,471	15,262	5,964	86	61	9,151	1,198	5
206,432	207,492	3,711,197		100	85,754	2,409,061	173,434	6,821,673	4,239,178	7,171	4,185	38	175	2,773	1,500	6
141,118	111,967	1,524,149			10,281	1,702,156	61,752	3,551,424	1,787,516	2,820	2,820				2,237	7
47,092	98,138	1,398,254	4,511	1,200	4,918	924,854	54,792	2,589,930	1,610,284	2,234	2,202	15		17	1,106	8
248,152	249,099	4,340,507	655	3,000	4,754	3,969,740	150,327	8,970,460	4,850,393	14,327	7,975	97		6,255	4,051	9
64,297	30,331	987,662	416		7,353	842,265	37,727	2,033,635	1,153,643	3,901	1,170	4		2,727	100	10
696,215	1,171,341	20,432,816	63,879	3,840	274,735	17,286,738	1,031,726	41,496,130	23,177,666	36,781	25,195	169		11,417	15,807	11
318,096	740,034	10,112,667	39	220	46,496	8,897,410	455,039	20,585,579	11,203,130	18,021	15,088	67		2,866	9,674	12
352,448	303,043	5,987,971	5,867		53,564	4,383,529	349,996	11,433,988	6,700,463	9,337	8,244	9		1,084	4,792	13
292,784	372,409	5,874,089	97		84,456	5,874,162	423,077	12,889,361	6,592,122	9,994	9,828	106		50	6,263	14
191,821	239,173	5,650,935			57,972	7,120,436	138,459	13,344,242	6,085,347	8,176	7,831			345	6,610	15
108,029	74,906	1,736,276	72,373		9,395	1,006,246	70,623	3,042,318	1,965,449	2,365	1,842	34		489	893	16
34,280	47,601	988,465			13,655	946,818	59,298	2,075,637	1,069,521	1,377	665	10		702	18	17
61,753	308,394	3,954,705			6,072	8,723,058	156,543	13,229,352	4,349,751	6,056	5,522	21		513	6,582	18
110,710	188,080	4,393,731			107,448	3,954,176	242,705	8,829,665	4,632,784	8,287	7,672	70		545	9,196	19
207,175	184,319	3,905,314	1,165		8,958	3,030,784	233,666	7,599,197	4,304,747	8,595	4,176	551		3,868	2,297	20
373,738	259,825	7,544,270	5,364		37,833	5,784,609	542,619	14,594,018	8,266,790	15,678	10,333	502	40	4,903	7,010	21
105,850	116,394	2,028,065		75	12,990	1,432,829	60,072	3,682,100	2,189,199	3,350	2,816			1,034	464	22
356,189	239,635	6,838,843	3,941	4,400	51,633	5,025,362	346,549	12,847,379	7,475,468	9,031	7,955	33		1,043	6,655	23
174,585	85,582	3,008,833			4,381	2,308,862	233,094	5,833,618	3,291,662	5,376	2,993	77	26	2,190	1,259	24
204,286	128,344	3,510,731			44,232	2,635,292	227,864	6,736,863	3,873,707	7,895	7,731	22		142	6,445	25
34,693	53,163	1,230,028			12,430	829,010	102,738	2,260,964	1,329,216	2,737	1,916	13		808	1,155	26
258,113	374,919	4,910,250	11,853		93,474	4,210,343	341,307	10,344,659	5,793,099	11,203	10,388	78		737	8,946	27
111,886	92,179	1,635,061			1,153	1,270,525	111,534	3,139,411	1,757,382	2,276	2,241	35		849	849	28
847,811	1,173,067	14,367,258		400	153,198	13,628,723	705,434	30,892,742	16,558,585	30,825	17,267	1,444	976	11,139	18,456	29
42,237	119,876	1,673,975		300	2,977	2,752,042	86,771	5,047,536	2,208,723	1,941	1,737	65		139	3,110	30
45,037	29,585	745,900			1,725	301,355	110,261	1,235,171	823,555	718	643			75	332	31
460,175	1,128,504	9,470,620	2,422		54,559	15,321,654	732,067	33,286,205	17,232,484	31,389	26,516	757	175	3,941	14,525	32
57,281	73,347	1,155,857			29,359	873,502	82,243	2,270,374	1,314,629	954	403	76		415	40	33
77,992	52,795	1,343,158			1,990	939,667	79,640	2,583,653	1,564,346	1,370	689	22		659		34
1,578,283	2,127,817	38,868,035		10,765	90,231	47,365,767	1,791,279	93,608,049	44,451,003	77,885	65,409	469		12,007	51,679	35
52,036	105,903	928,296			3,406	929,838	18,857	2,064,141	1,115,446	842	768	6		68		36
37,620	10,856	461,725			1,295	595,722	63,914	1,177,750	513,723	765	765			2,177	1,067	37
157,627	271,445	4,622,354			22,455	4,447,015	139,333	9,688,409	5,102,061	6,323	4,106	40		4,726	2,601	38
478,141	514,902	7,826,559	19		52,716	5,394,275	594,153	15,276,387	9,297,959	13,205	7,698	781		4,414	3,554	39
73,219	74,283	1,943,855			32,547	1,407,352	98,122	3,574,891	2,069,387	3,099	1,865		40	1,194	887	40
31,346	18,866	727,041			100	522,497	54,820	1,354,671	777,354	1,438	299			1,189	25	41
193,459	459,915	6,607,104			35,178	10,463,372	298,209	18,216,056	7,454,475	6,980	6,021	31		928	11,021	42
209,991	110,066	3,541,193	628		10,939	2,881,504	198,404	7,026,916	3,947,008	7,160	2,746			4,414	1,181	43
128,102	299,294	5,539,753	1,901		18,649	4,778,787	206,465	10,990,193	6,004,941	5,060	4,555	65		440	2,639	44
94,323	501,451	5,718,224		510	18,980	4,175,772	364,669	10,920,856	6,380,445	7,233	6,834	45		404	1,555	45
42,903	109,398	1,295,744			25,747	899,812	101,089	2,469,129	1,468,228	2,924	2,561	8		355	355	46
84,395	184,418	3,629,040			43,695	3,088,797	234,895	7,468,869	4,145,177	8,099	6,490	22	300	1,287	1,196	47

\* All other states embrace: Connecticut, 8 establishments; District of Columbia, 2; New Hampshire, 4; and Rhode Island, 2.

## ELECTRIC-RAILROAD REPAIR SHOPS.

Comparison with earlier censuses.—Table 34 summarizes the statistics of electric-railroad repair shops for each census from 1899 to 1914, and gives percentages of increase.

The extraordinary growth of this industry since 1899

is the result of the development of electric railroads which has taken place during the last 15 years. During the period 1899 to 1914 covered by the table, the number of establishments increased by 501 per cent, number of wage earners by 275.6 per cent, and value of products by 311.7 per cent.

Table 34

	NUMBER OR AMOUNT.				PER CENT OF INCREASE. <sup>1</sup>		
	1914	1909	1904	1899	1909-1914	1904-1909	1899-1904
Number of establishments.....	649	541	56	108	20.0	529.1	-20.4
Persons engaged.....	28,215	23,699	11,551	7,226	19.1	105.2	59.9
Proprietors and firm members.....	1,827	1,281	499	201	42.6	158.7	148.3
Salaried employees.....	26,384	22,418	11,052	7,025	17.7	102.8	57.3
Wage earners (average number).....	44,989	35,794	3,154	6,443	25.7	1,034.9	-51.0
Primary horsepower.....	\$63,613,741	\$38,898,686	\$12,905,853	\$10,781,939	63.5	201.4	19.7
Capital.....	20,559,383	15,690,228	7,553,485	4,598,268	31.0	107.7	64.3
Salaries and wages.....	1,914,538	1,204,219	542,687	193,675	59.0	121.9	180.2
Salaries.....	18,644,845	14,486,009	7,012,798	4,404,593	28.7	106.6	59.2
Wages.....	24,596	23,480	13,195	23,392	4.8	77.9	-43.6
Paid for contract work.....	581,657	351,626	219,598	136,193	65.4	.....	-12.2
Rent and taxes (including internal revenue).....	17,609,574	15,167,899	5,463,360	4,336,744	16.1	177.6	26.0
Cost of materials.....	38,576,565	31,962,561	13,437,121	9,370,811	20.7	137.9	43.4
Value of products.....	20,966,991	16,794,662	7,973,761	5,034,067	24.8	110.6	58.4
Value added by manufacture (value of products less cost of materials).....							

<sup>1</sup> A minus sign (—) denotes decrease.

<sup>2</sup> Exclusive of internal revenue.

Persons engaged in the industry.—Table 35 shows, for 1914 and 1909, the number of persons engaged in the industry, distributed by sex, the average number of wage earners being distributed also by age. The sex and age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the "Explanation of terms."

Table 35

CLASS.	Census year.	PERSONS ENGAGED IN THE INDUSTRY.					
		Total.	Male.	Female.	Per cent of total.		
					Male.	Female.	
All classes.....	1914	28,215	28,022	193	99.3	0.7	
	1909	23,699	23,550	149	99.4	0.6	
Proprietors and officials.....	1914	803	799	4	99.5	0.5	
	1909	658	657	1	99.8	0.2	
Proprietors and firm members.....	1914	4	4	.....	100.0	.....	
	1909	.....	.....	.....	.....	.....	
Salaried officers of corporations.....	1914	101	97	4	96.0	4.0	
	1909	107	106	1	99.1	0.9	
Superintendents and managers.....	1914	698	698	.....	100.0	.....	
	1909	551	551	.....	100.0	.....	
Clerks and other subordinate salaried employees.....	1914	1,028	941	87	91.5	8.5	
	1909	623	579	44	92.9	7.1	
Wage earners (average number).....	1914	26,384	26,282	102	99.6	0.4	
	1909	22,418	22,314	104	99.5	0.5	
16 years of age and over.....	1914	26,377	26,275	102	99.6	0.4	
	1909	22,403	22,300	103	99.5	0.5	
Under 16 years of age.....	1914	7	7	.....	100.0	.....	
	1909	15	14	1	93.3	6.7	

In 1914, 26,384, or 93.5 per cent, of the persons engaged in this industry were wage earners, and of these only 102, or four-tenths of 1 per cent, were females. The number of children decreased from 15 in 1909 to 7 in 1914.

Wage earners employed, by months.—The following table gives, for the industry, the total number of

wage earners employed on the 15th of each month, or the nearest representative day, for 1914 and 1909, and the average number employed during each month in 1904, together with the percentage which the number reported for each month forms of the greatest number reported for any month.

Table 36

MONTH.	WAGE EARNERS IN THE INDUSTRY.					
	Number. <sup>1</sup>			Per cent of maximum.		
	1914	1909	1904	1914	1909	1904
January.....	26,267	21,922	10,762	97.4	95.7	93.9
February.....	26,709	22,005	11,060	99.0	96.1	96.5
March.....	26,869	22,169	11,185	99.6	96.8	97.6
April.....	26,880	22,198	11,463	99.7	96.9	100.0
May.....	26,919	22,280	11,339	99.8	97.3	98.9
June.....	26,745	22,325	11,305	99.2	97.5	98.6
July.....	26,970	22,273	10,574	100.0	97.3	92.2
August.....	26,694	22,411	10,858	99.0	97.9	94.7
September.....	26,336	22,857	11,034	97.6	99.8	96.3
October.....	25,945	22,869	11,247	96.2	99.9	98.1
November.....	25,139	22,825	11,113	93.2	99.7	96.9
December.....	25,135	22,898	10,684	93.2	100.0	93.2

<sup>1</sup> The figures for 1914 and 1909 represent the number employed on the 15th of each month, or the nearest representative day; those for 1904, the average number employed during the month.

The degree of fluctuation in employment in this industry is small. The number employed during December, the month of minimum employment in 1914, was 93.2 per cent of the maximum number reported for that year. In 1909 the smallest number was reported for January and was 95.7 per cent of the maximum, and in 1904 the minimum number was reported for July and formed 92.2 per cent of the maximum.

Prevailing hours of labor.—In Table 37 the average number of wage earners reported for 1914 and 1909, for the industry, has been classified according to the number of hours of labor per week prevailing in the

establishments in which they were employed. The number employed in each establishment was classified as a total, even though a few employees worked a greater or smaller number of hours.

**Table 37**

PREVAILING HOURS OF LABOR PER WEEK.	WAGE EARNERS IN ESTABLISHMENTS WITH SPECIFIED NUMBER OF HOURS.			
	Average number.		Percent of total.	
	1914	1909	1914	1909
Total.....	26,384	22,418	100.0	100.0
48 and under.....	1,665	220	6.3	1.0
Between 48 and 54.....	1,638	510	6.2	2.3
54.....	6,160	4,803	23.3	21.4
Between 54 and 60.....	6,640	4,992	25.2	22.3
60.....	6,040	7,845	22.9	35.0
Between 60 and 72.....	3,857	3,689	14.6	16.5
72.....	23	74	0.1	0.3
Over 72.....	361	285	1.4	1.3

Table 37 shows a tendency toward a shorter working-day. In 1914, 61 per cent of the wage earners were employed in establishments where the prevailing hours were less than 60 per week, as compared with 47 per cent in 1909. A decrease is also shown in the proportion employed in establishments operated 60 hours per week, from 35 per cent in 1909 to 22.9 per cent in 1914.

**Size of establishments.**—The tendency of the industry to become concentrated in large establishments is indicated by the statistics given in Table 38.

Very little change has taken place in the groups for the two years, the most noticeable being in value of products for the group "\$100,000 to \$1,000,000," which shows an increase of 3 per cent in the proportion which it formed of the total.

**Table 38**

VALUE OF PRODUCT.	Census year.	Number of establishments.	Wage earners (average number).	Value of products.	Value added by manufacture.	VALUE OF PRODUCT.	Census year.	Number of establishments.	Wage earners (average number).	Value of products.	Value added by manufacture.
All classes.....	1914 1909	649 541	26,384 22,418	\$38,576,565 31,962,561	\$20,966,991 16,794,662	Per cent distribution: Less than \$5,000.....	1914 1909	23.7 23.1	1.3 1.2	1.2 1.1	1.2 1.2
Less than \$5,000.....	1914 1909	154 125	344 279	446,504 361,072	253,087 197,379	\$5,000 to \$20,000.....	1914 1909	37.3 36.8	7.0 7.4	6.6 7.0	6.7 7.5
\$5,000 to \$20,000.....	1914 1909	242 199	1,842 1,668	2,554,138 2,230,661	1,410,980 1,254,306	\$20,000 to \$100,000....	1914 1909	27.1 28.6	19.5 21.6	18.2 19.6	19.2 20.1
\$20,000 to \$100,000.....	1914 1909	176 155	5,140 4,834	7,029,094 6,261,138	4,023,670 3,370,762	\$100,000 to \$1,000,000..	1914 1909	10.8 10.2	47.2 44.8	47.9 44.9	46.9 45.8
\$100,000 to \$1,000,000.....	1914 1909	70 55	12,462 10,034	18,488,491 14,366,014	9,825,494 7,633,202	\$1,000,000 and over....	1914 1909	1.1 1.3	25.0 25.0	26.1 27.4	26.0 25.5
\$1,000,000 and over.....	1914 1909	7 7	6,596 5,603	10,058,338 8,743,676	5,453,780 4,279,013						

Table 39 shows the size of establishments in 1914 and 1909, as measured by the number of wage earners employed in the industry.

**Table 39**

WAGE EARNERS PER ESTABLISHMENT.	NUMBER OF ESTABLISHMENTS.				AVERAGE NUMBER OF WAGE EARNERS.			
			Per cent of total.				Per cent of total.	
	1914	1909	1914	1909	1914	1909	1914	1909
All establishments.....	649	541	100.0	100.0	26,384	22,418	100.0	100.0
No wage earners.....	253	205	39.0	37.9	719	615	2.7	2.7
1 to 5 wage earners.....	193	169	29.7	31.2	2,134	2,060	8.1	8.9
6 to 20 wage earners.....	112	87	17.3	16.1	3,537	2,813	13.4	12.5
21 to 50 wage earners.....	37	31	5.7	5.7	2,623	2,400	9.9	10.7
51 to 100 wage earners.....	34	30	5.2	5.5	4,862	4,619	18.4	20.6
101 to 250 wage earners.....	9	8	1.4	1.5	3,366	2,688	12.8	12.0
251 to 500 wage earners.....	8	6	1.2	1.1	5,265	3,661	20.0	16.3
501 to 1,000 wage earners.....	3	3	0.5	0.6	3,878	3,622	14.7	16.2
Over 1,000 wage earners.....								

Of the 649 establishments reported for the industry in 1914, 68.7 per cent employed from 1 to 20 wage earners each; 23 per cent, from 21 to 100; 6.6 per cent, from 101 to 500; and 1.7 per cent, over 500. Of the total number of wage earners, 10.8 per cent were reported by establishments employing from 1 to 20 wage earners; 23.3 per cent, by establishments employing from 21 to 100; 31.2 per cent, by establishments employing from 101 to 500; and 34.7 per cent, by establishments employing over 500.

The groups held very nearly the same position relatively in 1909 as in 1914; the proportion of wage earners in the group "501 to 1,000 wage earners" increased from 16.3 per cent in 1909 to 20 per cent in 1914, and the proportion in the group "over 1,000 wage earners" decreased from 16.2 per cent to 14.7 per cent during the same period.

**Engines and power.**—Table 40 shows, for 1914, 1909, and 1904, for the industry, the number and horsepower of engines or motors employed in generating power (including electric motors operated by purchased current). It also shows separately the number and horsepower of electric motors operated by current generated in the establishments reporting electric power.

Only a little over one-eighth of the power used in

this industry in 1914 and 1909 was generated by steam; the proportion which this class of power forms of the total decreased from 43 per cent in 1904 to 13.3 per cent in 1914, while that of rented electric power increased from 36.7 per cent in 1904 to 81.9 per cent in 1914. The decrease in electric power generated in the establishments reporting is due evidently to the different methods of reporting.

Table 40

POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.					
				Amount.			Per cent distribution.		
	1914	1909	1904	1914	1909	1904	1914	1909	1904
Primary power, total.....	2,649	1,830	76	44,969	35,794	3,154	100.0	100.0	100.0
Owned.....	44	38	24	8,128	4,840	1,995	18.1	13.5	63.3
Steam engines and turbines.....	34	37	17	6,997	4,831	1,355	13.3	13.5	43.0
Internal-combustion engines.....	8	1	1	1,121	9	40	2.5	0.0	1.3
Water wheels, turbines, and motors.....	2	.....	6	1,010	.....	600	2.2	.....	19.0
Rented—Electric.....	2,605	1,792	52	36,861	30,954	1,159	81.9	86.5	36.7
Electric.....	3,095	1,887	412	44,670	33,024	10,358	100.0	100.0	100.0
Rented.....	2,605	1,792	52	36,861	30,954	1,159	82.5	93.7	11.2
Generated by establishments reporting.....	490	95	360	7,809	2,070	9,199	17.5	6.3	88.8

Of the 7,809 horsepower reported in 1914 as electric power generated in the establishment reporting, 6,175 horsepower was furnished by the electric-railroad companies operating the repair shops.

Although the railroad repair shops report no expense for the service it is practically rented power and has been so treated in some instances under similar conditions.

## SPECIAL STATISTICS.

Table 41 shows in detail statistics of electric-railroad repair shops for 1914, 1909, and 1904.

Table 41 CLASS OF WORK.	1914	1909	1904	CLASS OF WORK.	1914	1909	1904
Total value.....	\$38,576,565	\$31,062,561	\$13,437,121	Car department, value—Continued.			
Motive power and machinery department, value.....	\$5,380,573	\$4,510,332	\$510,946	Repairs to cars of all kinds.....	\$27,628,802	\$22,869,777	\$11,254,505
Repairs to motors, etc.....	\$4,933,436	\$4,004,336		Work for other corporations.....	\$441,323	\$624,805	\$36,714
Work for other corporations.....	\$56,944	\$88,070	\$2,626	All other products or work.....	\$2,204,814	\$1,714,129	\$685,002
All other products or work.....	<sup>1</sup> \$390,193	<sup>2</sup> \$417,926	\$508,320	Bridge and building department (shop-work), value.....	\$434,427	\$330,948	\$327,855
Car department, value.....	\$31,086,043	\$25,835,463	\$12,581,365	Repairs and renewals.....	\$199,751	\$279,581	\$253,133
Cars built, value.....	\$811,104	\$626,752	\$805,144	Work for other corporations.....	\$479	\$5,093	
Passenger—				All other products or work.....	\$234,197	\$32,274	\$74,722
Number.....	235	129	288	All other products and work, not classified, value.....	\$1,675,522	\$1,285,818	\$16,955
Value.....	\$737,928	\$498,709	\$550,669				
Freight—							
Number.....	11	63	13				
Value.....	\$21,196	\$59,102	\$11,366				
Other—							
Number.....	58	51	9				
Value.....	\$51,982	\$68,941	\$13,109				

<sup>1</sup> Includes the value of 1 locomotive.

<sup>2</sup> Includes the value of 3 electric locomotives.

Thirteen and nine-tenths per cent of the work done in 1914 was for the motive power and machinery department; 80.6 per cent for the car department; 1.1 per cent for the bridge and building department; and 4.3 per cent for all other work, not classified. Repairs to motors constituted 91.7 per cent of the

work in the motive power department, and repairs to cars constituted 88.9 per cent of the car-department expense. The number of cars constructed shows a slight decrease in 1914, as compared with 1904, but the value of cars built shows an increase for the same period of 34 per cent.

## DETAIL STATE TABLE.

The principal statistics secured by the census inquiry concerning electric-railroad repair shops are presented in detail, by states, for 1914, in Table 42 on the following pages.

## MANUFACTURES.

TABLE 42.—DETAIL STATISTICS FOR CARS AND GENERAL SHOP CONSTRUCTION

STATE.		Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.					Capital.
			Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.			Total.	16 and over.		Under 16.		
						Male.	Female.	Average number.	Number, 15th day of—			Male.	Female.	Male.	Female.	
									Maximum month.	Minimum month.						
1	United States.....	649	23,215	4	799	941	87	26,384	Jy 26,970	De 25,135	25,509	25,403	99	7	.....	\$63,613,741
2	Alabama.....	7	221	.....	8	12	.....	201	Ja 224	Oc 176	184	184	.....	.....	.....	330,631
3	Arizona.....	3	15	.....	15	.....	.....	15	Jy 19	Ja 11	12	12	.....	.....	.....	48,898
4	Arkansas.....	8	75	.....	4	4	.....	67	Mh 72	Oc 63	67	67	.....	.....	.....	231,706
5	California.....	27	2,172	.....	35	47	4	2,086	Fe 2,165	Se 2,040	2,136	2,136	.....	.....	.....	2,937,287
6	Colorado.....	7	286	.....	10	10	1	265	Ap 280	Se 256	257	257	.....	.....	.....	844,819
7	Connecticut.....	21	360	.....	3	21	.....	336	Se 367	Fe 318	319	319	.....	.....	.....	1,725,711
8	Florida.....	4	85	.....	4	4	.....	77	Fe 86	De 61	75	75	.....	.....	.....	362,990
9	Georgia.....	8	242	.....	7	16	.....	219	Ja 237	De 204	210	210	.....	.....	.....	653,353
10	Illinois.....	43	2,081	.....	64	171	33	1,813	Mh 2,090	No 1,589	1,704	1,699	5	.....	.....	5,941,982
11	Indiana.....	32	817	.....	29	34	1	753	Ja 813	No 686	725	722	3	.....	.....	1,219,204
12	Iowa.....	12	320	.....	13	7	2	298	Jy 318	Mh 279	315	313	2	.....	.....	1,228,736
13	Kansas.....	15	101	.....	12	2	1	86	Au 91	Fe 75	90	90	.....	.....	.....	174,981
14	Kentucky.....	8	231	.....	10	3	.....	218	Jy 228	Ja 206	216	215	1	.....	.....	471,226
15	Louisiana.....	6	408	.....	16	5	.....	387	Ja 390	No 382	382	382	.....	.....	.....	190,263
16	Maine.....	11	191	.....	9	5	1	176	Au 193	De 159	159	159	.....	.....	.....	396,388
17	Maryland.....	5	618	.....	14	15	.....	589	Fe 627	No 549	598	593	3	2	.....	946,303
18	Massachusetts.....	39	1,779	.....	40	26	8	1,705	Jy 1,730	Fe 1,603	1,737	1,724	13	.....	.....	2,861,028
19	Michigan.....	18	939	1	10	41	2	885	Je 939	Se 880	872	872	.....	.....	.....	1,734,332
20	Minnesota.....	8	478	.....	23	20	.....	435	De 481	Jy 396	430	430	.....	.....	.....	1,763,472
21	Mississippi.....	9	52	.....	6	2	1	43	Au 44	Jy 42	43	43	.....	.....	.....	200,814
22	Missouri.....	8	1,216	.....	20	27	1	1,168	Mh 1,105	No 1,133	1,163	1,162	1	.....	.....	2,423,041
23	Montana.....	5	40	.....	3	1	.....	36	Jy 41	De 30	32	32	.....	.....	.....	184,471
24	New Hampshire.....	5	62	.....	3	1	.....	58	My 63	Au 55	56	56	.....	.....	.....	66,095
25	New Jersey.....	17	1,266	.....	21	15	2	1,228	My 1,299	Fe 1,134	1,182	1,180	2	.....	.....	2,129,043
26	New York.....	61	5,369	3	185	246	14	4,921	Se 5,186	De 4,497	4,569	4,547	19	3	.....	13,437,681
27	Ohio.....	48	1,963	.....	63	20	1	1,879	Ja 1,921	De 1,780	1,789	1,763	26	.....	.....	4,066,813
28	Oklahoma.....	7	72	.....	7	7	.....	58	Ja 59	Je 56	59	59	.....	.....	.....	145,826
29	Oregon.....	4	256	.....	5	23	3	225	Ja 287	De 170	170	163	2	.....	.....	701,318
30	Pennsylvania.....	92	3,138	.....	78	85	3	2,972	Je 3,039	De 2,888	2,890	2,878	10	2	.....	3,004,720
31	South Carolina.....	5	83	.....	5	3	2	73	Mh 78	Au 65	72	72	.....	.....	.....	718,610
32	Tennessee.....	6	335	.....	5	8	1	321	Ap 355	Fe 285	321	317	4	.....	.....	369,931
33	Texas.....	19	622	.....	23	14	2	583	Je 648	De 532	584	584	.....	.....	.....	977,183
34	Utah.....	4	174	.....	4	4	.....	166	Mh 203	No 141	147	147	.....	.....	.....	273,300
35	Vermont.....	8	22	.....	1	.....	.....	21	No 25	Jy 19	21	21	.....	.....	.....	59,418
36	Virginia.....	11	338	.....	15	6	.....	317	Jy 345	Fe 300	295	292	3	.....	.....	7,019,648
37	Washington.....	13	400	.....	6	11	1	332	My 421	De 340	340	340	.....	.....	.....	1,200,039
38	West Virginia.....	9	163	.....	8	3	.....	152	Jy 164	No 134	145	145	.....	.....	.....	175,485
39	Wisconsin.....	16	413	.....	9	2	1	401	Ap 462	Oc 334	398	393	5	.....	.....	1,146,523
40	All other states <sup>1</sup> .....	20	812	.....	21	20	2	769	.....	.....	745	745	.....	.....	.....	1,250,492

<sup>1</sup> Owned power only.<sup>2</sup> Same number reported for one or more other months.



## RAILROAD REPAIR SHOPS.

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AND REPAIRS BY ELECTRIC-RAILROAD COMPANIES, BY STATES: 1914.

EXPENSES.										POWER.						
Salaries and wages.			For contract work.	Rent and taxes.		For materials.		Value of products.	Value added by manufacture.	Primary horsepower.					Electric horsepower generated in establishments reporting.	
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, including internal revenue and corporation income.	Principal materials.	Fuel and rent of power.			Total.	Steam engines. <sup>1</sup>	Internal-combustion engines. <sup>1</sup>	Water wheels and motors. <sup>1</sup>	Electric (rented).		
\$1,082,341	\$832,197	\$18,644,845	\$24,596	\$32,794	\$548,863	\$16,962,542	\$647,032	\$38,576,565	\$20,966,991	44,989	5,997	1,121	1,010	36,861	7,809	1
9,885	5,802	85,241			2,163	73,878	2,453	179,510	103,179	326				326		2
		14,361			111	12,068	10	26,439	14,361	25				25		3
5,700	3,150	50,985	1,200		1,271	47,298	1,005	109,469	61,166	113				113	67	4
64,315	48,320	1,609,088		128	19,894	1,493,774	28,243	3,283,619	1,761,002	3,981	125			3,856	166	5
11,868	5,654	152,005			4,381	111,524	5,601	271,993	154,868	179				179	199	6
5,390	24,122	248,321			932	249,619	2,005	531,048	279,424	503				503	8	7
4,180	3,950	49,551			4,273	35,450	211	96,282	60,621	193				193		8
12,634	17,639	80,531			8,104	95,215	1,557	214,642	117,870	203				203	222	9
71,468	161,587	1,386,815	113	8,961	22,817	1,452,948	74,508	3,181,375	1,653,919	1,845	600			1,245	223	10
43,013	32,181	482,179		1,950	7,165	307,126	4,279	875,933	564,528	398	20			378	200	11
11,946	3,530	217,979			12,881	119,947	32,958	399,951	247,046	490				490	231	12
10,265	1,480	73,321			2,992	48,794	1,785	138,881	88,322	1,272		1,101		171	30	13
12,381	1,920	130,909	360		2,675	175,091	6,361	329,065	147,613	471				471		14
20,880	4,140	275,971			3,102	136,534	1,926	443,864	305,404	261				261	26	15
8,660	4,701	105,004	3,550		8,228	94,904	4,446	223,866	124,516	97				97	43	16
21,854	10,375	356,023			13,973	223,303	4,465	653,008	420,240	66				66	285	17
40,139	22,069	1,372,677	2,248	11,550	18,255	1,177,253	26,589	2,565,946	1,362,104	235				235	1,876	18
14,953	34,094	629,366			17,681	617,140	14,744	1,326,474	694,590	413	125			288	10	19
40,946	18,376	433,767			26,122	347,222	19,592	862,575	495,761	1,266				1,266		20
5,005	381	25,145			3,689	23,634	1,024	59,157	34,499	56				56		21
28,395	23,459	807,199			13,695	814,678	19,754	1,710,323	875,891	812				812	1,541	22
4,551	1,500	42,614			564	63,157	1,061	113,447	49,229	86				86		23
2,150	900	41,633			825	50,253	247	96,010	45,510	47				47	16	24
34,506	11,672	809,237	154		9,568	732,781	16,265	1,614,137	865,091	3,853				3,853		25
262,214	208,310	3,467,573	4,880	5,487	172,055	3,862,964	203,433	8,204,259	4,137,862	10,584	958		800	8,826	829	26
66,039	14,738	1,228,041	1,840	5	45,379	1,025,145	52,261	2,385,584	1,308,178	3,687	1,350			2,337	1,251	27
3,195	978	48,310			1,756	41,204	1,380	98,215	55,631	125				125		28
10,020	24,900	196,136		648	25	300,858	3,646	536,237	231,733	737	200			537		29
89,931	85,538	2,070,115	8,520	1,950	5,082	1,106,366	36,704	3,421,052	2,277,982	4,782	10	17		4,755	21	30
6,050	2,400	32,127			305	38,315	550	80,552	41,687	91				91		31
8,050	7,380	132,874			7,245	145,319	2,267	300,852	153,266	441				441	75	32
32,450	11,207	415,767		65	21,502	244,345	23,455	734,566	466,766	2,354	1,900	3		451	5	33
5,850	3,240	116,271		10	8,606	35,821	4,297	175,095	133,977	554				554		34
811		13,563			135	21,373	354	36,236	14,509	10				10	8	35
61,767	3,390	206,538	702	2,040	27,053	152,862	2,725	426,334	270,747	458				458	29	36
10,232	8,430	340,871			15,913	240,306	18,425	632,805	374,074	1,223				1,223	12	37
9,080	1,590	99,708			1,159	65,805	1,770	183,259	115,634	89				89	65	38
8,750	705	269,862			22,540	361,133	14,009	648,545	273,403	2,110	359		210	1,541		39
22,818	18,359	527,167	1,029		14,747	811,135	10,687	1,405,960	584,138	553	350			203	431	40

<sup>1</sup> All other states embrace: Delaware, 2 establishments; District of Columbia, 3; Idaho, 1; Nebraska, 4; North Carolina, 3; North Dakota, 2; Rhode Island, 2; South Dakota, 2; and Wyoming, 1.

# THE RUBBER INDUSTRY.

## SUMMARY AND ANALYSIS.

**Scope of the report.**—This report presents statistics for the establishments engaged primarily in the manufactures of rubber or products in which rubber is the principal material. The reports received were classified into three groups: (1) Establishments whose principal products were rubber belting and hose; (2) establishments making rubber boots and shoes; and (3) establishments engaged primarily in the manufacture of all other kinds of rubber products. The first group has been divided into subgroups, those establishments whose chief product was belting and those making hose as a primary product. The third group consists of establishments manufacturing rubber tires of all kinds, rubber packing, rubber clothing, druggists' and stationers' sundries, and other articles made from rubber. Prior to the census of 1909 elastic woven goods was included in the statistics for rubber goods, but in 1909 and 1914 the manufacture of this class of goods was included in the industry "suspenders, garters, and elastic woven goods." Table 1 presents, for 1914, the more important statistics for the rubber industry as a whole and for each branch of the industry.

Table 1	Total for the industry.	ESTABLISHMENTS ENGAGED PRIMARILY IN THE MANUFACTURE OF—			
		Belting and hose, rubber.		Boots and shoes, rubber.	Rubber goods, not elsewhere specified.
		Belting.	Hose.		
Number of establishments.....	342	7	11	23	301
Persons engaged in the industry.....	88,821	2,997	3,208	20,359	62,257
Proprietors and firm members.....	87	.....	.....	2	85
Salaried employees..	14,712	555	535	1,670	11,952
Wage earners (average number).....	74,022	2,442	2,673	18,687	50,220
Primary horsepower.....	199,543	10,506	12,489	24,621	151,927
Capital.....	\$267,671,422	\$11,240,598	\$11,187,324	\$46,051,464	\$199,183,036
Salaries and wages.....	60,445,980	2,424,642	2,170,973	11,944,733	43,905,632
Salaries.....	16,278,578	973,080	720,342	1,958,279	12,626,877
Wages.....	44,167,402	1,451,562	1,450,631	9,986,454	31,278,755
Paid for contract work.	408,851	.....	1,200	39,140	368,511
Rent and taxes (including internal revenue).....	2,226,322	81,857	83,101	345,678	1,715,686
Cost of materials.....	163,034,713	5,926,568	7,040,436	23,958,036	126,111,673
Value of products.....	300,993,796	11,580,405	11,980,484	53,822,123	223,610,784
Value added by manufacture (value of products less cost of materials).....	137,959,083	5,653,837	4,940,048	29,866,087	97,499,111

Of the 342 establishments reported by the rubber industry in 1914, 18 were engaged in the manufacture

of rubber belting and hose; 7 of these made belting chiefly and 11 made hose as a primary product. Rubber boots and shoes were the chief product of 23 establishments, and other rubber goods were made in 301 establishments. The most important branch of the rubber industry is that designated as "rubber goods, not elsewhere specified," 74.3 per cent of the total value of products being reported for this branch.

**Comparison with earlier censuses.**—Table 2 summarizes the statistics of establishments engaged in the rubber industry as a whole, together with separate figures for the three branches of the industry, from 1879 to 1914, and gives percentages of increase.

The value of the products of the industry increased from \$25,309,648 in 1879 to \$300,993,796 in 1914, or more than elevenfold; the increase for the decade 1904 to 1914 was 103.4 per cent, while for the later half of the decade the increase was 52.5 per cent. Each branch of the industry shows a substantial increase between 1909 and 1914, rubber goods, not elsewhere specified, showing the largest percentages of increase. The value of the product for the belting and hose industry increased 22.5 per cent between 1909 and 1914, rubber boots and shoes, 8.2 per cent, and rubber goods, 74.1 per cent.

The decrease in the number of proprietors and firm members is due to the decrease in the number of small establishments operated by individuals or firms, and also to the fact that some establishments of this class were incorporated during the period between the censuses. In such cases the class reported as proprietors or firm members at one census might be returned as salaried employees at a subsequent enumeration.

In addition to the \$300,993,796 reported as the total value of products for the rubber industry in 1914, rubber goods to the amount of \$752,503 were manufactured as subsidiary products by 19 establishments engaged primarily in other industries.

A distribution, by states, of the value of products for the industry as a whole can not be shown without the possibility of disclosing the operations of individual establishments in some states. Table 15, however, gives for 1914 the value of products for each branch of the industry, together with separate totals for such states as can be shown.

## MANUFACTURES.

Table 2

	NUMBER OR AMOUNT.						PER CENT OF INCREASE.				
	1914	1909	1904	1899	1889	1879	1909-1914	1904-1909	1899-1904	1889-1899	1879-1889
<b>RUBBER GOODS—ALL BRANCHES.<sup>2</sup></b>											
Number of establishments.....	342	267	265	301	167	104	28.1	0.8	-12.0	80.2	60.6
Persons engaged in the industry.....	88,821	56,059	47,676	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	58.4	17.6	.....	.....	.....
Proprietors and firm members.....	87	103	105	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	-15.5	-1.9	.....	.....	.....
Salaried employees.....	14,712	6,692	3,693	2,505	859	( <sup>3</sup> )	119.8	81.0	47.6	191.6	.....
Wage earners (average number).....	74,022	49,264	43,873	36,566	20,152	11,789	50.3	12.3	29.0	81.5	70.9
Primary horsepower.....	199,543	122,436	86,808	71,169	27,125	( <sup>3</sup> )	63.0	41.0	22.0	162.4	.....
Capital.....	\$267,671,422	\$162,144,564	\$93,979,636	\$78,463,771	\$36,764,825	\$8,974,187	65.1	63.8	26.1	113.4	309.7
Salaries and wages.....	60,445,980	32,977,876	24,623,078	18,575,728	9,526,909	4,051,431	83.3	33.9	32.6	95.0	135.1
Salaries.....	16,278,578	7,840,700	4,538,912	3,149,155	( <sup>3</sup> )	( <sup>3</sup> )	107.6	72.7	44.1	.....	.....
Wages.....	44,167,402	25,136,976	20,084,166	15,426,573	( <sup>3</sup> )	( <sup>3</sup> )	75.7	25.2	30.2	.....	.....
Paid for contract work.....	408,851	25,099	76,188	62,861	( <sup>3</sup> )	( <sup>3</sup> )	1,529.0	-67.1	21.2	.....	.....
Rent and taxes (including internal revenue).....	2,226,322	851,213	464,127	465,321	( <sup>3</sup> )	( <sup>3</sup> )	161.5	.....	.....	.....	.....
Cost of materials.....	163,034,713	122,745,102	80,002,476	60,240,559	26,243,853	16,527,220	32.8	53.4	32.8	129.5	58.8
Value of products.....	300,993,796	197,394,638	148,015,391	99,880,693	42,853,817	25,309,648	52.5	33.4	48.2	133.1	99.3
Value added by manufacture (value of products less cost of materials).....	137,959,083	74,649,536	68,012,915	39,640,134	16,609,964	8,782,428	84.8	9.8	71.6	138.7	89.1
<b>BELTING AND HOSE, RUBBER.</b>											
Number of establishments.....	18	18	19	18	17	2	.....	.....	.....	.....	.....
Persons engaged in the industry.....	6,205	5,876	4,210	1,971	( <sup>3</sup> )	( <sup>3</sup> )	5.6	39.6	113.6	.....	.....
Proprietors and firm members.....	1,090	744	512	197	( <sup>3</sup> )	( <sup>3</sup> )	40.5	45.3	159.9	79.1	.....
Salaried employees.....	5,115	5,131	3,698	1,771	1,835	384	-0.3	38.8	108.8	-3.5	404.1
Wage earners (average number).....	22,995	17,471	12,343	5,317	4,942	( <sup>3</sup> )	31.6	41.5	132.1	7.6	.....
Primary horsepower.....	\$22,436,922	\$19,731,968	\$13,240,273	\$5,493,885	\$5,270,068	\$265,000	13.7	49.0	141.0	4.2	1,888.7
Salaries and wages.....	4,595,615	3,492,720	2,612,640	1,254,510	1,043,768	131,721	31.6	33.7	108.3	20.2	692.4
Salaries.....	1,693,422	1,019,844	807,648	336,319	( <sup>3</sup> )	( <sup>3</sup> )	66.0	26.3	140.1	.....	.....
Wages.....	2,902,193	2,472,876	1,804,992	918,191	( <sup>3</sup> )	( <sup>3</sup> )	17.4	37.0	96.6	.....	.....
Paid for contract work.....	1,200	.....	1,515	6,096	( <sup>3</sup> )	( <sup>3</sup> )	.....	.....	-75.1	.....	.....
Rent and taxes (including internal revenue).....	161,958	78,941	463,448	452,620	( <sup>3</sup> )	( <sup>3</sup> )	109.0	.....	.....	.....	.....
Cost of materials.....	12,967,004	10,976,105	9,089,786	4,075,702	3,479,538	863,000	18.1	20.8	123.0	17.1	303.2
Value of products.....	23,560,889	19,238,324	14,954,186	6,169,044	5,512,840	1,085,000	22.5	28.6	142.4	11.9	408.1
Value added by manufacture (value of products less cost of materials).....	10,593,885	8,262,219	5,864,400	2,093,342	2,033,302	222,000	28.2	40.9	180.1	3.0	815.9
<b>BOOTS AND SHOES, RUBBER.</b>											
Number of establishments.....	23	22	22	22	11	9	.....	.....	.....	.....	.....
Persons engaged in the industry.....	20,359	18,899	19,315	14,877	( <sup>3</sup> )	( <sup>3</sup> )	7.7	-4.6	33.2	.....	.....
Proprietors and firm members.....	2	1	2	3	( <sup>3</sup> )	( <sup>3</sup> )	.....	.....	.....	.....	.....
Salaried employees.....	1,670	1,287	822	483	130	( <sup>3</sup> )	29.8	56.6	70.2	271.5	.....
Wage earners (average number).....	18,687	17,612	18,991	14,391	9,134	4,662	6.1	-7.3	32.0	57.6	95.9
Primary horsepower.....	21,621	25,903	26,084	25,017	9,543	( <sup>3</sup> )	-4.9	-0.7	4.3	162.2	.....
Capital.....	\$46,051,464	\$43,905,308	\$39,441,826	\$33,667,533	\$17,790,970	\$2,425,000	4.9	11.3	17.2	89.2	633.6
Salaries and wages.....	11,844,733	9,854,995	9,740,807	7,023,818	3,966,875	1,469,038	19.9	2.2	38.7	77.1	170.1
Salaries.....	1,853,279	1,114,743	874,001	597,239	( <sup>3</sup> )	( <sup>3</sup> )	38.4	61.9	46.3	.....	.....
Wages.....	9,990,454	8,544,252	8,866,806	6,426,579	( <sup>3</sup> )	( <sup>3</sup> )	16.9	-3.6	38.0	.....	.....
Paid for contract work.....	39,140	.....	5,132	4,187,692	( <sup>3</sup> )	( <sup>3</sup> )	29.8	.....	.....	.....	.....
Rent and taxes (including internal revenue).....	845,678	269,368	416,590	22,682,543	11,650,787	6,023,053	-19.0	-7.6	41.1	94.7	93.4
Cost of materials.....	23,856,036	29,577,176	32,080,464	22,682,543	18,632,060	9,705,724	8.2	-29.0	70.5	120.5	92.0
Value of products.....	53,822,123	49,727,567	70,065,296	41,089,819	.....	.....	.....	.....	.....	.....	.....
Value added by manufacture (value of products less cost of materials).....	29,866,087	20,143,391	38,064,832	18,407,276	6,981,273	3,682,671	48.3	-47.1	106.8	163.7	89.6
<b>RUBBER GOODS, NOT ELSEWHERE SPECIFIED.<sup>3</sup></b>											
Number of establishments.....	301	227	224	261	139	93	32.6	1.3	-14.2	87.8	.....
Persons engaged in the industry.....	62,237	31,284	23,651	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	99.0	32.3	.....	.....	.....
Proprietors and firm members.....	85	102	103	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	-16.7	-1.0	.....	.....	.....
Salaried employees.....	11,952	4,661	2,384	1,825	619	( <sup>3</sup> )	156.4	97.2	29.5	194.8	.....
Wage earners (average number).....	50,220	26,521	21,184	20,404	9,183	( <sup>3</sup> )	89.4	25.2	3.8	122.2	35.8
Primary horsepower.....	151,927	79,062	48,331	40,535	12,640	( <sup>3</sup> )	92.2	63.4	15.5	223.1	.....
Capital.....	\$199,183,036	\$98,607,228	\$46,297,537	\$39,302,353	\$13,703,787	\$6,294,187	102.2	112.8	17.8	186.8	119.1
Salaries and wages.....	43,905,632	19,525,961	12,289,631	10,297,400	4,516,266	2,450,672	124.9	59.1	19.2	128.0	84.3
Salaries.....	12,926,877	5,406,113	2,857,263	2,215,597	( <sup>3</sup> )	( <sup>3</sup> )	133.6	89.2	29.0	.....	.....
Wages.....	31,278,755	14,119,848	9,432,368	8,081,803	( <sup>3</sup> )	( <sup>3</sup> )	121.5	50.0	16.5	.....	.....
Paid for contract work.....	368,511	25,099	69,541	56,785	( <sup>3</sup> )	( <sup>3</sup> )	1,368.2	-63.9	22.5	.....	.....
Rent and taxes (including internal revenue).....	1,715,686	505,904	441,089	440,009	( <sup>3</sup> )	( <sup>3</sup> )	239.1	.....	.....	.....	.....
Cost of materials.....	126,111,673	82,191,821	38,912,226	33,482,314	11,113,528	9,641,167	53.4	111.2	18.2	201.3	15.3
Value of products.....	223,610,784	128,435,747	62,995,909	52,621,830	18,708,917	14,518,924	74.1	103.9	19.7	181.3	28.9
Value added by manufacture (value of products less cost of materials).....	97,499,111	46,243,926	24,083,683	19,139,516	7,595,389	4,877,757	110.8	92.0	25.8	152.0	55.7

<sup>1</sup> A minus sign (-) denotes decrease; percentages are omitted where base is less than 100.

<sup>2</sup> Figures for 1904, 1899, 1889, and 1879 include data for establishments engaged in the manufacture of elastic woven goods, and are not strictly comparable with figures for 1909 and 1914.

<sup>3</sup> Figures not available.

<sup>4</sup> Exclusive of internal revenue.

Persons engaged in the industry.—Table 3 shows, for 1914 and 1909, the number of persons engaged in the industry as a whole and in each of the three branches separately, distributed by sex, the average number of wage earners being distributed also by age. The sex and age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the "Explanation of terms."

Table 4 gives, for the several classes of persons engaged in the industry and in each branch, the percent-

ages of increase from 1909 to 1914 and the per cent distribution at the two censuses.

Of the 88,821 persons engaged in the industry in 1914, 79.6 per cent were males and 20.4 per cent were females, the proportion of males being larger by 3.4 per cent than in 1909. The wage earners formed 83.3 per cent of all persons engaged in the industry and the average number increased by 50.3 per cent between 1909 and 1914. For the industry as a whole, increases in the number employed are shown for all classes, except proprietors and firm members and wage

earners under 16 years of age. For the separate industries, a decrease is shown in the number of wage earners employed in the belting and hose industry, while each of the other branches reported increases.

"Rubber goods, not elsewhere specified," shows an increase of 89.4 per cent in the number of wage earners in 1914, as compared with 1909.

Table 3

Table 3		PERSONS ENGAGED IN THE INDUSTRY.						PERSONS ENGAGED IN THE INDUSTRY.					
INDUSTRY AND CLASS.	Census year.	Total.	Male.	Fe-male.	Per cent of total.		INDUSTRY AND CLASS.	Census year.	Total.	Male.	Fe-male.	Per cent of total.	
					Male.	Fe-male.						Male.	Fe-male.
RUBBER GOODS—ALL BRANCHES	1914	88,821	70,716	18,105	79.6	20.4	BOOTS AND SHOES, RUBBER....	1914	20,359	12,407	7,952	60.9	39.1
	1909	56,059	42,702	13,357	76.2	23.8		1909	18,899	11,680	7,219	61.8	38.2
Proprietors and officials.....	1914	1,599	1,570	29	98.2	1.8	Proprietors and officials.....	1914	160	155	5	96.9	3.1
	1909	1,118	1,094	24	97.9	2.1		1909	194	191	3	98.5	1.5
Proprietors and firm members..	1914	87	82	5	94.3	5.7	Proprietors and firm members..	1914	2	2	0	100.0	0.0
	1909	103	93	10	90.3	9.7		1909	44	44	0	100.0	0.0
Salaried officers of corporations..	1914	514	503	11	97.9	2.1	Salaried officers of corporations..	1914	44	44	0	100.0	0.0
	1909	348	344	4	98.9	1.1		1909	44	44	0	100.0	0.0
Superintendents and managers..	1914	998	985	13	98.7	1.3	Superintendents and managers..	1914	114	109	5	95.6	4.4
	1909	667	657	10	98.5	1.5		1909	150	147	3	98.0	2.0
Clerks and other subordinate sala- ried employees.	1914	13,200	9,900	3,300	75.0	25.0	Clerks and other subordinate sala- ried employees.	1914	1,512	1,056	456	69.8	30.2
	1909	5,677	4,256	1,421	75.0	25.0		1909	1,093	813	280	74.4	25.6
Wage earners (average number).....	1914	74,022	59,246	14,776	80.0	20.0	Wage earners (average number).....	1914	18,687	11,196	7,491	59.9	40.1
	1909	49,264	37,352	11,912	75.8	24.2		1909	17,612	10,676	6,936	60.6	39.4
16 years of age and over.....	1914	73,376	58,907	14,469	80.3	19.7	16 years of age and over.....	1914	18,440	11,094	7,346	60.2	39.8
	1909	48,393	36,903	11,490	76.3	23.7		1909	17,162	10,451	6,711	60.9	39.1
Under 16 years of age.....	1914	646	339	307	52.5	47.5	Under 16 years of age.....	1914	247	102	145	41.3	58.7
	1909	871	449	422	51.5	48.5		1909	450	225	225	50.0	50.0
BELTING AND HOSE, RUBBER....	1914	6,205	5,284	921	85.2	14.8	RUBBER GOODS, NOT ELSE- WHERE SPECIFIED.	1914	62,257	53,025	9,232	85.2	14.8
	1909	5,876	5,294	582	90.1	9.9		1909	31,284	27,728	3,556	82.2	17.8
Proprietors and officials.....	1914	116	116	0	100.0	0.0	Proprietors and officials.....	1914	1,323	1,299	24	98.2	1.8
	1909	94	94	0	100.0	0.0		1909	830	809	21	97.5	2.5
Proprietors and firm members..	1914	1	1	0	100.0	0.0	Proprietors and firm members..	1914	85	80	5	94.1	5.9
	1909	1	1	0	100.0	0.0		1909	102	92	10	90.2	9.8
Salaried officers of corporations..	1914	46	46	0	100.0	0.0	Salaried officers of corporations..	1914	424	413	11	97.4	2.6
	1909	32	32	0	100.0	0.0		1909	272	268	4	98.5	1.5
Superintendents and managers..	1914	70	70	0	100.0	0.0	Superintendents and managers..	1914	814	806	8	99.0	1.0
	1909	61	61	0	100.0	0.0		1909	456	449	7	98.5	1.5
Clerks and other subordinate sala- ried employees.	1914	974	756	218	77.6	22.4	Clerks and other subordinate sala- ried employees.	1914	10,714	8,088	2,626	75.5	24.5
	1909	651	516	135	79.3	20.7		1909	3,933	2,927	1,006	74.4	25.6
Wage earners (average number).....	1914	5,115	4,412	703	86.3	13.7	Wage earners (average number).....	1914	50,220	43,638	6,582	86.9	13.1
	1909	5,131	4,684	447	91.3	8.7		1909	26,521	21,992	4,529	82.9	17.1
16 years of age and over.....	1914	5,099	4,401	698	86.3	13.7	16 years of age and over.....	1914	49,837	43,412	6,425	87.1	12.9
	1909	5,094	4,684	430	91.6	8.4		1909	26,137	21,788	4,349	83.4	16.6
Under 16 years of age.....	1914	16	11	5	68.8	31.2	Under 16 years of age.....	1914	383	226	157	59.0	41.0
	1909	37	20	17	54.1	45.9		1909	384	204	180	53.1	46.9

Table 4

Table 4	INDUSTRY AND CLASS.	PERSONS ENGAGED IN THE INDUSTRY.								
		Per cent of increase, <sup>1</sup> 1909-1914.			Per cent distribution.					
		Total.	Male.	Female.	Total.		Male.		Female.	
					1914	1909	1914	1909	1914	1909
RUBBER GOODS—ALL BRANCHES.....	58.4	65.6	35.5	100.0	100.0	100.0	100.0	100.0	100.0	
Proprietors and officials.....	43.0	43.5	.....	1.8	2.0	2.2	2.6	0.2	0.2	
Proprietors and firm members.....	-15.5	.....	.....	0.1	0.2	0.1	0.2	.....	0.1	
Salaried officers of corporations.....	47.7	46.2	.....	0.6	0.6	0.7	0.8	0.1	.....	
Superintendents and managers.....	49.6	49.9	.....	1.1	1.2	1.4	1.5	0.1	0.1	
Clerks and other subordinate salaried employees.....	132.5	132.6	132.2	14.9	10.1	14.0	10.0	15.2	10.6	
Wage earners (average number).....	50.3	58.6	24.0	83.3	87.9	82.8	87.5	81.6	89.2	
16 years of age and over.....	51.6	59.6	25.9	82.6	86.3	83.3	86.4	79.9	86.0	
Under 16 years of age.....	-25.8	-24.5	-27.3	0.7	1.6	0.5	1.1	1.7	3.2	
BELTING AND HOSE, RUBBER.....	5.6	-0.2	58.2	100.0	100.0	100.0	100.0	100.0	100.0	
Proprietors and officials.....	.....	.....	.....	1.9	1.6	2.2	1.8	.....	.....	
Proprietors and firm members.....	.....	.....	.....	( <sup>2</sup> )	( <sup>2</sup> )	.....	( <sup>2</sup> )	.....	.....	
Salaried officers of corporations.....	.....	.....	.....	0.7	0.5	0.9	0.6	.....	.....	
Superintendents and managers.....	.....	.....	.....	1.1	1.0	1.3	1.2	.....	.....	
Clerks and other subordinate salaried employees.....	49.6	46.5	61.5	15.7	11.1	14.3	9.7	23.7	23.2	
Wage earners (average number).....	-0.3	-5.8	57.3	82.4	87.3	83.5	88.5	76.3	76.8	
16 years of age and over.....	0.1	-5.6	62.3	82.2	86.7	83.3	88.1	75.8	73.9	
Under 16 years of age.....	.....	.....	.....	0.3	0.6	0.2	0.4	0.5	2.9	

<sup>1</sup> A minus sign (-) denotes decrease; percentages are omitted where base is less than 100.

<sup>2</sup> Less than one-tenth of 1 per cent.

Table 4—Continued.

Table 4—Continued.	PERSONS ENGAGED IN THE INDUSTRY.									
	INDUSTRY AND CLASS.	Per cent of increase, <sup>1</sup> 1903-1914.		Per cent distribution.						
		Total.	Male.	Female.	Total.		Male.		Female.	
					1914	1909	1914	1909	1914	1909
BOOTS AND SHOES, RUBBER.....	7.7	6.2	10.2	100.0	100.0	100.0	100.0	100.0	100.0	
Proprietors and officials.....	-17.5	-18.8	.....	0.8	1.0	1.2	1.6	0.1	( <sup>2</sup> )	
Proprietors and firm members.....	.....	.....	.....	( <sup>2</sup> )	.....	( <sup>2</sup> )	.....	.....	.....	
Salaried officers of corporations.....	.....	.....	.....	0.2	0.2	0.4	0.4	.....	.....	
Superintendents and managers.....	-24.0	-25.9	.....	0.6	0.8	0.9	1.3	0.1	( <sup>2</sup> )	
Clerks and other subordinate salaried employees.....	38.3	29.9	62.9	7.4	5.8	8.5	7.0	5.7	3.9	
Wage earners (average number).....	6.1	4.9	8.0	91.8	93.2	90.2	91.4	94.2	96.1	
16 years of age and over.....	7.4	6.2	9.5	90.6	90.8	89.4	89.5	92.4	93.0	
Under 16 years of age.....	-45.1	-54.7	-35.6	1.2	2.4	0.8	1.9	1.8	3.1	
RUBBER GOODS, NOT ELSEWHERE SPECIFIED.....	99.0	106.1	66.2	100.0	100.0	100.0	100.0	100.0	100.0	
Proprietors and officials.....	59.4	60.6	.....	2.1	2.7	2.4	3.1	0.3	0.4	
Proprietors and firm members.....	-16.7	.....	.....	0.1	0.3	0.2	0.4	0.1	0.2	
Salaried officers of corporations.....	55.9	54.1	.....	0.7	0.9	0.8	1.0	0.1	0.1	
Superintendents and managers.....	78.5	79.5	.....	1.3	1.5	1.5	1.7	0.1	0.1	
Clerks and other subordinate salaried employees.....	172.4	170.3	161.0	17.2	12.6	15.3	11.4	28.4	18.1	
Wage earners (average number).....	89.4	98.4	45.3	80.7	84.8	82.3	85.5	71.3	81.5	
16 years of age and over.....	90.7	99.2	47.7	80.1	83.5	81.9	84.7	69.6	78.3	
Under 16 years of age.....	-0.3	10.8	-12.8	0.6	1.2	0.4	0.8	1.7	2.2	

<sup>1</sup> A minus sign (—) denotes decrease; percentages are omitted where base is less than 100.<sup>2</sup> Less than one-tenth of 1 per cent.

Wage earners employed, by months.—The following table gives, for the industry, the total number of wage earners employed on the 15th of each month, or the nearest representative day, for 1914 and 1909, and the average number employed during each month for 1904, together with the percentage which the number reported for each month forms of the greatest number reported for any month.

Table 5

MONTH.	WAGE EARNERS IN THE INDUSTRY.					
	Number. <sup>1</sup>			Per cent of maximum.		
	1914	1909	1904	1914	1909	1904
January.....	70,590	45,945	44,426	85.9	86.8	98.1
February.....	74,157	46,289	44,069	90.2	87.5	97.3
March.....	77,759	47,956	44,643	94.6	90.7	98.6
April.....	80,967	48,864	42,841	98.5	92.4	94.6
May.....	82,193	49,006	42,424	100.0	91.9	93.7
June.....	78,650	48,803	43,488	95.7	92.3	96.0
July.....	74,148	48,887	42,916	90.2	92.4	94.8
August.....	68,414	48,640	43,518	83.2	92.0	96.1
September.....	70,412	50,338	43,638	85.7	95.2	96.4
October.....	70,441	51,369	44,325	85.7	97.1	97.9
November.....	69,954	52,540	44,906	85.1	99.3	99.1
December.....	70,579	52,902	45,291	85.9	100.0	100.0

<sup>1</sup> The figures for 1914 and 1909 represent the number employed on the 15th of each month, or the nearest representative day; those for 1904, the average number employed during the month.

May was the month of maximum employment in 1914, 82,193 being reported, while the minimum number, 68,414, was shown for August. In both 1909 and 1904 the largest number of wage earners was reported for December, and the smallest was reported for

January in 1909 and for May in 1904. The greatest stability of employment is shown for 1904, the minimum number representing 93.7 per cent of the maximum, while the greatest fluctuation in number employed appears for 1914 when the smallest number reported formed 83.2 per cent of the largest number.

Table 6 gives the total average number of wage earners employed during 1914, together with the total number employed on the 15th of each month, or the nearest representative day, for the industry as a whole, and for each branch separately, by states.

For the belting and hose industry, June was the month of maximum employment and December, reporting 93.1 per cent of the maximum number, was the month of minimum employment. In the manufacture of rubber boots and shoes, the largest number was reported for December and the smallest for August, the variation being 17.9 per cent.

"Rubber goods, not elsewhere specified" reported the maximum number for May, and the minimum number, 76.5 per cent of the maximum, was shown for November. Among the states shown for this branch of the rubber industry, Illinois shows the greatest stability of employment, the minimum number forming 86.4 per cent of the maximum. Rhode Island shows the greatest fluctuation in employment, the smallest number forming only 43.8 per cent of the largest number. In this state November and April represented the extremes of employment.

Table 6

Table 6	WAGE EARNERS: 1914. [Month of maximum employment is indicated by <b>boldface</b> figures and that of minimum by <i>italic</i> figures.]														
	INDUSTRY AND STATE.	Average number employed during year.	Number employed on 15th day of the month or nearest representative day.												Per cent minimum is of maximum.
			Janu-ary.	Febru-ary.	March.	April.	May.	June.	July.	August.	Septem-ber.	Octo-ber.	Novem-ber.	Decem-ber.	
RUBBER GOODS—ALL BRANCHES....	74,022	70,590	74,157	77,759	80,967	82,193	78,650	74,148	68,414	70,412	70,441	63,954	79,579	83.2	
BELTING AND HOSE, RUBBER.															
United States.....	5,115	5,103	5,044	5,068	5,137	5,171	5,274	5,243	5,041	5,166	5,183	5,049	4,910	93.1	
New Jersey.....	2,239	2,204	2,241	2,269	2,283	2,343	2,381	2,310	2,199	2,197	2,195	2,114	2,152	89.5	
BOOTS AND SHOES, RUBBER.															
United States.....	18,687	18,286	18,325	18,613	18,513	18,776	18,752	17,491	16,759	18,617	19,377	20,340	20,398	82.1	
Massachusetts.....	8,087	7,796	7,760	7,963	8,110	8,209	8,259	7,577	8,026	7,845	8,117	8,828	8,554	85.8	
RUBBER GOODS, NOT ELSEWHERE SPECIFIED.															
United States.....	50,220	47,201	50,788	54,078	57,317	58,246	54,624	51,414	46,617	46,629	45,881	44,574	43,271	76.5	
California.....	226	187	199	216	217	232	231	242	240	222	245	240	241	76.3	
Connecticut.....	2,455	2,430	2,535	2,880	3,130	3,193	3,099	2,778	2,170	1,517	1,882	1,755	1,991	55.9	
Illinois.....	563	556	569	597	559	601	598	677	519	521	525	529	545	86.4	
Indiana.....	1,490	1,407	1,541	1,632	1,766	1,836	1,763	1,678	1,406	1,297	1,174	1,190	1,298	63.9	
Massachusetts.....	4,743	5,057	5,181	5,282	5,189	5,164	5,170	4,462	4,159	4,339	4,372	4,302	4,259	78.4	
Missouri.....	235	262	281	266	272	245	200	194	215	212	211	219	243	64.0	
New Jersey.....	6,316	5,899	6,188	6,391	6,556	6,846	6,906	6,621	6,174	6,121	6,123	6,013	5,984	85.0	
New York.....	3,633	3,741	3,849	3,918	3,956	3,973	3,918	3,734	3,288	3,578	3,590	2,967	2,584	75.1	
Ohio.....	21,705	19,479	21,577	23,524	25,409	25,439	22,558	21,657	20,025	20,410	20,246	20,118	20,018	76.6	
Pennsylvania.....	3,172	2,972	3,179	3,344	3,592	3,698	3,621	3,233	3,233	3,109	2,671	2,668	2,744	72.1	
Rhode Island.....	1,541	1,753	1,765	1,879	2,011	1,986	1,875	1,827	1,341	1,035	1,107	887	1,032	43.8	
Wisconsin.....	1,637	1,556	1,582	1,717	1,768	1,920	1,855	1,774	1,580	1,587	1,587	1,464	1,454	70.6	

**Prevailing hours of labor.**—In Table 7 the average number of wage earners reported, for 1914 and 1909, for the rubber industry, has been classified according to the number of hours of labor per week prevailing in the establishments in which they were employed.

A similar classification is given for each branch separately, by states. The number employed in each establishment was classified as a total, even though a few employees worked a greater or smaller number of hours.

**Table 7**

Table 7	INDUSTRY AND STATE.	Cen- sus year.	AVERAGE NUMBER OF WAGE EARNERS.						
			Total.	In establishments where the prevailing hours of labor per week were—					
				48 and under	Be- tween 48 and 54.	54.	Be- tween 54 and 60.	60.	Over 60.
	RUBBER GOODS— ALL BRANCHES.	1914 1909	74,022 49,264	3,216 183	9,959 1,201	23,969 15,555	31,739 23,457	4,750 8,881	389 7
	BELTING AND HOSE, RUBBER.								
	United States.....	1914 1909	5,115 5,131	.....	.....	1,091	2,822 4,439	1,202 692	.....
	New Jersey.....	1914 1909	2,239 1,913	.....	.....	.....	1,497 1,333	742 580	.....
	BOOTS AND SHOES, RUBBER.								
	United States.....	1914 1909	18,687 17,612	.....	338	14,859 10,142	3,490 4,537	2,933	.....
	Massachusetts.....	1914 1909	8,087 6,928	.....	.....	8,087 6,928	.....	.....	.....
	RUBBER GOODS, NOT ELSEWHERE SPECIFIED.								
	United States.....	1914 1909	50,220 26,521	3,216 163	9,621 1,201	8,019 5,413	25,427 14,481	3,548 5,256	389 7
	California.....	1914 1909	226 74	55 34	137	34	.....	.....	.....
	Connecticut.....	1914 1909	2,485 2,115	.....	366 131	184	1,568 1,767	367 217	.....
	INDUSTRY AND STATE.	Cen- sus year.	AVERAGE NUMBER OF WAGE EARNERS.						
			Total.	In establishments where the prevailing hours of labor per week were—					
				48 and under	Be- tween 48 and 54.	54.	Be- tween 54 and 60.	60.	Over 60.
	RUBBER GOODS, NOT ELSEWHERE SPECIFIED— continued.								
	Illinois.....	1914 1909	563 104	2 12	38 4	7 25	488 61	28 2	.....
	Indiana.....	1914 1909	1,499 787	.....	597	39	448 328	415 459	.....
	Massachusetts.....	1914 1909	4,743 3,418	.....	246 5	143 6	4,348 2,229	6 30	.....
	Missouri.....	1914 1909	235	49	19	20	147	.....	.....
	New Jersey.....	1914 1909	6,316 4,255	10 .....	1,139 15	41	3,666 2,571	1,460 1,659	.....
	New York.....	1914 1909	3,633 2,066	27 101	797 82	1,808 88	305 939	686 856	10
	Ohio.....	1914 1909	21,705 10,382	3,057 .....	5,848 843	99 4,050	12,297 5,158	64 301	340
	Pennsylvania.....	1914 1909	3,172 1,205	12 5	417 39	2,704 5	39 784	372	.....
	Rhode Island.....	1914 1909	1,541 774	.....	744 34	3	756 647	41 90	.....
	Wisconsin.....	1914 1909	1,637 212	.....	17 38	.....	1,245	375 169	.....

The tendency toward a shorter working-day is emphasized by this table. In 1914, 50.2 per cent of the wage earners were employed in establishments in which the prevailing hours per week were 54 or fewer, while in 1909 only 34.3 per cent of the wage earners were employed in establishments of this class. On the other hand, these establishments which operated 60 hours or more per week employed 6.9 per cent of the wage earners in 1914, as compared with 18 per cent in 1909.

In 1914 more than half of the wage earners employed in the belting-and-hose and other-rubber-goods branches of the industry were reported for establishments operating between 54 and 60 hours per week, while in the boot-and-shoe branch nearly four-fifths were reported for those operating 54 hours per week.

For "rubber goods, not elsewhere specified," 58.5 per cent of the wage earners were reported by establishments operating more than 54 hours per week, as compared with 74.4 per cent in 1909.

**Character of ownership.**—Table 8 presents statistics concerning the character of ownership, or legal organization, of establishments in the rubber industry for 1914 and 1909.

CHARACTER OF OWNERSHIP.	Census year.	Number of establishments.	Average number of wage-earners.	Value of products.	Value added by manufacture.
All classes.....	1914 1909	342 267	74,022 49,264	\$300,993,796 197,394,638	\$137,959,083 74,649,536
Individuals.....	1914 1909	40 44	774 685	2,350,052 2,365,077	891,744 844,030
Corporations.....	1914 1909	283 196	73,040 48,349	297,939,143 194,022,094	136,729,985 73,386,455
All others.....	1914 1909	19 27	208 230	704,601 937,467	337,354 419,051
Per cent distribution:					
Individuals.....	1914 1909	11.7 16.5	1.0 1.4	0.8 1.2	0.6 1.1
Corporations.....	1914 1909	82.7 73.4	98.7 98.1	99.0 98.3	99.1 98.3
All others.....	1914 1909	5.6 10.1	0.3 0.5	0.2 0.5	0.2 0.6

Ninety-nine per cent of the total value of the product of the rubber industry in 1914 was reported for establishments operated by incorporated companies, as compared with 98.3 per cent in 1909. The value of products for this form of organization increased \$103,847,049, or 53.5 per cent, from 1909 to 1914, while the number of establishments and value of products for the other forms of ownership show a decrease.

**Size of establishments.**—The tendency of the industry to become concentrated in large establishments is indicated by the statistics given in Table 9.

VALUE OF PRODUCT.	Census year.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.
All classes.....	1914 1909	342 267	74,022 49,264	\$300,993,796 197,394,638	\$137,959,083 74,649,536
Less than \$5,000.....	1914 1909	26 20	32 24	64,221 53,582	35,941 24,688
\$5,000 to \$20,000.....	1914 1909	52 45	259 204	528,766 500,503	286,135 239,568
\$20,000 to \$100,000.....	1914 1909	84 65	1,485 987	4,212,430 3,340,262	1,938,851 1,421,341
\$100,000 to \$1,000,000.....	1914 1909	117 88	13,965 9,672	45,569,371 34,000,274	19,250,061 12,509,325
\$1,000,000 and over.....	1914 1909	63 49	58,281 38,377	250,619,008 159,500,017	116,448,095 60,454,614
Per cent distribution:					
Less than \$5,000.....	1914 1909	7.6 7.5	(1) (1)	(1) (1)	(1) (1)
\$5,000 to \$20,000.....	1914 1909	15.2 16.9	0.3 0.4	0.2 0.3	0.2 0.3
\$20,000 to \$100,000.....	1914 1909	24.6 24.3	2.0 2.0	1.4 1.7	1.4 1.9
\$100,000 to \$1,000,000..	1914 1909	34.2 33.0	18.9 19.6	15.1 17.2	14.0 16.8
\$1,000,000 and over.....	1914 1909	18.4 18.4	78.7 77.9	83.3 80.8	84.4 81.0

<sup>1</sup> Less than one-tenth of 1 per cent.

The most important group at each census, as measured by value of products, was that comprising establishments with products of over \$1,000,000, although the group having products valued at "\$100,000 to \$1,000,000" shows the largest number of establishments. The former group reported 83.3 per cent of the total value of products in 1914 and 80.8 per cent in 1909. Each of the other groups reported increases in the total value of products but their relative importance decreased.

The average value of products per establishment for the industry increased from \$739,306 in 1909 to \$880,099 in 1914, and the average number of wage earners per establishment from 185 in 1909 to 216 in 1914.

Table 10 shows the size of establishments in 1914 and 1909, as measured by the number of wage earners employed, for the industry as a whole and for each branch separately, by states.

Of the 342 establishments reported for the rubber industry in 1914, 10 employed no wage earners. These were small establishments in which the work was done by the proprietors and firm members. Some of these employed a few wage earners for a short time; but the number was so small and the period of employment so short that in estimating the average number, as described in the "Explanation of terms," no wage earners could be shown.

In 1914 a majority of the establishments, 69 per cent, employed not more than 100 wage earners, and



only 7.4 per cent of the wage earners were reported by these establishments.

The establishments employing more than 500 wage earners, although forming only 11.7 per cent of the total number of establishments, gave employment to 70.2 per cent of the wage earners. In 1909 similar percentages for this group were 10.1 and 65.3 per cent, respectively.

There were 13 establishments that reported over 1,000 wage earners each. One of these is included in the belting-and-hose branch of the industry; 5 in the boot-and-shoe branch; and 7 in the other rubber-goods branch. Four of these large plants are located in Massachusetts, 4 in Ohio, and 1 each in Connecticut, Indiana, Michigan, Rhode Island, and Wisconsin.

Table 10

Table 10	INDUSTRY AND STATE.	Census year.	ESTABLISHMENTS EMPLOYING—																		
			TOTAL.		No wage earners.	1 to 5 wage earners.		6 to 20 wage earners.		21 to 50 wage earners.		51 to 100 wage earners.		101 to 250 wage earners.		251 to 500 wage earners.		501 to 1,000 wage earners.		Over 1,000 wage earners.	
			Establishments.	Wage earners (average number).	Establishments.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.
RUBBER GOODS—ALL BRANCHES.	1914 1909	342 267	74,022 49,264	10 5	58 62	167 182	75 53	868 607	60 41	1,978 1,247	33 19	2,501 1,325	37 39	5,944 6,138	29 21	10,602 7,618	27 15	18,881 10,784	13 12	23,081 21,363	
BELTING AND HOSE, RUBBER.																					
United States.....	1914 1909	18 18	5,115 5,131	..... .....	..... 1	..... 2	1 1	15 12	2 .....	75 .....	3 3	193 196	6 6	1,117 962	2 3	724 1,093	3 3	1,948 1,818	1 1	1,043 1,048	
New Jersey.....	1914 1909	9 9	2,239 1,913	..... .....	..... .....	..... .....	1 1	15 12	1 .....	28 .....	2 3	140 196	2 3	290 516	1 .....	339 487	2 1	1,427 702	..... .....	..... .....	
BOOTS AND SHOES, RUBBER.																					
United States.....	1914 1909	23 22	18,687 17,612	..... .....	..... .....	..... .....	2 1	13 7	1 .....	33 .....	..... .....	..... .....	2 3	355 453	7 7	2,935 2,810	6 4	4,824 3,110	5 7	10,527 11,232	
Massachusetts.....	1914 1909	9 8	8,087 6,928	..... .....	..... .....	..... .....	2 1	13 7	..... .....	..... .....	..... .....	..... .....	1 .....	137 .....	3 2	1,387 947	2 1	1,714 601	2 3	4,973 5,236	
RUBBER GOODS, NOT ELSEWHERE SPECIFIED.																					
United States.....	1914 1909	301 227	50,220 26,521	10 5	58 61	167 180	72 51	840 588	57 41	1,870 1,247	30 16	2,308 1,129	29 30	4,472 4,723	20 11	6,943 3,715	18 8	12,109 5,856	7 4	21,511 9,683	
California.....	1914 1909	11 5	226 74	..... .....	5 2	20 4	2 1	15 18	3 2	101 52	1 .....	90 .....	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....	
Connecticut.....	1914 1909	18 13	2,485 2,115	..... .....	2 3	10 7	6 1	69 13	3 2	99 58	2 3	137 222	1 2	146 266	2 .....	649 .....	2 1	1,375 534	..... 1	..... 1,015	
Illinois.....	1914 1909	17 13	563 104	1 .....	5 6	14 15	7 6	65 62	2 1	66 27	1 .....	90 .....	..... .....	..... .....	1 .....	328 .....	..... .....	..... .....	..... .....	..... .....	
Indiana.....	1914 1909	9 11	1,499 787	..... .....	4 .....	8 .....	1 .....	13 .....	4 2	123 53	1 .....	66 .....	1 3	150 416	2 1	563 297	1 .....	597 .....	..... .....	..... .....	
Massachusetts.....	1914 1909	42 29	4,743 3,418	..... .....	10 6	26 20	11 5	125 54	8 6	241 222	5 4	360 291	3 4	455 657	4 3	1,490 1,184	..... 1	990 .....	1 .....	2,046 .....	
Missouri.....	1914 1909	6 .....	235 .....	..... .....	..... .....	..... .....	4 .....	66 .....	1 .....	22 .....	..... .....	..... .....	1 .....	147 .....	..... .....	..... .....	..... .....	..... .....	..... .....	..... .....	
New Jersey.....	1914 1909	53 36	6,316 4,255	..... 2	5 4	22 19	11 7	143 90	13 4	447 103	9 6	677 347	7 10	1,114 1,606	5 .....	1,863 .....	3 3	2,050 2,090	..... .....	..... .....	
New York.....	1914 1909	45 53	3,633 2,066	5 2	14 17	36 44	9 18	96 204	7 0	222 267	2 .....	194 .....	3 4	556 658	2 3	641 893	3 .....	1,888 .....	..... .....	..... .....	
Ohio.....	1914 1909	54 37	21,705 10,382	1 .....	8 10	16 30	7 7	162 84	8 7	230 223	6 1	453 95	9 5	1,376 701	1 2	340 646	4 2	2,774 1,634	4 2	16,354 6,969	
Pennsylvania.....	1914 1909	19 13	3,172 1,205	1 .....	4 3	9 14	3 2	42 31	5 4	179 131	..... 1	84 .....	1 1	128 250	2 2	694 695	3 .....	2,120 .....	..... .....	..... .....	
Rhode Island.....	1914 1909	6 5	1,541 774	..... .....	1 .....	3 .....	..... .....	..... .....	2 2	71 73	2 1	165 90	..... .....	..... .....	..... .....	..... .....	2 1	1,305 608	..... .....	..... .....	
Wisconsin.....	1914 1909	5 3	1,637 212	..... .....	..... 1	..... 5	..... .....	2 .....	34 .....	1 38	..... .....	..... .....	1 1	174 169	1 .....	375 .....	..... .....	..... .....	1 .....	1,054 .....	

Engines and power.—Table 11 shows, for 1914, 1909, and 1904, for the rubber industry, the number and horsepower of engines and motors employed in generating power (including electric motors operated

by purchased current). It also shows separately the number and horsepower and per cent distribution of electric motors operated by current generated in the establishments reporting.

Table 11

POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.					
				Amount.			Per cent distribution.		
	1914	1909	1904	1914	1909	1904	1914	1909	1904
Primary power, total.....	2,237	1,013	503	100,543	122,436	80,808	100.0	100.0	100.0
Owned.....	627	580	503	105,259	113,812	81,202	82.8	93.0	97.0
Steam engines and turbines <sup>1</sup> .....	556	529	441	158,547	106,614	79,661	79.5	87.1	91.8
Internal-combustion engines.....	30	23	13	1,691	2,361	307	0.8	1.9	0.4
Water wheels, turbines, and motors.....	41	37	49	6,021	4,808	4,234	2.5	3.9	4.9
Rented.....	1,610	424	(2)	34,284	8,624	2,000	17.2	7.0	3.0
Electric.....	1,610	424	(2)	33,983	7,909	1,738	17.0	6.5	2.0
Other.....				301	715	868	0.2	0.6	1.0
Electric.....	6,176	1,502		114,803	27,591	10,452	100.0	100.0	100.0
Rented.....	1,610	424	(2)	33,983	7,909	1,738	20.0	28.7	16.6
Generated by establishments reporting.....	4,566	1,078	373	80,820	19,682	8,714	70.4	71.3	83.4

<sup>1</sup> Figures for horsepower include for 1909 the amounts reported under the head of "other" owned power.<sup>2</sup> Not reported.

The total number of engines and motors used in generating primary horsepower more than doubled during the 5-year period 1909-1914, and the total amount of primary horsepower generated shows an increase of 63 per cent for 1914 as compared with 1909. Although the steam power increased 51,904 horsepower, or 48.7 per cent, during the later 5-year period and forms 79.5 per cent of the primary power reported, in 1914, the largest relative increase is shown for rented electric power. In 1909 rented electric power formed

6.5 per cent of the total primary power reported and in 1914, 17 per cent, and the actual increase amounted to 26,074 horsepower, or 329.7 per cent.

**Fuel.**—The principal fuel used in the industry in 1914 was bituminous coal, of which 1,064,761 short tons were consumed. In addition, 131,038 tons (2,240 pounds) of anthracite coal, 376,324 thousand cubic feet of gas, 18,843 barrels of oil, and 3,131 tons (2,000 pounds) of coke were reported.

## SPECIAL STATISTICS RELATING TO PRODUCTS.

**Products.**—Table 12 gives in detail, for 1914, the quantities and values of the principal products of the rubber industry for the United States. Data for earlier censuses are not available.

PRODUCT.	Number and amount.	PRODUCT.	Number and amount.
Total value.....	\$300,993,796	Belting, value.....	\$7,989,405
Boots, rubber:		Hose, value.....	\$10,853,993
Pairs.....	4,024,488	Packing, value.....	\$3,507,651
Value.....	\$12,047,934	Clothing, value.....	\$0,799,515
Shoes, rubber:		Druggists' and stationers' sundries, value.....	\$7,511,755
Pairs.....	57,211,728	All other manufactures of rubber, value.....	\$40,133,250
Value.....	\$37,858,222	Scrap and old rubber, sold and on hand, value.....	\$1,250,836
Tires:		Reclaimed rubber, sold and on hand, value.....	\$11,134,958
Automobile, pneumatic—		All other products, value..	\$8,885,008
Casings—			
Number.....	8,021,371		
Value.....	\$105,878,951		
Inner tubes—			
Number.....	7,907,351		
Value.....	\$20,101,084		
Motorcycle and bicycle (including aeroplane tires)—			
Number.....	3,728,138		
Value.....	\$6,905,853		
Solid, all kinds, value.	\$13,735,681		

<sup>1</sup> In addition, products to the value of \$752,503 were reported by establishments assigned to other classifications.

The 7 establishments classified as "belting" reported rubber hose to the value of \$3,330,173, and other rubber goods to the value of \$3,405,960, while the 11 establishments manufacturing hose as their product of chief value reported belting to the value of \$1,300,393, and other rubber products to the value of \$2,729,118, and those establishments making other rubber goods reported belting to the value of \$3,081,464, and hose to the value of \$6,712,267.

The establishments in the industry were classified according to the product of chief value, but in the manufacture of the various products there was much overlapping between the branches of the industry. For example, there were 18 establishments that reported the manufacture of belting and hose as a chief product, but 18 additional establishments reported some belting or hose.

In 1914 there were 36 establishments that manufactured rubber belting and hose, 17 of which were in New Jersey, 5 in Ohio, 4 in Massachusetts, 3 each in California and New York, and 1 each in Connecticut, Delaware, Illinois, and Pennsylvania; 24 establishments made rubber boots and shoes, 9 of which were in Massachusetts, 5 in Connecticut, 4 in Rhode Island, 2 in New Jersey, and 1 each in Indiana, New York, Ohio, and Wisconsin; and 95 establishments made rubber tires, including inner tubes, 27 of which were in Ohio, 19 in New Jersey, 9 in Pennsylvania, 7 in Massachusetts, 6 each in Connecticut and Indiana, 5 in New York, 4 in Wisconsin, 3 in California, 2 each in Illinois, Michigan, and Rhode Island, and 1 each in Kentucky, Maryland, and Washington.

The total value of products for the industry as a whole was \$300,993,796 in 1914, of which \$109,658,605, or more than one-third, was reported by the state of Ohio. Massachusetts, New Jersey, and Connecticut, in the order named, were the next states in importance.

Rubber boots represented 4.2 per cent of the total value of products, and rubber shoes 12.6 per cent. Massachusetts was the leading state in the output of both rubber boots and rubber shoes, producing 1,850,098 pairs of rubber boots, valued at \$7,027,168, and 22,760,889 pairs of rubber shoes, valued at \$13,486,639. Connecticut and Indiana were the next states in importance in the manufacture of rubber boots, and Connecticut, Rhode Island, and Indiana in the output of rubber shoes.

Tires are the chief product of the rubber industry, the output of these in 1914 being valued at \$146,421,569, or 48.6 per cent of the total value of products for the entire industry. Ohio was the leading state in the manufacture of pneumatic automobile tires, reporting 4,747,666 casings, valued at \$61,723,117, or 58.4 per cent of the total value for the United States, and 4,102,959 inner tubes, valued at \$10,052,961, or 50 per cent of the total value. Massachusetts, New Jersey, Michigan, Wisconsin, and Pennsylvania, in the order named, followed Ohio in importance in the production of casings, while New Jersey, Massachusetts, Indiana, and Pennsylvania were the states next in importance in the output of inner tubes. New Jersey reported 806,856 casings, valued at \$9,600,776, and 1,618,098 inner tubes, valued at \$4,403,444, Indiana reported 628,799 inner tubes, valued at \$1,088,473, and Pennsylvania, 348,592, valued at \$1,031,314. The production of solid tires for automobiles and other vehicles is also highly centralized in Ohio, which reported \$11,897,710, or 86.6 per cent of the total value of this product, in 1914. Pennsylvania was the principal state in the manufacture of motorcycle and bicycle tires, while Ohio and Indiana were the states next in importance. Ohio produced 643,419 of such tires, valued at \$1,570,244, and Indiana, 770,447 tires, valued at \$1,293,202.

New Jersey, with a product valued at \$3,207,681, was the leading state in the manufacture of rubber belting, Ohio being second, with \$2,154,696, and Massachusetts third, with \$1,550,705. The same states in the order named led in the value of rubber hose produced, the totals being \$6,066,500, \$4,194,576, and \$2,722,939, respectively. New Jersey reported rubber packing, to the value of \$1,823,568, this amount being more than one-half of the total for the United States. Ohio, with \$851,807, was next in importance in this branch of the rubber industry. In the manufacture of rubber clothing, Massachusetts was the leading state, reporting a product valued at \$3,394,807,

or nearly one-half the total value for the United States.

Ohio was the leading state in the output of druggists' and stationers' sundries made of rubber, reporting \$2,513,949, or slightly more than one-third of the total value of this class of products. Massachusetts was next in importance, with \$1,155,323, and Rhode Island, New York, and Connecticut followed in the order named.

The \$40,133,250 reported for "all other manufactures of rubber," consisted largely of rubberized fabrics, including carriage and automobile cloth, hardrubber,

mechanical rubber, rubber soles and heels, mats and matting, rubber thread, and jar rings, for each of which products valued at over \$1,000,000 were reported.

Imports and exports.—Table 13 gives the value of the imports and exports of the manufactures of rubber for the fiscal years (ending June 30) from 1909 to 1915, inclusive. The figures are taken from the Statistical Abstract of the United States, issued by the Bureau of Foreign and Domestic Commerce, Department of Commerce.

Table 13

KIND.	VALUE OF THE IMPORTS AND EXPORTS OF THE MANUFACTURES OF RUBBER FOR THE YEARS ENDING JUNE 30—						
	1915	1914	1913	1912	1911	1910	1909
Imports, total.....	\$802,122	\$1,559,812	\$1,294,536	\$915,834	\$936,408	\$1,234,914	\$1,463,589
Exports, total.....	14,767,513	12,441,220	14,324,894	12,822,918	12,452,562	10,175,634	7,432,832
Belting, hose, and packing.....	1,807,848	2,372,887	2,605,551	2,315,424	2,163,416	1,960,825	1,498,445
Boots and shoes.....	2,780,325	1,113,495	1,438,283	1,502,890	2,219,430	1,984,739	1,292,673
Tires—							
Automobile.....	4,963,270	3,505,267	3,943,220	2,657,809	2,085,107		
All other.....	576,602	563,372	611,458	546,833	592,470		
Scrap and old rubber.....	291,421	598,287	880,442	780,188	723,664	578,944	402,897
Reclaimed rubber.....	822,561	834,440	932,904	875,501	781,050	535,795	414,861
All other manufactures of rubber.....	3,525,486	3,453,472	3,913,036	4,144,273	3,886,825	5,115,331	3,823,956

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## DETAIL STATE TABLES.

Table 14 shows, for 1914, 1909, and 1904, the number of establishments, average number of wage earners, primary horsepower, wages, cost of materials, and value of products for the rubber industry and, by

states, for the three branches of the industry. Table 15 presents, for 1914, the more detailed statistics of the rubber industry and, by states, for the three branches of the industry.

TABLE 14.—COMPARATIVE SUMMARY, BY STATES, FOR 1914, 1909, AND 1904.

INDUSTRY AND STATE.	Census year.	Number of establishments.	Wage earners (average number).	Primary horsepower.	Expressed in thousands.		
					Wages.	Cost of materials.	Value of products.
RUBBER GOODS—ALL BRANCHES.	1914	342	74,022	199,543	\$44,167	\$163,035	\$300,994
	1909	267	49,264	122,436	25,137	122,745	197,395
	1904	265	43,873	86,808	20,084	80,002	148,015
BELTING AND HOSE, RUBBER.							
United States.....	1914	18	5,115	22,995	2,902	12,967	23,561
	1909	18	5,131	17,471	2,473	10,976	19,238
	1904	19	3,698	12,343	1,805	9,090	14,954
New Jersey.....	1914	9	2,239	10,260	1,260	5,218	10,341
	1909	9	1,913	8,133	985	5,024	8,302
	1904	12	2,192	7,603	1,112	6,141	9,916
All other states.....	1914	9	2,876	12,735	1,642	7,749	13,220
	1909	9	3,218	9,338	1,488	5,952	10,936
	1904	7	1,506	4,740	693	2,949	5,038
BOOTS AND SHOES, RUBBER.							
United States.....	1914	23	18,687	24,621	9,986	23,956	53,822
	1909	22	17,612	25,903	8,544	29,577	49,721
	1904	22	18,991	26,084	8,867	32,000	70,065
Massachusetts.....	1914	9	8,087	8,177	4,468	10,455	23,789
	1909	8	6,928	8,330	3,376	10,640	18,722
	1904	7	7,674	8,987	3,754	13,178	39,035
All other states.....	1914	14	10,600	16,444	5,518	13,501	30,033
	1909	14	10,684	17,573	5,168	18,937	30,999
	1904	15	11,317	17,097	5,113	18,822	31,030
RUBBER GOODS, NOT ELSEWHERE SPECIFIED.							
United States.....	1914	301	50,220	151,927	31,279	126,112	223,611
	1909	227	26,521	79,062	14,120	82,192	128,436
	1904	224	21,184	48,381	9,412	38,912	62,996
California.....	1914	11	226	1,180	172	479	905
	1909	5	74	209	61	169	323
	1904	4	45	44	30	131	219
RUBBER GOODS, NOT ELSEWHERE SPECIFIED—CON.							
Connecticut.....	1914	18	2,465	9,598	\$1,413	\$5,645	\$10,188
	1909	13	2,115	6,136	1,116	7,126	11,005
	1904	21	3,143	5,797	1,283	5,342	8,868
Illinois.....	1914	17	563	1,951	342	965	1,980
	1909	13	104	293	53	200	381
	1904	11	1,179	1,473	459	1,671	2,848
Indiana.....	1914	9	1,499	5,984	839	4,265	6,333
	1909	11	787	5,276	410	2,968	4,313
	1904	6	558	2,325	255	1,367	2,357
Massachusetts.....	1914	42	4,743	17,515	2,845	14,142	23,011
	1909	29	3,418	10,123	1,769	11,005	15,796
	1904	47	5,003	10,441	2,208	8,829	14,098
New Jersey.....	1914	53	6,316	22,214	3,681	15,172	25,458
	1909	36	4,255	12,906	2,300	13,032	19,543
	1904	24	1,728	5,609	846	2,959	4,836
New York.....	1914	45	3,633	11,915	1,887	4,686	10,228
	1909	53	2,066	6,868	1,058	5,659	8,784
	1904	55	2,692	4,399	1,113	5,000	8,266
Ohio.....	1914	54	21,705	58,672	14,578	58,737	109,659
	1909	37	10,382	26,885	5,660	32,442	53,911
	1904	27	4,815	13,945	2,318	10,226	15,964
Pennsylvania.....	1914	19	3,172	8,970	1,744	7,299	12,177
	1909	13	1,205	5,300	566	3,242	4,686
	1904	13	751	2,365	366	1,313	2,220
Rhode Island.....	1914	6	1,541	3,350	821	4,062	6,069
	1909	5	774	1,075	320	2,075	3,143
	1904	9	991	1,215	417	1,639	2,582
All other states.....	1914	27	4,337	10,578	2,957	10,660	17,583
	1909	12	1,341	4,959	807	4,334	6,551
	1904	7	279	768	117	435	738

<sup>1</sup> Figures include data for establishments engaged in the manufacture of elastic woven goods, and are not strictly comparable with those for 1909 and 1914.

## MANUFACTURES.

TABLE 15. DETAIL STATISTICS FOR THE

INDUSTRY AND STATE.		Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.										WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.						Capital.
			Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.				Total.	16 and over.		Under 16.				
						Male.	Female.	Average number.	Number, 15th day of		Male.		Female.	Male.	Female.				
									Maximum month.	Minimum month.									
1	RUBBER GOODS--ALL BRANCHES, BELTING AND ROSE, RUBBER.	342	88,821	87	1,512	9,900	3,300	74,022	My 82,193	Aug 68,414	74,788	50,096	15,030	343	317	\$267,671,422			
2	United States.....	18	6,205	.....	110	756	218	5,115	Je 5,274	Dec 4,910	5,072	4,304	692	14	5	22,436,022			
3	New Jersey.....	9	2,632	.....	54	202	77	2,230	Je 2,361	Dec 2,114	2,217	1,870	330	5	.....	8,753,432			
4	All other states <sup>1</sup> .....	9	3,543	.....	62	404	141	2,870	.....	.....	2,855	2,488	350	6	5	13,083,400			
5	ROOTS AND SHOES, RUBBER.																		
5	United States.....	23	20,350	2	158	1,050	450	18,687	Dec 20,308	Aug 16,750	20,437	12,133	8,034	112	158	46,051,464			
6	Massachusetts.....	9	8,026	.....	73	513	253	8,087	No 8,828	July 7,577	8,590	5,244	3,258	63	31	23,027,061			
7	All other states <sup>1</sup> .....	14	11,433	2	85	543	203	10,600	.....	.....	11,841	6,880	4,776	49	127	23,024,403			
8	RUBBER GOODS, NOT ELSEWHERE SPECIFIED.																		
8	United States.....	301	62,257	85	1,238	8,088	2,620	50,220	My 58,246	No 44,574	49,279	42,590	6,304	222	154	199,183,036			
9	California.....	11	262	6	10	30	11	220	Oct 245	Jan 187	243	198	45	.....	.....	1,215,058			
10	Connecticut.....	18	2,846	2	97	168	94	2,485	My 3,103	No 1,785	2,502	2,125	353	11	13	7,813,178			
11	Illinois.....	17	683	4	26	68	22	563	My 601	Aug 510	550	474	73	2	1	1,075,301			
12	Indiana.....	9	1,649	1	32	76	41	1,490	My 1,836	Oct 1,174	1,414	1,308	105	1	.....	6,006,403			
13	Massachusetts.....	42	5,417	3	128	410	133	4,743	Mar 5,282	Aug 4,130	4,750	3,052	701	37	60	17,345,185			
14	Missouri.....	6	260	4	13	13	4	235	Feb 281	July 194	258	156	101	1	.....	350,228			
15	New Jersey.....	53	7,773	9	210	895	334	6,310	Je 6,000	Jan 5,800	6,263	5,400	680	60	18	22,402,538			
16	New York.....	45	4,161	24	90	311	103	3,633	My 3,973	Dec 2,084	3,167	2,178	806	10	23	9,700,399			
17	Ohio.....	54	20,212	10	469	5,433	1,695	21,705	My 25,430	Jan 19,470	21,003	19,451	2,423	24	6	100,742,327			
18	Pennsylvania.....	19	3,585	9	64	232	108	3,172	My 3,698	No 2,668	2,740	2,360	330	33	17	12,326,867			
19	Rhode Island.....	6	1,718	.....	22	110	45	1,541	Apr 2,011	No 881	1,550	1,178	360	7	14	5,284,168			
20	Wisconsin.....	5	1,951	4	25	202	83	1,637	My 1,920	Jan 1,350	1,462	1,316	142	1	3	4,001,211			
21	All other states.....	16	2,701	9	34	140	53	2,465	.....	.....	2,682	2,404	83	6	.....	8,000,003			

<sup>1</sup> Owned power only.<sup>2</sup> Includes rented power, other than electric.<sup>3</sup> All other states embrace: California, 2 establishments; Connecticut, 1; Delaware, 1; Massachusetts, 3; New York, 2.

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RUBBER INDUSTRY, BY STATES: 1914.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.						
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.	
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, including internal revenue and corporation income.	Principal materials.	Fuel and rent of power.			Total.	Steam engines. <sup>1</sup>	Internal-combustion engines. <sup>2</sup>	Water wheels and motors. <sup>1</sup>	Electric (rented).		
\$5,318,294	\$10,960,284	\$44,167,402	\$408,851	\$314,026	\$1,912,296	\$159,273,742	\$3,754,971	\$300,993,796	\$137,959,083	199,543	158,547	1,992	5,021	33,983	80,820	1
565,794	1,127,628	2,902,193	1,200	12,000	152,958	12,510,818	456,186	23,560,889	10,593,885	22,995	17,518	66	473	4,938	9,297	2
265,400 300,394	490,346 637,282	1,259,852 1,642,341	1,200 .....	12,000	50,437 102,521	5,071,815 7,439,003	146,475 309,711	10,340,523 13,220,366	5,122,233 5,471,652	10,290 12,735	8,420 9,098	6 60	323 150	1,511 3,427	2,045 7,215	3 4
541,113	1,417,166	9,986,454	39,140	20,036	325,642	23,401,256	554,780	53,822,123	29,866,087	24,621	19,885	80	1,275	3,381	3,226	5
265,003 276,110	614,867 802,299	4,468,411 5,518,043	39,140 .....	1,095 18,941	173,430 162,212	10,188,696 13,212,560	266,129 288,651	23,788,788 30,033,335	13,333,963 16,532,124	8,177 16,444	6,710 13,175	..... 80	..... 1,275	1,467 1,914	1,168 2,058	6 7
4,211,387	8,415,490	31,278,755	368,511	281,990	1,433,696	123,367,668	2,744,005	223,610,784	97,499,111	151,927	121,144	1,846	3,273	25,664	68,324	8
42,245 217,056 71,302 75,492 459,407	44,420 254,296 81,246 109,470 512,989	171,646 1,413,478 341,625 838,599 2,845,043	..... ..... 375 2,200 1,539	11,850 88,556 14,118 2,500 16,820	5,032 39,063 9,142 41,706 146,872	458,060 5,455,896 912,246 4,147,102 13,800,293	21,224 188,946 52,704 117,438 341,445	905,408 10,187,757 1,980,133 6,332,645 23,011,349	426,124 4,542,915 1,015,063 2,068,105 8,869,611	1,180 9,598 1,951 5,984 17,515	7 7,618 1,180 4,657 12,286	..... ..... 20 600 75	..... 80 30 727 810	1,173 1,150 751 727 4,394	..... 2,898 263 1,128 3,953	9 10 11 12 13
23,925 697,386 370,583 1,687,441	16,614 1,101,808 465,555 4,814,937	128,355 3,680,648 1,886,559 14,578,251	500 37,392 24,173 3,875	15,717 17,286 50,735 14,245	712 89,824 49,796 923,546	443,280 14,698,077 4,483,638 57,837,001	9,388 474,390 202,536 900,475	726,028 25,458,216 10,228,445 109,658,605	273,360 10,285,749 5,542,271 50,921,129	657 22,214 11,915 58,672	16 19,986 6,715 49,951	..... 95 114 1,152	..... 315 578 .....	641 1,818 4,508 7,569	..... 5,623 3,262 41,295	14 15 16 17
289,249 83,028 93,450 100,824	379,520 178,577 261,524 194,554	1,744,128 820,796 1,005,380 1,824,238	..... ..... 10,928 287,529	6,931 35,450 660 7,122	24,019 40,394 20,110 25,480	7,135,136 3,974,277 4,016,384 6,006,278	164,116 88,132 78,670 104,451	12,176,847 6,088,988 7,382,108 9,474,255	4,877,595 2,026,579 3,287,054 3,363,526	8,970 3,350 4,107 5,814	7,775 2,810 2,845 5,348	10 300 ..... .....	220 ..... ..... 466	965 240 1,262 466	3,408 2,378 1,288 2,900	18 19 20 21

<sup>1</sup> All other states embrace: Connecticut, 5 establishments; Indiana, 1; New Jersey, 2; New York, 1; Rhode Island, 4; Wisconsin, 1.

<sup>2</sup> All other states embrace: Delaware, 1 establishment; Iowa, 2; Kentucky, 1; Maryland, 1; Michigan, 6; New Hampshire, 1; Oregon, 1; Texas, 1; Virginia, 1; Washington, 1.



# MUSICAL INSTRUMENTS.

By JAMES D. BOYLE.

## SUMMARY AND ANALYSIS.

Scope of the report.—This report presents statistics for the manufacture of (1) pianos, organs, and piano and organ materials; (2) musical instruments and materials, not specified; and (3) phonographs, graphophones, and talking machines. The products of the establishments assigned to these three classes are so dissimilar that a combination of totals would have little, if any, significance. For this reason each class is treated in a separate section. The manufacture of pianos and organs and the materials used in their

manufacture is the most important of the three industries and is treated more in detail.

Table 1 presents combined comparative statistics for five classes of establishments engaged in the manufacture of pianos, organs, piano and organ materials, metal and stringed instruments and materials, and phonograph, graphophones, and talking machines, for the census years from 1849 to 1914, inclusive. This is the only table showing combined statistics for the five industries.

CENSUS YEAR.	MUSICAL INSTRUMENTS AND MATERIALS.							
	Number of establishments.	Wage earners (average number).	Primary horse-power.	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
1914.....	737	48,768	57,902	\$168,618,245	\$30,854,658	\$49,323,415	\$119,638,728	\$70,265,313
1909.....	712	45,041	49,417	120,895,331	26,594,346	47,753,728	104,743,648	56,989,920
1904.....	639	38,617	34,259	80,965,997	21,373,049	33,277,702	79,811,415	46,533,713
1899.....	630	24,981	23,288	51,054,864	13,383,392	19,403,551	46,665,252	27,261,701
1899 <sup>1</sup> .....	674	18,096	11,788	20,650,489	11,648,648	14,436,163	36,868,169	22,432,006
1879.....	429	11,350	( <sup>2</sup> )	14,446,765	7,098,794	8,361,227	19,254,739	10,893,512
1859.....	337	7,167	2,018	9,554,761	5,107,291	4,834,552	13,905,908	9,071,356
1859.....	248	4,758	( <sup>2</sup> )	4,622,600	2,529,788	2,325,209	6,967,718	4,642,509
1849.....	204	2,331	( <sup>2</sup> )	1,545,935	1,054,728	698,167	2,530,715	1,882,548

<sup>1</sup> Exclusive of two establishments manufacturing phonographs and graphophones (one in Connecticut and one in New York).  
<sup>2</sup> Figures not available.

## THE MANUFACTURE OF PIANOS AND ORGANS AND MATERIALS.

### GENERAL STATISTICS.

Scope of the industry.—This section presents combined statistics for the establishments making pianos, organs, and piano and organ materials, together with separate statistics for the establishments engaged primarily in the manufacture of each of these three classes. The piano branch of the industry includes establishments making chiefly upright and grand pianos, with or without player attachments; the organ branch includes establishments making chiefly pipe and reed organs and orchestrions; and the branch manufacturing materials includes establishments making chiefly piano strings, plates, keys, actions, key-boards, cases, back frames, pedal attachments, hammers, sounding boards, perforated music rolls, legs, trusses, organ reeds, pipes, stops, knobs, reed poles, etc., and piano and organ hardware.

Comparative summary.—Table 2 summarizes the more important figures relative to the combined indus-

try and to each of the three branches for 1914, 1909, and 1904, and gives percentages of increase.

During the ten years covered by Table 2 the value of products of establishments engaged in the combined industry increased more than one-third, but decreased slightly during the five-year period ending with 1914.

The total cost of materials and value of products includes considerable duplication, due to the fact that the establishments engaged primarily in the manufacture of pianos and organs used the greater part of the materials manufactured by those establishments reporting piano and organ materials as their principal product, and also to the fact that the parts and materials manufactured by establishments engaged primarily in the manufacture of pianos or organs were used by other establishments in the same industry in producing the finished product.

Table 2

	NUMBER OR AMOUNT.			PER CENT OF INCREASE. <sup>1</sup>			NUMBER OR AMOUNT.			PER CENT OF INCREASE. <sup>1</sup>	
	1914	1909	1904	1909-1914	1904-1909		1914	1909	1904	1909-1914	1904-1909
<b>PIANOS AND ORGANS AND MATERIALS.</b>						<b>ORGANS.</b>					
Number of establishments.....	478	507	444	-5.7	14.2	Number of establishments.....	85	86	91	.....	.....
Persons engaged.....	41,723	41,882	36,106	-0.4	16.0	Persons engaged.....	3,518	2,754	4,033	27.7	-31.7
Proprietors and firm members.....	221	297	303	-25.6	-2.0	Proprietors and firm members.....	74	83	85	.....	.....
Salaried employees.....	3,946	3,565	2,722	10.7	31.0	Salaried employees.....	361	288	323	32.3	-10.8
Wage earners (average number).....	37,556	38,020	33,081	-1.2	14.0	Wage earners (average number).....	3,063	2,383	3,023	28.5	-34.2
Primary horsepower.....	44,349	41,023	30,134	6.5	38.1	Primary horsepower.....	3,666	4,534	4,085	19.0	-18.4
Capital.....	\$130,989,794	\$103,231,301	\$68,481,910	26.0	50.7	Capital.....	\$8,012,405	\$4,553,600	\$7,303,878	76.6	-36.8
Salaries and wages.....	20,835,276	28,313,754	22,255,008	6.4	27.2	Salaries and wages.....	2,512,191	1,777,619	2,406,921	41.0	-26.1
Salaries.....	6,482,025	5,552,180	3,727,030	16.8	48.0	Salaries.....	524,779	349,008	372,302	50.1	-6.3
Wages.....	23,352,051	22,761,568	18,527,978	2.6	22.0	Wages.....	1,987,415	1,428,611	2,034,550	39.5	-29.8
Paid for contract work.....	310,198	202,007	340,880	5.9	-14.1	Paid for contract work.....	12,441	30,060	18,038	-66.3	104.0
Rent and taxes (including internal revenue).....	1,772,300	1,331,324	875,430	33.1	.....	Rent and taxes (including internal revenue).....	68,031	52,208	75,330	30.2	.....
Cost of materials.....	41,252,791	43,764,737	27,986,637	-5.7	56.4	Cost of materials.....	2,659,080	1,722,923	2,008,638	54.4	-16.7
Value of products.....	88,948,145	89,789,544	66,092,030	-0.9	35.8	Value of products.....	6,207,342	4,745,655	6,041,814	32.7	-21.5
Value added by manufacture (value of products less cost of materials).....	47,005,354	46,024,807	38,106,003	3.6	20.8	Value added by manufacture (value of products less cost of materials).....	3,637,368	3,022,732	3,073,200	20.3	-23.0
<b>PIANOS.</b>						<b>PIANO AND ORGAN MATERIALS.</b>					
Number of establishments.....	255	204	249	-13.3	18.1	Number of establishments.....	138	127	101	8.7	25.7
Persons engaged.....	26,828	28,416	23,207	-5.6	22.4	Persons engaged.....	11,377	10,713	8,800	6.2	20.8
Proprietors and firm members.....	85	126	137	-32.5	-8.0	Proprietors and firm members.....	62	88	70	.....	.....
Salaried employees.....	2,800	2,702	2,008	2.7	35.0	Salaried employees.....	699	485	331	44.1	40.5
Wage earners (average number).....	23,877	25,407	21,002	-6.4	21.4	Wage earners (average number).....	10,610	10,140	8,450	4.7	19.0
Primary horsepower.....	25,081	23,246	17,407	11.8	33.1	Primary horsepower.....	14,702	15,043	8,582	-2.3	75.3
Capital.....	\$101,746,424	\$81,644,004	\$40,640,136	24.8	64.2	Capital.....	\$21,200,065	\$17,136,508	\$11,628,897	23.7	47.4
Salaries and wages.....	20,414,510	20,192,875	15,010,030	1.1	34.5	Salaries and wages.....	6,003,663	6,343,230	4,841,151	8.8	31.3
Salaries.....	4,700,840	4,455,608	2,846,085	5.7	56.5	Salaries.....	1,240,000	747,580	508,883	67.1	46.0
Wages.....	15,704,670	15,737,277	12,170,261	-0.2	29.3	Wages.....	5,054,557	5,595,650	4,332,268	1.1	29.5
Paid for contract work.....	276,470	217,004	204,180	27.1	-26.0	Paid for contract work.....	21,284	38,344	28,033	-44.5	33.8
Rent and taxes (including internal revenue).....	1,292,670	1,003,707	662,208	21.5	.....	Rent and taxes (including internal revenue).....	411,680	215,340	137,823	91.2	.....
Cost of materials.....	20,091,046	32,818,770	10,587,770	-11.4	67.6	Cost of materials.....	9,501,766	9,223,044	6,330,210	3.0	45.7
Value of products.....	62,775,085	66,509,273	40,022,471	-5.7	41.0	Value of products.....	10,875,702	18,474,010	13,128,315	7.0	40.7
Value added by manufacture (value of products less cost of materials).....	33,683,900	33,750,503	27,834,701	-0.2	23.5	Value added by manufacture (value of products less cost of materials).....	10,373,936	9,251,572	6,798,096	12.1	36.1

<sup>1</sup> A minus sign (—) denotes decrease; percentages are omitted where base is less than 100.<sup>2</sup> Exclusive of internal revenue.

In 1914 the establishments engaged primarily in the manufacture of pianos reported 70.6 per cent of the total value of products of the three branches of the industry combined; those engaged chiefly in the manufacture of organs, 7.1 per cent; and those engaged in the manufacture of materials, 22.3 per cent. In 1909 the three branches reported 74.1, 5.3, and 20.6 per cent, and in 1904, 71, 9.1, and 19.9 per cent, respectively.

Decreases occurred during the period 1909-1914 in nearly all the more important items reported for the piano branch of the industry, including number of establishments, proprietors and firm members, average number of wage earners, wages paid, cost of materials, value of products, and value added by manufacture. This is in strong contrast to the conditions shown for the period 1904-1909, when substantial increases were reported for all items except proprietors and firm members and amount paid for contract work.

Increases are shown for nearly all the items reported for the establishments engaged chiefly in the manufacture of organs during the period 1909-1914, due, no

doubt, to the increased demand for pipe organs, including orchestrions. Small decreases are shown for number of establishments and proprietors and firm members, with a large decrease (66.3 per cent) in the amount paid for contract work. During the period 1904-1909 decreases were shown for this branch of the industry in every item except amount paid for contract work. This item is relatively unimportant and may show considerable increase or decrease at different censuses, depending upon the business methods followed.

During the decade 1904-1914 considerable increases are shown for the piano and organ materials branch of the industry, the only decreases being in number of proprietors and firm members and amount paid for contract work. The manufacture of materials for organs and pianos was first shown as a separate industry in 1904. Previous to that period organ materials had been included with organs, and piano materials with pianos. The following statement gives statistics for the two subclassifications of the piano and organ materials industry for 1914:

INDUSTRY.	Number of establishments.	Wage earners (average number).	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
Piano and organ materials.....	138	10,616	\$21,200,065	\$5,054,557	\$9,501,766	\$10,875,702	\$10,373,936
Piano materials.....	121	10,436	20,788,040	5,518,079	9,357,420	19,492,444	10,135,016
Organ materials.....	17	180	412,325	136,878	144,346	383,318	238,978

# MUSICAL INSTRUMENTS.

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Summary, by states.—Table 3 summarizes the more important statistics of the combined industry, by states, the states being arranged according to the value of products reported for 1914. Three states—

Maryland, Vermont, and North Carolina—ranked higher than some of those named in the table, but data for them can not be shown separately without disclosing the operations of individual establishments.

Table 3

Table 3		PIANOS AND ORGANS AND MATERIALS: 1914.																			
STATE.	Number of establishments.	Wage earners.			Value of products.			Value added by manufacture.			Per cent of increase. <sup>1</sup>										
		Average number.	Per cent of total.	Rank.	Amount.	Per cent of total.	Rank.	Amount.	Per cent of total.	Rank.	Wage earners (average number).			Value of products.			Value added by manufacture.				
											1914	1909	1904	1909	1914	1909	1904	1909	1914	1909	1904
United States..	478	37,556	100.0	-----	\$88,948,145	100.0	-----	\$47,695,354	100.0	-----	-1.2	14.9	55.2	-0.9	35.8	61.1	3.6	20.8	61.1		
New York.....	160	12,602	33.6	1	33,071,781	37.2	1	17,315,933	36.3	1	5.6	24.2	41.4	-1.8	44.0	58.6	7.0	30.1	52.0		
Illinois.....	71	8,334	22.2	2	19,705,601	22.2	2	11,384,130	23.9	2	-5.0	18.9	60.8	2.8	43.9	63.4	8.1	32.9	64.0		
Massachusetts.....	52	3,906	10.4	3	8,213,341	9.2	3	4,511,208	9.5	3	-8.0	1.8	31.4	-9.8	10.0	34.1	-9.0	-4.0	33.5		
Connecticut.....	19	2,267	6.0	4	5,229,954	5.9	4	2,659,457	5.6	4	-1.6	-10.8	38.6	-5.6	5.0	55.3	5.7	-12.4	37.2		
Indiana.....	15	1,614	4.3	7	3,933,934	4.4	5	2,286,474	4.8	5	-3.2	34.8	-----	6.7	62.2	-----	15.3	43.1	-----		
Ohio.....	27	1,745	4.6	6	3,544,686	4.0	6	1,871,769	3.9	6	-5.2	-16.7	136.6	-9.7	6.6	153.9	-6.6	-2.7	177.9		
New Jersey.....	24	1,960	5.2	5	3,502,746	3.9	7	1,764,626	3.7	7	40.7	25.5	-----	57.1	50.9	-----	53.1	40.0	-----		
Michigan.....	17	1,070	2.8	8	2,681,855	3.0	8	1,422,486	3.0	8	-38.9	66.4	40.7	-36.5	113.0	68.1	-35.8	79.7	74.8		
Pennsylvania.....	28	922	2.5	9	2,083,727	2.3	9	1,025,830	2.2	9	-22.0	17.2	-----	-12.5	35.6	-----	9.5	2.1	-----		
Wisconsin.....	6	495	1.3	12	1,469,585	1.7	11	603,422	1.3	11	34.1	-----	-----	64.6	385.3	-----	49.6	-----	-----		
Kentucky.....	7	444	1.2	13	760,621	0.9	13	390,695	0.8	13	29.4	-4.7	-----	29.4	16.4	-----	23.3	21.1	-----		
Minnesota.....	4	108	0.3	14	315,246	0.4	14	159,222	0.3	14	-24.5	-----	-----	7.1	-----	-----	5.5	-----	-----		
California.....	8	94	0.3	15	252,246	0.3	16	119,829	0.2	16	-45.7	-----	-----	68.0	-27.9	-----	10.1	-21.6	-----		
All other states.....	40	1,095	5.3	-----	4,182,822	4.7	-----	2,180,217	4.6	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----		

<sup>1</sup> Percentages are based on figures in Table 17; a minus sign (—) denotes decrease. Percentages are omitted where base is less than 100 for wage earners or less than \$100,000 for value of products or value added by manufacture, or where comparable figures can not be given.

Statistics are shown for 13 states separately, but almost three-fifths (59.4 per cent) of the total value of products were reported by the first two states. New York, ranking first, reported 37.2 per cent of the total, and Illinois, second in rank, reported 22.2 per cent. In 1909 these states held the same rank as in 1914 and reported 37.5 and 21.4 per cent, respectively, of the total value of products. With the exception of the first four states, there were a number of changes in relative standing as reported at the two censuses. Indiana advanced from seventh place in value of products in 1909 to fifth place in 1914, New Jersey advanced from ninth to seventh place, and Wisconsin, from twelfth to eleventh place, while Michigan dropped

from fifth to eighth place, and Pennsylvania, from eighth to ninth. In 1914 the states had practically the same rank in wage earners and value added by manufacture as in value of products.

Persons engaged in the industry.—Table 4 shows, for 1914 and 1909, for the combined industry and for its three branches separately, the number of persons engaged, distributed by sex, the average number of wage earners being distributed also by age. The sex and age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the "Explanation of terms."

Table 4

Table 4	INDUSTRY AND CLASS.	Cen- sus year.	PERSONS ENGAGED IN THE INDUSTRY.						INDUSTRY AND CLASS.	Cen- sus year.	PERSONS ENGAGED IN THE INDUSTRY.					
			Total.	Male.	Fe- male.	Per cent of total.		Total.			Male.	Fe- male.	Per cent of total.			
						Male.	Fe- male.						Male.	Fe- male.		
PIANOS AND ORGANS AND MATERIALS.	1914	41,723	38,115	3,608	91.4	8.6	PIANOS.....	1914	26,828	25,320	1,508	94.4	5.6			
	1909	41,882	39,005	2,877	93.1	6.9		1909	23,415	27,222	1,193	95.8	4.2			
Proprietors and officials.....	1914	1,357	1,317	40	97.1	2.9	Proprietors and officials.....	1914	795	775	20	97.5	2.5			
	1909	1,378	1,340	38	97.2	2.8		1909	907	886	21	97.7	2.3			
Proprietors and firm members..	1914	221	217	4	98.2	1.8	Proprietors and firm members..	1914	85	84	1	98.8	1.2			
	1909	297	285	12	96.0	4.0		1909	126	121	5	96.0	4.0			
Salaried officers of corporations..	1914	613	532	81	91.9	5.1	Salaried officers of corporations..	1914	397	379	18	95.5	4.5			
	1909	516	524	22	96.0	4.0		1909	397	385	12	97.0	3.0			
Superintendents and managers..	1914	523	518	5	99.0	1.0	Superintendents and managers..	1914	313	312	1	99.7	0.3			
	1909	535	531	4	99.3	0.7		1909	384	380	4	99.0	1.0			
Clerks and other subordinate sal- aried employees.	1914	2,810	1,825	985	64.9	35.1	Clerks and other subordinate sal- aried employees.	1914	2,156	1,449	707	67.2	32.8			
	1909	2,484	1,788	696	72.0	28.0		1909	2,011	1,483	528	73.7	26.3			
Wage earners (average number)....	1914	37,556	34,973	2,583	93.1	6.9	Wage earners (average number)....	1914	23,877	23,096	781	96.7	3.3			
	1909	38,020	35,877	2,143	94.4	5.6		1909	25,497	24,853	644	97.5	2.5			
16 years of age and over.....	1914	37,198	34,045	2,553	93.1	6.9	16 years of age and over.....	1914	23,674	22,907	767	96.8	3.2			
	1909	37,316	35,340	1,976	94.7	5.3		1909	25,146	24,530	616	97.6	2.4			
Under 16 years of age.....	1914	358	328	30	91.6	8.4	Under 16 years of age.....	1914	203	189	14	93.1	6.9			
	1909	704	537	167	76.3	23.7		1909	351	323	28	92.0	8.0			

INDUSTRY AND CLASS.		PERSONS ENGAGED IN THE INDUSTRY.						INDUSTRY AND CLASS.		PERSONS ENGAGED IN THE INDUSTRY.					
		Total.	Male.	Fe-male.	Per cent of total.		Total.			Male.	Fo-male.	Per cent of total.			
					Male.	Fe-male.						Male.	Fo-male.		
ORGANS.....	1914 1909	3,518 2,754	3,233 2,592	235 162	91.9 94.1	8.1 5.9	PIANO AND ORGAN MATERIALS..	1914 1909	11,377 10,713	9,562 9,191	1,815 1,522	84.0 85.8	16.0 14.2		
Proprietors and officials.....	1914 1909	198 175	194 168	4 7	98.0 96.0	2.0 4.0	Proprietors and officials.....	1914 1909	364 296	348 286	16 10	85.8 96.6	14.2 3.4		
Proprietors and firm members..	1914 1909	74 83	72 78	2 5	97.3 94.0	2.7 6.0	Proprietors and firm members..	1914 1909	62 88	61 86	1 2	98.4 97.7	1.6 2.3		
Salaried officers of corporations..	1914 1909	61 42	59 40	2 2	96.7 95.2	3.3 4.8	Salaried officers of corporations..	1914 1909	155 107	144 99	11 8	92.9 92.5	7.1 7.5		
Superintendents and managers..	1914 1909	63 50	63 50	..... .....	100.0 100.0	..... .....	Superintendents and managers..	1914 1909	147 101	143 101	4 .....	97.3 100.0	2.7 .....		
Clerks and other subordinate sal- aried employees.	1914 1909	257 196	131 127	126 69	51.0 64.8	49.0 35.2	Clerks and other subordinate sal- aried employees.	1914 1909	397 277	245 178	152 99	61.7 64.3	38.3 35.7		
Wage earners (average number)....	1914 1909	3,063 2,383	2,908 2,297	155 86	94.9 96.4	5.1 3.6	Wage earners (average number)....	1914 1909	10,616 10,140	8,969 8,727	1,647 1,413	84.5 86.1	15.5 13.9		
16 years of age and over.....	1914 1909	3,045 2,366	2,892 2,280	153 86	95.0 96.4	5.0 3.6	16 years of age and over.....	1914 1909	10,479 9,804	8,846 8,530	1,633 1,274	84.4 87.0	15.6 13.0		
Under 16 years of age.....	1914 1909	18 17	16 17	2 .....	89.8 100.0	10.2 .....	Under 16 years of age.....	1914 1909	137 336	123 197	14 139	89.8 58.6	10.2 41.4		

Table 5 gives, for the several classes of persons engaged in the combined industry, the percentages of increase from 1909 to 1914 and the per cent distribution at the two censuses.

Table 5	CLASS.	PERSONS ENGAGED IN THE INDUSTRY.								
		Per cent of increase, <sup>1</sup> 1909-1914.			Per cent distribution.					
		Total.	Male.	Female.	Total.		Male.		Female.	
					1914	1909	1914	1909	1914	1909
All classes.....	-0.4	-2.3	25.4	100.0	100.0	100.0	100.0	100.0	100.0	
Proprietors and officials.....	-1.5	-1.7	.....	3.3	3.3	3.5	3.4	1.1	1.3	
Proprietors and firm members.....	-25.6	-23.9	.....	0.5	0.7	0.6	0.7	0.1	0.4	
Salaried officers of corporations.....	12.3	11.1	.....	1.5	1.3	1.5	1.3	0.9	0.8	
Superintendents and managers.....	-2.2	-2.4	.....	1.3	1.3	1.4	1.4	0.1	0.1	
Clerks and other subordinate salaried employees.....	13.1	2.1	41.5	6.7	5.9	4.8	4.6	27.3	24.2	
Wage earners (average number).....	-1.2	-2.5	20.5	90.0	90.8	91.8	92.0	71.6	74.5	
16 years of age and over.....	-0.3	-2.0	29.2	89.2	89.1	90.9	90.6	70.8	68.7	
Under 16 years of age.....	-49.1	-38.9	-82.0	0.8	1.7	0.9	1.4	0.8	5.8	

<sup>1</sup> A minus sign (-) denotes decrease; percentages are omitted where base is less than 100.

Males largely predominated in all of the different classes for which separate figures are given for 1914 and 1909. The largest proportion of the total number of males in 1914 and 1909 (66.4 percent and 69.8 per cent, respectively) is shown for the manufacture of pianos. More than half of the total number of females employed (50.3 per cent in 1914 and 52.9 per cent in 1909) was reported for the manufacture of piano and organ materials. Females were of the greatest relative importance in the combined industry in the class "clerks and other subordinate salaried employees," where they formed 35.1 per cent of the total in 1914 and 28 per cent in 1909.

During the five years covered by the table, salaried officers of corporations and clerks and other subordinate salaried employees are the only classes showing increases. The total number of wage earners decreased slightly (1.2 per cent), but those under 16 years of age decreased 49.6 per cent. Wage earners under 16 years of age, however, formed less than 1

per cent of the total number of wage earners in 1914, and were employed mostly in the manufacture of pianos and piano and organ materials, only 18 being reported for the organ branch.

**Wage earners employed, by months.**—Table 6, gives, for the combined industry and for each of the three branches, the total number of wage earners employed on the 15th day of each month, or the nearest representative day, for 1914 and 1909, and the average number employed during each month in 1904, together with the percentage which the number reported for each month forms of the greatest number reported for any month.

Employment in the combined industry was more stable at the censuses of 1909 and 1904 than at the census of 1914, the minimum number of wage earners in 1914 representing only 87 per cent of the maximum, as compared with 90.6 and 89.6 per cent, respectively, for 1909 and 1904.

Table 6

Table 6	WAGE EARNERS IN THE INDUSTRY.							WAGE EARNERS IN THE INDUSTRY.							
	Number. <sup>1</sup>			Per cent of maximum.				INDUSTRY AND MONTH.	Number. <sup>1</sup>			Per cent of maximum.			
	1914	1909	1904	1914	1909	1904			1914	1909	1904	1914	1909	1904	
INDUSTRY AND MONTH.															
PIANOS AND ORGANS AND MATERIALS.							ORGANS.								
January.....	39,992	36,900	32,454	98.9	92.2	92.3	January.....	3,191	2,400	3,644	98.8	97.6	98.6		
February.....	40,150	37,241	32,773	99.3	93.1	93.3	February.....	3,217	2,391	3,641	99.6	97.2	98.6		
March.....	40,442	37,530	32,850	100.0	93.8	93.5	March.....	3,231	2,361	3,594	100.0	96.0	97.3		
April.....	39,992	37,679	32,868	98.9	94.2	93.5	April.....	3,194	2,365	3,623	98.9	96.1	98.1		
May.....	38,715	37,696	32,566	95.7	94.2	92.7	May.....	3,115	2,394	3,568	96.4	97.3	96.6		
June.....	37,306	37,455	32,258	92.2	93.6	91.8	June.....	3,103	2,338	3,531	96.0	95.0	95.6		
July.....	35,350	36,269	31,498	87.4	90.6	89.6	July.....	3,077	2,379	3,557	95.2	96.7	96.3		
August.....	35,176	37,238	32,168	87.0	93.1	91.5	August.....	2,994	2,356	3,631	92.7	95.8	98.3		
September.....	35,698	38,522	33,194	88.3	96.3	94.5	September.....	2,918	2,358	3,641	90.3	95.9	98.6		
October.....	35,949	39,752	34,299	88.9	99.4	97.6	October.....	2,920	2,383	3,661	90.4	96.9	99.1		
November.....	35,845	39,978	34,901	88.6	99.9	99.3	November.....	2,866	2,418	3,694	88.7	98.3	100.0		
December.....	36,057	40,011	35,143	89.2	100.0	100.0	December.....	2,930	2,460	3,691	90.7	100.0	99.9		
PIANOS.							PIANO AND ORGAN MATERIALS.								
January.....	25,168	24,677	20,307	99.2	91.6	89.9	January.....	11,633	9,823	8,503	98.3	91.9	95.8		
February.....	25,221	24,914	20,491	99.4	92.4	90.8	February.....	11,712	9,936	8,641	98.9	93.0	97.4		
March.....	25,672	25,194	20,777	100.0	93.5	92.0	March.....	11,839	9,975	8,479	100.0	93.3	95.5		
April.....	25,276	25,232	20,867	99.6	93.6	92.4	April.....	11,522	10,062	8,378	97.3	94.3	94.4		
May.....	24,565	25,316	20,768	96.8	93.9	92.0	May.....	11,035	9,986	8,220	93.2	93.4	92.7		
June.....	23,752	25,037	20,634	93.6	92.9	91.4	June.....	10,451	10,080	8,093	88.3	94.3	91.2		
July.....	22,497	24,256	19,786	88.7	90.0	87.6	July.....	9,776	9,634	8,155	82.6	90.1	91.9		
August.....	22,393	24,925	20,256	88.3	92.5	89.7	August.....	9,789	9,957	8,281	82.7	93.2	93.3		
September.....	22,915	25,873	21,153	90.3	96.0	93.7	September.....	9,865	10,291	8,400	83.3	96.3	94.6		
October.....	23,130	26,680	21,955	91.2	99.0	97.2	October.....	9,899	10,689	8,683	83.6	100.0	97.8		
November.....	23,091	26,921	22,453	91.0	99.9	99.5	November.....	9,888	10,639	8,754	83.5	99.5	98.6		
December.....	23,144	26,952	22,577	91.2	100.0	100.0	December.....	9,983	10,599	8,875	84.3	99.2	100.0		

<sup>1</sup> The figures for 1914 and 1909 represent the number employed on the 15th of each month, or the nearest representative day; those for 1904, the average number employed during the month.

Similar conditions prevailed in the three branches of the industry. For the piano, organ, and piano and organ materials branches in 1914, the minimum number of wage earners represented, respectively, 88.3, 88.7, and 82.6 per cent of the maximum, as compared with 90, 95, and 90.1 per cent, respectively, in 1909 and 87.6, 95.6, and 91.2, respectively, in 1904.

Table 7 gives the total average number of wage earners employed during 1914 in the combined industry and in each of its branches, together with the total number employed on the 15th of each month, or the nearest representative day, for the United States as a whole and for each state in which the average number of wage earners was 500 or more.

Table 7

Table 7	WAGE EARNERS: 1914. [Month of maximum employment is indicated by boldface figures and that of minimum by <i>italic</i> figures.]														
	INDUSTRY AND STATE.	Average number employed during year.	Number employed on 15th day of the month or nearest representative day.												Per cent minimum is of maximum.
			January	February	March	April	May	June	July	August	September	October	November	December	
PIANOS AND ORGANS AND MATERIALS.															
United States.....	37,556	39,992	40,150	<b>40,442</b>	39,992	38,715	37,306	35,350	<i>35,176</i>	35,698	35,949	35,845	36,057	87.0	
Connecticut.....	2,267	<b>2,596</b>	2,588	2,589	2,482	2,349	2,225	<i>1,922</i>	1,965	2,052	2,123	2,134	2,179	74.0	
Illinois.....	8,334	8,545	8,787	8,819	<b>8,839</b>	8,465	8,361	8,153	8,132	<b>8,218</b>	7,972	7,924	<i>7,823</i>	88.5	
Indiana.....	1,614	<b>1,812</b>	1,750	1,715	1,740	1,750	1,631	1,550	1,634	1,506	1,470	<i>1,404</i>	1,406	77.5	
Massachusetts.....	3,906	4,299	4,270	<b>4,309</b>	4,227	4,108	3,939	3,761	<i>3,715</i>	3,550	3,627	<b>3,623</b>	3,644	81.6	
Michigan.....	1,070	1,119	1,102	<b>1,162</b>	1,122	1,070	1,040	1,039	1,043	1,092	1,033	<i>1,001</i>	1,017	86.1	
New Jersey.....	1,960	2,126	2,140	<b>2,143</b>	2,092	2,010	1,815	<i>1,807</i>	1,838	1,867	1,912	1,887	1,883	84.3	
New York.....	12,602	<b>13,320</b>	13,300	<b>13,452</b>	13,333	12,997	12,465	<i>11,266</i>	11,647	11,937	12,388	12,460	12,659	83.7	
Ohio.....	1,745	1,840	1,874	<b>1,875</b>	1,871	1,780	1,731	1,698	1,716	<b>1,627</b>	<i>1,621</i>	1,655	<b>1,652</b>	86.5	
Pennsylvania.....	922	1,000	1,006	1,005	941	938	931	878	<i>853</i>	855	882	880	895	84.8	
PIANOS.															
United States.....	23,877	25,168	25,221	<b>25,372</b>	25,276	24,565	23,752	22,497	<i>22,393</i>	22,915	23,130	23,091	23,144	88.3	
Illinois.....	6,682	6,717	6,973	7,017	<b>7,064</b>	6,788	6,739	6,570	6,563	6,610	<i>6,370</i>	6,382	6,391	90.2	
Indiana.....	1,585	1,779	1,721	1,689	1,711	1,719	1,598	1,518	1,602	1,476	1,440	<i>1,381</i>	1,386	77.6	
Massachusetts.....	2,352	<b>2,587</b>	2,524	2,542	2,519	2,483	2,392	2,322	<i>2,062</i>	2,120	2,207	2,227	2,239	79.7	
Michigan.....	925	973	945	997	976	923	901	906	910	955	887	<i>853</i>	874	85.6	
New Jersey.....	852	863	850	852	853	834	782	857	860	859	892	870	842	87.7	
New York.....	8,202	<b>8,727</b>	8,660	<b>8,754</b>	8,690	8,429	8,039	<i>7,160</i>	7,421	7,717	8,179	8,291	8,357	81.8	
Ohio.....	707	721	728	732	745	716	702	<i>651</i>	693	704	686	687	689	91.4	
Pennsylvania.....	646	730	732	723	657	654	646	605	582	<i>579</i>	611	609	624	79.1	
ORGANS.															
United States.....	3,063	3,191	3,217	<b>3,231</b>	3,194	3,115	3,103	3,077	2,994	2,918	2,920	<i>2,866</i>	2,930	88.7	
New York.....	648	704	710	705	684	645	617	611	618	<i>598</i>	612	630	642	84.2	
PIANO AND ORGAN MATERIALS.															
United States.....	10,616	11,633	11,712	<b>11,839</b>	11,522	11,035	10,451	<i>9,776</i>	9,789	9,885	9,899	9,888	9,983	82.6	
Connecticut.....	1,544	<b>1,838</b>	1,829	1,836	1,731	1,610	1,518	<i>1,223</i>	1,236	1,311	1,368	1,464	1,534	66.5	
Illinois.....	1,420	1,586	1,544	1,565	1,537	1,441	1,386	1,350	1,332	1,377	1,378	1,332	<i>1,212</i>	76.4	
Massachusetts.....	1,849	1,489	1,523	<b>1,540</b>	1,452	1,423	1,352	1,246	1,252	1,229	1,222	1,218	<i>1,212</i>	78.7	
New York.....	3,752	<b>3,889</b>	3,930	<b>3,993</b>	3,959	3,923	3,809	<i>3,495</i>	3,608	3,622	<b>3,597</b>	3,539	3,660	87.5	
Ohio.....	915	989	1,011	<b>1,011</b>	995	941	902	888	897	<i>811</i>	833	850	852	80.2	

For the combined industry, March was the month of maximum employment for the United States and for five of the states shown separately—Massachusetts, Michigan, New Jersey, New York, and Ohio. Connecticut and Indiana employed the greatest number in January; Illinois, in April; and Pennsylvania, in February. The month of minimum employment for the industry as a whole was August, but only two states—Massachusetts and Pennsylvania—reported the minimum number for that month, while Connecticut, New Jersey, and New York reported the minimum in July; Indiana and Michigan, in November; Ohio, in October; and Illinois, in December.

Similar conditions were shown for the various branches of the industry. In the piano branch, the month of maximum employment for the United States was March and that of minimum, August, but in only two of the states shown separately—Michigan and New York—was the month of maximum employment the same as that for the United

States, and in only one—Massachusetts—was the minimum month the same. In the organ branch the maximum and minimum months for the United States were March and November, respectively. New York, the only state shown separately, had as its maximum and minimum months February and September, respectively. The month of greatest employment for the United States in the piano and organ materials branch was March and that of minimum, July. Of the five states shown separately, three had the same maximum month as that shown for the United States, and two had the same minimum.

**Prevailing hours of labor.**—In Table 8 the average number of wage earners reported for 1914 and 1909, for the combined industry and for 1914 for each of the three branches, has been classified according to the number of hours of labor per week prevailing in the establishments in which they were employed. The number employed in each establishment was classified as a total, even though a few employees worked a greater or smaller number of hours.

Table 8

Table 8		AVERAGE NUMBER OF WAGE EARNERS.						
INDUSTRY AND STATE.	Cen- sus year.	Total.	In establishments where the prevailing hours of labor per week were—					
			48 and under.	Be- tween 48 and 54.	54.	Be- tween 54 and 60.	60.	Be- tween 60 and 72.
PIANOS AND ORGANS AND MATERIALS.								
United States....	1914	37,556	1,754	5,269	19,951	6,498	3,814	270
	1909	35,020	1,270	2,534	17,372	6,055	10,789	
Connecticut.....	1914	2,267	4	49	1,836	370	8	
	1909	2,304			750	356	1,198	
Illinois.....	1914	8,334	318	1,768	3,814	1,804	630	
	1909	8,777	121	564	4,604	842	2,646	
Indiana.....	1914	1,614	319		34	623	638	
	1909	1,667				488	1,181	
Massachusetts.....	1914	3,906	244	641	2,876	135	10	
	1909	4,245	700	420	2,855	195	75	
Michigan.....	1914	1,070		2	98	335	365	270
	1909	1,779		1	51	1,106	621	
New Jersey.....	1914	1,960	65	38	1,334	312	211	
	1909	1,393	64	5	978	345	1	
New York.....	1914	12,602	317	1,694	9,123	981	487	
	1909	11,938	364	1,481	6,967	649	2,477	
Ohio.....	1914	1,745	282	848	138	248	220	
	1909	1,841		3	219	782	837	
Pennsylvania.....	1914	922	59	105	296	198	264	
	1909	1,182		32	305	492	263	
PIANOS.								
United States....	1914	23,877	1,305	2,974	13,043	4,320	1,965	270
Illinois.....	1914	6,682	234	1,051	3,405	1,554	438	
Indiana.....	1914	1,585	319		34	596	636	
Massachusetts.....	1914	2,352	240	448	1,567	97		
Michigan.....	1914	925			25	310	320	270
New Jersey.....	1914	852	5		847			
New York.....	1914	8,202	244	1,120	6,106	716	16	
Ohio.....	1914	707	96	257	117	93	144	
Pennsylvania.....	1914	646	25	60	295	101	165	
ORGANS.								
United States....	1914	3,063	104	197	1,129	698	935	
New York.....	1914	648	67	25	487	53	16	
PIANO AND ORGAN MATERIALS.								
United States....	1914	10,616	345	2,098	5,779	1,480	914	
Connecticut.....	1914	1,544	4	49	1,439	44	8	
Illinois.....	1914	1,420	84	688	403	168	77	
Massachusetts.....	1914	1,349	1	140	1,163	35	10	
New York.....	1914	3,752	6	549	2,530	212	455	
Ohio.....	1914	915	185	591		132	7	

A tendency toward a shorter working-day is shown for the United States as a whole and for most of the states in which the industry is carried on. In 1914 only 28.2 per cent of the total number of wage earners were employed more than 54 hours per week, as compared with 44.3 per cent in 1909.

Of the several groups shown in Table 8, the largest was made up of the wage earners in establishments where the prevailing hours were 54 per week. In 1914, 53.1 per cent of the wage earners employed in the combined industry worked that number of hours,

as compared with 45.7 per cent in 1909, and in Connecticut, Illinois, Massachusetts, New Jersey, New York, and Pennsylvania those hours predominated. There were only 270 wage earners reported as employed more than 60 hours per week in 1914 and none in 1909, while there were 7,023, or 18.7 per cent of the total number, reported as employed less than 54 hours per week in 1914 and 3,804, or 10 per cent, in 1909.

In the piano branch of the industry in 1914, more than nine-tenths of the wage earners worked less than

60 hours per week. Similarly in Illinois and New York nine-tenths, in Ohio and Pennsylvania three-fourths, and in Massachusetts and New Jersey all of the wage earners were in this class.

In the organ branch of the industry nearly seven-tenths of the wage earners were employed in establishments where the prevailing hours were less than

60 per week, and in the piano and organ materials branch, 91.4 per cent were so employed.

**Character of ownership.**—Table 9 presents statistics concerning the character of ownership, or legal organization, of establishments in the combined industry for 1914 and 1909, and for 1914 for each state that reported an average of 500 wage earners or more.

Table 9	STATE.	Cen- sus year.	NUMBER OF ESTABLISHMENTS OWNED BY—			AVERAGE NUMBER OF WAGE EARNERS.									VALUE OF PRODUCTS.								
						Total.			In establishments owned by—			Per cent of total.			Total.			Of establishments owned by—			Per cent of total.		
			Indi- vid- uals.	Cor- pora- tions.	All oth- ers.	Indi- vid- uals.	Cor- pora- tions.	All oth- ers.	Indi- vid- uals.	Cor- pora- tions.	All oth- ers.	Indi- vid- uals.	Cor- pora- tions.	All oth- ers.	Indi- vid- uals.	Cor- pora- tions.	All oth- ers.	Indi- vid- uals.	Cor- pora- tions.	All oth- ers.			
United States.....	1914	105	322	51	37,556	1,727	34,722	1,107	4.6	92.5	2.9	\$88,948,145	\$4,621,448	\$81,651,530	\$2,675,167	5.2	91.8	3.0					
	1909	125	314	68	38,020	2,751	32,722	2,547	7.2	86.1	6.7	89,789,544	7,923,369	76,865,192	4,900,983	8.8	85.7	5.5					
Connecticut.....	1914	3	15	1	2,267	118	2,249	.....	0.8	99.2	.....	5,229,954	<sup>1</sup> 38,898	5,191,056	.....	0.7	99.3	.....					
Illinois.....	1914	11	55	5	8,334	85	8,215	34	1.0	98.6	0.4	19,705,601	190,768	19,354,624	160,209	1.0	98.2	0.8					
Indiana.....	1914	2	12	1	1,614	.....	<sup>2</sup> 1,614	.....	.....	100.0	.....	3,933,934	.....	<sup>2</sup> 3,933,934	.....	.....	100.0	.....					
Massachusetts.....	1914	14	34	4	3,906	190	3,378	338	4.9	86.5	8.7	8,213,341	418,137	6,872,022	923,182	5.1	83.7	11.2					
Michigan.....	1914	4	12	1	1,070	<sup>1</sup> 82	988	.....	7.7	92.3	.....	2,681,855	1140,765	2,541,090	.....	5.2	94.8	.....					
New Jersey.....	1914	3	19	2	1,960	<sup>1</sup> 38	1,922	.....	1.9	98.1	.....	3,502,746	148,505	3,454,241	.....	1.4	98.6	.....					
New York.....	1914	25	114	21	12,602	629	11,653	320	5.0	92.5	2.5	33,071,781	2,393,702	29,507,739	770,340	7.2	90.4	2.3					
Ohio.....	1914	6	15	6	1,745	23	1,636	86	1.3	93.8	4.9	3,544,686	61,528	3,276,414	206,744	1.7	92.4	5.8					
Pennsylvania.....	1914	10	13	5	922	95	778	49	10.3	84.4	5.3	2,083,727	192,354	1,734,056	157,317	9.2	83.2	7.5					

<sup>1</sup> Includes the group "all others."

<sup>2</sup> Includes the groups "individuals" and "all others."

The growing tendency in the industry toward the corporate form of ownership is shown by the increased proportion of the total average number of wage earners and value of products reported by corporations at the census of 1914, as compared with 1909. This class represented 67.4 per cent of the total number of establishments in 1914, 92.5 per cent of the average number of wage earners, and 91.8 per cent of the value

of products, the corresponding percentages for 1909 being 61.9, 86.1, and 85.7, respectively. All forms of ownership, other than corporate, show a decrease for all items shown in Table 9. The group "all others" is composed chiefly of firms.

**Size of establishments.**—The tendency of the industry to become concentrated in large establishments is indicated by the statistics given in Table 10.

VALUE OF PRODUCT.	Census year.	Num-ber of estab-lish-ments.	Average number of wage earners.	Value of products.	Value added by manu-facture.	VALUE OF PRODUCT.	Census year.	Num-ber of estab-lish-ments.	Average number of wage earners.	Value of products.	Value added by manu-facture.
All classes.....	1914	478	37,556	\$88,948,145	\$47,695,354	Per cent distribution:	1914	9.8	0.1	0.1	0.2
	1909	507	38,020	89,789,544	46,024,807		1909	10.5	0.2	0.2	0.2
Less than \$5,000.....	1914	47	54	121,034	80,923	\$5,000 to \$20,000.....	1914	15.3	1.1	0.9	1.0
	1909	53	86	168,073	110,908		1909	16.8	1.1	1.0	1.2
\$5,000 to \$20,000.....	1914	73	397	766,881	457,229	\$20,000 to \$100,000.....	1914	30.3	9.5	9.0	8.7
	1909	85	435	900,917	559,824		1909	32.7	10.3	10.0	10.4
\$20,000 to \$100,000.....	1914	145	3,572	8,035,328	4,161,844	\$100,000 to \$1,000,000.....	1914	42.3	71.7	71.4	69.4
	1909	166	3,907	8,952,604	4,794,745		1909	38.1	72.5	71.0	69.6
\$100,000 to \$1,000,000.....	1914	202	26,947	63,501,946	33,083,250	\$1,000,000 and over.....	1914	2.3	17.5	18.6	20.8
	1909	193	27,551	63,736,264	32,049,304		1909	2.0	15.9	17.8	18.5
\$1,000,000 and over.....	1914	11	6,596	16,522,956	9,912,108						
	1909	10	6,041	16,031,686	8,510,026						

In 1914, 90 per cent, and in 1909, 88.8 per cent, of the products of the industry, as measured by value, were reported by establishments whose annual output was valued at \$100,000 or more. The most important group in each year was that comprising establishments with products valued at \$100,000 to \$1,000,000. The relative importance of this group showed a slight decrease during the five-year period in average number of wage earners and value added by manufacture, while that of the group of establishments with products

valued at \$1,000,000 and over increased slightly in all items shown.

Table 11 shows the size of establishments as measured by the number of wage earners employed for the combined industry in 1914 and 1909 and for each of its branches in 1914, for the United States as a whole and for the leading states.

Of the total number of wage earners in the combined industry, 72.3 per cent were reported in 1914, and 74.6 per cent in 1909, by establishments which



employed more than 100 wage earners. The most important group at the census of 1914 was that comprising establishments which employed from 251 to 500 wage earners each, while in 1909 the most important group was that which employed from 101 to 250 each. However, there was but little variance in these two groups for each census year.

Of the six establishments employing more than 500 wage earners each, three were located in New York, which ranked first in total number of wage earners and value of products; two in Illinois, which ranked second in both items; and one in Indiana, which ranked seventh in number of wage earners and fifth in value of products.

There were eleven establishments which reported no wage earners in 1914. These were nearly all small

factories which manufactured piano and organ materials, and the work was done by the proprietors or firm members. In some cases a few wage earners were employed for short periods, but the number was so small and the term of employment so short that in computing the average number of wage earners, as described in the "Explanation of terms," no wage earners could be shown for the establishment.

The piano branch of the industry reported, for 1914, 67 establishments, each of which had more than 100 wage earners, and these establishments employed more than two-thirds of the total average number of wage earners. In New York, the leading state, 21 establishments, with more than 100 wage earners each, employed more than two-thirds of the total average number reported for the state.

Table 11

Table 11  INDUSTRY AND STATE.		Census years.	ESTABLISHMENTS EMPLOYING—																			
			TOTAL.		No wage earn- ers.		1 to 5 wage earn- ers.		6 to 20 wage earn- ers.		21 to 50 wage earn- ers.		51 to 100 wage earn- ers.		101 to 250 wage earn- ers.		251 to 500 wage earn- ers.		501 to 1,000 wage earn- ers.		Over 1,000 wage earn- ers.	
					Estab- lish- ments.	Wage earn- ers (average num- ber).	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.
PIANOS AND ORGANS AND MATERIALS.																						
United States.....		1914	478	37,556	11	93	234	100	1,259	92	3,193	76	5,723	68	11,119	32	11,296	5	3,338	1	1,394	
		1909	507	38,020	12	100	242	123	1,577	96	3,221	63	4,633	74	12,017	31	10,265	7	4,541	1	1,524	
Connecticut.....		1914	19	2,267	.....	2	5	3	31	5	210	2	173	4	675	3	1,173	.....	.....	.....	.....	
		1909	17	2,304	.....	.....	.....	4	35	3	111	.....	203	.....	734	.....	610	.....	611	.....	.....	
Illinois.....		1914	71	8,334	2	15	44	10	136	11	399	11	805	12	1,895	8	2,932	1	729	1	1,394	
		1909	68	8,777	1	8	23	17	223	14	471	6	423	12	1,979	7	2,601	2	1,533	1	1,524	
Indiana.....		1914	15	1,614	.....	1	2	2	27	4	150	4	312	3	619	.....	.....	1	504	.....	.....	
		1909	15	1,667	.....	3	8	2	25	1	47	4	289	3	518	1	253	1	527	.....	.....	
Massachusetts.....		1914	52	3,906	2	8	24	10	116	8	309	12	1,041	8	1,262	4	1,154	.....	.....	.....	.....	
		1909	59	4,245	4	13	31	8	105	8	248	9	674	13	1,967	4	1,220	.....	.....	.....	.....	
Michigan.....		1914	17	1,070	.....	3	4	2	16	5	154	4	271	2	355	1	270	.....	.....	.....	.....	
		1909	17	1,779	1	2	5	2	26	1	50	4	306	5	705	2	687	.....	.....	.....	.....	
New Jersey.....		1914	24	1,960	2	4	14	3	42	2	49	6	436	6	936	1	483	.....	.....	.....	.....	
		1909	18	1,393	1	3	7	2	28	4	146	4	279	3	587	1	346	.....	.....	.....	.....	
New York.....		1914	160	12,602	1	23	55	45	594	36	1,206	22	1,619	20	3,200	10	3,823	3	2,105	.....	.....	
		1909	184	11,938	1	32	71	51	655	40	1,343	27	1,981	23	3,655	7	2,363	8	1,870	.....	.....	
Ohio.....		1914	27	1,745	.....	6	20	6	75	5	161	4	302	5	822	1	365	.....	.....	.....	.....	
		1909	30	1,841	1	4	11	12	152	5	143	2	189	4	719	2	627	.....	.....	.....	.....	
Pennsylvania.....		1914	28	922	.....	7	11	10	115	6	198	3	193	1	153	1	252	.....	.....	.....	.....	
		1909	30	1,182	2	6	16	10	118	8	259	1	56	1	149	2	584	.....	.....	.....	.....	
PIANOS.																						
United States.....		1914	255	23,877	2	32	87	52	644	52	1,769	50	3,832	44	7,221	17	5,592	5	3,338	1	1,394	
Illinois.....		1914	43	6,682	.....	5	16	8	108	5	183	7	521	10	1,633	6	2,098	1	729	1	1,394	
Indiana.....		1914	12	1,585	.....	.....	.....	.....	.....	4	150	4	312	3	619	.....	.....	1	504	.....	.....	
Massachusetts.....		1914	10	2,352	.....	1	4	2	18	2	68	7	633	4	741	3	888	.....	.....	.....	.....	
Michigan.....		1914	12	925	.....	1	1	2	16	3	83	3	200	2	355	1	270	.....	.....	.....	.....	
New Jersey.....		1914	8	852	.....	1	5	2	31	.....	.....	2	191	1	142	1	483	.....	.....	.....	.....	
New York.....		1914	103	8,202	.....	11	30	26	347	27	914	18	1,283	14	2,215	4	1,308	3	2,105	.....	.....	
Ohio.....		1914	13	707	.....	3	12	1	18	3	93	4	302	2	282	.....	.....	.....	.....	.....	.....	
Pennsylvania.....		1914	13	646	.....	1	1	7	73	1	25	2	142	1	153	1	252	.....	.....	.....	.....	
ORGANS.																						
United States.....		1914	85	3,063	2	33	71	17	229	17	594	10	684	4	746	2	739	.....	.....	.....	.....	
New York.....		1914	16	648	1	5	8	7	86	1	24	1	66	.....	.....	1	464	.....	.....	.....	.....	
PIANO AND ORGAN MATERIALS.																						
United States.....		1914	138	10,616	7	28	76	31	386	23	830	16	1,207	20	3,152	13	4,965	.....	.....	.....	.....	
Connecticut.....		1914	12	1,544	.....	2	5	3	31	2	93	1	84	1	158	3	1,173	.....	.....	.....	.....	
Illinois.....		1914	18	1,420	.....	2	9	2	28	4	145	2	142	2	262	2	834	.....	.....	.....	.....	
Massachusetts.....		1914	24	1,349	.....	2	3	9	86	3	133	4	334	4	521	1	266	.....	.....	.....	.....	
New York.....		1914	41	3,752	.....	7	17	12	161	8	268	3	270	6	985	5	2,051	.....	.....	.....	.....	
Ohio.....		1914	6	915	.....	1	3	1	7	.....	.....	.....	.....	3	540	1	365	.....	.....	.....	.....	

In the organ branch six establishments had more than 100 wage earners. They employed nearly one-half of the total average number of wage earners. One of these establishments was located in New York and employed more than two-thirds of the number of wage earners reported for the state.

Nearly one-fourth of the establishments engaged in the piano and organ materials branch had more than 100 wage earners. Together they employed more than two-thirds of the total average number reported

for this branch. This condition was reflected in New York and Connecticut, the leading states.

**Engines and power.**—Table 12 shows, for 1914, 1909, and 1904, for the combined industry and for each of its branches, the number and horsepower of engines or motors employed in generating power (including electric motors operated by purchased current). It also shows separately the number and horsepower of electric motors operated by current generated in the establishments reporting.

POWER.		NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.					
					Amount.			Per cent distribution.		
		1914	1909	1904	1914	1909	1904	1914	1909	1904
PIANOS AND ORGANS AND MATERIALS.										
Primary power, total.....		2,079	1,147	539	44,349	41,623	30,134	100.0	100.0	100.0
Owned.....		321	393	329	35,027	35,702	27,314	79.0	85.8	90.6
Steam engines and turbines.....		263	302	263	32,792	33,314	25,700	74.0	80.0	85.3
Internal-combustion engines.....		39	55	37	1,592	1,282	747	3.6	3.1	2.5
Water wheels, turbines, and motors.....		19	36	29	643	1,106	887	1.4	2.7	2.9
Rented.....		1,758	754	210	9,322	5,921	2,820	21.0	14.2	9.4
Electric.....		1,758	754	210	9,046	5,355	1,932	20.4	12.9	6.4
Other.....					276	566	888	0.6	1.4	2.9
Electric.....		3,170	1,662	442	21,492	13,256	5,085	100.0	100.0	100.0
Rented.....		1,758	754	210	9,046	5,355	1,932	42.1	40.4	38.0
Generated by establishments reporting.....		1,412	908	232	12,446	7,901	3,153	57.9	59.6	62.0
PIANOS.										
Primary power, total.....		962	553	282	25,981	23,246	17,467	100.0	100.0	100.0
Owned.....		178	192	176	21,491	20,702	16,422	82.7	89.1	94.0
Steam engines and turbines.....		163	166	154	20,636	19,897	15,906	79.4	85.6	91.1
Internal-combustion engines.....		10	16	11	710	561	216	2.7	2.4	1.2
Water wheels, turbines, and motors.....		5	10	11	145	244	300	0.6	1.1	1.7
Rented.....		784	361	106	4,490	2,544	1,045	17.3	10.9	6.0
Electric.....		784	361	106	4,347	2,256	764	16.7	9.7	4.4
Other.....					143	288	281	0.6	1.2	1.6
Electric.....		1,882	1,053	246	12,689	7,345	2,577	100.0	100.0	100.0
Rented.....		784	361	106	4,347	2,256	764	34.3	30.7	29.6
Generated by establishments reporting.....		1,098	692	140	8,342	5,089	1,813	65.7	69.3	70.4
ORGANS.										
Primary power, total.....		536	172	98	3,666	3,334	4,085	100.0	100.0	100.0
Owned.....		29	54	63	1,989	2,496	3,663	54.3	74.9	89.7
Steam engines and turbines.....		19	31	40	1,770	2,205	3,151	48.3	66.2	77.1
Internal-combustion engines.....		10	23	18	219	291	266	6.0	8.7	6.5
Water wheels, turbines, and motors.....				5			246			6.0
Rented.....		507	118	35	1,677	838	422	45.7	25.1	10.3
Electric.....		507	118	35	1,677	813	200	45.7	24.4	4.9
Other.....						25	222		0.7	5.4
Electric.....		519	157	79	1,968	1,225	569	100.0	100.0	100.0
Rented.....		507	118	35	1,677	813	200	85.2	66.4	25.1
Generated by establishments reporting.....		12	39	44	291	412	369	14.8	33.6	64.9
PIANO AND ORGAN MATERIALS.										
Primary power, total.....		581	422	159	14,702	15,043	8,582	100.0	100.0	100.0
Owned.....		114	147	90	11,547	12,504	7,220	78.5	83.1	84.2
Steam engines and turbines.....		81	105	69	10,886	11,223	6,649	70.6	74.7	77.5
Internal-combustion engines.....		19	16	8	663	419	259	4.5	2.8	3.0
Water wheels, turbines, and motors.....		14	26	13	498	862	321	3.4	5.7	3.7
Rented.....		467	275	69	3,155	2,539	1,363	21.5	16.9	15.8
Electric.....		467	275	69	3,022	2,286	968	20.6	15.2	11.3
Other.....					133	253	395	0.9	1.7	4.5
Electric.....		769	452	117	6,835	4,690	1,939	100.0	100.0	100.0
Rented.....		467	275	69	3,022	2,286	968	44.2	48.8	49.9
Generated by establishments reporting.....		302	177	48	3,813	2,400	971	55.8	51.2	50.1

<sup>1</sup> Includes the amounts reported under the head of "other" owned power.

The total primary horsepower used in the combined industry increased 47.2 per cent from 1904 to 1914, while from 1909 to 1914 the increase was but 6.5 per cent. From 1909 to 1914 the horsepower of steam engines showed a small decrease of 522, or 1.6 per cent, and during the same period the rented electric power increased 3,691 horsepower, or 68.9 per cent. Thus the falling off in the horsepower of steam and other

owned power was more than offset by the increase in the use of rented electric power. The number and horsepower of electric motors operated by current generated in the establishments showed a relatively large increase in each census period.

The piano branch of the industry showed a decrease in the proportion of owned power used, from 89.1 per cent in 1909 to 82.7 per cent in 1914. There was an

increase of about one-tenth in the total horsepower, due to the increase in rented electric power.

The organ branch reported the utilization of only about one-tenth more power in 1914 than in 1909. The character of the power used changed, as is shown by the fact that the proportion of the total power represented by owned power in 1914 was 54.3 per cent, as compared with 74.9 per cent in 1909, while the proportion of rented electric power increased from 24.4 per cent in 1909 to 45.7 per cent in 1914.

The piano and organ materials branch showed a small decrease during this period in the amount of power used. The proportion of rented electric power in this branch of the industry shows an increase from 15.2 per cent in 1909 to 20.6 per cent in 1914, with a corresponding decrease in the proportion of owned power.

**Fuel.**—Closely related to the subject of power employed in manufactures is that of fuel consumed in generating this power or otherwise used in the manufacturing processes.

Table 13 shows, for 1914, the quantity of each kind of fuel used, for which data were obtained, for the combined industry and for each of its branches, for the United States and for the leading states.

Bituminous coal was the fuel largely used in 1914 in the combined industry and in each branch. The largest amount was reported by Illinois, the state second in rank in the combined industry, while New York, the leading state, reported the greatest quantity of anthracite. The quantity of coke used was comparatively small. More than 50 per cent of the gas reported for the industry was natural gas, and was consumed in Ohio, the state sixth in rank. Similar conditions are shown for the organ and piano and organ materials industries. In the piano industry New York

used more gas than any other state, or 44.8 per cent of the total for the industry. A very small portion of this was natural gas.

Table 13

INDUSTRY AND STATE.	COAL.		Coke (tons, 2,000 lbs.).	Oil, in- cluding gasoline (bar- rels).	Gas (1,000 cubic feet).
	Anthra- cite (tons, 2,240 lbs.).	Bitumi- nous (tons, 2,000 lbs.).			
PIANOS AND ORGANS AND MATERIALS.					
United States.....	36,812	185,934	5,869	1,979	79,622
Connecticut.....	1,430	12,610	560	26	584
Illinois.....	1,099	63,220	1,168	41	5,433
Indiana.....	20,475	232	216	136	136
Massachusetts.....	2,260	18,789	353	99	8,285
Michigan.....	161	12,215	.....	.....	65
New Jersey.....	7,288	4,484	125	22	636
New York.....	23,571	28,093	588	837	14,378
Ohio.....	.....	7,957	1,808	24	42,906
Pennsylvania.....	610	1,869	1,020	.....	2,491
All other states.....	93	16,222	15	714	4,388
PIANOS.					
United States.....	26,891	138,619	2,507	1,549	26,556
Illinois.....	1,020	55,296	423	5	2,877
Indiana.....	.....	20,434	192	216	.....
Massachusetts.....	1,345	10,445	300	.....	7,724
Michigan.....	161	10,367	.....	.....	.....
New Jersey.....	6,035	2,433	.....	.....	55
New York.....	17,364	17,634	542	765	11,901
Ohio.....	.....	7,261	30	10	1,077
Pennsylvania.....	547	1,250	1,020	.....	74
All other states.....	419	13,499	.....	553	2,848
ORGANS.					
United States.....	812	12,691	22	171	13,814
Illinois.....	.....	1,673	.....	5	80
Massachusetts.....	35	662	4	.....	15
New York.....	53	2,659	.....	.....	780
Ohio.....	.....	60	.....	4	10,018
Pennsylvania.....	41	509	.....	.....	741
All other states.....	683	7,128	18	162	2,180
PIANO AND ORGAN MATERIALS.					
United States.....	9,109	34,624	3,340	259	39,252
Connecticut.....	1,018	8,139	557	25	205
Illinois.....	79	6,251	745	31	2,476
Massachusetts.....	880	7,682	49	99	546
New York.....	6,454	7,800	46	72	1,697
Ohio.....	.....	636	1,778	10	31,811
Pennsylvania.....	22	110	.....	.....	1,676
All other states.....	656	4,006	165	22	841

#### SPECIAL STATISTICS RELATING TO PRODUCTS.

At each of the last four censuses supplemental data were obtained from those establishments engaged primarily in the manufacture of pianos and organs, consisting of a detailed statement of the number and value of the different kinds of pianos and organs manufactured.

**Production of pianos.**—Table 14 shows the number and value of the upright and grand pianos made in the United States and in 10 of the leading states in 1914, 1909, 1904, and 1899, where figures can be shown without disclosing the operations of individual establishments.

Table 14	Census year.	PIANOS (WITH AND WITHOUT PLAYER ATTACHMENTS).				
		Total value.	Upright.		Grand.	
			Number.	Value.	Number.	Value.
United States.	1914	\$50,311,883	315,764	\$51,696,896	10,510	\$4,614,907
	1909	\$58,493,846	355,804	\$54,455,177	8,741	\$4,035,669
	1904	\$41,476,479	253,825	\$37,815,056	7,372	\$3,661,423
	1899	\$27,002,852	166,760	\$25,301,432	4,251	\$1,701,420
Per cent of total.	1914	100.0	96.8	91.8	3.2	8.2
	1909	100.0	97.6	93.1	2.4	6.9
	1904	100.0	97.2	91.2	2.3	5.8
	1899	100.0	97.5	93.7	2.5	6.3
Connecticut.....	1914	\$972,343	6,127	\$972,343	(1)	(1)
	1909	1,716,695	9,759	1,716,695	(1)	(1)
	1904	1,238,667	9,221	1,231,242	19	\$7,425
	1899	944,994	7,259	941,344	10	3,650
Illinois.....	1914	14,562,820	92,893	14,277,117	733	285,703
	1909	14,783,394	107,903	14,646,471	380	136,923
	1904	9,696,142	73,899	9,614,431	238	81,711
	1899	5,691,747	46,024	5,643,287	110	48,460
Indiana <sup>2</sup> .....	1914	3,513,127	23,669	3,513,127	(1)	(1)
	1909	3,319,190	22,891	3,319,190	(1)	(1)
Massachusetts.....	1914	5,033,930	23,596	4,315,701	1,948	718,229
	1909	5,328,716	25,644	4,411,627	2,533	916,789
	1904	5,120,833	20,967	4,022,247	2,159	1,107,596
	1899	3,566,662	15,872	3,177,217	937	389,445
Michigan <sup>2</sup> .....	1914	2,203,745	13,707	2,203,745	(1)	(1)
	1909	3,732,973	25,165	3,732,973	(1)	(1)
New Jersey <sup>2</sup> .....	1914	895,711	4,618	895,711	(1)	(1)
	1909	693,917	3,970	693,917	(1)	(1)
New York.....	1914	22,285,359	115,812	10,606,964	5,403	2,678,395
	1909	22,764,384	127,482	20,393,863	4,298	2,370,621
	1904	16,684,911	98,491	14,819,717	3,541	1,835,194
	1899	11,862,257	69,274	10,899,392	2,581	892,855
Ohio.....	1914	1,024,679	10,239	1,762,273	365	162,406
	1909	1,901,294	11,118	1,778,629	229	122,665
	1904	1,855,610	11,119	1,782,910	160	72,700
	1899	1,214,068	8,696	1,150,293	166	63,775
Pennsylvania <sup>2</sup> .....	1914	1,363,114	6,618	1,302,706	165	60,408
	1909	1,818,070	9,806	1,784,220	96	33,850
Wisconsin <sup>2</sup> .....	1914	1,440,721	11,766	1,440,721	(1)	(1)
	1909	640,850	4,735	540,350	(1)	(1)
All other states....	1914	2,116,314	6,719	1,406,488	1,896	709,826
	1909	1,894,883	7,831	1,436,942	1,205	457,921
	1904	6,871,316	40,128	6,344,519	1,255	526,797
	1899	3,723,124	19,635	3,489,899	447	233,225

<sup>1</sup> Included in "all other states."

<sup>2</sup> Figures for 1904 and 1899 included in "all other states," to avoid disclosing individual operations.

From 1899 to 1909 there was a steady increase in the total number and value of upright and grand pianos manufactured, but from 1909 to 1914 the number of upright pianos manufactured decreased by 40,040, or 11.3 per cent, and the value, by \$2,758,281, or 5 per cent. During this period a decrease in upright pianos is also noted in Connecticut, Illinois, Massachusetts, Michigan, New York, Ohio, and Pennsylvania. The number and value of the upright pianos manufactured in 1914 represented 96.8 and 91.8 per cent, respectively, of the total. The total number and value of grand pianos manufactured increased at each census period shown in the table, and also in the states of Connecticut, Illinois, New York, and Pennsylvania. Ohio shows an increased production at each period, except from 1899 to 1904, when the number decreased by 6, but the value increased \$8,925.

The value of products reported in this branch of the industry by the three leading states, New York, Illinois, and Massachusetts, in the order named, con-

stituted nearly three-fourths (74.4 per cent) of the total reported for the industry. In 1909 these states held the same relative rank and reported 73.3 per cent of the total value of products for that year.

**Production of organs.**—Table 15 shows the number and value of reed and pipe organs reported for the United States and for five leading states, for 1914, 1909, 1904, and 1899.

Table 15		Cen- sus year.	ORGANS.					
			Total value.	Reed.		Pipe.		
				Num- ber.	Value.	Num- ber.	Value.	
United States...	1914	\$6,378,312	40,533	\$1,718,011	2,273	\$4,660,301		
	1909	\$5,309,016	64,111	\$2,585,429	1,224	\$2,713,587		
	1904	\$6,152,032	113,065	\$4,162,053	901	\$1,990,979		
	1899	\$5,217,261	106,694	\$4,040,240	564	\$1,177,021		
Percent of total.	1914	100.0	94.7	26.9	5.3	73.1		
	1909	100.0	98.1	48.9	1.9	51.1		
	1904	100.0	99.2	67.7	0.8	32.3		
	1899	100.0	99.5	77.4	0.5	22.6		
Illinois.....	1914	\$1,448,429	12,506	\$540,043	589	\$908,386		
	1909	1,281,415	28,644	973,783	154	307,632		
	1904	1,969,543	55,619	1,739,220	140	230,323		
	1899	1,773,200	52,307	1,668,043	87	105,157		
Massachusetts.....	1914	379,204	(1)	(1)	73	379,204		
	1909	339,693	(1)	(1)	151	339,693		
	1904	671,770	2,073	150,883	137	520,887		
	1899	550,092	3,323	190,582	137	365,510		
New York.....	1914	734,771	(1)	(1)	679	734,771		
	1909	330,373	(1)	(1)	245	330,373		
	1904	133,471	(1)	(1)	58	133,471		
	1899	216,120	(1)	(1)	73	216,120		
Ohio.....	1914	187,691	(1)	(1)	85	187,691		
	1909	199,964	(1)	(1)	85	199,964		
	1904	346,063	1,949	94,577	137	251,486		
	1899	125,647	1,643	98,572	16	25,075		
Pennsylvania.....	1914	215,444	(1)	(1)	81	215,444		
	1909	192,901	(1)	(1)	82	192,901		
	1904	417,614	5,715	242,059	87	175,555		
	1899	426,428	6,240	275,438	80	150,990		
All other states.....	1914	3,412,773	28,027	1,177,968	766	2,234,805		
	1909	2,964,670	35,467	1,621,646	507	1,343,024		
	1904	2,613,571	47,709	1,935,314	342	678,257		
	1899	2,121,774	43,151	1,807,605	171	314,169		

<sup>1</sup> Included in "all other states," to avoid disclosing individual operations.

The total value of organs manufactured increased during each period shown in the table, except from 1904 to 1909, when a decrease is shown. This decrease was in the production of reed organs, as the manufacture of pipe organs increased. The figures for pipe organs include those for 1,088 orchestrons, valued at \$1,040,091.

In the manufacture of both reed and pipe organs, as measured by value of products, Illinois was the leading state in 1914, reporting 31.4 per cent and 19.5 per cent, respectively, of the total value.

Table 16 shows in detail the statistics of products manufactured in the piano and organ branches of the industry for 1914, 1909, and 1904.

The production of pianos increased 65,077, or 24.9 per cent, in number and \$14,814,074, or 35.7 per cent, in value during the decade, but from 1909 to 1914 the number decreased 38,271, or 10.5 per cent, and the value, \$2,181,983, or 3.7 per cent.

The manufacture of upright pianos without player attachments decreased 93,623, or 29.1 per cent, in

number and \$13,748,794, or 30.4 per cent, in value during the period 1909-1914. This decrease is somewhat offset by the marked increase in the production of this class of pianos for or with player attachments of 53,583, or 155.3 per cent, in number and \$10,990,513, or 118.5 per cent, in value during this period. Included in the figures for upright pianos are those for 3,622 automatic pianos, valued at \$1,373,206.

Table 16 PRODUCT.	PIANOS AND ORGANS.		
	1914	1909	1904
Total value <sup>1</sup> .....	\$99,072,383	\$70,056,223	\$52,964,315
Pianos:			
Number.....	326,274	364,545	261,197
Value.....	\$56,311,863	\$58,493,846	\$41,497,789
Upright—			
Without player attachments—			
Number.....	227,686	321,309	251,957
Value.....	\$31,431,382	\$45,180,176	\$37,418,984
For or with player attachments—			
Number.....	88,078	34,495	1,888
Value.....	\$20,265,514	\$9,275,001	\$417,382
Grand—			
Without player attachments—			
Number.....	9,679	8,720	
Value.....	\$4,201,302	\$4,009,769	7,372
For or with player attachments—			
Number.....	831	21	3,661,423
Value.....	\$413,665	\$28,900	
Player attachments made separate:			
Number.....	6,493	10,898	20,391
Value.....	\$854,774	\$1,474,630	\$2,004,266
Organs:			
Number.....	42,806	65,335	113,966
Value.....	\$6,378,312	\$5,309,016	\$6,625,319
Pipe—			
Number.....	2,273	1,224	901
Value.....	\$4,660,301	\$2,713,587	\$1,989,979
Reed—			
Number.....	40,533	64,111	113,065
Value.....	\$1,718,011	\$2,595,429	\$4,635,340
Perforated music rolls, value.....	\$833,357	\$216,150	
Parts, materials, and supplies, value.....	\$2,913,197	\$2,442,611	\$2,836,941
All other products, value.....	\$1,780,880	\$2,119,970	

<sup>1</sup> In addition, establishments engaged primarily in industries other than the piano and organ industry reported, in 1914, pianos, organs, and parts to the value of \$754,148, of which \$712,850 was the value of \$10,428 piano-player attachments and in 1904, piano players, valued at \$25,458, and reed and pipe organs, valued at \$149,114.

<sup>2</sup> Figures do not agree with those published in 1909 or with those in the general tables, because certain establishments revised their reports for that census.

<sup>3</sup> Includes \$21,310, the value of square pianos.

<sup>4</sup> Includes \$473,287, the value of street and self-playing organs.

Of the total number of upright pianos manufactured in 1914, 88,078, or 27.9 per cent, were for or with player attachments, and the value of these was \$20,265,514, or 39.2 per cent of the total.

The production of player attachments in the piano and organ industry shows a decrease of 4,405, or 40.4 per cent, in number and \$619,856, or 42 per cent, in value from 1909 to 1914, but these figures do not represent the total production, as there was reported in the piano and organ materials industry 10,428 attachments, valued at \$712,850. This makes an increase of 6,023, or 55.3 per cent, in number and \$92,994, or 6.3 per cent, in value in the total production.

The total number of organs decreased during each period shown in the table. While the value decreased 19.9 per cent from 1904 to 1909, it increased 20.2 per cent from 1909 to 1914. The production of reed organs decreased during each census period shown, while that of pipe organs shows a marked increase.

Five establishments, whose chief product was pianos, manufactured organs, valued at \$1,249,446, and 12 establishments, whose chief product was organs, manufactured pianos, valued at \$534,539.

The value of perforated music rolls made in establishments manufacturing pianos and organs shows an increase of \$617,207, or 285.5 per cent, since 1909, the first census at which these data were reported separately. There was also reported a value of \$1,192,683 for this product in 1914 and \$575,317 in 1909 by establishments manufacturing piano and organ materials, which added to that in the piano and organ industry makes a total reported value of \$2,026,040 for 1914 and \$791,467 for 1909, and an increase in the total value during the period 1909-1914 of \$1,234,573, or 156 per cent.

## DETAIL STATE TABLES.

The principal statistics secured by the census inquiry concerning the piano, organ, and piano and organ materials industry are presented, by states, in Tables 17 and 18.

Table 17 shows, for 1914, 1909, and 1904, by states,

the number of establishments, average number of wage earners, primary horsepower, wages, cost of materials, and value of products as reported for the combined industries. Table 18 presents, for 1914, by states, the more detailed statistics of the industry.

TABLE 17.—COMPARATIVE SUMMARY, BY STATES, FOR 1914, 1909, AND 1904.

STATE.	Cen- sus year.	Num- ber of estab- lish- ments.	Wage earners (aver- age num- ber).	Pri- mary horse- power.	Wages.	Cost of mate- rials.	Value of prod- ucts.	STATE.	Cen- sus year.	Num- ber of estab- lish- ments.	Wage earners (aver- age num- ber).	Pri- mary horse- power.	Wages.	Cost of mate- rials.	Value of prod- ucts.
United States.....	1914	478	37,556	44,349	\$23,353	\$41,253	\$38,948	Minnesota.....	1914	4	108	249	\$79	\$156	\$315
	1909	507	38,020	41,623	22,762	43,765	39,790		1909	5	143	153	100	126	294
	1904	444	33,081	30,134	18,527	27,987	66,093		1904	13	23	26	16	28	55
California.....	1914	8	94	89	74	132	252	New Jersey.....	1914	24	1,960	2,102	1,096	1,738	3,503
	1909	11	57	53	60	41	150		1909	18	1,393	1,121	721	1,076	2,229
	1904	12	105	174	86	69	208		1904	14	1,110	1,400	560	657	1,477
Connecticut.....	1914	19	2,267	2,696	1,277	2,570	5,230	New York.....	1914	160	12,602	11,527	7,976	15,756	33,072
	1909	17	2,304	2,559	1,251	3,022	5,538		1909	184	11,938	10,905	7,752	17,495	33,680
	1904	17	2,583	2,224	1,337	2,402	5,273		1904	160	9,614	6,569	5,925	10,950	23,390
Illinois.....	1914	71	8,334	8,597	5,237	8,322	19,706	Ohio.....	1914	27	1,745	2,201	1,022	1,673	3,545
	1909	68	8,777	8,123	5,009	8,642	19,176		1909	30	1,841	2,254	1,092	1,922	3,926
	1904	56	7,508	6,809	3,932	5,398	13,323		1904	26	2,210	2,153	1,205	1,625	3,684
Indiana.....	1914	15	1,614	3,253	1,054	1,647	3,934	Pennsylvania.....	1914	28	922	1,233	555	1,058	2,084
	1909	15	1,667	2,650	994	1,703	3,686		1909	30	1,182	1,260	505	1,248	2,382
	1904	12	1,237	2,346	630	884	2,270		1904	28	1,008	877	525	646	1,757
Kentucky.....	1914	7	444	866	259	370	761	Wisconsin.....	1914	16	495	553	307	866	1,470
	1909	6	343	796	222	272	588		1909	11	369	339	202	490	893
	1904	6	360	478	188	244	505		1904	3	84	37	45	120	184
Massachusetts.....	1914	52	3,906	5,105	2,510	3,702	8,213	All other states.....	1914	40	1,995	3,951	1,230	2,004	4,181
	1909	59	4,245	4,454	2,668	4,149	9,106		1909	36	1,982	4,266	1,111	1,570	3,916
	1904	55	4,171	3,381	2,488	3,114	8,279		1904	39	1,999	2,350	1,053	1,100	3,704
Michigan.....	1914	17	1,070	1,927	677	1,259	2,682								
	1909	17	1,779	2,690	1,075	2,009	4,226								
	1904	13	1,069	1,310	537	750	1,984								

<sup>1</sup> Excludes statistics for two establishments, to avoid disclosing individual operations.

<sup>2</sup> Excludes statistics for three establishments, to avoid disclosing individual operations.

<sup>3</sup> Excludes statistics for one establishment, to avoid disclosing individual operations.

## MANUFACTURES.

TABLE 18.—DETAIL STATISTICS FOR

STATE.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.						Capital.
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.			Total.	16 and over.		Under 16.			
					Male.	Female.	Average number.	Number, 15th day of—			Male.	Female.	Male.	Female.		
								Maximum month.	Minimum month.							

## MUSICAL INSTRUMENTS, PIANOS AND ORGANS AND MATERIALS.

1	United States.....	478	41,723	221	1,136	1,825	985	37,556	Mh 40,442	Au 35,176	36,676	33,860	2,467	320	29	\$130,989,794
2	California.....	8	119	5	9	9	2	94	Jy 104	No 76	105	92	13	.....	.....	359,023
3	Connecticut.....	19	2,479	5	68	96	43	2,267	Ja 2,596	Jy 1,922	2,144	1,769	371	4	.....	5,725,686
4	Illinois.....	71	9,315	24	202	467	258	8,334	Ap 8,839	De 7,823	7,964	7,236	633	80	15	39,340,270
5	Indiana.....	15	1,823	4	57	103	45	1,614	Ja 1,812	No 1,404	1,667	1,506	100	.....	1	5,910,099
6	Kentucky.....	7	533	3	13	38	35	444	Mh 492	No 343	409	390	19	.....	.....	1,616,030
7	Massachusetts.....	52	4,309	21	118	183	81	3,906	Mh 4,309	Au 3,515	3,780	3,535	210	35	.....	12,469,020
8	Michigan.....	17	1,221	4	43	76	28	1,070	Mh 1,162	No 1,001	1,017	988	29	.....	.....	6,868,787
9	Minnesota.....	4	128	4	6	7	3	108	Ap 123	Au 95	98	98	.....	.....	.....	420,450
10	New Jersey.....	24	2,150	7	63	87	63	1,960	Mh 2,143	Jy 1,807	1,894	1,535	354	3	2	3,708,854
11	New York.....	160	13,953	70	391	596	294	12,602	Mh 13,452	Jy 11,266	12,661	11,902	590	159	10	41,033,621
12	Ohio.....	27	1,896	23	58	46	24	1,745	Mh 1,875	Oc 1,621	1,657	1,575	89	2	.....	3,845,529
13	Pennsylvania.....	28	1,053	23	38	43	27	922	Fe 1,008	Au 853	905	875	22	7	1	2,931,629
14	Wisconsin.....	6	546	.....	18	16	17	495	Ja 534	No 454	464	450	2	12	.....	1,253,851
15	All other states.....	40	2,168	28	52	58	35	1,995	.....	.....	1,911	1,849	44	18	.....	5,506,945

## MUSICAL INSTRUMENTS, PIANOS.

1	United States.....	255	26,828	85	710	1,449	707	23,877	Mh 25,372	Au 22,393	23,512	22,557	755	186	14	\$101,746,424
2	Illinois.....	43	7,527	9	144	434	258	6,682	Ap 7,064	Oc 6,370	6,414	6,098	240	63	13	36,453,010
3	Indiana.....	12	1,788	3	53	102	45	1,585	Ja 1,779	No 1,381	1,647	1,546	100	.....	1	5,872,624
4	Massachusetts.....	19	2,627	2	63	154	56	2,352	Ja 2,587	Au 2,062	2,274	2,187	53	34	.....	9,459,742
5	Michigan.....	12	1,063	2	37	73	26	925	Mh 997	No 853	874	847	27	.....	.....	6,446,110
6	New Jersey.....	8	947	2	23	61	9	852	Oc 892	Je 782	842	714	128	.....	.....	2,052,711
7	New York.....	103	9,258	34	276	502	244	8,202	Mh 8,754	Jy 7,160	8,356	8,177	124	55	.....	30,657,547
8	Ohio.....	13	786	7	33	25	14	707	Ap 745	Jy 681	687	685	2	.....	.....	2,042,356
9	Pennsylvania.....	13	728	10	24	34	14	646	Fe 732	Se 579	624	600	17	7	.....	2,402,457
10	Wisconsin.....	6	546	.....	18	16	17	495	Ja 534	No 454	464	450	2	12	.....	1,253,851
11	All other states.....	26	1,558	16	39	48	24	1,431	.....	.....	1,330	1,253	62	15	.....	5,106,016

## MUSICAL INSTRUMENTS, ORGANS.

1	United States.....	85	3,518	74	124	131	126	3,063	Mh 3,231	No 2,866	3,012	2,844	150	16	2	\$8,042,405
2	Illinois.....	10	265	6	14	4	9	232	Ja 242	No 210	210	200	8	2	.....	432,649
3	Massachusetts.....	9	241	7	12	8	9	205	Mh 227	No 178	198	193	4	1	.....	599,296
4	New York.....	16	714	21	21	11	13	648	Fe 710	Se 598	653	604	40	8	.....	1,725,517
5	Ohio.....	8	150	12	9	1	5	123	Fe 135	Oc 102	118	112	4	2	.....	131,126
6	Pennsylvania.....	8	189	6	8	6	6	163	Je 175	De 136	155	151	3	.....	1	272,455
7	All other states.....	34	1,959	22	60	101	84	1,692	.....	.....	1,678	1,584	91	3	.....	4,831,362

## MUSICAL INSTRUMENTS, PIANO AND ORGAN MATERIALS.

1	United States.....	138	11,377	62	302	245	152	10,616	Mh 11,839	Jy 9,776	10,152	8,459	1,562	118	13	\$21,200,965
2	Connecticut.....	12	1,683	5	42	59	33	1,544	Ja 1,838	Jy 1,223	1,498	1,168	326	4	.....	2,991,395
3	Illinois.....	18	1,523	9	44	29	21	1,420	Ja 1,588	De 1,212	1,340	938	385	15	2	2,454,811
4	Massachusetts.....	24	1,441	12	43	21	16	1,349	Mh 1,540	De 1,212	1,308	1,155	153	.....	.....	2,409,982
5	New York.....	41	3,981	15	94	83	37	3,752	Mh 3,993	Jy 3,495	3,652	3,121	426	96	9	8,650,557
6	Ohio.....	6	960	4	16	20	5	915	Mh 1,011	Se 811	852	778	74	.....	.....	1,622,047
7	Pennsylvania.....	7	136	7	6	3	7	113	De 135	Ja 100	126	124	2	.....	.....	256,717
8	All other states.....	30	1,653	10	57	30	33	1,523	.....	.....	1,376	1,175	196	3	2	2,815,656

\* Owned power only.

\* Includes rented power, other than electric.

\* Same number reported for one or more other months.

\* Excludes statistics for three establishments manufacturing organs, to avoid disclosing individual operations.

\* All other states embrace: Arkansas, 1 establishment; Delaware, 1; District of Columbia, 1; Iowa, 4; Maine, 2; Maryland, 8; Missouri, 4; Nebraska, 1; New Hampshire, 2; North Carolina, 1; Oregon, 2; Rhode Island, 1; Vermont, 5; Virginia, 2; Washington, 2; Wisconsin, 3.

# MUSICAL INSTRUMENTS.

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THE INDUSTRY, BY STATES: 1914.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.					
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horse-power generated in establishments reporting.
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, including internal revenue and corporation income.	Principal materials.	Fuel and rent of power.			Total.	Steam engines. <sup>1</sup>	Internal-combustion engines. <sup>2</sup>	Water wheels and motors. <sup>1</sup>	Electric (rented).	

## MUSICAL INSTRUMENTS, PIANOS AND ORGANS AND MATERIALS.

\$3,739,745	\$2,742,880	\$23,352,651	\$310,198	\$1,150,040	\$621,756	\$40,368,080	\$884,711	\$88,948,145	\$47,095,354	44,349	32,792	1,568	643	9,046	12,446	1
20,610	13,122	73,935	.....	2,470	2,050	130,322	2,095	252,246	119,829	89	.....	.....	.....	89	.....	2
248,993	160,087	1,276,623	1,483	26,847	43,544	2,501,973	68,524	5,229,954	2,659,457	2,696	1,974	110	246	366	1,155	3
735,103	771,124	5,237,119	976	126,941	144,227	8,132,705	188,766	19,705,601	11,384,130	8,597	6,717	69	.....	1,811	2,794	4
199,055	122,499	1,053,977	1,650	10,415	24,384	1,597,904	49,556	3,933,934	2,285,474	3,253	2,730	95	.....	428	1,610	5
34,016	65,401	259,387	1,070	2,500	9,094	359,209	10,717	760,621	390,695	866	620	35	.....	211	299	6
373,635	227,354	2,509,521	917	143,210	115,802	3,586,942	115,191	8,213,341	4,511,208	5,105	3,895	200	207	803	593	7
135,532	111,500	676,930	1,703	2,260	23,758	1,229,686	29,683	2,681,855	1,422,486	1,927	1,805	.....	.....	122	164	8
18,480	13,646	79,165	645	.....	2,636	150,770	5,254	815,246	159,222	249	150	.....	.....	99	127	9
143,112	137,363	1,095,982	16	47,780	21,535	1,695,480	42,640	3,502,746	1,704,626	2,102	1,810	76	.....	216	949	10
1,418,591	863,974	7,975,809	279,522	690,141	132,688	15,498,540	257,258	33,071,781	17,315,983	11,527	8,148	403	30	2,946	3,250	11
133,005	56,606	1,022,350	2,044	65,547	29,735	1,631,875	41,042	3,544,686	1,871,769	2,201	885	560	.....	756	496	12
111,868	40,524	554,642	6,097	16,760	8,506	1,038,727	19,604	2,083,727	1,025,836	1,233	700	57	.....	476	408	13
39,966	24,333	306,754	978	9,680	10,002	851,608	14,555	1,469,585	603,422	553	410	.....	.....	143	27	14
127,184	135,347	1,230,457	13,097	6,089	53,895	1,962,779	39,826	4,182,822	2,180,217	3,951	2,948	263	160	580	674	15

## MUSICAL INSTRUMENTS, PIANOS.

\$2,595,196	\$2,114,644	\$15,704,679	\$276,470	\$845,150	\$447,526	\$28,533,989	\$557,056	\$62,775,035	\$33,653,990	25,981	20,636	553	145	4,347	8,342	1
588,158	716,892	4,417,393	75	105,007	129,500	6,906,683	151,469	16,785,649	9,727,497	6,559	5,337	50	.....	1,172	2,023	2
194,995	122,049	1,038,622	1,650	10,165	24,066	1,563,865	48,594	8,800,334	2,253,875	3,229	2,730	95	.....	404	1,510	3
219,326	180,500	1,525,669	.....	105,979	89,225	2,245,956	66,897	5,805,154	2,992,801	2,595	2,110	40	105	340	512	4
118,132	107,348	587,466	188	1,960	20,094	1,104,169	24,280	2,415,999	1,287,540	1,481	1,430	.....	.....	51	164	5
69,352	62,078	556,994	.....	23,890	14,541	804,091	21,586	1,737,722	912,045	1,426	1,380	.....	.....	46	848	6
1,038,286	730,552	5,509,675	267,578	527,379	100,599	11,896,519	165,847	24,406,261	12,343,895	6,565	4,526	320	30	1,639	2,006	7
88,369	32,299	447,339	2,044	30,972	17,725	1,052,572	15,221	1,972,309	904,516	996	820	88	.....	85	68	8
83,973	26,596	389,309	1,472	12,314	7,106	736,699	12,990	1,504,602	751,813	869	625	.....	.....	244	400	9
39,966	24,333	306,754	978	9,680	10,002	851,608	14,555	1,469,585	603,422	553	410	.....	.....	143	27	10
164,639	91,997	925,458	2,485	11,804	34,668	1,371,827	35,607	3,311,520	1,904,086	1,708	1,268	260	10	170	784	11

## MUSICAL INSTRUMENTS, ORGANS.

\$259,312	\$264,467	\$1,993,415	\$12,444	\$27,791	\$40,240	\$2,585,078	\$74,902	\$6,297,348	\$3,637,368	3,666	1,770	219	.....	1,677	291	1
23,503	5,534	141,353	866	1,302	1,822	162,411	5,379	424,290	256,500	321	130	.....	.....	191	.....	2
30,660	14,602	200,490	225	1,211	4,710	175,516	8,681	470,514	286,317	180	40	60	.....	80	.....	3
39,004	15,091	408,025	4,213	8,158	6,162	427,292	11,922	1,260,311	821,097	416	30	20	.....	366	.....	4
9,023	4,229	75,499	.....	1,923	1,806	109,165	3,252	239,497	127,080	191	65	72	.....	54	.....	5
15,550	8,086	96,508	4,625	2,076	940	106,884	2,937	266,513	156,692	223	75	29	.....	119	.....	6
140,972	217,525	1,071,545	2,515	13,121	24,800	1,603,810	42,731	3,636,223	1,989,682	2,335	1,430	38	.....	867	281	7

## MUSICAL INSTRUMENTS, PIANO AND ORGAN MATERIALS.

\$885,237	\$393,709	\$5,654,557	\$21,284	\$277,699	\$133,990	\$9,249,013	\$252,753	\$19,875,762	\$10,373,996	14,702	10,386	796	498	3,022	3,813	1
139,030	93,151	784,874	810	17,522	28,036	1,708,958	49,011	3,221,465	1,463,496	1,857	1,304	110	246	197	1,005	2
123,442	49,698	678,373	35	20,632	12,905	1,063,611	31,918	2,495,662	1,400,133	1,717	1,250	19	.....	448	771	3
129,649	32,852	783,362	692	36,020	21,867	1,165,470	39,613	2,437,073	1,232,590	2,330	1,745	100	102	383	81	4
341,301	118,331	2,058,109	7,731	154,604	25,927	3,174,729	79,489	7,405,209	4,150,991	4,546	3,592	63	.....	891	1,244	5
35,613	20,078	499,512	.....	26,652	10,204	470,138	22,569	1,332,880	840,173	1,014	.....	400	.....	614	428	6
12,840	5,842	68,830	.....	2,370	460	194,704	3,677	312,712	114,331	141	.....	28	.....	113	.....	7
109,862	44,817	781,497	12,016	19,899	34,591	1,471,403	26,476	2,670,161	1,172,282	3,097	2,495	76	150	376	276	8

<sup>1</sup> All other states embrace: Arkansas, 1 establishment; California, 2; Connecticut, 5; Iowa, 2; Kentucky, 3; Maine, 1; Maryland, 3; Minnesota, 3; Missouri, 2; Nebraska, 1; New Hampshire, 1; Oregon, 1; Washington, 1.  
<sup>2</sup> All other states embrace: California, 3 establishments; Connecticut, 2; Delaware, 1; District of Columbia, 1; Indiana, 1; Iowa, 2; Kentucky, 3; Maine, 1; Maryland, 3; Michigan, 3; Minnesota, 1; Missouri, 2; New Jersey, 3; North Carolina, 1; Vermont, 2; Virginia, 2; Wisconsin, 3.  
<sup>3</sup> All other states embrace: California, 3 establishments; Indiana, 2; Kentucky, 1; Maryland, 2; Michigan, 2; New Hampshire, 1; New Jersey, 13; Oregon, 1; Rhode Island, 1; Vermont, 3; Washington, 1.



## THE MANUFACTURE OF MUSICAL INSTRUMENTS AND MATERIALS, NOT SPECIFIED.

**Scope of the industry.**—The establishments in this industry were engaged primarily in the manufacture of various kinds of wind, percussive, and stringed musical instruments and materials therefor. The instruments include among others, accordions; banjos; bones; bugles; castanets; concertinas; cornets; trombones, tubas, and other metal instruments for band and orchestral use; cymbals; drums, bass and snare; dulcimers; fifes; flageolets; flutes; piccolos; guitars; harps; jew's-harps; lutes; lyres; mandolins; mechanical musical instruments; musical bells; sonnettes of wood and metal; ukuleles; tambourines;

tympanies; violins, violoncellos, and all other instruments of the violin type; xylophones; and zithers. Parts of these instruments, such as strings, drum-heads, violin bows and bridges, etc., are also produced for sale, as such, direct to musicians or to manufacturers of complete instruments. Thus there is some duplication within the industry. The number and value of the various kinds of instruments manufactured were not reported separately.

The following statement gives statistics for the different classes into which establishments in the industry were divided:

INDUSTRY.	Number of establishments.	Wage earners (average number).	Capital.	Wages.	Cost of materials.	Value of products.	Value added by manufacture.
Musical instruments and materials.....	241	1,831	\$3,857,787	\$1,160,512	\$1,022,584	\$3,624,667	\$2,602,083
Brass and other metal.....	39	733	1,903,269	494,456	296,993	1,390,819	1,093,826
Violins and other stringed instruments.....	135	495	992,679	235,148	272,712	1,142,149	869,437
All other.....	67	603	961,839	372,908	452,879	1,091,699	638,820

**Comparison with earlier censuses.**—Table 19 summarizes the statistics of establishments engaged in the manufacture of musical instruments and materials,

not specified, for each census from 1869 to 1914, and gives percentages of increase.

Table 19

	NUMBER OR AMOUNT.							PER CENT OF INCREASE. <sup>1</sup>					
	1914	1909	1904	1899	1889	1879	1869	1909-1914	1904-1909	1899-1904	1889-1899	1879-1889	1869-1879
Number of establishments.....	241	187	181	229	293	84	83	28.9	3.3	-21.0	-21.8	.....	.....
Persons engaged.....	2,410	2,269	2,554	2,799	(?)	(?)	(?)	6.2	-11.2	-8.8	.....	.....	.....
Proprietors and firm members.....	234	187	190	236	(?)	(?)	(?)	25.1	-1.6	-19.5	.....	.....	.....
Salaried employees.....	345	260	225	158	(?)	(?)	(?)	32.7	15.6	42.4	.....	.....	.....
Wage earners (average number).....	1,831	1,822	2,139	2,405	1,056	573	1,050	0.5	-14.8	-11.1	127.7	(?)	(?)
Primary horsepower.....	1,865	1,423	1,603	1,417	696	(?)	562	31.1	-11.2	13.1	103.6	.....	.....
Capital.....	\$3,857,787	\$3,297,669	\$3,743,469	\$3,896,101	\$1,329,329	\$654,850	\$1,851,600	17.0	-11.9	-3.9	193.1	103.0	-51.6
Salaries and wages.....	1,545,709	1,335,128	1,413,834	1,373,784	862,177	293,062	631,634	15.8	-5.6	2.9	59.3	194.2	-53.6
Salaries.....	855,197	342,853	251,766	141,745	(?)	(?)	(?)	12.4	36.2	77.6	.....	.....	.....
Wages.....	1,160,512	992,275	1,162,068	1,232,039	(?)	(?)	(?)	17.0	-14.6	-5.7	.....	.....	.....
Paid for contract work.....	14,601	14,960	1,042	6,254	(?)	(?)	(?)	-2.6	1,838.6	-83.3	.....	.....	.....
Rent and taxes (including internal revenue).....	128,708	88,309	47,457	40,617	(?)	(?)	(?)	49.1	.....	.....	.....	.....	.....
Cost of materials.....	1,022,584	889,000	1,129,939	1,205,337	510,664	385,776	932,657	14.9	-21.3	-6.3	136.0	32.4	-58.6
Value of products.....	3,624,667	3,228,108	3,481,710	3,394,734	1,888,613	853,746	2,019,464	12.3	-7.3	2.6	79.7	121.2	-57.7
Value added by manufacture (value of products less cost of materials).....	2,602,083	2,338,508	2,351,771	2,189,397	1,377,949	467,970	1,086,807	11.3	-0.6	7.4	58.9	194.4	-56.9

<sup>1</sup> A minus sign (—) denotes decrease; percentages are omitted where base is less than 100.

<sup>2</sup> Figures not available.

<sup>3</sup> Figures not strictly comparable.

<sup>4</sup> Exclusive of internal revenue.

While there was considerable variation in the number of establishments reported for this branch of the industry at the different censuses for which statistics are shown in Table 19, there has been comparatively little change since 1899 in the more important items given in the table. The total expenses, value of products, and value added by manufacture in 1914

exceeded that for any previous census. The amount paid for contract work varied greatly from 1899 to 1909, but the size of this item is dependent on business methods, and the increase or decrease at different census periods is no indication of the magnitude of the operations.

## DETAIL STATE TABLE.

Table 20 presents, for 1914, by states, the more detailed statistics of the industry. The three leading states in the industry in 1909, as measured by value of products, were New Jersey, Illinois, and Indiana, in the order named. In 1914 Indiana advanced to first rank, Illinois retained second position, while New

York, ranking fourth in 1909, was the third in rank in 1914. New Jersey, the leading state in 1909, dropped to fifth position in 1914. In both census years the three leading states together reported more than one-half of the total value of products.

TABLE 20.—DETAIL STATISTICS FOR THE INDUSTRY, BY STATES: 1914.

STATE.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.							WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.					EXPENSES.			
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Average number.	Wage earners.		Total.	16 and over.		Under 16.		Capital.	Salaries and wages.	
					Male.	Fe-male.		Maximum month.	Minimum month.		Male.	Fe-male.	Male.	Fe-male.		Officials.	Clerks, etc.
United States....	241	2,410	234	97	85	163	1,831	De 1,910	Jy 1,772	1,925	1,652	242	23	8	\$3,857,787	\$222,869	\$162,328
California.....	17	41	19	.....	.....	2	20	De 1 22	Ja 1 18	22	22	.....	.....	.....	42,787	.....	340
Illinois.....	27	461	23	21	21	18	378	De 391	Se 355	391	346	40	4	1	691,414	54,413	27,828
Indiana.....	12	492	6	18	9	64	395	De 428	Ja 325	428	393	35	.....	.....	1,216,466	62,337	42,328
Kentucky.....	3	4	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7,650	.....	.....
Maine.....	3	2	1	.....	.....	.....	1	De 1 2	Mh 0	1	1	.....	.....	.....	2,325	.....	.....
Massachusetts.....	25	359	26	10	20	21	282	De 302	Ja 269	302	237	60	4	1	318,809	17,865	25,646
Michigan.....	14	191	9	6	11	26	139	De 162	No 124	141	133	8	.....	.....	293,188	15,240	27,891
Minnesota.....	4	13	3	4	2	.....	4	Mh 5	Ap 3	5	5	.....	.....	.....	11,622	3,000	1,500
Missouri.....	5	15	4	2	.....	.....	9	( <sup>1</sup> ) 9	( <sup>2</sup> ) 9	10	9	.....	1	.....	23,968	1,716	.....
New Jersey.....	7	270	3	15	3	7	242	Oc 260	Jy 210	258	165	85	2	6	457,351	36,806	8,760
New York.....	61	332	72	14	10	9	227	Fe 242	An 205	226	218	7	1	.....	474,098	23,062	14,147
Oregon.....	6	8	7	.....	.....	.....	1	( <sup>3</sup> ) 1	( <sup>3</sup> ) 1	1	1	.....	.....	.....	6,179	.....	.....
Pennsylvania.....	18	106	19	4	4	6	73	De 80	Jy 70	75	64	.....	11	.....	178,798	5,120	5,160
Washington.....	8	9	7	.....	.....	.....	2	( <sup>2</sup> ) 2	( <sup>2</sup> ) 2	2	2	.....	.....	.....	9,750	.....	.....
All other states.....	31	107	31	3	5	10	58	.....	.....	63	56	7	.....	.....	123,379	3,310	8,728

STATE.	EXPENSES—continued.						Value of products.	Value added by manufacture.	POWER.					Electric horsepower generated in establishments reporting.			
	Salaries and wages.—Continued.	For contract work.	Rent and taxes.		For materials.				Primary horsepower.								
			Rent of factory.	Taxes, including internal revenue and corporation income.	Principal materials.	Fuel and rent of power.			Total.	Steam engines. <sup>5</sup>	Internal combustion engines. <sup>6</sup>	Water wheels and motors. <sup>5</sup>	Electric (rented).				
United States.....	\$1,160,512	\$14,601	\$97,184	\$31,524	\$971,177	\$51,407	\$3,624,667	\$2,602,083	1,865	360	684	135	686	212			
California.....	17,226	250	3,030	287	14,933	205	65,381	50,243	9	.....	.....	.....	9	.....			
Illinois.....	236,901	6,320	15,426	11,427	238,021	11,970	719,344	469,353	352	30	105	.....	217	.....			
Indiana.....	264,318	1,202	2,245	4,972	141,200	13,517	742,100	587,383	503	.....	370	.....	133	156			
Kentucky.....	.....	.....	.....	116	1,185	58	7,700	6,457	1	.....	.....	.....	1	.....			
Maine.....	360	.....	216	.....	634	70	2,615	1,911	5	.....	.....	.....	5	.....			
Massachusetts.....	204,522	2,212	19,585	3,005	157,820	4,844	418,845	256,181	302	40	56	135	71	.....			
Michigan.....	95,115	40	5,150	2,854	43,479	3,966	328,702	281,257	75	.....	.....	.....	76	.....			
Minnesota.....	2,225	500	1,200	105	1,475	167	21,375	19,733	12	.....	.....	.....	12	.....			
Missouri.....	5,101	.....	1,206	113	6,009	233	17,178	10,936	3	.....	.....	.....	3	.....			
New Jersey.....	111,517	500	336	3,613	123,083	4,520	353,854	226,251	244	240	4	.....	.....	21			
New York.....	135,749	1,735	35,966	2,645	177,769	6,820	635,931	451,342	192	30	102	.....	60	35			
Oregon.....	1,248	.....	1,008	46	5,477	203	17,132	11,452	4	.....	.....	.....	4	.....			
Pennsylvania.....	45,645	1,272	3,370	975	20,940	2,918	133,365	109,507	97	20	16	.....	61	.....			
Washington.....	854	.....	2,517	54	1,090	30	13,880	12,260	3	.....	.....	.....	3	.....			
All other states.....	39,731	570	5,929	1,312	38,062	1,886	147,765	107,817	62	.....	31	.....	31	.....			

<sup>1</sup> Same number reported for one or more other months.

<sup>2</sup> None reported for one or more other months.

<sup>3</sup> Same number reported throughout the year.

<sup>4</sup> All other states embrace: Alabama, 1 establishment; Colorado, 1; Connecticut, 5; Georgia, 1; Iowa, 3; Maryland, 2; Montana, 1; Nebraska, 2; Ohio, 10; Rhode Island, 1; Texas, 1; Wisconsin, 3.

<sup>5</sup> Owned power only.

<sup>6</sup> Includes rented power, other than electric.

## THE PHONOGRAPH, GRAPHOPHONE, AND TALKING-MACHINE INDUSTRY.

## GENERAL STATISTICS.

Scope of the industry.—Establishments manufacturing mechanical devices, by whatever names known, for registering and reproducing speech, music, and other sound, are included in this industry. Those manufacturing records, blanks, horns, needles, matrices, multiplex attachments, and other supplies and materials used in the industry are also included.

Comparison with earlier censuses.—Table 21 summarizes the statistics of establishments engaged in the manufacture of phonographs, graphophones, and talking machines for each census from 1899 to 1914, and gives percentages of increase.

Table 21	NUMBER OR AMOUNT.				PER CENT OF INCREASE. <sup>1</sup>		
	1914	1909	1904	1899	1909-1914	1904-1909	1899-1904
Number of establishments.....	18	18	14	11	.....	.....	.....
Persons engaged.....	11,366	5,928	3,940	1,415	91.7	50.5	178.4
Proprietors and firm members.....	11	2	6	4	.....	.....	.....
Salaried employees.....	1,974	727	537	144	171.5	35.4	272.6
Wage earners (average number).....	9,381	5,199	2,397	1,267	80.4	53.0	168.1
Primary horsepower.....	11,688	6,371	2,522	1,082	83.4	152.6	133.1
Capital.....	\$33,770,511	\$14,363,361	\$8,740,618	\$3,348,282	135.1	64.3	181.0
Salaries and wages.....	8,770,664	3,785,766	2,350,392	787,635	131.7	61.1	198.4
Salaries.....	2,429,169	945,263	666,489	179,146	157.0	41.8	272.0
Wages.....	6,341,495	2,840,503	1,683,903	608,490	123.2	68.7	176.7
Paid for contract work.....	.....	259	4,240	10,415	.....	-93.9	-59.3
Rent and taxes (including internal revenue).....	153,941	50,587	231,037	211,066	204.3	.....	.....
Cost of materials.....	7,048,040	3,099,391	4,161,136	827,529	127.4	-25.5	402.8
Value of products.....	27,115,916	11,725,996	10,237,075	2,246,274	131.2	14.5	355.7
Value added by manufacture (value of products less cost of materials).....	20,067,876	8,626,605	6,075,939	1,418,746	132.6	42.0	328.3

<sup>1</sup> A minus sign (-) denotes decrease; percentages are omitted where base is less than 100.

<sup>2</sup> Exclusive of internal revenue.

No statistics are given for the industry in census reports prior to 1899. At the census of 1889 there were only two establishments reporting, one located in Connecticut and one in New York, but they were included in "all other industries," to avoid disclosing individual operations. The development of the industry was most marked in the period 1899-1904,

when there was an increase in the persons engaged of 2,525, or 178.4 per cent, and in the value of products of \$7,990,801, or 355.7 per cent. During the five-year period 1909-1914 the persons engaged increased 5,438, or 91.7 per cent, and the value of products, \$15,389,920, or 131.2 per cent. Table 22 presents, for 1914 and 1909, the more detailed statistics of the industry.

Table 22	UNITED STATES.		UNITED STATES.	
	1914	1909	1914	1909
Number of establishments.....	18	18	.....	.....
Persons engaged.....	11,366	5,928	.....	.....
Proprietors and firm members.....	11	2	.....	.....
Salaried officers, superintendents, and managers.....	183	106	.....	.....
Clerks and other subordinate salaried employees.....	1,791	621	.....	.....
Male.....	1,236	404	.....	.....
Female.....	555	217	.....	.....
Wage earners—	.....	.....	.....	.....
Average number.....	9,381	5,199	.....	.....
Number 15th day of month—	.....	.....	.....	.....
Maximum month and number.....	Dec. 10,007	Jan. 6,524	.....	.....
Minimum month and number.....	Sept. 8,743	Sept. 4,400	.....	.....
Wage earners Dec. 15 or nearest representative day.....	10,065	5,996	.....	.....
16 years of age and over.....	10,060	5,931	.....	.....
Male.....	9,068	5,249	.....	.....
Female.....	1,022	682	.....	.....
Under 16 years of age.....	5	65	.....	.....
Male.....	4	31	.....	.....
Female.....	1	34	.....	.....
Capital.....	.....	.....	\$33,770,511	\$14,363,361
Salaries and wages.....	.....	.....	\$8,770,664	\$3,785,766
Officials.....	.....	.....	\$791,688	\$477,041
Clerks, etc.....	.....	.....	\$1,637,501	\$498,222
Wage earners.....	.....	.....	\$6,341,495	\$2,840,503
Contract work.....	.....	.....	.....	\$259
Rent and taxes.....	.....	.....	.....	\$50,587
Rent of factory.....	.....	.....	\$153,941	\$18,112
Taxes (including internal revenue and corporation income).....	.....	.....	\$32,457	.....
Cost of materials.....	.....	.....	\$121,484	\$32,475
Principal materials.....	.....	.....	\$7,048,040	\$3,099,391
Fuel and rent of power.....	.....	.....	\$6,744,728	\$2,980,698
Value of products.....	.....	.....	\$308,312	\$118,083
Value added by manufacture.....	.....	.....	\$27,115,916	\$11,725,996
Primary horsepower.....	.....	.....	20,067,876	\$8,626,605
Steam engines <sup>1</sup> .....	.....	.....	11,688	6,371
Internal-combustion engines.....	.....	.....	9,865	5,300
Electric (rented).....	.....	.....	110	54
Electric horsepower generated in establishments reporting.....	.....	.....	1,713	517
.....	.....	.....	5,687	2,435

<sup>1</sup> Owned power only.

New York was the only state in 1914 for which statistics could be given separately without disclosing the operations of individual establishments, but the industry in New York was not of sufficient importance to present data in detail for this state. The value of the products of the 5 establishments located in New York was \$160,603, or less than 1 per cent of the total for the country. Of the remaining 13 establishments reported in 1914, 4 were located in New Jersey; 3 in

Illinois; 2 in Connecticut; and 1 each in Delaware, Massachusetts, Ohio, and Pennsylvania.

Both in 1914 and 1909 New Jersey was, by far, the leading state, as measured by value of products, followed by Connecticut and New York, in the order named. Of the total number of persons engaged in the industry, wage earners represented 87.7 per cent in 1909 and 82.5 per cent in 1914. Of the wage earners employed on December 15, or the nearest rep-

representative day, the males represented 88.1 per cent in 1909 and 89.9 per cent in 1914. The number of wage earners under 16 years of age was negligible and constituted 1.1 per cent of the total in 1909 and but one-half of 1 per cent in 1914.

There was considerably less fluctuation of employment in the industry in 1914 than in 1909. In the

earlier year the number employed in September, the month of minimum employment, was equal to 67.6 per cent of the maximum number employed in January, while in the later year the minimum number employed in September equaled 87.4 per cent of the maximum in December.

#### SPECIAL STATISTICS RELATING TO PRODUCTS.

Table 23 shows the number and value of phonographs, graphophones, and talking machines, and records and blanks for 1914, 1909, and 1899 and the value only for 1904, as at that census the number was not reported separately.

Of the total value of products reported at the different censuses, the value of the complete instruments formed 56.4 per cent in 1914, 46.1 per cent in 1909, 29 per cent in 1904, and 55.2 per cent in 1899, and that of records and blanks formed 40.9 per cent, 42.7 per cent, 45.7 per cent, and 24 per cent, respectively. The value of parts and supplies formed 1.2 per cent in 1914 and 7.2 per cent in 1909.

The figures presented include some duplication, due to the fact that parts and supplies are frequently sold to establishments engaged in the manufacture of the complete machines, and their value is thus duplicated in the total value of products.

Of the establishments reporting in 1914, nine manufactured phonographs, graphophones, or talking machines, and also made other products of the indus-

try; two made records and blanks only; three manufactured needles only; and four, parts and supplies only.

PRODUCT.	1914	1909	1904	1899
Total value <sup>1</sup> .....	\$27,115,916	\$11,725,996	\$10,237,075	\$2,246,274
Phonographs, graphophones, and talking machines:				
Number.....	514,154	344,681	(?)	151,403
Value.....	\$15,290,491	\$5,406,684	\$2,966,343	\$1,240,503
Records and blanks:				
Number.....	27,221,290	27,183,959	(?)	2,763,277
Value.....	\$11,111,418	\$5,007,104	\$4,678,547	\$539,370
Disc records—				
Number.....	23,314,176	8,572,805	(?)	(?)
Value.....	\$10,877,476	\$2,507,717		
Cylinder records and blanks—				
Number.....	3,907,114	18,611,154	(?)	(?)
Value.....	\$733,943	\$2,439,387		
Parts and supplies, not included in finished instruments, value.....	\$356,935	\$844,631	(?)	(?)
All other products, value....	\$357,072	\$467,577	\$2,592,185	\$466,401

<sup>1</sup>In addition, in 1914, phonographs and graphophones and parts, valued at \$66,531, and in 1909, valued at \$31,899 were made by establishments engaged primarily in the manufacture of products other than those covered by this industry designation.

<sup>2</sup> Figures not available.

# MANUFACTURE OF GLASS.

By FRANK ADAMS.

## GENERAL STATISTICS.

**Scope of the industry.**—This industry embraces all establishments engaged in the manufacture of glass from raw materials, but does not include those engaged primarily in glass beveling, bending sheet glass, engraving glass, making glass labels, staining and ornamenting glass, or making glassware from purchased "blanks." It does, however, cover the reworking of glass when done by the establishment in which the glass is manufactured.

The establishments in this industry are engaged in the manufacture of (1) building glass, which includes window glass, plate glass, and all varieties of cast and rolled glass; (2) pressed and blown glass, such as tableware; jelly glasses; tumblers; goblets; bar goods; lamps; chimneys; lantern globes; shades, globes, and other gas and electric goods; opal ware; and cut glass; and (3) bottles, jars, demijohns, etc.

**Comparison with earlier censuses.**—Statistics for the glass industry in the United States appeared in the report of the census of manufactures taken in 1810, and have been included in the reports of all subsequent censuses. They show a consistent development, keeping pace with the increasing demand for glass products. At the census of 1849, 94 establishments were reported as manufacturing glass. These establishments employed an average of 5,668 wage earners and manufactured products valued at \$4,640,676. In 1859 there were 112 establishments with 9,016 wage earners and products valued at \$8,775,155.

Table 1 summarizes the statistics of establishments engaged in the manufacture of glass for each census from 1869 to 1914, and gives percentages of increase.

	NUMBER OR AMOUNT.							PER CENT OF INCREASE. <sup>1</sup>					
	1914	1909	1904	1899	1889	1879	1869	1909-1914	1904-1914	1899-1909	1889-1899	1879-1889	1869-1879
Number of establishments.....	348	333	399	355	294	169	154	-4.1	-12.8	2.3	20.7	74.0	9.7
Persons engaged.....	78,804	72,573	67,105	55,256	(2)	(2)	(2)	8.6	17.4	31.3	.....	.....	.....
Proprietors and firm members.....	93	87	96	170	(2)	(2)	(2)	6.9	-3.1	-43.8	.....	.....	.....
Salaried employees.....	4,209	3,575	3,040	2,268	(2)	(2)	(2)	17.7	38.5	57.6	.....	.....	.....
Wage earners (average number).....	74,502	68,911	63,969	52,818	44,892	24,177	15,367	8.1	16.5	30.5	17.7	(2)	(2)
Primary horsepower.....	163,139	123,132	91,476	52,943	28,241	5,672	1,857	32.5	78.3	132.6	87.5	397.9	205.4
Capital.....	\$153,925,876	\$129,238,384	\$89,389,151	\$61,423,903	\$40,966,850	\$18,804,599	\$13,826,142	19.1	72.2	110.5	49.9	117.9	36.0
Salaries and wages.....	55,204,723	44,233,215	41,228,441	29,877,086	22,118,522	9,144,100	7,589,110	24.6	33.9	43.3	35.1	141.9	20.5
Salaries.....	6,548,904	4,993,591	3,940,293	2,792,376	(2)	(2)	(2)	31.1	66.2	78.8	.....	.....	.....
Wages.....	48,655,819	39,239,624	37,288,148	27,084,710	(2)	(2)	(2)	23.8	30.5	45.1	.....	.....	.....
Paid for contract work.....	150,185	85,864	56,848	58,959	(2)	(2)	(2)	74.9	164.2	45.6	.....	.....	.....
Rent and taxes (including internal revenue).....	882,222	506,533	435,121	426,588	(2)	(2)	(2)	74.2	147.0	90.7	.....	.....	.....
Cost of materials.....	46,016,504	32,119,499	26,145,522	16,731,009	12,140,985	8,028,621	5,864,365	43.3	76.0	82.0	37.8	51.2	30.9
Value of products.....	123,085,019	92,085,203	79,607,998	56,539,712	41,051,004	21,154,571	18,467,507	33.6	54.6	62.9	37.7	94.1	14.6
Value added by manufacture (value of products less cost of materials).....	77,068,515	59,975,704	53,462,476	39,808,703	28,910,019	13,125,950	12,603,142	28.5	44.2	50.7	37.7	120.3	4.1

<sup>1</sup> A minus sign (-) denotes decrease.

<sup>2</sup> Figures not available.

<sup>3</sup> Figures not strictly comparable.

<sup>4</sup> Exclusive of internal revenue.

While there was a decrease of 51 in the number of glass factories reported for 1914 as compared with the number for 1904, the other items given in the table show that since 1899 there has been a decided increase in the magnitude of the industry. During the 15 years the capital invested and the value of the products considerably more than doubled, the number of persons engaged in the industry increased by 42.6 per cent, and the wages and salaries paid by 84.8 per cent.

**Summary, by states.**—Table 2 summarizes the more important statistics of the industry, by states, the states being arranged according to the value of products reported for 1914. Some of the states (California, Massachusetts, Michigan, and Wisconsin) for which data can not be shown separately without disclosing the operations of individual establishments, ranked higher than some of those named in the table.

The bulk of the glass manufactured in the United States is made in the four adjoining states of Pennsylvania, Ohio, Indiana, and West Virginia. These states reported for 1914, 70.7 per cent of the establishments, 71 per cent of the wage earners, and 71.9 per cent of the value of products.

Pennsylvania was the most important state in the industry, producing 32.3 per cent of all the glass manufactured in the United States in 1914. Ohio ranked second and Indiana third, followed closely by West Virginia. Oklahoma made a pronounced gain during the period 1909 to 1914, but comparative figures can not be shown without disclosing the operations of individual establishments.

Of the states for which comparable data are given in the table, Missouri shows the greatest relative gain in value of products, 94.8 per cent, during the five-

year period 1909-1914, and West Virginia the next greatest, 88.1 per cent. Measured by the average number of wage earners, however, the greatest increase, 43.6 per cent, appears for West Virginia, and the next greatest, 28.1 per cent, for Missouri. Kansas is the only state showing a loss in value of products in 1914, as compared with 1909, this being due largely to the decrease in the natural-gas supply in that

state and to its proximity to Oklahoma, where new gas fields have been developed. With the exceptions of Oklahoma, Kansas, and Virginia, the states held the same or nearly the same rank in value of products in 1914 as in 1909. Illinois displaced New Jersey for fifth position and Missouri displaced Kansas for eighth, the latter state dropping to fourteenth place.

Table 2

Table 2		CENSUS OF 1914.										PER CENT OF INCREASE. <sup>1</sup>								
STATE.	Number of establishments.	Wage earners.			Value of products.			Value added by manufacture.				Wage earners (average number).			Value of products.			Value added by manufacture.		
		Average number.	Per cent distribution.	Rank.	Amount.	Per cent distribution.	Rank.	Amount.	Per cent distribution.	Rank.		1909-1914	1904-1909	1899-1904	1909-1914	1904-1909	1899-1904	1909-1914	1904-1909	1899-1904
										1914	1909									
United States...	348	74,502	100.0	.....	\$123,085,019	100.0	.....	\$77,068,515	100.0	.....	.....	8.1	7.7	21.1	33.6	15.7	40.8	28.5	12.2	34.3
Pennsylvania.....	103	23,606	31.7	1	39,797,822	32.3	1	24,256,117	31.5	1	.....	-0.4	14.0	7.1	21.3	18.6	25.7	20.2	10.0	17.8
Ohio.....	39	10,997	14.8	2	19,191,342	15.6	2	12,145,665	15.8	2	.....	8.2	29.5	72.5	33.7	59.1	98.5	25.6	56.2	87.9
Indiana.....	41	9,390	12.6	3	14,881,372	12.1	3	7,975,949	10.3	4	.....	-1.6	-20.6	-7.6	28.4	-21.2	-0.3	16.2	-25.0	-10.1
West Virginia.....	63	8,889	11.9	4	14,631,171	11.9	4	9,993,030	13.0	3	.....	43.6	68.5	88.5	83.1	69.1	145.7	82.2	64.2	161.1
Illinois.....	10	3,764	5.1	6	7,680,343	6.2	5	4,872,493	6.3	6	.....	7.3	-26.4	44.3	52.2	-10.2	98.3	39.0	-16.9	95.4
New Jersey.....	19	5,784	7.8	5	7,597,754	6.2	6	5,066,562	6.6	5	.....	2.4	2.6	2.3	9.1	7.9	26.6	2.1	8.0	27.4
New York.....	22	3,089	4.1	7	5,156,714	4.2	7	3,471,897	4.5	7	.....	-0.8	-1.2	23.3	14.4	5.4	55.2	3.6	16.8	54.4
Missouri.....	7	2,248	3.0	8	3,882,420	3.2	8	2,807,632	3.0	8	.....	28.1	12.4	140.2	94.8	11.9	132.5	120.6	-2.5	100.9
Oklahoma.....	12	1,270	1.7	9	2,005,736	1.6	9	1,285,928	1.7	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Maryland.....	6	1,154	1.6	10	1,500,982	1.2	11	1,101,439	1.4	11	.....	12.5	62.1	-12.5	44.6	75.9	5.7	37.4	85.8	6.2
Kansas.....	6	364	0.5	16	728,681	0.6	14	527,091	0.7	13	.....	-74.6	99.9	.....	-64.2	112.4	.....	-61.4	126.0	.....
Virginia.....	4	606	0.8	12	690,420	0.6	16	432,317	0.6	16	.....	15.6	11.0	.....	1.2	24.2	.....	0.3	13.4	.....
All other states.....	16	3,311	4.4	.....	5,340,262	4.3	.....	3,632,395	4.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

<sup>1</sup> Percentages are based on figures in Table 17; a minus sign (-) denotes decrease. Percentages are omitted where comparable figures can not be given.

Persons engaged in the industry.—Table 3 shows, for 1914 and 1909, the number of persons engaged in the industry, distributed by sex, the average number of wage earners being distributed also by age. The sex

and age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the "Explanation of terms."

Table 3

Table 3	CLASS.	Cen- sus year.	PERSONS ENGAGED IN THE INDUSTRY.						CLASS.	Cen- sus year.	PERSONS ENGAGED IN THE INDUSTRY.					
			Total.	Male.	Fe- male.	Per cent of total.		Total.			Male.	Fe- male.	Per cent of total.			
						Male.	Fe- male.						Male.	Fe- male.		
All classes.....	1914	78,804	73,243	5,561	92.9	7.1	Clerks and other subordinate salaried employees.	1914	2,824	2,026	798	71.7	28.3			
	1909	72,573	67,811	4,762	93.4	6.6			1909	2,286	1,616	670	70.7	29.3		
Proprietors and officials.....	1914	1,478	1,400	78	98.8	1.2	Wage earners (average number).....	1914	74,502	69,757	4,745	93.6	6.4			
	1909	1,376	1,366	10	99.3	0.7			1909	68,911	64,829	4,082	94.1	5.9		
Proprietors and firm members.....	1914	93	91	2	97.8	2.2	16 years of age and over.....	1914	72,510	68,085	4,425	93.9	6.1			
	1909	87	82	5	94.3	5.7			1909	65,350	61,639	3,711	94.3	5.7		
Salaried officers of corporations.....	1914	517	505	12	97.7	2.3	Under 16 years of age.....	1914	1,992	1,672	320	83.9	16.1			
	1909	479	475	4	99.2	0.8			1909	3,561	3,190	371	89.6	10.4		
Superintendents and managers.....	1914	868	864	4	99.5	0.5										
	1909	810	809	1	99.9	0.1										

Table 4 gives, for the several classes of persons engaged in the industry, the percentages of increase

from 1909 to 1914, and the per cent distribution at the two censuses.

Table 4

CLASS.	PERSONS ENGAGED IN THE INDUSTRY.							
	Per cent of increase, <sup>1</sup> 1909-1914.			Per cent distribution.				
	Total.	Male.	Female.	Total.		Male.		Female.
				1914	1909	1914	1909	
All classes.....	8.6	8.0	16.8	100.0	100.0	100.0	100.0	100.0
Proprietors and officials.....	7.4	6.9	.....	1.9	1.9	2.0	2.0	0.3
Proprietors and firm members.....	.....	.....	.....	0.1	0.1	0.1	0.1	(*)
Salaried officers of corporations.....	7.9	6.3	.....	0.7	0.7	0.7	0.7	0.2
Superintendents and managers.....	7.2	6.8	.....	1.1	1.1	1.2	1.2	0.1
Clerks and other subordinate salaried employees.....	23.5	25.4	19.1	3.6	3.1	2.8	2.4	14.3
Wage earners (average number).....	8.1	7.6	16.2	94.5	95.0	95.2	95.6	85.3
16 years of age and over.....	11.0	10.5	19.2	92.0	90.0	93.0	90.9	79.6
Under 16 years of age.....	-44.1	-47.6	-13.7	2.5	4.9	2.3	4.7	77.9

<sup>1</sup> A minus sign (-) denotes decrease; percentages are omitted where base is less than 100.

<sup>2</sup> Less than one-tenth of 1 per cent.

The percentage of increase, 23.5, shown for clerks and other subordinate salaried employees for the five-year period 1909-1914 is nearly three times as great as that for wage earners, 8.1. During this period the number of wage earners under 16 years of age decreased greatly, the decrease being much more pronounced for males than for females. The latter, however, represented less than one-sixth of the total wage earners under 16 in 1914.

The female wage earners, both women and children, are employed chiefly in the packing departments.

**Wage earners employed, by months.**—The following table gives for the industry the total number of wage earners employed on the 15th of each month, or the nearest representative day, for 1914 and 1909, and the average number employed during each month in 1904, together with the percentage which the number reported for each month forms of the greatest number reported for any month.

On the basis of number of wage earners employed, the industry shows its greatest activity during the late fall, winter, and spring months. In 1914 the maximum employment was in March; in 1909, in December; and in 1904, in April. August was the month of minimum employment in 1914, and July in 1909 and 1904. The degree of fluctuation in employment has been steadily decreasing, as will be seen by a comparison of the percentages which the minimum months represented of the maximum—38 in 1904, 49.3 in 1909, and 57.7 in 1914.

MONTH.	WAGE EARNERS IN THE INDUSTRY.					
	Number. <sup>1</sup>			Per cent of maximum.		
	1914	1909	1904	1914	1909	1904
January.....	83,002	72,931	71,158	96.0	89.3	95.8
February.....	85,875	75,720	72,908	99.3	92.7	98.1
March.....	86,461	78,921	74,004	100.0	96.6	99.6
April.....	85,644	77,692	74,316	99.1	95.1	100.0
May.....	82,973	76,550	73,313	98.0	93.7	98.7
June.....	74,347	73,038	66,985	86.0	89.4	90.1
July.....	55,433	40,222	28,246	64.1	49.3	38.0
August.....	49,861	43,839	31,375	57.7	53.7	42.2
September.....	62,683	56,127	60,590	72.5	68.7	81.5
October.....	72,075	71,746	70,119	83.4	87.9	94.4
November.....	77,383	78,454	71,962	89.5	96.1	96.8
December.....	78,287	81,665	72,652	90.5	100.0	97.8

<sup>1</sup> The figures for 1914 and 1909 represent the number employed on the 15th of each month, or the nearest representative day; those for 1904, the average number employed during the month.

Table 6 gives the total average number of wage earners employed during 1914, together with the total number employed on the 15th of each month, or the nearest representative day, for each state in which the average number of wage earners was 500 or more in 1914.

January was the month of maximum employment in Illinois; February in Indiana, Maryland, and New York; March in New Jersey and Pennsylvania; April in California, Missouri, Ohio, Oklahoma, and Virginia; and May in West Virginia. In Virginia and California the number of wage earners employed in August formed only 10 per cent and 19.2 per cent, respectively, of the number employed in April.

Table 6	STATE.	WAGE EARNERS: 1914. [Month of maximum employment for each state is indicated by boldface figures and that of minimum by <i>italic</i> figures.]													Per cent minimum is of maximum.
		Average number employed during year.	Number employed on 15th day of the month or nearest representative day.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
United States.....		74,502	83,002	85,875	86,461	85,644	82,973	74,347	55,433	<i>49,861</i>	62,683	72,075	77,383	78,287	57.7
California.....		1,084	1,295	1,264	1,335	1,367	1,349	1,318	863	<i>262</i>	1,005	1,041	1,022	887	19.2
Illinois.....		3,764	4,337	4,320	4,206	4,288	3,967	4,029	3,310	2,713	<i>2,694</i>	3,448	3,895	3,961	62.1
Indiana.....		9,390	11,066	11,278	11,217	10,696	10,242	9,365	6,900	<i>6,116</i>	7,724	9,003	9,579	9,494	54.2
Maryland.....		1,184	1,357	1,361	1,350	1,318	1,317	1,201	1,020	<i>681</i>	1,088	1,217	1,203	1,195	42.7
Missouri.....		2,248	2,388	2,503	2,636	2,690	2,300	1,951	1,926	<i>1,839</i>	1,884	2,493	2,125	2,241	68.4
New Jersey.....		5,784	6,790	6,938	7,040	6,977	6,715	5,911	3,888	<i>1,883</i>	3,242	6,386	6,884	6,754	26.7
New York.....		3,089	3,819	3,823	3,749	3,527	3,381	3,296	2,283	<i>1,760</i>	2,299	2,918	3,026	3,187	46.0
Ohio.....		10,907	12,182	12,665	12,810	13,290	12,204	11,207	8,147	<i>7,192</i>	9,653	10,185	11,103	11,326	54.1
Oklahoma.....		1,270	1,447	1,540	1,597	1,793	1,736	1,058	888	<i>653</i>	653	926	1,496	1,473	35.3
Pennsylvania.....		23,608	25,406	26,327	26,391	25,740	25,847	23,854	18,056	18,057	21,634	23,169	24,033	24,753	63.4
Virginia.....		606	784	770	783	780	675	665	241	<i>79</i>	504	670	652	659	10.0
West Virginia.....		8,889	9,229	10,011	10,137	10,082	10,173	8,152	6,089	7,138	8,271	8,413	9,431	9,542	59.9

**Prevailing hours of labor.**—In Table 7 the average number of wage earners reported for 1914 and 1909 for the industry has been classified according to the number of hours of labor per week prevailing in the establishments in which they were employed. The number employed in each establishment was classified as a total, even though a few employees worked a greater or smaller number of hours.

In 1914, 69.2 per cent of the wage earners employed in the industry were in establishments where the prevailing hours were 54 or fewer per week, as compared with 53.2 per cent in 1909.

Of the several groups shown in Table 7, the largest was made up of the wage earners in establishments

where the prevailing hours were between 48 and 54 per week. The decided drift toward a shorter working day is shown by the fact that this group represented 37.5 per cent of the total in 1914, as against only 24.1 per cent in 1909. Over two-thirds—67.4 per cent—of the wage earners employed in the glass industry in Oklahoma were reported by establishments where the prevailing hours were 48 or under per week. In Missouri 78 per cent were employed in establishments in the 60-hours-a-week class. In Illinois and New York, the largest numbers were in the class "between 54 and 60." For all the other states, the table shows the largest numbers in the class "between 48 and 54." For 1914 there were reported 1,738 wage earners, or



2.3 per cent of the total, in establishments whose prevailing hours were over 72 per week. This condition was due to the fact that for a part of the year several

establishments were in continuous operation, the day shift working 11 hours and the night shift 12 hours, the latter in some cases working 84 hours per week.

Table 7

STATE.	Census year.	AVERAGE NUMBER OF WAGE EARNERS.							
		Total.	Average number in establishments where the prevailing hours of labor per week were—						
			48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72.	Over 72.
United States.....	1914	74,502	12,205	27,975	11,394	7,458	10,743	2,550	439
	1909	68,911	11,353	16,603	8,707	13,923	10,764	3,423	668
California.....	1914	1,054	203	836	25				
	1909	640		100	540				
Illinois.....	1914	3,764	180	1,203	663	1,398	320		
	1909	3,507	94	957	80		670		240
Indiana.....	1914	9,390	590	3,361	2,290	1,241	1,908		
	1909	9,544	1,850	2,109	1,978	1,575	1,584	448	
Maryland.....	1914	1,184	140	937	107				
	1909	1,052	181	482	389				
Missouri.....	1914	2,248	11	448	35		1,754		
	1909	1,755		102		224		1,066	363
New Jersey.....	1914	5,784	864	3,602	918		151		
	1909	5,651	1,007	2,451	420	1,773			249
New York.....	1914	3,089	344	882	700	1,107	56		
	1909	3,114	369	776	280	323	1,361		
Ohio.....	1914	10,997	784	4,515	2,916	198	2,276	118	190
	1909	10,159	1,797	2,279	1,726	2,501	1,139	652	65
Oklahoma.....	1914	1,270	856	156	258				
	1909								
Pennsylvania.....	1914	23,606	4,494	7,235	2,734	2,114	2,859	2,432	1,738
	1909	23,710	3,049	4,406	1,645	6,235	5,468	1,257	1,650
Virginia.....	1914	606	163	343	100				
	1909	524		465	59				
West Virginia.....	1914	8,889	2,315	3,931	532	983	1,128		
	1909	6,180	1,866	2,252	1,424	385	263		

Character of ownership.—Table 8 presents statistics concerning the character of ownership, or legal organization, of establishments in the glass industry, for 1914 and 1909.

Table 8

CHARACTER OF OWNERSHIP.	Census year.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.
All classes.....	1914	348	74,502	\$123,085,019	\$77,068,515
	1909	363	68,911	92,095,203	59,975,704
Individuals.....	1914	12	770	892,991	596,735
	1909	23	1,317	1,529,780	1,031,246
Corporations.....	1914	313	71,136	118,980,573	74,165,662
	1909	321	66,278	89,138,494	57,875,308
All others.....	1914	23	2,596	3,211,455	2,306,118
	1909	19	1,316	1,426,929	1,069,150
Per cent distribution:					
Individuals.....	1914	3.4	1.0	0.7	0.8
	1909	6.3	1.9	1.7	1.7
Corporations.....	1914	89.9	95.5	96.7	96.2
	1909	88.4	96.2	96.8	96.5
All others.....	1914	6.6	3.5	2.6	3.0
	1909	5.2	1.9	1.5	1.8

The table shows clearly that the great bulk of the glass industry is conducted under corporate ownership. The output of individually-owned establishments shows a marked decrease for the five-year period, but that of establishments under "all other" forms of ownership increased greatly.

Size of establishments.—The tendency of the industry to become concentrated in large establishments is indicated by the statistics given in Table 9.

Table 9

VALUE OF PRODUCT.	Census year.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.
All classes.....	1914	348	74,502	\$123,085,019	\$77,068,515
	1909	363	68,911	92,095,203	59,975,704
Less than \$5,000.....	1914	3	9	5,927	3,338
	1909	11	47	33,445	20,571
\$5,000 to \$20,000.....	1914	14	234	163,984	92,214
	1909	13	162	138,525	91,058
\$20,000 to \$100,000.....	1914	52	2,424	3,306,894	2,157,023
	1909	91	4,647	5,691,849	3,761,833
\$100,000 to \$1,000,000.....	1914	256	59,620	78,923,778	51,295,524
	1909	238	53,931	69,534,919	45,377,554
\$1,000,000 and over.....	1914	23	19,215	40,684,449	25,520,116
	1909	10	10,124	16,695,465	10,734,688
Per cent distribution:					
Less than \$5,000.....	1914	0.9	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
	1909	3.0	0.1	( <sup>1</sup> )	( <sup>1</sup> )
\$5,000 to \$20,000.....	1914	4.0	0.3	0.1	0.1
	1909	3.6	0.2	0.2	0.2
\$20,000 to \$100,000.....	1914	14.9	3.3	2.7	2.8
	1909	25.1	6.7	6.2	6.3
\$100,000 to \$1,000,000.....	1914	73.6	70.6	64.1	66.6
	1909	65.6	78.3	75.5	75.7
\$1,000,000 and over.....	1914	6.6	25.8	33.1	30.5
	1909	2.8	14.7	13.1	17.9

<sup>1</sup> Less than one-tenth of 1 per cent.

During the five-year period 1909-1914 a marked decrease took place in the number of establishments with products valued at less than \$100,000, as well as in the number of wage earners and value of products reported by such establishments. These establishments reported 3.6 per cent of the total wage earners and 2.8 per cent of the total value of products for 1914, as compared with 7 per cent of the wage earners and 6.4 per cent of the value of products for 1909. The greatest increases appear for establishments with



products valued at more than \$1,000,000. In this group the number of establishments increased from 10 in 1909 to 23 in 1914, the number of wage earners increased by 89.8 per cent, and value of products by 143.7 per cent. The establishments having products valued at \$100,000 but less than \$1,000,000 constitute the leading class, but their relative importance diminished, while that of the establishments with products valued at \$1,000,000 and over increased. During the period 1909-1914 the value of products of the former group increased by 13.5 per cent, whereas

that of the latter increased by 143.7 per cent; and during the same period the proportion which the value of products of the former group formed of the total decreased from 75.5 per cent to 64.1 per cent, whereas the corresponding proportion for the latter group increased from 18.1 per cent to 33.1 per cent.

Table 10 shows the size of establishments in 1914 and 1909, as measured by the number of wage earners employed, for the industry as a whole and the 12 leading states.

Table 10		ESTABLISHMENTS EMPLOYING—																	
STATE.	Cen- sus year.	TOTAL.		1 to 5 wage earn-ers.		6 to 20 wage earn-ers.		21 to 50 wage earn-ers.		51 to 100 wage earn-ers.		101 to 250 wage earn-ers.		251 to 500 wage earn-ers.		501 to 1,000 wage earners.		Over 1,000 wage earn-ers.	
		Estab- lish- ments.	Wage earn-ers (average number).	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.
United States.....	1914	348	74,502	5	16	17	251	31	1,096	72	5,542	126	20,000	68	23,706	23	16,179	6	7,652
	1909	363	68,911	12	35	22	316	41	1,450	81	6,170	122	19,202	58	21,173	20	12,206	7	8,359
California.....	1914	3	1,084					1	25			1	203			1	856		
	1909	3	640					1	44		100			1	496				
Illinois.....	1914	10	3,764			1	17			1	53	4	662	2	663	1	971	1	1,398
	1909	11	3,507			1	15	1	24	2	174	3	490	2	707	1	637	1	1,460
Indiana.....	1914	41	9,390			4	70	2	123	5	406	13	2,090	12	4,065	4	2,627		
	1909	44	9,544			5	90	1	25	6	428	20	3,361	10	3,916	1	612	1	1,112
Maryland.....	1914	6	1,184									5	830	1	354				
	1909	7	1,052			1	11	1	30	2	151	1	181	2	679				
Missouri.....	1914	7	2,248			1	11	1	35			1	134	3	949			1	1,119
	1909	4	1,755									2	326	1	363			1	1,066
New Jersey.....	1914	19	5,784			1	10			4	316	8	1,393	3	1,180	2	1,235	1	1,660
	1909	23	5,651	2	10			1	33	5	388	6	876	7	2,398	1	617	1	1,329
New York.....	1914	22	3,089			3	42	2	61	6	429	9	1,368	1	288	1	901		
	1909	24	3,114	1	5	1	9	4	102	8	604	9	1,357			1	977		
Ohio.....	1914	39	10,997					4	113	3	211	16	2,561	9	3,082	7	5,030		
	1909	45	10,159			3	54	5	164	8	544	16	2,659	6	2,260	6	3,440	1	1,038
Oklahoma.....	1914	12	1,270					2	78	8	668	1	107	1	417				
	1909																		
Pennsylvania.....	1914	103	23,606			3	51	6	261	24	1,844	36	5,908	27	9,700	4	2,357	3	3,485
	1909	112	23,710	1	3	5	62	11	442	25	1,938	37	5,805	22	7,811	9	5,295	2	2,354
Virginia.....	1914	4	606							1	100	3	506						
	1909	5	524							3	218	2	306						
West Virginia.....	1914	63	8,889	4	14	3	31	9	294	16	1,206	23	3,483	5	1,659	3	2,202		
	1909	51	6,190	5	12	4	51	7	214	11	864	18	2,647	5	1,774	1	628		

Of the 348 establishments reported for the industry in 1914, 6.3 per cent employed from 1 to 20 wage earners each, 29.6 per cent from 21 to 100, 55.7 per cent from 101 to 500, and 8.3 per cent over 500. Six establishments employed over 1,000 wage earners each. Of the total number of wage earners, four-tenths of 1 per cent were reported by establishments employing from 1 to 20; 8.9 per cent by establishments employing from 21 to 100; 58.7 per cent by establishments employing from 101 to 500; and 32 per cent by establishments employing over 500.

From 1909 to 1914 there was a decrease in the number of establishments and wage earners in each of the groups employing not more than 100 wage earners, and an increase in each of those having more than 100 wage earners, with the single exception of the group of establishments reporting over 1,000. Of the six establishments employing over 1,000 wage earners in

1914 three were located in Pennsylvania and one each in Illinois, Missouri, and New Jersey.

**Engines and power.**—Table 11 shows, for 1914, 1909, and 1904, for the industry, the number and horsepower of engines or motors employed in generating power (including electric motors operated by purchased current). It also shows separately the number and horsepower of electric motors operated by current generated in the establishments reporting.

The amount of power used in the glass industry was first reported for 1869. The total horsepower reported for that year was 1,857—equal to only a little more than 1 per cent of the power reported for 1914. Nearly two-thirds of the power used in the industry in 1914 was generated by steam, but the proportion which this class of power forms of the total has decreased materially from census to census, having fallen from 84.1 per cent in 1904 to 64.4 per cent in 1914.

Table 11

POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.					
				Amount.			Per cent distribution.		
	1914	1909	1904	1914	1909	1904	1914	1909	1904
Primary power, total.....	2,290	1,428	1,108	163,139	123,132	91,476	100.0	100.0	100.0
Owned.....	1,051	1,122	1,043	148,710	119,707	90,593	91.2	97.2	99.4
Steam engines and turbines <sup>1</sup> .....	681	765	742	105,061	98,971	76,915	64.4	80.4	84.1
Internal-combustion engines.....	385	356	297	43,448	20,781	13,947	26.6	16.8	15.2
Water wheels, turbines, and motors.....	5	1	4	201	5	31	0.1	( <sup>2</sup> )	( <sup>2</sup> )
Rented.....	1,239	306	65	14,429	3,425	583	8.8	2.8	0.6
Electric.....	1,239	306	65	14,224	3,425	583	8.7	2.8	0.6
Other.....				205			0.1		
Electric.....	6,018	2,510	965	92,596	43,589	16,769	100.0	100.0	100.0
Rented.....	1,239	306	65	14,224	3,425	583	15.3	7.9	3.5
Generated by establishments reporting.....	4,779	2,204	900	78,672	40,164	16,186	84.7	92.1	96.5

<sup>1</sup> Figures for horsepower include, for 1904, the amounts reported under the head of "other" owned power.<sup>2</sup> Less than one-tenth of 1 per cent.

During the decade the capacity of internal-combustion engines increased by 211.5 per cent and the proportion which the power of these engines formed of the total increased from 15.2 per cent to 26.6 per cent. The use of water power in the glass industry is insignificant. The amount of rented electric power in use, although still comparatively small, increased from 583 horsepower in 1904 to 14,224 in 1914, and during the same period the proportion which this class of power formed of the total primary power increased from six-tenths of 1 per cent to 8.7 per cent. The power of electric motors operated by current generated in the same establishments represented 84.7 per cent of the total electric power in 1914, and during the decade 1904-1914 the increase in the power of such motors amounted to 386 per cent. It is noteworthy that 52.9 per cent, or more than half of the power generated in 1914—mainly by steam and internal-combustion engines—in the establishments in this industry was transformed into electric power before being used.

Fuel.—Table 12 shows, for 1914, the quantity of each kind of fuel used, for which data were obtained, for the industry as a whole, and for 13 separate states.

Gas, practically all of which is natural gas, was the most important class of fuel used. Of the total amount consumed, nearly one-half was reported by Pennsylvania; the second, third, fourth, and fifth largest amounts being reported by West Virginia, Ohio, Oklahoma, and Kansas, respectively. Bituminous coal was next in importance. California was the only state using oil exclusively, and Kansas the only one using gas exclusively.

Table 12

STATE.	COAL.		Coke (tons, 2,000 lbs.).	Oil, including gasoline (barrels).	Gas (1,000 cubic feet).
	An-thra-cite (tons, 2,240 lbs.).	Bitumi-nous (tons, 2,000 lbs.).			
United States.....	41,372	2,252,268	16,770	867,836	43,336,322
California.....				94,886	
Illinois.....		397,550		289,976	
Indiana.....		470,646	2,020	121,744	453,770
Kansas.....					758,611
Maryland.....	2,327	13,528	42	20,163	58,505
Missouri.....		221,666	2,922	40,326	800
New Jersey.....	3,793	139,856	2,356	112,265	3,029
New York.....	11,870	95,081	1,439	29,445	97,740
Ohio.....		271,397	675	6,480	7,251,445
Oklahoma.....		300		6	2,426,681
Pennsylvania.....	9,155	521,399	1,501	118,674	20,939,700
Virginia.....		16,850	1,237		
West Virginia.....		28,583	160		10,066,469
All other states.....	14,227	75,912	5,655	29,634	739,572

## SPECIAL STATISTICS RELATING TO PRODUCTS AND EQUIPMENT.

Products.—Table 13, on the following page, shows in detail the statistics of products manufactured in the glass industry in 1914, 1909, 1904, and 1899.

Of the 348 establishments reported for 1914, 102 manufactured building glass; 107, pressed and blown glass; and 150, bottles and jars; and of the 363 establishments reported for 1909, 104 produced building glass; 114, pressed and blown glass; and 166, bottles and jars.

In 1914, 29.9 per cent of the total value of products represented building glass; 24.6 per cent, pressed and blown glass; 42.2 per cent, bottles and jars; and 3.3 per cent, other products. The corresponding proportions in 1909 were 28.6, 29.8, 39.1, and 2.6 per cent, respectively.

The total value of building glass reported shows an increase of 40 per cent for the period 1909-1914 and

of 21.2 per cent during the preceding five years. The most important product in this class in 1914 was window glass, whose value represented 47.5 per cent of the total for building glass. Window glass also occupied first place in this respect in 1904 and 1899, but plate glass led in 1909. During the five-year period the output of window glass increased by 49 per cent in value but by only 15.9 per cent in quantity.

Pennsylvania produced over 193,000,000 square feet of window glass in 1914, or nearly one-half of the total for the United States. West Virginia was second with over 82,000,000 square feet, and Ohio third with over 52,000,000 square feet. Pennsylvania also ranked first in the output of obscured glass, plate glass, and rough wire glass, producing over half of the total for each class. Missouri ranked second in the production of these three classes.

Table 13	1914	1909	1904	1899
Products, total value.....	\$123,085,019	\$92,095,203	\$79,607,998	\$56,539,712
Building glass, value.....	\$36,824,069	\$26,308,438	\$21,697,861	\$17,096,234
Window glass—				
Square feet.....	400,998,893	346,080,550	242,615,750	217,064,100
Value.....	\$17,495,956	\$11,742,959	\$11,610,851	\$10,879,355
Obscured glass, including				
cathedral and skylight—				
Square feet.....	43,040,079	22,815,946	21,870,634	12,526,055
Value.....	\$2,417,253	\$1,358,574	\$972,014	\$732,338
Plate glass, total cast, square				
feet.....	75,770,261	60,105,694	34,804,983	21,172,129
Polished—				
Square feet.....	60,383,516	47,370,254	27,293,138	16,883,578
Value.....	\$14,773,787	\$12,204,875	\$7,978,253	\$5,158,598
Rough, made for sale—				
Square feet.....	131,492	205,690	17,784	628,684
Value.....	\$25,899	\$37,431	\$3,529	\$75,857
Wire glass—				
Polished—				
Square feet.....	1,707,848	(2)	(2)	(2)
Value.....	\$534,322	(2)	(2)	(2)
Rough (made for sale as				
such)—				
Square feet.....	13,980,996	(2)	(2)	(2)
Value.....	\$1,058,612	(2)	(2)	(2)
All other building glass.....	\$520,280	\$964,599	\$1,133,214*	\$3250,056
Pressed and blown glass, value..	\$30,279,290	\$27,398,445	\$21,956,158	\$17,076,125
Tableware, 100 pieces.....	1,554,056	1,286,056	1,283,974	655,141
Jellies, tumblers, and gob-				
lets, dozens.....	18,030,243	11,687,036	7,346,214	8,544,050
Lamps, dozens.....	580,196	322,432	487,017	807,765
Chimneys, dozens.....	6,989,624	6,652,987	7,039,750	6,901,192
Lantern globes, dozens.....	1,363,562	952,620	1,765,247	1,044,816
Shades, globes, and other gas				
goods, dozens.....	2,016,800	1,541,449	878,244	2,673,854
Blown tumblers, stem ware,				
and bar goods, dozens.....	11,377,810	9,182,060	6,282,606	6,127,367
Opal ware, dozens.....	4,636,051	3,095,686	1,091,208	3,750,443
Cut ware, dozens.....	297,957	206,336	83,736	134,726
Decorated glassware, dozens.....	1,158,077	(2)	(2)	(2)
Bottles and jars, value.....	\$51,958,728	\$36,018,333	\$33,631,063	\$21,676,791
Prescriptions, vials, and				
druggists' wares, gross.....	4,893,416	3,624,022	3,202,586	2,423,932
Beer, soda, and mineral,				
gross.....	4,573,610	2,345,204	2,351,852	1,351,118
Liquors and flasks, gross.....	2,689,022	1,887,344	2,157,801	985,374
Milk jars, gross.....	1,188,891	440,302	253,651	146,142
Fruit jars, gross.....	1,198,952	1,124,485	1,061,829	789,298
Battery jars and other elec-				
trical goods, gross.....	79,211	9,981	19,974	(2)
Patent and proprietary, gross				
packers' and preservers',	1,384,689	1,637,798	1,657,372	1,296,131
gross.....	3,271,174	1,237,175	1,237,065	784,588
Demijohns and carboys,				
dozens.....	160,796	122,570	64,450	83,243
All other products, value.....	\$4,022,932	\$2,369,987	\$2,322,916	\$690,562

\* In addition, considerable quantities of electrical shades, globes, and bulbs, which can not be shown without disclosing the operations of individual establishments, were made in 1914 by establishments engaged primarily in the manufacture of electrical goods. In 1909, 42,639 gross of bottles and jars, valued at \$90,490, and in 1904 glassware, valued at \$9,663, were made as subsidiary products by establishments engaged primarily in other lines of manufacture.

\* Not reported separately.

The total value of pressed and blown glass shows an increase of \$8,323,132, or 37.9 per cent, for the decade 1904-1914, and of \$2,880,845, or 10.5 per cent, for the five-year period 1909-1914. During both the ten-year and the five-year periods the increases in the production of jelly glasses, tumblers, and goblets were pronounced. The output of blown tumblers, stem ware, and bar goods has also shown a large increase since 1904.

Of the three main classes of products, bottles and jars represented the greatest value at each of the four censuses covered by the table. During the decade 1904-1914 there was an increase of \$18,327,665, or 54.5 per cent, in the value of this class of products, and for the five-year period 1909-1914, \$15,940,395, or 44.3 per cent.

For the period 1909-1914 considerable increases were reported in the output of most of the products

shown in the table, the only ones which show actual decreases being rough plate glass made for sale, "all other building glass," and patent and proprietary medicine bottles and jars.

Few of the glass plants make finished cut glass, the item "cut ware" representing principally the glass blanks, which have not been cut and polished but which are sold to establishments making a specialty of producing the finished ware. These latter establishments are classed in the census reports under the head "glass, cutting, staining, and ornamenting."

"All other products" include a number of unclassified articles, such as thermos bottles, thermometer and electric tubing, marbles, glass stoppers, nest eggs, etc.

Table 14, on the following page, shows the value of each of the three classes of glass products, in the leading states, for 1914, 1909, 1904, and 1899.

For 1914 Pennsylvania reported 51.5 per cent of the total value of building glass, 37.1 per cent of the total value of pressed and blown glass, and 17.2 per cent of the total value of bottles and jars, ranking first in the first and second classes and second in the third class. West Virginia ranked second in value of building glass produced, and Ohio third, but in pressed and blown glass these states ranked third and second, respectively. Indiana ranked first in value of bottles and jars manufactured, followed by Pennsylvania, Ohio, New Jersey, and Illinois.

Of the 102 plants that manufactured building glass in 1914, 64 made window glass, 21 of which were located in West Virginia, 20 in Pennsylvania, 9 in Ohio, 4 each in Kansas and Oklahoma, 2 each in Indiana and Texas, and 1 each in Louisiana and Missouri; 20 made obscured glass, including cathedral and skylight, 6 of which were in Pennsylvania, 5 in West Virginia, 3 in Indiana, 2 each in Illinois and Missouri, and 1 each in New York and Ohio; 19 made plate glass, 11 of which were in Pennsylvania, 3 in Missouri, and 1 each in Illinois, Indiana, Michigan, Ohio, and West Virginia; and 7 made wire glass, 4 of which were in Pennsylvania and 1 each in Illinois, Missouri, and West Virginia.

Pennsylvania with 33 establishments, Ohio with 15, and West Virginia with 26, in the order named, were the leading states in value of pressed and blown glass produced in 1914. Named in the order of their importance, the leading states producing tableware were Pennsylvania, Ohio, Indiana, and West Virginia; jelly glasses, tumblers, and goblets, West Virginia, Ohio, Indiana, and Pennsylvania; lamps, Pennsylvania, Ohio, and Indiana; lamp chimneys, Indiana, Pennsylvania, West Virginia, and Ohio; blown tumblers, stem ware, and bar goods, West Virginia, Pennsylvania, and Ohio; and cut ware and decorated ware, West Virginia and Pennsylvania.

Of the 150 establishments that produced bottles and jars in 1914, 34 were in Pennsylvania, 24 in Indi-

ana, 18 in New Jersey, 14 each in Ohio and West Virginia, 12 in New York, 7 each in Illinois and Oklahoma, 4 each in Maryland and Virginia, 3 each in California and Missouri, and 1 each in Louisiana, Michigan, South Carolina, Tennessee, Washington, and Wisconsin.

Table 14	1914	1909	1904	1899
Products, total value.....	\$123,085,019	\$92,005,203	\$79,607,998	\$56,539,712
Illinois.....	7,680,343	5,047,333	5,619,740	2,834,398
Indiana.....	14,881,372	11,593,094	14,706,929	14,757,883
Kansas.....	728,681	2,036,573	958,720	.....
Maryland.....	1,500,982	1,038,368	589,589	557,895
Missouri.....	3,882,420	1,992,833	1,781,026	765,564
New Jersey.....	7,597,754	6,961,088	6,450,195	5,093,822
New York.....	5,156,714	4,508,790	4,279,766	2,756,978
Ohio.....	19,191,342	14,358,274	9,026,208	4,547,063
Oklahoma.....	2,005,736	(1)	(1)	.....
Pennsylvania.....	39,797,822	32,817,936	27,671,693	22,011,130
Virginia.....	690,420	681,900	549,031	(1)
West Virginia.....	14,631,171	7,779,483	4,598,563	1,871,795
All other states.....	5,340,262	3,279,481	3,376,538	1,343,104
Building glass, value.....	36,824,069	26,308,438	21,697,861	17,096,234
Illinois.....	(1)	648,718	281,559	24,000
Indiana.....	2,356,946	1,616,092	3,790,618	5,711,948
Kansas.....	(1)	1,131,808	381,084	.....
Missouri.....	3,122,793	1,778,364	1,036,433	505,564
New Jersey.....	(1)	(1)	201,922	274,011
New York.....	(1)	173,387	456,310	346,790
Ohio.....	3,805,609	2,744,513	1,625,126	671,422
Oklahoma.....	1,191,657	(1)	(1)	.....
Pennsylvania.....	18,968,873	14,958,649	12,169,013	9,213,545
West Virginia.....	4,410,710	2,751,133	1,323,896	101,242
All other states.....	2,977,421	505,774	431,900	247,712
Pressed and blown glass, value.....	30,279,290	27,398,445	21,956,158	17,076,125
Indiana.....	2,920,296	2,774,128	2,859,087	2,691,787
Kansas.....	(1)	202,696	64,697	.....
Maryland.....	(1)	508,492	46,191	100,000
New Jersey.....	(1)	1,019,836	181,559	21,300
New York.....	2,237,960	1,926,852	1,932,524	1,173,784
Ohio.....	6,490,498	6,160,707	3,954,660	2,738,289
Oklahoma.....	220,520	(1)	(1)	.....
Pennsylvania.....	11,241,495	9,847,228	9,406,183	8,453,550
West Virginia.....	6,263,554	4,306,528	2,620,665	1,379,706
All other states.....	898,967	651,978	890,392	517,709
Bottles and jars, value.....	51,958,728	34,018,333	33,631,063	21,676,791
California.....	(1)	873,434	855,446	(1)
Illinois.....	6,680,700	4,304,795	4,949,156	2,678,780
Indiana.....	9,155,163	6,982,878	7,213,456	6,327,468
Kansas.....	(1)	651,376	407,898	.....
Maryland.....	1,244,760	528,767	536,478	346,633
Missouri.....	759,627	(1)	607,353	290,000
New Jersey.....	7,176,787	5,884,605	6,060,714	4,452,219
Pennsylvania.....	2,343,683	1,884,394	1,860,285	1,195,276
New York.....	7,422,402	4,717,658	2,961,727	1,058,955
Ohio.....	(1)	(1)	(1)	.....
Oklahoma.....	603,559	(1)	(1)	.....
Pennsylvania.....	8,930,255	7,778,787	5,051,144	4,192,990
Virginia.....	690,420	681,900	549,031	(1)
West Virginia.....	3,777,445	646,521	602,002	381,847
All other states.....	3,773,927	1,083,718	1,064,413	812,623
All other products, value.....	4,022,332	2,369,987	2,322,916	690,562

<sup>1</sup> Included in "all other states," to avoid disclosing the operations of individual establishments.

Named in the order of their importance, the leading states producing prescription bottles, vials, and druggists' wares were New Jersey, Pennsylvania, Illinois, Indiana, Maryland, and Virginia; beer, soda, and mineral water bottles, Ohio, Illinois, Indiana, Pennsylvania, and New York; liquors and flasks, Indiana, Ohio, Illinois, Pennsylvania, and New Jersey; fruit jars, Indiana, Pennsylvania, and Oklahoma; and packers and preservers, Pennsylvania and West Virginia.

**Equipment.**—The measure of production for a glass factory is the melting capacity of its pot furnaces and tanks. Table 15 presents the statistics of such equipment for the census years 1914, 1909, 1904, and 1899. The idle furnaces and tanks shown in this table represent the idle equipment of active estab-

lishments and not the equipment of establishments which were idle throughout the year.

Table 15

STATE.	Census year.	POT FURNACES.				TANKS. <sup>1</sup>							
		Operated.		Idle.		Continuous.				Intermittent.			
						Operated.		Idle.		Operated.		Idle.	
		Number.	Number of pots.	Number.	Number of pots.	Number.	Number of rings.	Number.	Number of rings.	Number.	Capacity (tons).	Number.	Capacity (tons).
United States..	1914	328	4,522	58	766	348	3,641	48	421	59	467	16	94
	1909	370	4,945	59	697	369	3,759	48	430	73	433	13	56
	1904	349	4,192	49	617	340	3,076	20	191	94	406	13	69
	1899	391	4,300	60	807	192	1,871	14	79	130	818	17	83
Illinois.....	1914	6	100	2	30	18	101	2	23	.....	1	2	.....
	1909	9	107	1	20	24	201	4	53	1	5	.....	.....
	1904	8	104	4	47	24	284	.....	4	20	1	10	.....
	1899	9	117	1	12	11	133	.....	7	40	.....	.....	.....
Indiana.....	1914	18	244	2	22	57	499	5	21	3	19	.....	.....
	1909	18	307	2	40	61	533	6	34	2	14	.....	.....
	1904	63	670	7	79	87	749	4	25	3	20	1	8
	1899	116	1,220	9	134	71	564	4	12	33	208	4	12
Maryland.....	1914	6	84	1	16	4	23	.....	1	12	.....	.....	.....
	1909	11	109	1	12	3	21	.....	1	8	.....	.....	.....
	1904	6	74	2	17	1	5	.....	1	8	.....	.....	.....
	1899	10	91	2	16	.....	.....	.....	1	6	.....	.....	.....
New Jersey.....	1914	15	115	2	19	27	257	15	117	5	27	3	18
	1909	16	130	6	42	36	329	12	90	9	106	1	11
	1904	19	147	4	36	35	310	11	71	11	60	.....	.....
	1899	27	200	6	55	31	293	6	40	12	72	2	7
New York.....	1914	23	281	6	45	15	117	4	23	2	4	1	2
	1909	35	798	9	66	19	167	1	7	3	7	1	1
	1904	28	257	3	27	22	179	2	15	3	10	1	6
	1899	24	200	5	47	14	115	.....	7	49	1	3	.....
Ohio.....	1914	58	759	7	101	36	519	5	96	7	26	.....	.....
	1909	56	593	12	143	49	434	8	98	11	27	2	3
	1904	39	551	4	69	34	283	2	20	12	33	2	9
	1899	37	444	5	95	12	95	.....	3	13	3	12	.....
Pennsylvania.....	1914	138	2,121	28	383	90	1,011	10	100	28	282	5	57
	1909	144	2,086	23	301	99	1,178	12	93	26	145	6	27
	1904	120	1,715	17	222	87	864	6	54	36	137	3	12
	1899	143	1,758	25	359	43	404	1	8	44	232	5	42
West Virginia.....	1914	32	341	2	20	54	615	4	26	12	95	4	9
	1909	37	339	2	24	33	422	2	45	12	96	2	11
	1904	43	393	6	88	18	155	1	6	19	90	5	24
	1899	14	144	1	12	.....	.....	.....	19	85	1	5	.....
All other states.....	1914	32	477	8	130	47	499	3	15	1	2	2	6
	1909	44	476	3	49	45	474	3	16	8	25	1	3
	1904	23	281	2	32	32	247	.....	5	28	.....	.....	.....
	1899	11	126	6	77	10	67	3	19	4	113	1	2

<sup>1</sup> In addition, 26 establishments reported, for 1914, 106 tanks equipped with 331 automatic machines.

Of the 328 pot furnaces, with a capacity of 4,522 pots, operated in 1914, only 2 furnaces, with 36 pots, were used in making window glass; 14 furnaces, with 187 pots, in producing obscured glass; and 103 furnaces, with 1,928 pots, in making plate glass. Eighty-one continuous tanks, with a capacity of 1,444 rings, were operated in producing building glass. Of this number, 62 tanks, with 1,298 rings, were used in producing window glass; 10 tanks, with 84 rings, in making obscured glass; 7 tanks, with 53 rings, in producing wire glass; and only 2 tanks, with 9 rings, in making plate glass.

Although the schedule for 1914 did not call for the information separately, 26 establishments reported the operation of 106 tanks equipped with 331 automatic machines.

**Imports and exports.**—Table 16 shows the value of glass imported and exported during each of the fiscal years ended June 30, 1869, 1879, 1889, and 1899, and during each subsequent fiscal year to 1914, inclusive.

This table brings out the fact that the exports of glass, as measured by value, have never equaled the imports. The nearest approach was in 1913, when the value of glass exported was equivalent to 64.1 per cent of that imported. The exports, however, show a much greater relative increase than the imports.

The value of window glass imported decreased by 7.5 per cent between 1869 and 1914, and that of unsilvered polished plate glass imported increased during the same period by only 1.4 per cent.

The demand for glass products in this country during the entire period covered by the table has been

met mainly by the domestic industry, as will be seen by a comparison of the values of imports given in this table with the total values of products of the glass industry, as given in Table 1. Moreover, the increase in the value of products of the domestic industry during this period—nearly 600 per cent—has been much greater relatively than the increase in the value of imports—a little more than 100 per cent. In 1869 the value of imports was equal to 21.1 per cent of the value of glass manufactured in this country, but the corresponding percentage for 1914 was only 6.7.

FISCAL YEAR ENDED JUNE 30—	IMPORTS. <sup>1</sup>								EXPORTS. <sup>1</sup>			
	Total value.	Bottles, vials, demijohns, carboys, and jars (except blown).	Bottles, decanters, and other glassware, cut or ornamented.	Cylinder, crown, and common window glass unpolished.	Plate glass, cast, polished, unsilvered.	Lenses and all optical instruments and spectacles.	Plates or disks for optical purposes.	All other.	Total value.	Bottles, vials, demijohns, carboys, and jars.	Window glass.	All other.
1914.....	\$8,191,833	\$1,148,460	\$1,151,875	\$1,356,218	\$727,889	\$721,560	\$617,703	\$2,468,128	\$3,729,623	\$711,353	\$311,339	\$2,706,981
1913.....	6,537,293	843,397	1,022,948	977,211	321,605	695,135	504,594	2,162,403	4,193,642	808,327	434,361	2,950,954
1912.....	6,210,625	913,638	1,001,542	959,123	344,819	579,650	383,234	2,037,569	3,494,153	(2)	114,109	3,380,044
1911.....	6,881,891	911,506	1,313,457	948,959	940,924	(2)	277,393	2,489,652	3,246,391	(2)	121,339	3,125,052
1910.....	6,553,764	819,918	(2)	810,915	693,262	(2)	407,976	3,821,693	2,805,401	(2)	67,995	2,737,406
1909.....	5,262,190	638,934	(2)	700,164	515,642	(2)	455,807	2,891,643	2,173,193	(2)	59,427	2,113,766
1908.....	6,570,123	904,773	(2)	824,616	805,656	(2)	360,278	3,674,800	2,505,417	(2)	107,596	2,397,821
1907.....	7,596,631	997,295	(2)	1,037,770	1,420,109	(2)	218,491	3,922,966	2,604,717	(2)	85,388	2,509,329
1906.....	7,507,823	805,752	(2)	1,306,723	1,575,375	(2)	199,500	3,620,473	2,433,904	(2)	68,327	2,365,577
1905.....	5,948,839	671,699	(2)	627,618	1,184,088	(2)	177,457	3,287,977	2,252,799	(2)	65,869	2,186,930
1904.....	6,583,168	540,460	(2)	1,351,104	945,048	(2)	215,583	3,500,973	1,978,481	(2)	71,498	1,906,983
1903.....	7,255,879	493,712	(2)	1,762,767	1,432,297	(2)	217,612	3,349,491	2,150,699	(2)	59,519	2,091,180
1902.....	6,205,052	458,454	(2)	1,827,498	999,934	(2)	191,089	2,728,077	1,960,106	(2)	51,952	1,908,154
1901.....	5,010,675	505,283	(2)	908,044	787,450	(2)	161,512	2,648,386	2,126,309	(2)	55,286	2,071,023
1900.....	5,037,931	464,483	(2)	1,555,924	226,295	(2)	125,449	2,665,780	1,936,119	(2)	36,218	1,899,901
1899.....	4,303,660	371,294	(2)	1,275,184	233,190	(2)	119,832	2,304,060	1,503,651	(2)	32,690	1,470,961
1889.....	7,724,662	825,411	(2)	1,444,982	933,316	(2)	10,741	4,460,212	894,200	(2)	16,864	877,336
1879.....	3,222,479	(2)	(2)	595,070	699,459	(2)	(2)	1,927,950	768,644	(2)	(2)	768,644
1869.....	3,895,739	(2)	(2)	1,466,138	717,952	(2)	(2)	1,711,649	580,718	(2)	(2)	580,718

<sup>1</sup> "Commerce and Navigation of the United States," Bureau of Foreign and Domestic Commerce.

<sup>2</sup> Figures cover the period from January 1 to June 30, inclusive.

<sup>3</sup> Not reported separately.

### DETAIL STATE TABLES.

Table 17 shows, for 1914, 1909, and 1904, by states, the number of establishments, average number of wage earners, primary horsepower, wages, cost of materials, and value of products for the glass industry.

Table 18 presents, for 1914, by states, the more detailed statistics of the industry.

TABLE 17.—COMPARATIVE STATISTICS FOR 1914, 1909, AND 1904.

STATE.	Census year.	Number of establishments.	Wage earners (average number).	Primary horsepower.	Expressed in thousands.			STATE.	Census year.	Number of establishments.	Wage earners (average number).	Primary horsepower.	Expressed in thousands.		
					Wages.	Cost of materials.	Value of products.						Wages.	Cost of materials.	Value of products.
United States....	1914	348	74,502	163,139	\$48,656	\$46,017	\$123,085	New York.....	1914	22	3,089	2,415	\$2,158	\$1,685	\$5,157
	1909	363	68,911	123,132	39,300	32,119	92,095		1909	24	3,114	1,774	1,806	1,159	4,509
	1904	399	63,969	91,476	37,288	26,146	79,608		1904	28	3,153	1,604	1,825	1,412	4,280
Illinois.....	1914	10	3,764	9,685	2,692	2,808	7,680	Ohio.....	1914	39	10,997	34,871	7,053	7,046	19,191
	1909	11	3,507	6,638	2,132	1,541	5,047		1909	45	10,159	16,198	5,977	4,688	14,358
	1904	13	4,768	1,583	3,012	1,400	5,620		1904	37	7,844	11,256	4,512	2,837	9,026
Indiana.....	1914	41	9,390	16,048	5,735	6,905	14,881	Pennsylvania.....	1914	103	23,606	61,399	15,214	15,542	39,798
	1909	44	9,544	21,031	4,942	4,728	11,593		1909	112	23,710	55,182	13,436	12,634	32,818
	1904	96	12,020	14,656	6,638	5,559	14,707		1904	122	20,794	47,750	12,513	9,325	27,672
Kansas.....	1914	6	364	195	367	202	729	Virginia.....	1914	4	606	286	328	258	690
	1909	23	1,435	1,031	956	672	2,037		1909	5	524	245	306	251	682
	1904	9	718	452	447	355	959		1904	4	472	100	264	169	549
Maryland.....	1914	6	1,184	1,030	783	490	1,501	West Virginia.....	1914	63	8,889	14,120	5,673	4,638	14,631
	1909	7	1,032	427	505	237	1,038		1909	51	6,190	5,233	3,628	2,296	7,779
	1904	6	649	426	354	159	590		1904	39	3,673	2,346	2,054	1,259	4,599
Missouri.....	1914	7	2,248	12,445	1,588	1,575	3,882	All other states.....	1914	28	4,581	7,748	3,295	2,427	7,347
	1909	4	1,755	8,820	758	947	1,993		1909	14	2,270	3,472	1,434	967	3,280
	1904	6	1,561	5,755	938	708	1,781		1904	17	2,810	2,857	1,581	1,107	3,375
New Jersey.....	1914	19	5,784	2,897	3,770	2,531	7,598								
	1909	23	5,651	3,081	3,340	1,999	6,961								
	1904	22	5,507	2,661	3,145	1,856	6,450								

TABLE 18.—DETAIL

STATE.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.										WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.					Capital.
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.				Total.	16 and over.		Under 16.			
					Male.	Female.	Average number.	Number, 15th day of—		Male.		Female.	Male.	Female.			
								Maximum month.	Minimum month.								
1 United States.....	348	78,804	93	1,355	2,026	798	74,502	Mh 86,461	Aug 49,861	84,158	76,909	4,999	1,889	361	\$153,925,876		
2 Illinois.....	10	4,033	3	68	159	44	3,764	Jan 4,337	Sept 2,094	4,028	3,859	159	9	1	11,487,541		
3 Indiana.....	41	9,804	3	156	174	81	9,390	Feb 11,278	Aug 6,116	10,488	9,508	802	100	18	13,566,269		
4 Kansas.....	6	385	3	7	5	6	364	Dec 651	July 92	678	667	11	.....	.....	349,793		
5 Maryland.....	6	1,259	6	22	36	11	1,184	Feb 1,361	Aug 581	1,282	1,043	88	149	2	1,109,339		
6 Missouri.....	7	2,335	.....	29	50	8	2,248	Apr 2,690	Aug 1,839	2,483	2,441	35	7	.....	9,762,406		
7 New Jersey.....	19	6,224	5	81	261	93	5,784	Mch 7,040	Aug 1,883	6,994	6,620	222	144	8	8,739,988		
8 New York.....	22	3,334	6	70	129	40	3,089	Feb 3,823	Aug 1,760	3,273	3,060	152	55	6	6,950,256		
9 Ohio.....	39	11,541	4	197	227	116	10,997	Apr 13,290	Aug 7,192	11,997	10,986	951	39	21	18,978,280		
10 Oklahoma.....	12	1,321	6	21	15	9	1,270	Apr 1,793	Aug 633	1,805	1,702	102	1	.....	1,650,679		
11 Pennsylvania.....	103	25,013	41	426	657	283	23,606	Mch 26,391	July 18,056	26,353	23,493	1,448	1,128	284	61,474,647		
12 Virginia.....	4	624	.....	11	3	4	606	Apr 790	Aug 79	669	618	22	29	.....	543,554		
13 West Virginia.....	63	9,422	16	246	202	69	8,889	May 10,173	July 6,089	10,566	9,546	921	83	16	13,762,618		
14 All other states <sup>1</sup> .....	16	3,594	.....	51	108	34	3,311	.....	.....	3,542	3,366	86	85	5	5,550,506		

<sup>1</sup> Owned power only.<sup>2</sup> Includes rented power, other than electric.

# MANUFACTURE OF GLASS.

837

STATISTICS, BY STATES: 1914.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.						
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horsepower generated in establishments reporting.	
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, including internal revenue and corporation income.	Principal materials.	Fuel and rent of power.			Total.	Steam engines. <sup>1</sup>	Internal-combustion engines. <sup>2</sup>	Water wheels and motors. <sup>1</sup>	Electric (rented). <sup>1</sup>		
\$3,693,498	\$2,855,406	\$48,655,819	\$150,185	\$138,237	\$743,985	\$35,081,576	\$10,934,928	\$123,085,019	\$77,068,515	163,139	105,061	43,653	201	14,224	78,672	1
194,402	249,627	2,692,125	-----	1,000	58,969	1,850,093	957,157	7,680,343	4,872,493	9,685	7,740	975	-----	970	3,866	2
364,818	243,080	5,735,204	36,594	48,000	92,702	5,573,735	1,331,688	14,891,372	7,975,949	16,048	6,588	7,336	-----	2,124	8,350	3
16,402	10,040	367,345	-----	500	3,808	128,145	73,445	728,681	527,091	195	20	162	-----	13	20	4
55,546	49,951	782,860	8	15,944	8,533	272,539	127,004	1,500,982	1,101,439	1,030	365	255	-----	410	118	5
100,167	62,273	1,588,448	5,200	3,000	22,669	1,069,685	505,103	3,882,420	2,307,632	12,445	7,945	4,300	200	-----	14,822	6
218,547	321,510	3,770,258	10,083	2,718	48,981	1,748,159	782,033	7,597,754	5,066,562	2,897	2,451	51	-----	395	618	7
250,486	151,147	2,157,555	14,332	2,850	34,630	1,269,266	385,551	5,156,714	3,471,897	2,415	1,365	150	-----	900	748	8
606,903	392,764	7,052,666	10,000	12,490	155,455	5,369,652	1,676,125	19,191,342	12,145,665	34,871	28,502	4,382	-----	1,987	25,318	9
32,159	16,393	991,958	-----	-----	7,361	645,137	74,671	2,005,736	1,285,928	1,291	630	625	-----	136	535	10
1,139,303	883,811	15,214,434	47,023	35,972	188,323	11,781,613	3,760,092	39,797,822	24,256,117	61,399	41,517	16,394	1	3,487	19,673	11
23,460	5,976	3,327,752	-----	-----	1,704	203,009	55,094	690,420	432,317	286	155	-----	-----	131	-----	12
544,605	278,511	5,672,672	26,460	9,823	86,636	3,918,023	720,118	14,631,171	9,993,030	14,120	3,595	8,867	-----	1,658	4,178	13
147,701	190,823	2,302,542	485	5,940	34,094	1,221,020	486,847	5,340,262	3,632,395	6,457	4,188	256	-----	2,013	426	14

<sup>1</sup> All other states embrace: California, 3 establishments; Louisiana, 2; Massachusetts, 2; Michigan, 2; Rhode Island, 1; South Carolina, 1; Tennessee, 1; Texas, 2; Washington, 1; Wisconsin, 1.



# MANUFACTURE OF BUTTONS.

## SUMMARY AND ANALYSIS.

**Scope of the industry.**—This report presents statistics for establishments engaged primarily in the manufacture of buttons, including those making button blanks or molds from the raw materials and those making finished buttons from either the raw materials or the blanks. These establishments manufacture ivory, bone, shell, metal, cloth-covered, porcelain, pearl, agate, glass, horn, composition, vegetable ivory, and wood buttons, and shell button blanks. Snap fasteners for use on clothing are also made by some of the establishments.

**Comparison with earlier censuses.**—Statistics for the button industry in the United States appeared in the report of the census of manufactures taken in 1810,

and have been included in the reports of all subsequent censuses. They show a fairly consistent development, with occasional fluctuations at the different censuses, owing to the fact that the demand for buttons is subject to changes in styles of the clothing on which they are used. Fashions, necessitating the use of large numbers of expensive buttons for purposes of ornament, naturally result in a great increase in the value of products shown for the industry, and a corresponding decrease when such fashions change.

Table 1 summarizes the statistics of establishments engaged in the manufacture of buttons for each census from 1869 to 1914, and gives percentages of increase.

**Table 1**

	NUMBER OR AMOUNT.							PER CENT OF INCREASE. <sup>1</sup>					
	1914	1909	1904	1899	1889	1879	1869	1909-1914	1904-1909	1899-1904	1889-1899	1879-1889	1869-1879
Number of establishments.....	517	444	275	238	106	124	64	16.4	61.5	15.5	124.5	-14.5	93.8
Persons engaged.....	16,296	18,004	11,637	9,291	(2)	(2)	(2)	-9.5	54.7	25.3	-----	-----	-----
Proprietors and firm members.....	536	519	302	267	(2)	(2)	(2)	3.3	71.9	13.1	-----	-----	-----
Salaried employees.....	1,249	1,058	768	339	(2)	(2)	(2)	18.1	37.8	126.5	-----	-----	-----
Wage earners (average number).....	14,511	16,427	10,567	8,685	3,831	5,825	1,912	-11.7	55.5	21.7	126.7	-34.2	204.7
Primary horsepower.....	14,398	12,831	6,982	4,165	1,680	(2)	597	12.2	83.8	67.6	147.9	-----	-----
Capital.....	\$19,075,374	\$15,640,152	\$7,783,900	\$4,212,568	\$3,089,265	\$2,013,350	\$1,013,700	22.0	100.9	84.8	36.4	53.4	98.6
Salaries and wages.....	8,075,236	8,088,394	4,391,669	3,122,596	1,673,876	1,645,130	580,380	-0.2	84.2	40.6	86.5	1.7	183.4
Salaries.....	1,630,837	1,299,217	711,473	296,358	(2)	(2)	(2)	27.1	82.6	140.1	-----	-----	-----
Wages.....	6,424,399	6,789,177	3,680,196	2,826,238	(2)	(2)	(2)	-5.4	84.5	30.2	-----	-----	-----
Paid for contract work.....	83,933	266,984	30,638	88,040	(2)	(2)	(2)	-68.6	771.4	-65.2	-----	-----	-----
Rent and taxes (including internal revenue).....	427,198	270,374	149,887	98,715	(2)	(2)	(2)	58.0	-----	-----	-----	-----	-----
Cost of materials.....	8,702,200	9,541,291	4,144,446	2,803,246	1,551,603	1,792,891	751,183	-8.8	130.2	47.8	80.7	-13.5	138.7
Value of products.....	20,711,979	22,708,065	11,133,769	7,695,910	4,216,795	4,449,542	1,778,893	-8.8	104.0	44.7	82.5	-5.2	150.1
Value added by manufacture (value of products less cost of materials).....	12,009,779	13,166,774	6,989,323	4,892,664	2,665,192	2,656,651	1,027,710	-8.8	88.4	42.9	83.6	0.3	153.5

<sup>1</sup> A minus sign (-) denotes decrease.

<sup>2</sup> Figures not available.

<sup>3</sup> Exclusive of internal revenue.

There was an increase of 73, or 16.4 per cent, from 1909 to 1914, in the number of establishments engaged in the industry, but most of the items show decreases for this period due, in most part, to changes in styles.

The value of products includes considerable duplication, due to the fact that most of the button blanks, backs, and parts, made by establishments engaged primarily in their manufacture, were utilized as materials by other establishments.

The final value of products of the button industry is most nearly represented by the value of the complete buttons manufactured, which amounted to \$16,121,873 in 1914. This figure excludes the value of parts of buttons, backs, etc., sold as such. The total for buttons given in the Abstract (p. 242) includes parts of buttons, to the value of \$111,325. In addition to the products shown in the tables, buttons valued at \$482,061, and approximately 260,000 gross of snap fasteners, the value of which can not be given without disclosing individual operations, were reported in 1914

as subsidiary products by establishments engaged primarily in other industries.

**Summary, by states.**—Table 2 summarizes the more important statistics of the industry, by states, the states being arranged according to the value of products reported for 1914. Some of the states (New Hampshire, Michigan, Wisconsin, Arkansas, Kentucky, and West Virginia), for which data can not be shown separately without disclosing the operations of individual establishments, ranked higher than some of those presented in the table.

Separate figures are given for 11 states, the statistics for the 13 other states in which the industry was carried on in 1914 being combined under the heading "all other states."

New York is the leading state in the industry, holding first rank at the censuses of 1914 and 1909. For 1914 the establishments in New York reported over one-third of the total value of products, value added by manufacture, and average number of wage earners employed in the industry throughout the



United States. Approximately two-thirds of the value of products, value added by manufacture, and wage earners engaged in the button industry was contributed by establishments in the four adjoining

states—New York, New Jersey, Pennsylvania, and Connecticut. Iowa ranked second for all three items given and reported 15.7 per cent of the total value of products.

Table 2	STATE.	CENSUS OF 1914.										PER CENT OF INCREASE. <sup>1</sup>								
		Number of establishments.	Wage earners.			Value of products.			Value added by manufacture.			Wage earners (average number).			Value of products.			Value added by manufacture.		
			Average number.	Per cent distribution.	Rank.	Amount.	Per cent distribution.	Rank.	Amount.	Per cent distribution.	Rank.	1909-1914	1904-1909	1899-1904	1909-1914	1904-1909	1899-1904	1909-1914	1904-1909	1899-1904
	United States....	517	14,511	100.0	.....	\$20,711,979	100.0	.....	\$12,009,770	100.0	.....	-11.7	55.5	21.7	-8.8	104.0	44.7	-8.8	88.4	42.9
	New York.....	224	5,223	36.0	1	7,821,290	37.8	1	4,597,532	38.3	1	-14.7	89.2	22.2	-16.6	143.5	62.3	-11.7	120.5	65.3
	Iowa.....	81	2,406	16.6	2	3,254,771	15.7	2	1,781,987	14.8	2	-24.1	63.8	33.1	-19.4	168.8	73.1	-32.0	171.0	44.3
	New Jersey.....	60	1,773	12.2	3	2,508,840	12.1	3	1,431,444	11.9	3	-21.6	65.2	17.1	-8.8	72.7	55.2	-8.7	63.6	52.8
	Pennsylvania.....	21	1,154	8.0	4	1,741,507	8.4	4	874,521	7.3	5	2.8	11.3	-11.5	11.2	73.9	-9.9	6.8	51.7	-9.4
	Connecticut.....	18	1,063	7.3	5	1,498,002	7.2	5	824,694	7.4	4	0.6	1.2	30.5	-8.4	13.1	33.0	-1.7	6.3	28.0
	Illinois.....	31	696	4.8	6	765,149	3.7	6	460,516	3.8	7	27.0	95.7	2.9	13.2	169.3	3.7	5.0	143.8	2.3
	Massachusetts.....	14	485	3.3	7	727,707	3.5	7	452,060	3.8	6	-26.4	-19.2	5.7	-25.7	21.6	18.1	-20.6	-1.6	30.5
	Missouri.....	9	282	1.9	8	256,708	1.2	11	148,405	1.2	10	-22.1	81.0	141.0	-3.4	73.9	80.0	-17.3	54.3	100.0
	Indiana.....	12	284	2.0	8	234,013	1.1	12	139,053	1.2	11	67.1	21.4	.....	100.0	67.1	.....	.....	.....	.....
	Ohio.....	9	157	1.1	12	155,529	0.8	13	87,523	0.7	13	4.0	.....	.....	36.8	.....	.....	.....	.....	.....
	California.....	9	32	0.2	16	48,628	0.2	17	34,214	0.3	17	.....	.....	.....	.....	.....	.....	.....	.....	.....
	All other states.....	29	956	6.6	.....	1,669,835	8.2	.....	1,117,830	9.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

<sup>1</sup> Percentages are based on figures in Table 15; a minus sign (—) denotes decrease. Percentages are omitted where base is less than 100 for wage earners or less than \$100,000 for value of products or value added by manufacture, or where comparable figures can not be given.

<sup>2</sup> Less than one-tenth of 1 per cent.

Persons engaged in the industry.—Table 3 shows, for 1914 and 1909, the number of persons engaged in the industry, distributed by sex, the average number of wage earners being distributed also by age. The sex

and age classification of the average number of wage earners in this and other tables is an estimate obtained by the method described in the "Explanation of terms."

Table 3	CLASS.	Cen- sus year.	PERSONS ENGAGED IN THE INDUSTRY.						CLASS.	Cen- sus year.	PERSONS ENGAGED IN THE INDUSTRY.					
			Total.	Male.	Fe- male.	Per cent of total.		Total.			Male.	Fe- male.	Per cent of total.			
						Male.	Fe- male.						Male.	Fe- male.		
All classes.....	1914 1909	16,296 18,004	10,584 11,301	5,712 6,703	64.9 62.8	35.1 37.2	Clerks and other subordinate sala- ried employees.	1914 1909	837 728	527 449	310 279	63.0 61.7	37.0 38.3			
Proprietors and officials.....	1914 1909	948 849	911 814	37 35	96.1 95.9	3.9 4.1	Wage earners (average number)....	1914 1909	14,511 16,427	9,146 10,038	5,365 6,389	63.0 61.1	37.0 38.9			
Proprietors and firm members..	1914 1909	536 519	511 498	25 21	95.3 96.0	4.7 4.0	16 years of age and over.....	1914 1909	14,243 16,855	9,029 9,853	5,214 6,002	63.4 62.1	36.6 37.9			
Salaried officers of corporations..	1914 1909	192 130	185 125	7 5	96.4 96.2	3.6 3.8	Under 16 years of age.....	1914 1909	268 572	117 185	151 387	43.7 32.3	56.3 67.7			
Superintendents and managers..	1914 1909	220 200	215 191	5 9	97.7 95.5	2.3 4.5										

Table 4 gives, for the several classes of persons engaged in the industry, the percentages of increase

from 1909 to 1914 and the per cent distribution at the two censuses.

Table 4	CLASS.	PERSONS ENGAGED IN THE INDUSTRY.							
		Per cent of increase, <sup>1</sup> 1909-1914.			Per cent distribution.				
		Total.	Male.	Female.	Total.	Male.	Female.	1914	1909
	All classes.....	-9.5	-6.3	-14.8	100.0	100.0	100.0	100.0	100.0
	Proprietors and officials.....	11.7	11.9	.....	5.8	4.7	8.6	7.2	0.5
	Proprietors and firm members..	3.3	2.6	.....	3.3	2.9	4.8	4.4	0.3
	Salaried officers of corporations..	47.7	48.0	.....	1.2	0.7	1.7	1.1	0.1
	Superintendents and managers..	10.0	12.6	.....	1.4	1.1	2.0	1.7	0.1
	Clerks and other subordinate salaried employees.....	15.0	17.4	11.1	5.1	4.0	5.0	4.0	4.2
	Wage earners (average number).....	-11.7	-8.9	-16.0	89.0	91.2	86.4	88.8	95.3
	16 years of age and over.....	-10.2	-8.4	-13.1	87.4	88.1	85.3	87.2	89.5
	Under 16 years of age.....	-53.1	-36.8	-61.0	1.6	3.2	1.1	1.6	5.8

<sup>1</sup> A minus sign (—) denotes decrease; percentages are omitted where base is less than 100.

The total number of persons engaged in the industry in 1914 was 16,296, of whom 64.9 per cent were males, the corresponding percentage in 1909 being 62.8 per cent. The proportion of females engaged as proprietors and officials was small (3.9 per cent), but they formed 37 per cent of the total number of clerks and other subordinate salaried employees, and of the total number of wage earners. The actual number of wage earners under 16 years of age was small at both censuses and decreased greatly (53.1 per cent) during the five-year period ending with 1914.

Increases are shown during the five-year period 1909-1914 for each of the classes of persons engaged in the industry, with the exception of the average number of wage earners employed, for which there was a decrease of more than one-tenth. The per cent of decrease shown for female wage earners was nearly twice as great as the corresponding figure for males, and the ratio of decrease for average number of wage earners under 16 years of age was more than five times as great as the corresponding figure for those over 16 years of age.

Table 5 presents, for 1914, 1909, and 1904, for the United States, and for 1914 and 1909 for each state in which the average number of wage earners was 500 or more, the average number of wage earners employed and their per cent distribution as males 16 years of age and over, females 16 years of age and over, and children under 16 years of age.

Table 5	STATE.	Census year.	WAGE EARNERS.			
			Average number. <sup>1</sup>	Per cent of total.		Under 16 years of age.
				16 years of age and over.		
				Male.	Female.	
United States.....	1914	14,511	62.2	35.9	1.9	
	1909	16,427	60.0	36.5	3.5	
	1904	10,597	49.1	47.5	3.4	
Connecticut.....	1914	1,063	43.4	52.2	4.4	
	1909	1,057	40.3	56.5	3.2	
Illinois.....	1914	696	76.3	21.8	1.9	
	1909	548	85.8	13.3	0.9	
Iowa.....	1914	2,406	70.6	23.7	0.7	
	1909	3,172	70.6	27.1	2.3	
New Jersey.....	1914	1,773	67.1	31.0	1.0	
	1909	2,261	65.0	31.4	3.6	
New York.....	1914	5,223	55.3	43.3	1.4	
	1909	6,126	53.5	43.7	2.3	
Pennsylvania.....	1914	1,184	52.3	40.0	7.6	
	1909	1,123	47.6	41.0	11.5	

<sup>1</sup> For method of estimating the distribution, by sex and age periods, of the average number for the industry, see "Explanation of terms."

The table shows the extent to which women were employed in the industry, over one-third of the total at each census being female wage earners. Between 1909 and 1914 the percentage of male wage earners 16 years of age and over increased, while the number and proportion of both women and children decreased, the proportion shown for those under 16 years of age

being only about half as large at the later as at the earlier period. Varying conditions prevailed in the states shown separately, Illinois showing increased proportions both of women and of children employed, while Iowa and New Jersey showed an increase in the former only, and Connecticut in the latter; New York and Pennsylvania showed decreases in both. Although the proportion of women wage earners in Connecticut decreased from 1909 to 1914, at each census they formed over one-half of the wage earners reported for the industry in the state.

**Wage earners employed, by months.**—The following table gives, for the industry, the total number of wage earners employed on the 15th of each month, or the nearest representative day, for 1914 and 1909, and the average number employed during each month in 1904, together with the percentage which the number reported for each month forms of the greatest number reported for any month.

MONTH.	WAGE EARNERS IN THE INDUSTRY.					
	Number. <sup>1</sup>			Per cent of maximum.		
	1914	1909	1904	1914	1909	1904
January.....	16,451	15,362	11,159	97.7	87.1	96.8
February.....	16,832	16,042	11,410	100.0	90.9	99.0
March.....	16,689	16,356	11,524	99.2	92.7	100.0
April.....	15,874	16,281	10,776	94.3	92.3	93.5
May.....	14,733	16,320	10,157	87.5	92.5	88.2
June.....	13,960	16,400	9,714	82.9	93.0	84.3
July.....	12,482	15,968	9,225	74.2	90.5	80.0
August.....	12,424	16,022	9,647	73.8	90.8	83.7
September.....	13,181	16,478	10,057	78.3	93.4	87.3
October.....	13,790	17,108	10,950	81.9	97.0	95.0
November.....	13,801	17,149	10,876	82.0	97.2	94.4
December.....	13,915	17,641	11,309	82.7	100.0	98.1

<sup>1</sup> The figures for 1914 and 1909 represent the number employed on the 15th of each month, or the nearest representative day; those for 1904, the average number employed during the month.

On the basis of number of wage earners employed, the industry shows its greatest activity in the winter and early spring. In 1914 the maximum employment was in February; in 1909, in December; and in 1904, in March. August was the month of minimum employment in 1914; January, in 1909; and July, in 1904. A greater degree of fluctuation in employment was shown for 1914 than for the earlier censuses.

Table 7 gives the total average number of wage earners employed during 1914, together with the total number employed on the 15th of each month, or the nearest representative day, for each state in which the average number of wage earners was 500 or more in 1914.

The percentage which the minimum number employed represented of the maximum ranged from 58.3 per cent in Iowa to 86 per cent in Connecticut. In New York, where more than one-third of the total number of wage earners reported for the industry was employed, the month of maximum employment was March and the month of minimum employment July.

Table 7

Table 7	WAGE EARNERS: 1914.													
	[Month of maximum employment for each state is indicated by <b>boldface</b> figures and that of minimum by <i>italic</i> figures.]													
	STATE.	Average number employed during year.	Number employed on 15th day of the month or nearest representative day.											
January.			February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
United States.....	14,511	16,451	16,832	16,689	15,874	14,733	13,960	12,482	<b>12,424</b>	13,181	13,790	13,801	13,915	73.8
Connecticut.....	1,063	1,081	1,132	1,114	1,113	1,062	1,030	<i>974</i>	980	1,058	1,070	1,066	1,076	86.0
Illinois.....	696	809	819	777	757	693	676	<i>628</i>	636	656	641	667	677	72.6
Iowa.....	2,406	2,973	3,073	3,011	2,747	2,563	2,363	<i>1,791</i>	1,807	1,875	2,114	2,206	2,349	68.3
New Jersey.....	1,773	1,935	1,990	1,983	1,897	1,757	1,697	<i>1,541</i>	1,603	1,731	1,764	1,692	1,686	77.4
New York.....	5,223	5,646	5,768	5,819	5,546	5,163	4,814	<i>4,539</i>	4,702	5,218	5,199	5,139	5,033	78.0
Pennsylvania.....	1,154	1,206	1,209	1,224	1,239	1,216	1,131	1,107	1,093	1,170	1,133	<i>1,042</i>	1,078	84.1

**Prevailing hours of labor.**—In Table 8 the average number of wage earners, reported for 1914 and 1909 for the industry, has been classified according to the number of hours of labor per week prevailing in the establishments in which they were employed. The number employed in each establishment was classified as a total even though a few employees worked a greater or smaller number of hours.

Table 8

STATE.	Census year.	AVERAGE NUMBER OF WAGE EARNERS.						
		Total.	In establishments where the prevailing hours of labor per week were—					
			48 and under.	Between 48 and 54.	54.	Between 54 and 60.	60.	Between 60 and 72. Over 72.
United States.....	1914	14,511	388	2,506	5,130	4,978	1,508	1
	1909	16,427	211	934	1,736	10,306	2,960	6 274
Connecticut.....	1914	1,063	.....	170	59	834	.....	.....
	1909	1,057	1	184	19	387	466	.....
Illinois.....	1914	696	67	182	89	77	281	.....
	1909	548	13	140	45	169	181	.....
Iowa.....	1914	2,406	3	362	664	824	553	.....
	1909	3,172	19	9	432	1,804	634	274
New Jersey.....	1914	1,773	74	59	165	1,472	3	.....
	1909	2,261	31	.....	160	1,574	196	.....
New York.....	1914	5,223	194	852	3,273	902	2	.....
	1909	6,126	113	583	370	4,453	601	6
Pennsylvania.....	1914	1,154	2	587	149	279	137	.....
	1909	1,123	4	.....	110	915	94	.....

A marked tendency toward a shorter working day is shown for the United States as a whole and for most of the states in which the industry is conducted. In 1914 more than one-half of the total average number of wage earners were employed in establishments where the prevailing hours of labor were 54 or less per week, as compared with only about one-sixth in 1909.

In New York the reduction in hours of labor was especially pronounced, the proportion which the wage earners in establishments whose prevailing hours were 54 or less per week represented of the total for the state increasing from about one-sixth in 1909 to more than four-fifths in 1914. This change is due in part to the passage in 1913 of a law limiting the hours of labor for women to 54 per week. Reductions in hours of labor were shown for nearly all the other states.

In 1909 Iowa reported 274 wage earners in establishments where the working hours were over 72 per week, but in 1914 there was only 1 wage earner employed in the industry in the United States whose working hours were more than 60 per week.

**Character of ownership.**—Table 9 presents statistics concerning the character of ownership, or legal organization, of establishments engaged in the industry for 1914 and 1909.

Table 9

CHARACTER OF OWNERSHIP.	Census year.	Number of establishments.	Average number of wage earners.	Value of products.	Value added by manufacture.
All classes.....	1914	517	14,511	\$20,711,979	\$12,009,779
	1909	444	16,427	22,708,065	13,166,774
Individuals.....	1914	235	2,308	3,011,907	1,887,155
	1909	200	2,464	3,169,472	1,988,638
Corporations.....	1914	145	10,021	14,524,949	8,412,066
	1909	109	10,598	14,491,275	8,125,361
All others.....	1914	137	2,182	3,175,123	1,710,558
	1909	135	3,365	5,047,318	3,052,775
Per cent distribution:					
Individuals.....	1914	45.5	15.9	14.5	15.7
	1909	45.0	15.0	14.0	15.1
Corporations.....	1914	28.0	69.1	70.1	70.0
	1909	24.5	64.5	63.8	61.7
All others.....	1914	26.5	15.0	15.3	14.2
	1909	30.4	20.5	22.2	23.2

Little change took place in the character of ownership of the establishments during the period 1909–1914. Small increases are shown for the proportions of the total number of establishments, average number of wage earners, value of products, and value added by manufacture for both the establishments owned by individuals and for those owned by corporations, with corresponding decreases for those under “all other” forms of ownership. The establishments under corporate ownership, although comprising only 28 per cent of the total number, employed 69.1 per cent of the average number of wage earners and reported 70.1 per cent of the total value of products and 70 per cent of the total value added by manufacture for the industry in 1914.

**Size of establishments.**—The tendency of the industry to become concentrated in large establishments, or the reverse, is indicated by the statistics given in Table 10.

Table 10 VALUE OF PRODUCT.	Cen- sus year.	Num- ber of estab- lish- ments.	Average number of wage earners.	Value of products.	Value added by manu- facture.
All classes.....	1914 1909	517 444	14,511 16,427	\$20,711,979 22,708,065	\$12,009,779 13,166,774
Less than \$5,000.....	1914 1909	169 120	294 250	412,654 299,831	290,533 211,923
\$5,000 to \$20,000.....	1914 1909	162 145	1,488 1,312	1,736,146 1,537,671	1,119,357 993,337
\$20,000 to \$100,000.....	1914 1909	144 121	5,133 4,801	6,196,609 5,653,390	3,613,081 3,430,368
\$100,000 to \$1,000,000.....	1914 1909	42 58	7,596 10,064	12,366,570 15,217,173	6,988,808 8,531,146
Per cent distribution:					
Less than \$5,000.....	1914 1909	32.7 27.0	2.0 1.5	2.0 1.3	2.4 1.6
\$5,000 to \$20,000.....	1914 1909	31.3 32.7	10.3 8.0	8.4 6.8	9.3 7.6
\$20,000 to \$100,000.....	1914 1909	27.9 27.3	35.4 29.2	29.9 24.9	30.1 26.1
\$100,000 to \$1,000,000.....	1914 1909	8.1 13.1	52.3 61.3	59.7 67.0	58.2 64.8

Of the establishments engaged in the industry in 1914, those reporting products valued at \$100,000 to \$1,000,000 numbered only 42, or 8.1 per cent of the

total, as compared with 58, or 13.1 per cent, in 1909. While these establishments reported more than one-half of the total average number of wage earners, value of products, and value added by manufacture, their proportion of the totals declined from 61.3 per cent, 67 per cent, and 64.8 per cent, respectively, for 1909, to 52.3 per cent, 59.7 per cent, and 58.2 per cent, respectively, for 1914.

On the other hand, the other groups of establishments—those having products valued at less than \$100,000—show slightly larger proportions for 1914 than for 1909, of the total number of wage earners, value of products, value added by manufacture, and with the exception of the "\$5,000 to \$20,000" group, for number of establishments.

Engines and power.—Table 11 shows, for 1914, 1909, and 1904, for the industry, the number and horsepower of engines or motors employed in generating power (including electric motors operated by purchased current). It also shows separately the number and horsepower of electric motors operated by current generated in the establishments reporting.

Table 11 POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.					
				Amount.			Per cent distribution.		
	1914	1909	1904	1914	1909	1904	1914	1909	1904
Primary power, total.....	734	505	219	14,398	12,831	6,982	100.0	100.0	100.0
Owned.....	200	216	175	10,058	9,235	5,620	69.8	72.0	80.5
Steam engines and turbines <sup>1</sup> .....	97	110	91	8,838	7,602	4,382	61.4	59.2	62.8
Internal-combustion engines.....	93	92	75	826	783	721	5.7	6.1	10.3
Water wheels, turbines, and motors.....	10	14	9	394	850	517	2.7	6.6	7.4
Rented.....	534	289	44	4,340	3,596	1,362	30.1	28.0	19.5
Electric.....	534	289	44	3,951	2,833	568	27.4	22.1	8.1
Other.....				389	763	794	2.7	5.9	11.4
Electric.....	650	362	53	5,016	3,416	679	100.0	100.0	100.0
Rented.....	534	289	44	3,951	2,833	568	78.8	82.9	83.7
Generated by establishments reporting.....	116	73	9	1,065	583	111	21.2	17.1	16.3

<sup>1</sup> Figures for horsepower include for 1909 and 1904 the amounts reported under the head of "other" owned power.

The total horsepower used in the industry in 1914 increased by about one-eighth over the corresponding figure for 1909, and was more than twice as great as in 1904. Steam engines and turbines formed the principal source of power at each census, the horsepower of such engines increasing 16.3 per cent during the period 1909-1914. Of the total primary power in 1914, 27.4 per cent was derived from rented electric current, as compared with 22.1 per cent in 1909.

Fuel.—Closely related to the subject of power employed in manufactures is that of fuel consumed in generating this power. Coal, both bituminous and anthracite, was the leading fuel used in the industry in 1914, 40,682 tons (of 2,000 pounds) of the former and 9,763 tons (of 2,240 pounds) of the latter being consumed. There were also utilized 31,492,000 cubic feet of gas, 7,005 barrels of oil, and 53 tons (of 2,000 pounds) of coke.

#### SPECIAL STATISTICS RELATING TO PRODUCTS.

Products classified according to kind and to materials used.—Plain and fancy buttons for fastenings and for ornamentation are manufactured in all sizes and styles and from many kinds of materials by the establishments engaged in the industry. Among the materials are bone, brass, celluloid, cloth, composition,

fresh-water mussel shells, glass, hoof, horn, iron, leather, ocean pearl, paper board, steel, and vegetable ivory.

Table 12, on the following page, shows the quantity and value of the various kinds of buttons manufactured in 1914.

Table 12

	BUTTONS: 1914.	
	Quantity (gross).	Value.
Products, total value.....		\$20,711,979
Buttons.....	60,211,153	16,121,873
Agate.....	3,660	5,100
Bone.....	2,198,946	329,934
Celluloid, plastic.....	623,169	724,354
Collar and cuff.....	1,771,053	56,251
Glass.....	217,224	100,201
Horn.....	537,096	299,487
Ivory.....	382,560	283,484
Metal (not including trouser or collar and cuff)—		
Dress or uniform.....	257,823	283,352
All other.....	614,740	172,133
Pearl or shell—		
Fresh-water.....	21,664,436	4,879,844
Ocean.....	4,516,969	2,489,364
Shoe.....	15,520,037	610,796
Covered.....	3,017,436	1,600,178
Trouser—		
Steel.....	535,207	307,802
Other metal.....	252,248	44,150
Vegetable ivory.....	2,289,402	1,326,227
Other composition.....	1,510,272	658,880
Vegetable ivory (not including trouser).....	2,838,603	1,559,276
Wood.....	1,831	2,522
Others, not specified.....	1,458,446	388,538
Parts of buttons.....	388,201	111,325
Blanks or molds.....	14,304,148	2,349,406
Snap fasteners <sup>2</sup> —		
Steel.....	517,895	159,351
Other metal.....	641,151	252,034
All other products.....		1,717,990

<sup>1</sup> In addition, buttons to the value of \$482,061 were manufactured by establishments engaged primarily in other industries, and approximately 260,000 gross of snap fasteners were reported by manufacturers of needles, pins, and hooks and eyes, but the value can not be given without disclosing the operations of individual establishments.

<sup>2</sup> On page 242 of the Abstract the number is erroneously designated as great gross.

Pearl or shell buttons formed the principal variety, both in number and value of output, their value comprising more than one-third of the total value of products in the industry. Fresh-water pearl buttons alone comprised nearly one-fourth of the total value of products. Vegetable ivory buttons (including both trouser and other) was the next largest item, forming one-seventh of the total, followed by covered buttons, which represented about one-thirteenth of the total value of products.

Statistics as to quantity and value of the various kinds of buttons manufactured were not collected for 1909, but for 1904 such data were secured.

Table 13 gives, for 1914 and 1904, comparative statistics of the products of the button industry.

During the period 1904-1914 both the total value of products and the value of the buttons manufactured nearly doubled. Pearl buttons (both fresh-water and ocean) formed the principal variety at each census, constituting more than one-half of the total value of the finished buttons in 1904 and nearly one-half in 1914. The quantity and value of the output of these buttons almost doubled during the decade, as did that of nearly all the other varieties

shown. A considerable decrease is shown, however, in the output of metal buttons, due to the lessened demand for this class of product.

Table 13

	1914		1904	
	Quantity (gross).	Value.	Quantity (gross).	Value.
Products, total value.....		\$20,711,979		\$11,133,769
Buttons.....	60,211,153	16,121,873	29,859,292	9,040,029
Pearl.....	26,181,405	7,369,208	13,143,553	4,870,274
Fresh-water.....	21,664,436	4,879,844	11,405,723	3,359,167
Ocean.....	4,516,969	2,489,364	1,737,830	1,511,107
Metal.....	1,660,018	807,437	6,815,962	1,312,741
Vegetable ivory.....	5,128,005	2,855,503	2,470,409	1,805,766
Covered.....	3,017,436	1,600,178	2,990,750	766,091
Bone.....	2,198,946	329,934	956,412	124,454
All other.....	22,025,348	3,129,613	3,482,206	660,703
Parts of buttons.....	388,201	111,325	( <sup>2</sup> )	( <sup>2</sup> )
Button blanks, made for sale.....	14,304,148	2,349,406	6,991,738	916,003
Snap fasteners.....	1,159,046	411,385	( <sup>2</sup> )	( <sup>2</sup> )
All other products.....		1,717,990		1,177,737

<sup>1</sup> In addition, buttons to the value of \$482,061 in 1914 and of \$1,034,843 in 1904 were reported by establishments engaged primarily in the manufacture of other products. Approximately 260,000 gross of snap fasteners were reported in 1914 by manufacturers of needles, pins, and hooks and eyes; the value can not be given without disclosing the operations of individual establishments.

<sup>2</sup> Not shown separately.

**Imports and exports.**—In Table 14 the statistics have been compiled from the Statistical Abstract of the United States, issued by the Bureau of Foreign and Domestic Commerce, Department of Commerce. The table shows for the years 1905 to 1915, inclusive, the value of buttons and parts of buttons imported, and for the years 1910 to 1915, inclusive, the value of those exported.

YEAR ENDING JUNE 30—	BUTTONS AND PARTS OF.		YEAR ENDING JUNE 30—	BUTTONS AND PARTS OF.	
	Imports.	Exports.		Imports.	Exports.
1915.....	\$1,004,794	\$1,171,232	1909.....	\$766,901	( <sup>1</sup> )
1914.....	2,082,029	654,372	1908.....	652,961	( <sup>1</sup> )
1913.....	1,855,843	849,282	1907.....	936,085	( <sup>1</sup> )
1912.....	1,130,359	723,784	1906.....	873,211	( <sup>1</sup> )
1911.....	762,388	556,504	1905.....	866,178	( <sup>1</sup> )
1910.....	1,055,645	473,780			

<sup>1</sup> Not reported separately.

Data regarding exports of buttons were not available prior to 1910. From that time until the close of the fiscal year 1914, which terminated just prior to the outbreak of the European war, the imports were considerably greater each year than the exports. In 1914 the value of the buttons imported was more than three times the value of those exported. During 1915, however, the exports nearly doubled, while the imports decreased by over one-half, resulting in a preponderance of exports.

#### DETAIL STATE TABLES.

The principal statistics secured by the census inquiry concerning the button industry are presented, by states, in Tables 15 and 16.

Table 15 shows, for 1914, 1909, and 1904, by states, the number of establishments, average number of

wage earners, primary horsepower, wages, cost of materials, and value of products, as reported for the industry.

Table 16 presents, for 1914, by states, the more detailed statistics of the industry.

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TABLE 15.—COMPARATIVE SUMMARY, BY STATES, FOR 1914, 1909, AND 1904.

STATE.	Cen- sus year.	Num- ber of estab- lish- ments.	Wage earn- ers (aver- age num- ber).	Primary horse- power.	Wages.	Cost. of ma- terials.	Value of prod- ucts.	STATE.	Cen- sus year.	Num- ber of estab- lish- ments.	Wage earn- ers (aver- age num- ber).	Primary horse- power.	Wages.	Cost of ma- terials.	Value of prod- ucts.
					Expressed in thousands.								Expressed in thousands.		
United States.....	1914	517	14,511	14,398	\$6,424	\$8,702	\$20,712	Missouri.....	1914	9	282	295	\$87	\$108	\$257
	1909	444	16,427	12,831	6,789	9,541	22,708		1909	10	362	232	108	87	266
	1904	275	10,567	6,982	3,680	4,144	11,134		1904	10	200	160	59	37	153
Connecticut.....	1914	18	1,063	882	492	613	1,498	New Jersey.....	1914	60	1,773	1,912	856	1,077	2,509
	1909	20	1,057	1,673	465	735	1,635		1909	64	2,261	1,232	913	1,183	2,750
	1904	11	1,044	831	410	599	1,446		1904	46	1,369	729	550	634	1,592
Illinois.....	1914	31	696	476	324	305	765	New York.....	1914	224	5,223	4,449	2,251	3,224	7,821
	1909	28	548	275	247	237	676		1909	165	6,126	3,911	2,462	4,168	9,373
	1904	22	280	220	102	71	251		1904	61	3,237	1,571	1,068	1,488	3,849
Indiana.....	1914	12	284	164	106	95	234	Ohio.....	1914	9	157	107	64	68	156
	1909	5	170	88	61	28	117		1909	5	151	73	55	30	114
	1904	4	140	66	40	14	70		1904	4	73	29	17	24	54
Iowa.....	1914	81	2,406	3,086	1,009	1,473	3,255	Pennsylvania.....	1914	21	1,154	1,318	477	867	1,741
	1909	70	3,172	2,809	1,412	1,414	4,035		1909	24	1,123	858	444	746	1,565
	1904	51	1,936	1,453	654	534	1,501		1904	21	1,099	796	395	390	969
Massachusetts.....	1914	14	485	614	230	276	728	All other states.....	1914	38	988	1,095	528	566	1,748
	1909	12	659	898	301	409	978		1909	41	798	782	361	504	1,199
	1904	12	816	554	318	226	804		1904	33	463	564	157	137	514

TABLE 16.—DETAIL STATISTICS FOR THE INDUSTRY, BY STATES: 1914.

STATE.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.									WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.						EXPENSES.		
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.			Total.	16 and over.		Under 16.		Capital.	Salaries and wages.			
					Male.	Fe-male.	Average number.	Number, 15th day of—			Male.	Fe-male.	Male.	Fe-male.		Officials.	Clerks, etc.		
								Maximum month.	Minimum month.										
United States.....	517	16,296	536	412	527	310	14,511	Fe 16,832	Am 12,424	15,098	9,394	5,425	122	157	\$19,075,374	\$880,196	\$770,651		
California.....	9	47	9	4	.....	2	32	No <sup>1</sup> 36	Ja 29	38	21	17	.....	.....	28,747	5,700	1,040		
Connecticut.....	18	1,164	9	35	39	18	1,063	Fe 1,132	Jy 974	1,073	465	560	24	24	1,609,754	75,998	64,008		
Illinois.....	31	783	42	18	19	8	696	Fe 819	Am 595	758	577	165	6	8	504,873	35,532	23,766		
Indiana.....	12	309	19	5	.....	1	284	Fe 378	Am 190	358	309	49	.....	.....	115,461	4,410	509		
Iowa.....	81	2,622	78	48	53	37	2,406	Fe 3,073	Jy 1,761	2,815	1,988	807	4	16	3,410,367	97,195	80,470		
Massachusetts.....	14	543	12	16	18	12	485	Ja 618	Am 301	466	185	260	5	16	1,241,996	51,104	42,833		
Missouri.....	9	308	8	9	5	4	282	Mh 356	Jy 140	335	247	86	.....	.....	264,833	8,822	3,287		
New Jersey.....	60	1,974	51	70	51	29	1,773	Fe 1,990	Jy 1,541	1,768	1,196	564	11	7	2,166,981	146,860	47,993		
New York.....	224	6,098	262	142	299	172	5,223	Mh 5,819	Jy 4,539	5,160	2,854	2,233	25	48	6,355,907	334,434	429,161		
Ohio.....	9	172	7	6	1	1	157	Ja 212	Am 42	201	175	26	.....	.....	96,541	6,389	1,908		
Pennsylvania.....	21	1,235	21	27	19	14	1,154	Ap 1,239	No 1,042	1,094	573	438	45	38	1,555,971	63,646	33,167		
All other states <sup>2</sup> .....	29	1,041	18	32	23	12	956	.....	.....	1,034	814	220	.....	.....	1,723,943	50,196	42,511		

STATE.	EXPENSES—continued.							Value of products.	Value added by manufacture.	POWER.					
	Salaries and wages—Con.	For contract work.	Rent and taxes.		For materials.					Primary horsepower.					Electric horsepower generated in establishments reporting.
			Rent of factory.	Taxes, including internal revenue and corporation income.	Principal materials.	Fuel and rent of power.	Total.			Steam engines. <sup>3</sup>	Internal-combustion engines. <sup>4</sup>	Water wheels and motors. <sup>5</sup>	Electric (rented).		
United States.....	\$6,424,399	\$83,933	\$338,617	\$88,581	\$8,382,703	\$319,497	\$20,711,079	\$12,009,779		14,398	8,838	1,215	394	3,951	1,065
California.....	12,963	600	4,385	168	13,544	870	48,628	34,214		33	.....	5	.....	28	.....
Connecticut.....	492,453	.....	9,338	10,745	589,125	24,183	1,498,002	884,604		882	600	41	214	27	441
Illinois.....	324,551	3,611	13,010	1,545	292,681	11,952	765,149	460,516		476	240	27	.....	209	.....
Indiana.....	106,157	.....	486	692	90,509	4,451	234,013	139,053		164	56	20	.....	88	.....
Iowa.....	1,008,650	16,836	11,838	11,538	1,429,670	43,114	3,254,771	1,781,987		3,086	2,565	199	.....	323	40
Massachusetts.....	230,445	606	6,494	9,388	259,980	15,667	727,707	452,060		614	440	.....	.....	174	160
Missouri.....	86,645	350	1,302	1,136	104,701	3,602	256,708	148,405		295	269	6	.....	20	.....
New Jersey.....	855,937	5,405	57,212	10,151	1,036,923	40,473	2,508,840	1,431,444		1,912	1,185	271	15	441	137
New York.....	2,250,554	46,911	196,661	19,780	3,111,435	112,323	7,821,290	4,597,532		4,449	1,870	475	165	1,909	29
Ohio.....	63,683	.....	3,740	439	66,334	1,672	155,529	87,523		107	52	25	.....	39	.....
Pennsylvania.....	476,649	9,514	27,965	4,366	843,163	23,823	1,741,507	874,321		1,318	1,150	66	.....	112	.....
All other states <sup>2</sup> .....	515,412	100	6,186	18,643	544,638	37,367	1,699,835	1,117,530		1,062	411	89	.....	571	227

<sup>1</sup> Same number reported for one or more other months.

<sup>2</sup> All other states embrace: Arkansas, 5 establishments; Colorado, 1; Kansas, 1; Kentucky, 4; Michigan, 2; Minnesota, 3; New Hampshire, 1; Oregon, 1; Rhode Island, 2; Tennessee, 2; Washington, 3; West Virginia, 2; Wisconsin, 2.

<sup>3</sup> Owned power only.

<sup>4</sup> Includes rented power, other than electric.

# POWER LAUNDRIES.

By A. E. SEYMOUR.

## SUMMARY AND ANALYSIS.

**Summary for the United States.**—The first census of laundries was taken in connection with the manufactures census of 1909. The statistics have been confined to laundries using mechanical power. As a rule, the establishments included are operated by steam power and are known as steam laundries. In some, however, steam and electric power are combined, and in others electric power is employed exclusively, steam and hot water being used only for washing purposes. The figures, therefore, relate to all kinds of power laundries.

Laundries are not classed as manufacturing establishments, and the statistics for them have not been included with those relating to manufacturing industries.

The statistics for the laundry industry as reported for 1914 and 1909 are summarized in the following table, which also gives the percentages of increase from 1909 to 1914.

Table 1	POWER LAUNDRIES.		
	Number or amount.		Per cent of increase: 1909-1914.
	1914	1909	
Number of establishments.....	6,097	5,186	17.6
Persons engaged in the industry.....	149,100	124,214	20.0
Proprietors and firm members.....	6,397	5,560	15.1
Salaried employees.....	12,062	9,170	31.5
Wage earners (average number).....	130,641	109,484	19.3
Primary horsepower.....	174,881	123,477	41.6
Capital.....	\$98,055,001	\$68,935,225	42.2
Salaries and wages.....	71,764,059	53,007,747	35.4
Salaries.....	12,292,815	8,180,769	50.3
Wages.....	59,471,244	44,826,978	32.7
Paid for contract work.....	374,448	239,090	56.6
Rent and taxes.....	4,104,933	2,776,871	47.8
Cost of materials.....	26,919,200	17,696,360	52.1
Amount received for work done.....	142,503,253	104,680,086	36.1

There were 6,097 laundries in the United States in 1914 that came within the scope of the census, as compared with 5,186 in 1909. As a rule a separate census report was made for each laundry, but in a few cases two or more plants, located in the same city and operated under the same ownership, were counted as a single establishment and were covered by a single report.

In some instances laundries reported as separate establishments in 1909 were consolidated under one ownership during the period between the two censuses and were reported as a single establishment in 1914. This condition explains why the number of establishments reported for some cities is smaller than the number of separate plants known to be in operation.

Table 1 shows that there has been a substantial increase not only in the number of laundries in the United States, but in the magnitude of their operations. It would be improper, however, to infer that the volume of work done has increased to the full extent indicated by the increase in the amount reported as received for such work, since there has been a considerable increase in the charges for certain classes of laundry work, which affects to some extent the values reported. On the other hand, it is probable that the amount of work done as "wet wash" or partial laundering, for which reduced prices are charged, has increased; and this would tend to increase the amount of work turned out without a corresponding increase in receipts.

One of the most important facts developed by the census is the extent of the industry in respect to number of persons employed. In 1914 there were 149,100, and in 1909, 124,214, persons engaged in all capacities, the increase being 24,886, or 20 per cent. These numbers include proprietors and firm members, officers of corporations, all salaried employees—clerks, stenographers, etc.—and all wage earners, including drivers of delivery wagons. Agents are not included unless they are carried on the pay rolls of the establishments reporting.

The number of proprietors and firm members increased from 5,560 in 1909 to 6,397 in 1914, or by 15.1 per cent; and during the same period the number of salaried employees increased from 9,170 to 12,062, or by 31.5 per cent, and the average number of wage earners increased from 109,484 to 130,641, or by 19.3 per cent. The increase in number of salaried employees was thus more than twice as great, proportionally, as that in number of proprietors and firm members, and was relatively more than three-fifths greater than the increase in number of wage earners.

The primary horsepower increased from 123,477 in 1909 to 174,881 in 1914, or by 41.6 per cent. It should be borne in mind, however, that the figures for primary horsepower refer only to the rated horsepower of engines and motors and not to the amount of power actually used in driving the machinery.

As stated under "Explanation of terms," the statistics of capital invested can be accepted only as indicating conditions in a very general manner. The figures for 1914 indicated an increase of \$29,119,775, or 42.2 per cent, over the amount reported for 1909. The average capital per establishment was approximately \$16,100 in 1914 and \$13,300 in 1909.



The amount paid for salaries and wages in 1914 showed an increase of 35.4 per cent over the amount paid in 1909. The per cent of increase in total salaries, 50.3, was considerably greater than that in number of salaried employees, 31.5; and, similarly, the per cent of increase in total wages, 32.7, was much greater than that in average number of wage earners, 19.3. In addition to salaries and wages, the laundries reported the payment of \$374,448 in 1914 and \$239,090 in 1909 for contract work done by persons not employed in the plants and not on their regular pay rolls.

The payments for rent and taxes, which are shown separately in Table 13, increased by \$1,328,062, or 47.8 per cent. The amount reported for rent increased from \$2,276,871 in 1909 to \$3,226,578 in 1914, while taxes increased from \$500,324 to \$878,355.

The cost of materials used in 1914 was \$26,919,200, as against \$17,696,360 in 1909, the increase being

\$9,222,840, or 52.1 per cent. This item includes the cost of fuel, power, water, soap, starch, bluing, soda ash and other chemicals, boxes, tags, oil and waste for machinery, and similar commodities used in the operation of the laundries.

The amount received for work done represents the gross income. The receipts for 1914 exceeded those for 1909 by \$37,823,167, or 36.1 per cent.

Comparative summary, by states.—Table 2 gives a comparative summary for the United States as a whole and for each state separately, for 1914 and 1909. It relates to number of establishments, persons engaged in the industry, and amount received for work done, and shows the rank of each state in respect to each of these items in 1914 and 1909, as well as its rank in respect to population in 1914 and 1910. The states are listed in the order of their rank in population (estimated) in 1914.

Table 2	POPULATION.		ESTABLISHMENTS.		PERSONS ENGAGED IN THE INDUSTRY.						AMOUNT RECEIVED FOR WORK DONE.					
	Number.		Rank.		Number.		Rank.		Increase. <sup>1</sup>		Rank.		Amount.		Increase.	
	1914 (estimated)		1914		1914		1914		1914		1914		1914		1914	
	1914 (estimated)	1910	1914	1910	1914	1910	1914	1910	1914	1910	1914	1910	1914	1910	1914	1910
UNITED STATES.....	98,781,324	91,972,268	.....	.....	6,097	5,188	.....	.....	149,100	124,214	24,888	20.0	.....	.....	\$142,503,253	\$104,680,086
New York.....	9,899,761	9,113,614	1	1	614	508	1	1	15,489	14,083	1,426	10.1	1	1	14,804,964	11,446,663
Pennsylvania.....	8,245,967	7,665,111	2	2	396	385	2	2	11,831	10,915	916	8.3	2	2	10,225,004	8,331,834
Illinois.....	5,986,781	5,638,591	3	3	461	448	3	3	12,470	10,916	1,554	14.2	2	2	12,846,432	10,049,445
Ohio.....	5,026,898	4,767,121	4	4	296	253	4	4	8,434	6,773	1,661	24.5	6	5	7,522,491	5,388,954
Texas.....	4,257,854	3,896,542	5	5	185	127	10	15	5,254	3,514	1,740	49.5	9	9	5,521,841	3,220,315
Massachusetts.....	3,605,522	3,366,416	6	6	391	280	5	5	8,861	6,655	2,206	33.1	5	6	8,661,830	5,754,572
Missouri.....	3,372,886	3,293,335	7	7	177	171	11	10	6,787	6,113	644	10.5	7	7	6,316,206	4,904,249
Michigan.....	2,976,030	2,810,173	8	8	234	219	7	7	5,637	4,828	1,809	30.2	8	8	5,115,286	3,261,841
New Jersey.....	2,815,663	2,537,167	9	11	142	112	16	16	4,024	3,334	690	20.6	11	12	3,590,789	2,779,277
Indiana.....	2,779,467	2,700,876	10	9	174	163	13	11	4,307	3,308	999	30.2	10	13	3,697,112	2,448,355
Georgia.....	2,776,513	2,609,121	11	10	43	42	33	31	2,008	1,525	483	31.7	20	22	1,632,221	1,006,724
California.....	2,757,595	2,377,549	12	12	532	321	2	4	12,077	9,060	3,017	33.3	3	4	13,945,738	9,541,785
Wisconsin.....	2,446,716	2,333,860	13	13	150	147	14	13	2,645	2,332	313	13.4	16	16	2,333,183	1,840,327
Kentucky.....	2,350,731	2,289,905	14	14	75	73	22	22	2,036	1,749	337	19.3	18	19	1,665,979	1,208,811
North Carolina.....	2,339,452	2,206,287	15	10	59	43	28	29	1,335	924	411	44.5	31	32	1,026,338	559,949
Alabama.....	2,269,945	2,138,093	16	18	41	38	35	33	1,569	1,274	295	23.2	26	27	1,360,688	909,130
Tennessee.....	2,254,754	2,184,789	17	17	67	63	26	23	2,398	2,392	506	21.2	14	15	2,296,797	1,643,407
Iowa.....	2,221,755	2,224,771	18	15	176	181	12	8	2,838	2,468	416	16.7	15	14	2,832,005	2,063,451
Minnesota.....	2,213,619	2,075,708	19	19	188	158	9	12	4,024	3,338	686	20.6	11	11	4,100,464	2,855,738
Virginia.....	2,150,009	2,061,612	20	20	71	57	25	26	1,955	1,523	442	29.0	22	23	1,453,912	1,003,191
Oklahoma.....	2,026,534	1,657,155	21	23	101	93	18	19	1,632	1,301	331	25.4	25	26	1,669,721	1,197,978
Mississippi.....	1,901,882	1,707,114	22	21	27	20	41	36	638	603	85	13.9	39	39	540,200	400,579
Kansas.....	1,784,897	1,690,949	23	22	150	138	14	14	1,853	1,751	102	5.9	24	18	1,695,799	1,485,967
Louisiana.....	1,778,482	1,656,388	24	24	28	25	40	40	1,869	1,117	252	22.6	29	29	1,190,148	852,021
Arkansas.....	1,689,480	1,574,449	25	25	53	45	30	28	1,011	850	161	19.1	34	33	836,457	684,036
South Carolina.....	1,690,015	1,515,400	26	26	23	24	43	41	588	440	148	33.6	40	42	422,212	269,112
Washington.....	1,407,865	1,141,900	27	30	192	172	8	0	3,744	3,731	13	0.3	13	10	4,251,620	3,814,825
Maryland.....	1,341,075	1,295,346	28	27	54	41	29	32	1,921	1,497	424	28.3	23	24	1,391,902	993,766
West Virginia.....	1,332,610	1,221,119	29	28	44	43	32	29	929	793	136	17.2	36	35	785,782	581,865
Nebraska.....	1,245,873	1,192,214	30	29	74	76	23	21	1,490	1,314	176	13.4	27	25	1,517,924	1,197,374
Connecticut.....	1,202,688	1,114,756	31	31	127	95	17	18	2,184	1,638	546	33.3	17	21	2,108,011	1,418,122
Colorado.....	909,537	799,024	32	32	94	99	19	17	2,079	2,076	3	0.1	19	17	2,163,263	1,980,663
Florida.....	848,111	752,619	33	33	45	28	31	37	991	638	353	55.3	35	38	946,314	474,088
Oregon.....	783,239	672,765	34	35	78	58	21	25	1,969	1,674	295	17.6	21	20	2,146,868	1,599,982
Maine.....	762,787	742,371	35	34	92	78	20	20	1,097	956	141	14.7	33	31	939,021	736,367
North Dakota.....	686,966	577,056	36	37	30	34	39	34	478	503	-25	-5.0	42	40	592,843	548,175
South Dakota.....	661,683	583,883	37	36	26	28	42	37	454	447	7	1.6	43	41	477,474	423,092
Rhode Island.....	591,215	542,610	38	38	66	53	27	27	1,402	1,211	191	15.8	28	28	1,260,942	1,019,404
New Hampshire.....	438,662	430,572	39	39	74	61	23	24	864	706	158	22.4	38	37	728,733	518,660
Montana.....	432,614	376,053	40	40	42	26	34	39	920	723	197	27.2	37	36	1,266,552	935,260
Utah.....	414,518	373,351	41	41	36	22	37	43	1,197	811	386	47.6	32	34	1,367,433	794,091
Idaho.....	395,407	325,594	42	45	36	24	37	41	510	410	100	24.4	41	43	592,749	394,226
New Mexico.....	383,551	327,301	43	44	15	8	47	48	274	168	106	63.1	47	48	280,373	156,419
Vermont.....	361,205	355,956	44	42	41	32	35	35	441	342	99	29.2	44	44	362,041	243,753
District of Columbia.....	353,778	331,069	45	43	18	17	44	44	1,351	1,096	255	23.3	30	30	1,023,475	795,999
Arizona.....	239,053	204,354	46	46	17	13	46	47	379	309	70	22.7	45	45	425,999	369,282
Delaware.....	209,817	202,322	47	47	12	15	48	45	369	283	86	30.4	46	46	242,897	187,038
Wyoming.....	168,736	145,965	48	48	18	14	44	46	212	203	9	4.4	48	47	238,048	216,847
Nevada.....	98,726	81,875	49	49	12	5	48	49	150	119	31	26.1	49	49	216,193	165,037

<sup>1</sup> A minus sign (-) denotes decrease.



The population figures given in this table for 1914 are estimates based on the assumption that the annual numerical increase since 1910 has been the same as the average annual numerical increase between 1900 and 1910. The rank according to the number of establishments shows some wide divergences from the rank in respect to population, due primarily to differences among the states in respect to the proportions urban and rural in their population. The laundry business is naturally concentrated in states having large urban populations. In Rhode Island, 97.6 per cent of whose inhabitants were urban—that is, lived in places of 2,500 or more—in 1910, there were 66 laundries in 1914, with total receipts for work done amounting to \$1,260,942, while South Dakota, with a little larger population than Rhode Island but with only 13.1 per cent classed as urban in 1910, had only 26 laundries in 1914, whose total receipts for work done were \$477,474. The rank of the states according to number of persons engaged in the industry and amount received for work done follows fairly closely the rank according to number of establishments.

New York, the most populous state, ranked first in the laundry industry. There were 614 establishments reported for the state in 1914, or 10.1 per cent of the total for the United States. These establishments gave employment to 15,489 persons, or 10.4 per cent of the total for the country; and their receipts for work done amounted to \$14,304,964, or 10 per cent of the United States total. California, which ranked twelfth in population, was second in number of laundries and amount received for work done and third in number of persons engaged in the industry; Illinois, third in population, was third in number of establishments and amount received for work done and second in number of persons engaged; and Pennsylvania, second in population, was fourth in number of establishments, number of persons engaged, and amount received for work done.

The three Pacific Coast states form striking exceptions to the general rule that the importance of the laundry business in any state depends primarily on the size of the urban population of that state. In 1914 California, Washington, and Oregon ranked seventh, seventeenth, and thirty-second, respectively, in number of urban inhabitants; but their rankings in respect to number of persons engaged in the industry were third, thirteenth, and twenty-first, respectively, and in respect to amount received for work done, second, tenth, and eighteenth, respectively.

The relatively high rank of the Pacific Coast states in the laundry industry is evidently due to local conditions and customs, it being probable that a much smaller proportion of the washing is done at home in these states than in most others. In view of the higher prices charged by laundries in the Pacific Coast states than in most other parts of the country, it is probable that the number of persons engaged forms a more reliable standard for measuring the importance of the industry in these states than does the amount received for work done.

The seven states, New York, California, Illinois, Pennsylvania, Massachusetts, Ohio, and Missouri, which ranked in the order in which named in respect to amount received for work done, did more than half of the laundry business of the United States as measured by this standard or by number of persons engaged, although having but 39.4 per cent of the total estimated population of the United States for 1914. The total amount received for work done in these seven states was \$74,125,665, or 52 per cent of the aggregate for the United States; and they reported 51.2 per cent of the total number of persons engaged in the industry and 47 per cent of the total number of establishments.

Eight states show a decrease in the number of power laundries in 1914 as compared with 1909. In only one state, however, North Dakota, was there a decrease in number of persons engaged in the industry, and every state shows an increase in the amount received for work done, the smallest percentage of increase being 8.1 per cent, in North Dakota. In 26 states the rate of increase in amount received for work done was greater than the corresponding rate for the United States, 36.1 per cent; in 11 states the increase amounted to more than 50 per cent, and in the state of Florida it was 99.6 per cent.

**Persons engaged in the operation of laundries.**—Table 3 shows the number of persons engaged in the power laundry industry in 1914 and 1909, classified according to occupational status and sex, and in the case of wage earners according to age, together with the percentages of males and females in each class.

Table 3	Census year.	PERSONS ENGAGED IN THE INDUSTRY.				
		Total.	Male.	Female.	Per cent male.	Per cent female.
All classes.....	1914	149,100	54,373	94,727	36.5	63.5
	1909	124,214	42,382	81,832	34.1	65.9
Proprietors and officials.....	1914	10,577	9,869	708	93.3	6.7
	1909	8,579	8,065	514	94.0	6.0
Proprietors and firm members..	1914	6,397	5,916	481	92.5	7.5
	1909	5,580	5,212	368	93.7	6.3
Salaried officers of corporations..	1914	1,636	1,547	119	92.9	7.1
	1909	1,069	1,016	53	95.0	5.0
Superintendents and managers..	1914	2,514	2,408	108	95.7	4.3
	1909	1,950	1,837	113	94.2	5.8
Clerks and other subordinate salaried employees.	1914	7,882	3,604	4,278	45.7	54.3
	1909	6,151	2,837	3,314	46.1	53.9
Wage earners (average number)....	1914	130,641	40,900	89,741	31.3	68.7
	1909	109,484	31,480	78,004	28.8	71.2
16 years of age and over.....	1914	130,053	40,747	89,306	31.3	68.7
	1909	103,543	31,214	72,329	29.8	70.2
Under 16 years of age.....	1914	888	153	435	26.0	74.0
	1909	941	266	675	28.4	71.6

The total number of persons reported as engaged in the laundry industry in 1914 was 149,100. Of this number, 130,641, or 87.6 per cent, were wage earners; 10,577, or 7.1 per cent, proprietors and officials; and 7,882, or 5.3 per cent, clerks and other subordinate salaried employees. In 1909, of the 124,214 persons engaged in the industry, 109,484, or 88.1 per cent, were wage earners; 8,579, or 6.9 per cent, proprietors

and officials; and 6,151, or 5 per cent, clerks and other subordinate salaried employees. It will be noted that the change between 1909 and 1914 in the proportions employed in these three classes did not in any case amount to more than one-half of 1 per cent.

Except in the group proprietors and officials, females predominate in the several occupational classes shown for the industry. They formed 54.3 per cent of the clerks and other subordinate salaried employees reported for 1914, and 53.9 per cent of those reported for 1909; and of the total number of wage earners, 68.7 per cent in 1914 and 71.2 per cent in 1909 were females. There was very little change, proportionally, during the five-year period in the numbers of

males and of females engaged in the laundry industry, the variation being less than 3 per cent for any class.

The number of wage earners shown in Table 3 is the average number, computed in the manner described under "Explanation of terms." A very small proportion of the wage earners in this industry are under 16 years of age, and this proportion decreased greatly between 1909 and 1914, there having been only 588 reported for the later year, as compared with 941 for the earlier.

Average number of wage earners, by states.—Table 4 shows the average number of wage earners, by states, in 1914 and 1909, and their distribution, in percentages, according to sex and age.

Table 4

Table 4	Census year.	WAGE EARNERS.					Census year.	WAGE EARNERS.				
		Average number.	Per cent of total.			Average number.		Per cent of total.				
			16 years of age and over.		Under 16 years of age.			16 years of age and over.		Under 16 years of age.		
			Male.	Female.				Male.	Female.			
UNITED STATES.....	1914	130,641	31.2	68.3	0.5	Montana.....	1914	819	31.9	68.0	0.1	
	1909	109,484	28.5	70.6	0.9		1909	652	27.5	72.5	.....	
Alabama.....	1914	1,388	30.4	69.3	0.3	Nebraska.....	1914	1,303	24.7	75.1	0.2	
	1909	1,108	29.9	68.4	1.7		1909	1,110	24.7	75.1	0.3	
Arizona.....	1914	335	27.5	72.5	.....	Nevada.....	1914	124	43.5	56.5	.....	
	1909	283	27.0	72.4	.....		1909	105	39.0	61.0	.....	
Arkansas.....	1914	832	28.7	70.9	0.4	New Hampshire.....	1914	760	34.5	65.4	0.1	
	1909	741	29.2	70.0	0.8		1909	608	35.7	64.0	0.3	
California.....	1914	10,416	41.9	58.1	.....	New Jersey.....	1914	3,642	38.2	61.2	0.8	
	1909	8,038	39.6	60.3	0.1		1909	2,984	29.5	67.8	2.7	
Colorado.....	1914	1,759	29.7	70.2	0.1	New Mexico.....	1914	240	26.7	72.1	1.2	
	1909	1,833	28.2	71.7	0.1		1909	146	28.1	70.6	1.3	
Connecticut.....	1914	1,913	39.4	60.1	0.5	New York.....	1914	13,751	31.7	68.1	0.2	
	1909	1,441	34.1	64.4	1.4		1909	12,578	29.4	70.3	0.3	
Delaware.....	1914	326	27.9	71.2	0.9	North Carolina.....	1914	1,165	31.6	67.9	0.5	
	1909	222	18.0	82.0	.....		1909	812	33.5	63.7	2.8	
District of Columbia.....	1914	1,217	28.0	71.9	0.1	North Dakota.....	1914	409	27.4	72.4	0.2	
	1909	983	26.8	73.1	0.1		1909	434	21.2	78.3	0.5	
Florida.....	1914	864	33.0	66.7	0.3	Ohio.....	1914	7,265	28.7	71.2	0.1	
	1909	571	30.8	67.6	1.6		1909	5,893	24.1	75.3	0.6	
Georgia.....	1914	1,776	31.7	67.1	1.2	Oklahoma.....	1914	1,416	32.3	67.7	.....	
	1909	1,332	30.8	67.3	1.9		1909	1,101	32.6	67.3	0.1	
Idaho.....	1914	442	31.0	69.0	.....	Oregon.....	1914	1,745	32.8	67.1	0.1	
	1909	357	30.5	69.2	0.3		1909	1,457	25.0	74.6	0.4	
Illinois.....	1914	11,004	26.7	72.8	0.5	Pennsylvania.....	1914	10,410	27.7	70.6	1.7	
	1909	9,705	24.6	74.7	0.7		1909	9,639	26.5	71.5	2.0	
Indiana.....	1914	3,750	25.2	74.4	0.4	Rhode Island.....	1914	1,192	42.1	56.0	1.9	
	1909	2,901	25.4	74.3	0.3		1909	1,076	39.1	58.9	2.0	
Iowa.....	1914	2,518	30.1	69.2	0.7	South Carolina.....	1914	517	34.2	65.6	0.2	
	1909	2,123	26.3	73.1	0.6		1909	373	31.6	66.2	2.2	
Kansas.....	1914	1,607	30.4	69.5	0.1	South Dakota.....	1914	400	24.2	74.5	1.3	
	1909	1,490	26.6	72.8	0.6		1909	386	22.8	76.2	1.0	
Kentucky.....	1914	1,873	31.5	68.1	0.4	Tennessee.....	1914	2,580	27.8	72.1	0.1	
	1909	1,554	29.9	69.2	0.9		1909	2,149	27.2	71.7	1.1	
Louisiana.....	1914	1,243	26.5	73.3	0.2	Texas.....	1914	4,605	36.5	63.4	0.1	
	1909	1,036	26.5	72.4	1.0		1909	3,073	36.2	62.4	1.4	
Maine.....	1914	930	33.3	66.1	0.6	Utah.....	1914	1,070	33.1	66.6	0.3	
	1909	816	33.2	66.2	0.6		1909	738	23.6	76.2	0.2	
Maryland.....	1914	1,715	28.6	70.5	0.9	Vermont.....	1914	378	29.4	70.6	.....	
	1909	1,278	24.7	71.0	4.3		1909	299	27.4	72.3	0.3	
Massachusetts.....	1914	7,771	37.5	61.7	0.8	Virginia.....	1914	1,695	26.7	73.0	0.3	
	1909	5,958	30.8	67.9	1.3		1909	1,351	30.4	69.0	0.5	
Michigan.....	1914	4,902	24.4	75.2	0.4	Washington.....	1914	3,298	37.8	62.1	0.1	
	1909	3,729	22.9	76.3	0.8		1909	3,264	35.0	64.8	0.1	
Minnesota.....	1914	3,494	26.5	73.4	0.1	West Virginia.....	1914	827	31.9	68.1	.....	
	1909	2,916	20.0	80.0	.....		1909	679	28.0	71.0	1.0	
Mississippi.....	1914	606	33.2	66.7	0.1	Wisconsin.....	1914	2,265	24.1	75.0	0.9	
	1909	529	28.0	69.3	2.7		1909	2,014	23.1	75.9	0.9	
Missouri.....	1914	5,899	24.7	75.0	0.3	Wyoming.....	1914	185	22.7	77.3	.....	
	1909	5,438	24.3	75.1	0.5		1909	171	26.3	73.1	0.6	

The proportion of female wage earners 16 years of age and over was somewhat smaller in 1914 than in 1909, being 68.3 per cent of the total in the later year and 70.6 per cent in the earlier. More than two-thirds of the wage earners were females in all but 11 states in 1914 and in all but 10 states in 1909. In the 4 states of Michigan, Missouri, Nebraska, and Wisconsin, 75 per cent or more of the wage earners in 1914 were females; and there were 10 states in which more than 75 per cent of the wage earners in 1909 were females. California, Nevada, and Rhode Island were the only states in which females formed less than 60 per cent of the total wage earners in 1914.

There were 8 states in 1914 and 5 in 1909 for which no wage earners under 16 years of age were reported.

**Distribution of wage earners, by months of employment.**—Table 5 gives the average number of wage earners employed during the year and the number employed on the 15th (or nearest representative day) of each month in 1914 and 1909 for each of the 39 states which in 1909 employed 500 or more wage earners. South Carolina reported more than 500 wage earners for 1914, but, since it had fewer than that number in 1909, it is not included in this table. The number of wage earners in South Carolina in 1914 ranged from 533 in September to 498 in December, the average number being 517.

Table 5	STATE.	Census year.	WAGE EARNERS. <sup>1</sup>											
			Average number during the year.	Number employed on 15th day of month or nearest representative day.										
				January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.
UNITED STATES.....	1914 1909	130,641 109,484	128,479 103,748	127,847 103,937	128,525 104,970	129,716 106,422	131,393 108,149	133,865 111,313	134,969 114,211	134,078 114,539	132,512 113,733	129,992 111,500	128,320 110,479	128,004 110,805
Alabama.....	1914 1909	1,388 1,108	1,340 998	1,340 1,043	1,334 1,062	1,385 1,093	1,393 1,107	1,490 1,137	1,489 1,158	1,470 1,175	1,435 1,187	1,372 1,134	1,326 1,106	1,304 1,103
Arkansas.....	1914 1909	832 741	815 681	806 703	804 726	808 733	821 752	874 766	921 795	892 771	883 763	800 754	786 721	774 724
California.....	1914 1909	10,416 8,038	10,417 7,632	10,355 7,600	10,428 7,823	10,446 7,911	10,319 7,985	10,295 8,107	10,496 8,366	10,577 8,277	10,527 8,350	10,382 8,209	10,342 8,118	10,416 8,116
Colorado.....	1914 1909	1,759 1,832	1,714 1,696	1,715 1,684	1,713 1,707	1,713 1,756	1,716 1,763	1,784 1,844	1,901 1,996	1,912 2,046	1,832 1,962	1,723 1,855	1,690 1,850	1,689 1,835
Connecticut.....	1914 1909	1,913 1,441	1,875 1,350	1,874 1,342	1,881 1,343	1,869 1,363	1,945 1,399	1,961 1,497	1,962 1,564	1,966 1,547	1,951 1,503	1,916 1,485	1,886 1,451	1,885 1,451
District of Columbia.....	1914 1909	1,217 993	1,231 1,020	1,234 1,009	1,228 1,013	1,210 1,017	1,201 1,013	1,204 965	1,200 927	1,187 916	1,190 935	1,234 1,001	1,238 1,027	1,244 1,069
Florida.....	1914 1909	864 571	838 566	925 565	938 578	888 562	864 550	832 642	838 548	803 553	823 555	825 570	851 620	891 647
Georgia.....	1914 1909	1,776 1,332	1,742 1,292	1,756 1,285	1,762 1,303	1,757 1,318	1,793 1,325	1,831 1,342	1,866 1,366	1,834 1,367	1,788 1,366	1,746 1,351	1,731 1,342	1,707 1,323
Illinois.....	1914 1909	11,004 9,705	10,959 9,288	10,869 9,369	10,964 9,425	11,094 9,522	11,267 9,741	11,378 9,862	11,147 10,042	11,064 10,141	10,978 10,008	10,856 9,718	10,769 9,657	10,705 9,686
Indiana.....	1914 1909	3,750 2,901	3,665 2,769	3,683 2,777	3,671 2,786	3,743 2,807	3,849 2,872	3,889 2,984	3,856 2,959	3,788 2,985	3,766 2,969	3,682 2,949	3,665 2,982	3,734 2,973
Iowa.....	1914 1909	2,518 2,123	2,457 2,030	2,435 2,024	2,452 2,031	2,476 2,053	2,509 2,074	2,573 2,130	2,605 2,195	2,570 2,242	2,561 2,248	2,524 2,180	2,515 2,130	2,541 2,139
Kansas.....	1914 1909	1,607 1,490	1,570 1,388	1,543 1,388	1,548 1,401	1,594 1,440	1,590 1,449	1,652 1,499	1,685 1,549	1,662 1,558	1,665 1,582	1,610 1,551	1,582 1,556	1,577 1,539
Kentucky.....	1914 1909	1,873 1,554	1,840 1,587	1,831 1,395	1,848 1,419	1,879 1,547	1,887 1,576	1,918 1,611	1,927 1,658	1,894 1,649	1,889 1,628	1,878 1,617	1,853 1,575	1,852 1,593
Louisiana.....	1914 1909	1,243 1,036	1,192 1,010	1,212 1,029	1,189 1,030	1,218 1,005	1,238 1,026	1,293 1,042	1,339 1,070	1,330 1,047	1,288 1,055	1,234 1,035	1,181 1,022	1,201 1,058
Maine.....	1914 1909	930 816	844 697	840 701	843 699	848 704	881 775	906 851	1,081 984	1,135 1,016	1,031 911	926 826	874 778	877 789
Maryland.....	1914 1909	1,715 1,278	1,664 1,257	1,669 1,252	1,627 1,260	1,642 1,265	1,745 1,285	1,754 1,272	1,732 1,288	1,719 1,287	1,730 1,283	1,741 1,300	1,775 1,304	1,777 1,285
Massachusetts.....	1914 1909	7,771 5,958	7,702 5,671	7,694 5,668	7,686 5,677	7,781 5,734	7,859 5,839	7,982 6,039	7,900 6,226	7,773 6,136	7,774 6,235	7,798 6,113	7,685 6,066	7,625 6,096
Michigan.....	1914 1909	4,902 3,729	4,738 3,434	4,691 3,423	4,731 3,463	4,793 3,567	4,854 3,639	5,045 3,821	5,230 4,066	5,245 4,096	5,110 3,987	4,899 3,795	4,738 3,726	4,757 3,732
Minnesota.....	1914 1909	3,494 2,916	3,395 2,715	3,371 2,725	3,405 2,729	3,464 2,816	3,505 2,896	3,590 2,996	3,615 3,101	3,595 3,111	3,574 3,085	3,510 2,956	3,474 2,925	3,444 2,939
Mississippi.....	1914 1909	607 529	580 495	576 498	582 507	598 530	600 542	625 549	655 561	657 554	648 548	598 524	597 521	562 513
Missouri.....	1914 1909	5,899 5,438	5,808 5,199	5,867 5,171	5,899 5,235	5,891 5,275	5,902 5,281	6,056 5,625	6,064 5,641	5,960 5,689	5,875 5,652	5,813 5,556	5,770 5,222	5,813 5,505
Montana.....	1914 1909	817 652	797 606	780 597	781 610	810 631	843 629	859 663	886 697	880 710	840 698	781 667	778 654	786 660
Nebraska.....	1914 1909	1,303 1,110	1,268 1,041	1,269 1,050	1,286 1,061	1,280 1,074	1,322 1,080	1,347 1,114	1,338 1,143	1,324 1,163	1,314 1,162	1,299 1,148	1,292 1,135	1,303 1,140
New Hampshire.....	1914 1909	760 608	726 539	728 542	723 545	725 560	756 615	777 652	804 672	811 691	798 671	768 620	750 601	744 598

<sup>1</sup> The month of maximum employment is indicated by boldface figures, and the month of minimum employment by italic figures.

## MANUFACTURES.

Table 5—Continued.

STATE.	Census year.	WAGE EARNERS. <sup>1</sup>											
		Average number during the year.	Number employed on 15th day of month or nearest representative day.										
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.
New Jersey.....	1914	3,642	<i>3,467</i>	3,479	3,492	3,521	3,595	3,729	3,923	3,998	3,849	3,699	3,524
	1909	2,984	<i>2,800</i>	2,821	2,841	2,838	2,881	3,054	3,194	3,276	3,145	2,994	2,967
New York.....	1914	13,751	13,784	13,561	13,635	13,756	13,865	<b>14,064</b>	13,974	13,891	13,779	13,729	13,554
	1909	12,578	12,129	12,160	<i>12,167</i>	12,155	12,312	12,702	13,010	13,048	12,899	12,782	12,735
North Carolina.....	1914	1,165	<i>1,074</i>	<i>1,068</i>	1,070	1,130	1,168	1,226	1,297	1,336	1,254	1,160	1,094
	1909	812	<i>745</i>	754	756	785	815	852	877	883	871	822	786
Ohio.....	1914	7,265	7,132	<i>7,067</i>	7,135	7,278	7,362	<b>7,599</b>	7,505	7,391	7,349	7,166	7,119
	1909	5,893	5,641	<i>5,626</i>	5,794	5,800	5,897	6,043	6,054	5,976	6,069	5,958	5,912
Oklahoma.....	1914	1,416	<i>1,386</i>	1,332	1,352	1,379	1,393	1,459	1,510	1,492	1,486	1,452	1,417
	1909	1,101	<i>898</i>	995	1,022	1,040	1,064	1,099	1,160	1,167	1,179	1,171	1,151
Oregon.....	1914	1,745	<i>1,820</i>	1,793	1,804	1,796	1,786	1,757	1,807	1,747	1,690	1,658	1,638
	1909	1,457	<i>1,371</i>	1,374	1,392	1,411	1,439	1,452	1,504	1,499	1,497	1,512	1,505
Pennsylvania.....	1914	10,410	10,404	10,402	10,477	10,471	<b>10,576</b>	10,521	10,407	10,355	10,310	10,410	10,320
	1909	9,639	<i>9,331</i>	9,357	9,350	9,474	9,630	9,771	9,756	9,716	9,820	9,849	9,802
Rhode Island.....	1914	1,192	1,170	<i>1,162</i>	<i>1,162</i>	1,177	1,192	1,214	<b>1,234</b>	1,223	1,211	1,194	1,184
	1909	1,076	1,041	<i>1,040</i>	1,041	1,047	1,070	1,083	1,103	1,101	1,101	1,091	1,095
Tennessee.....	1914	2,580	2,507	2,510	2,520	2,509	2,583	2,714	2,757	2,690	2,642	2,568	2,489
	1909	2,149	2,041	<i>2,039</i>	2,039	2,130	2,117	2,196	2,236	<b>2,246</b>	2,183	2,189	2,171
Texas.....	1914	4,605	4,352	<i>4,319</i>	4,360	4,509	4,684	4,894	5,072	5,019	4,844	4,555	4,378
	1909	3,073	<i>2,791</i>	2,847	2,891	2,976	3,048	3,160	3,232	<b>3,284</b>	3,277	3,172	3,112
Utah.....	1914	1,070	1,111	1,079	1,074	1,057	1,051	1,056	1,086	1,097	1,083	1,050	<i>1,036</i>
	1909	738	699	<i>690</i>	<i>690</i>	693	700	740	814	838	759	742	744
Virginia.....	1914	1,694	<i>1,601</i>	1,608	1,613	1,674	1,699	1,727	1,761	1,751	1,767	1,718	1,718
	1909	1,351	1,275	1,279	1,314	1,314	1,370	1,390	1,412	1,401	1,395	1,370	1,361
Washington.....	1914	3,298	3,282	<i>3,227</i>	3,267	3,300	3,318	3,316	3,370	3,344	3,377	3,268	3,260
	1909	3,264	<i>2,946</i>	2,957	2,986	3,066	3,169	3,389	3,537	<b>3,663</b>	3,579	3,391	3,262
West Virginia.....	1914	827	<i>750</i>	741	755	771	846	859	871	876	878	863	869
	1909	679	<i>635</i>	644	644	654	684	696	713	708	712	689	677
Wisconsin.....	1914	2,265	2,187	<i>2,184</i>	2,199	2,190	2,253	2,302	2,352	2,349	2,311	2,279	2,285
	1909	2,014	1,921	<i>1,917</i>	1,936	1,937	1,987	2,035	2,136	<b>2,138</b>	2,105	2,030	2,009

<sup>1</sup> The month of maximum employment is indicated by boldface figures, and the month of minimum employment by italic figures.

The largest number of wage earners reported for any month of 1914 was 134,969, for July, and the smallest, 127,847, for February, the minimum number being equal to 94.7 per cent of the maximum. In 1909 the largest number reported was 114,539, for August, and the smallest, 103,746, for January, the minimum number being equal to 90.6 per cent of the maximum. The wage-earning force, therefore, fluctuated to a less extent throughout the year in 1914 than in 1909. Although the summer months show a somewhat larger number of wage earners than other seasons, it is obvious that the laundry business is in no sense a seasonal industry.

Prevailing hours of labor.—Table 6 shows, for 1914 and 1909, the numbers of wage earners employed in establishments classified according to the prevailing number of hours of labor per week in the 39 states having more than 500 wage earners each in 1909.

This table brings out in a striking manner the marked reduction in the length of the working day which took place between 1909 and 1914. In 1909 the wage earners in plants where the prevailing hours of work exceeded 54 a week formed 56.8 per cent of the total number, but in 1914 the number employed in such establishments formed only 20.7 per cent of

the total. In 1909 the establishments working 60 hours per week employed 33.7 per cent of the wage earners reported for the industry, but by 1914 the proportion employed in such establishments had decreased to 10.7 per cent. Of the seven groups of establishments covered by Table 6, those operating 60 hours a week employed the greatest number of wage earners (36,884, or more than one-third of the total) in 1909, but in 1914 the greatest number (49,700, or more than three-eighths of the total) was reported by establishments operating 54 hours a week. In 1909 the number of wage earners employed in establishments operating 60 hours a week was four times as great as the number working 48 hours and under, but in 1914 the number employed in plants operating 60 hours a week was less than half as great as the number in plants whose hours were 48 and under. In 1909, 56.8 per cent of the wage earners worked in establishments whose prevailing hours were more than 54, whereas in 1914 the corresponding percentage, 20.7, was only a little more than one-third as great as that for the earlier year. In 1909 only 8.4 per cent of the wage earners worked in plants operating 48 hours and under; in 1914 the corresponding proportion was 22.6 per cent.

Table 6

Table 6		WAGE EARNERS (AVERAGE NUMBER).												WAGE EARNERS (AVERAGE NUMBER).									
STATE.	Cen- sus year.	Total.	In establishments where the prevailing hours of labor per week were—							STATE.	Cen- sus year.	Total.	In establishments where the prevailing hours of labor per week were—										
			48 and un- der.	Between 48 and 54.	54	Between 54 and 60.	60	Between 60 and 72.	72 and over.				48 and un- der.	Between 48 and 54.	54	Between 54 and 60.	60	Between 60 and 72.	72 and over.				
UNITED STATES.....	1914 1909	130,641 109,484	29,515 9,216	24,385 17,285	49,700 20,790	12,879 24,564	13,953 36,884	134 598	75 147	Mississippi.....	1914 1909	607 529	99 39	82 51	177 10	24 53	220 334	5 42					
Alabama.....	1914 1909	1,388 1,108	95 35	176 57	243 192	427 142	447 682	.....	.....	Missouri.....	1914 1909	5,899 5,438	1,693 328	1,186 797	2,961 2,043	8 546	39 1,724	12 .....					
Arkansas.....	1914 1909	832 741	148 20	104 39	268 120	49 122	263 420	.....	20	Montana.....	1914 1909	819 652	288 27	85 39	434 345	12 33	..... 208	.....					
California.....	1914 1909	10,416 8,038	6,510 1,470	1,736 1,270	1,708 2,301	66 516	389 2,241	1 176	6 64	Nebraska.....	1914 1909	1,303 1,110	173 29	297 84	790 195	32 115	11 687	.....					
Colorado.....	1914 1909	1,759 1,833	1,663 359	18 415	71 498	4 204	3 264	..... 89	..... 4	New Hampshire.....	1914 1909	760 608	228 18	116 58	161 63	226 291	29 178	.....					
Connecticut.....	1914 1909	1,913 1,441	427 160	390 104	406 227	611 739	76 211	3 .....	.....	New Jersey.....	1914 1909	3,642 2,984	669 658	1,057 452	604 317	643 456	669 1,075	..... 22					
District of Columbia.....	1914 1909	1,217 993	1,217 130	..... 222	..... 206	..... 245	..... 190	.....	.....	New York.....	1914 1909	13,751 12,578	2,061 831	1,518 2,269	9,011 2,095	812 3,809	349 3,551	..... 22					
Florida.....	1914 1909	864 571	154 .....	105 4	151 103	35 15	341 449	78 .....	.....	North Carolina.....	1914 1909	1,165 812	23 13	110 .....	261 43	149 39	682 703	..... 9					
Georgia.....	1914 1909	1,776 1,332	30 40	142 25	239 .....	40 274	1,325 910	..... 83	.....	Ohio.....	1914 1909	7,265 6,893	995 904	1,741 818	4,383 1,681	64 1,134	82 1,257	..... 6					
Illinois.....	1914 1909	11,004 9,705	898 510	2,111 1,550	1,982 1,534	2,947 2,073	3,052 4,032	14 .....	6	Oklahoma.....	1914 1909	1,416 1,101	223 49	217 99	810 198	58 285	110 470	.....					
Indiana.....	1914 1909	3,750 2,901	459 80	978 195	1,071 440	1,046 921	130 1,257	..... 8	66	Oregon.....	1914 1909	1,745 1,457	235 37	727 214	768 534	..... 464	15 208	.....					
Iowa.....	1914 1909	2,518 2,123	134 115	306 210	1,182 339	287 416	609 1,042	..... 1	.....	Pennsylvania.....	1914 1909	10,410 9,639	1,750 564	3,019 2,980	5,205 1,082	405 2,891	25 2,122	6 .....					
Kansas.....	1914 1909	1,607 1,490	313 88	286 252	623 370	131 302	254 474	..... 4	.....	Rhode Island.....	1914 1909	1,192 1,076	171 173	154 132	836 70	11 631	20 68	..... 2					
Kentucky.....	1914 1909	1,873 1,554	255 259	331 542	457 166	473 170	357 408	..... 9	.....	Tennessee.....	1914 1909	2,580 2,149	358 120	259 333	572 521	1,223 444	164 731	4 .....					
Louisiana.....	1914 1909	1,243 1,036	168 19	37 34	238 212	..... 16	800 755	.....	.....	Texas.....	1914 1909	4,605 3,073	978 60	967 42	2,232 197	96 294	332 2,446	..... 34					
Maine.....	1914 1909	930 816	61 49	159 56	317 66	104 184	287 460	2 .....	1	Utah.....	1914 1909	1,070 738	99 76	430 335	521 141	..... 102	20 84	.....					
Maryland.....	1914 1909	1,715 1,278	92 39	446 357	105 136	525 237	547 509	.....	.....	Virginia.....	1914 1909	1,694 1,351	124 97	163 126	202 60	420 228	785 804	..... 30					
Massachusetts.....	1914 1909	7,771 5,958	1,376 806	1,674 1,075	4,373 708	318 3,077	30 292	.....	.....	Washington.....	1914 1909	3,298 3,264	2,912 134	108 317	165 417	..... 610	113 1,774	..... 12					
Michigan.....	1914 1909	4,902 3,729	711 109	1,106 947	2,951 1,574	49 517	82 582	3 .....	.....	West Virginia.....	1914 1909	827 679	80 40	97 33	265 125	183 258	199 258	..... 3					
Minnesota.....	1914 1909	3,404 2,916	785 202	933 328	1,516 419	54 935	206 1,032	.....	.....	Wisconsin.....	1914 1909	2,265 2,014	209 119	576 289	565 462	689 505	226 636	..... 3					

In each year the number of wage earners in laundries working more than 60 hours was very small, representing less than three-fourths of 1 per cent in 1909 and less than one-sixth of 1 per cent in 1914.

The reduction in hours of work was particularly noteworthy in California, the District of Columbia, Massachusetts, Missouri, Texas, and Washington.

In California, in 1909, 65.9 per cent of the wage earners worked in establishments operating 54 hours or more and only 18.3 per cent were in plants operating 48 hours and under, but by 1914 these proportions had become 20.8 per cent and 62.5 per cent, respectively. In the District of Columbia, in 1909, the wage earners were distributed fairly uniformly among establishments working from 48 or fewer hours up to 60 hours a week, the greatest number being employed

in establishments operating more than 54 but fewer than 60 hours and the smallest number in those operating 48 hours and under; but in 1914 no wage earners were employed in laundries whose prevailing hours were more than 48 per week. In Massachusetts, 56.5 per cent of the wage earners in 1909 were employed in laundries operating more than 54 hours a week, but in 1914 less than 5 per cent were so employed. In Missouri, 41.7 per cent of the wage earners in 1909 were in establishments whose prevailing hours of labor were more than 54 per week, whereas in 1914 only 1 per cent were in establishments having such hours. In Texas, 80.7 per cent of the wage earners in 1909 were employed by laundries operating 60 or more hours per week, whereas 90.7 per cent in 1914 were employed in establishments whose prevailing

hours were 54 or less. In Washington, 54.7 per cent of the wage earners in 1909 were employed by laundries operating 60 or more hours a week, but in 1914, 88.3 per cent were employed in those for which the prevailing hours were 48 and under. This general reduction in the length of the working day is undoubtedly due to the enforcement of laws limiting the hours of work for women.

**Laundries in cities of 10,000 and over.**—Table 14 shows the principal statistical facts for the laundries in each city having a population of 10,000 or more for which the totals can be shown without disclosing the operations of individual plants. Table 7 summarizes the statistics so as to show the proportion of the entire industry represented by the establishments in such cities.

About three-fifths (59.5 per cent) of the laundries in the United States were, in 1914, located in places having 10,000 inhabitants or more; and these laundries employed 84 per cent of the total number of persons engaged in the industry and reported 85.2 per cent of the total receipts for work done. The relative importance of the establishments located in the cities of 10,000 and over was about the same at the two censuses.

Table 7

Table 7	Cen- sus year.	POWER LAUNDRIES.					
		Total number or amount.	In cities having 10,000 inhabit- ants or more.		In districts out- side of cities having 10,000 inhabitants or more.		
			Number or amount.	Per cent of total.	Number or amount.	Per cent of total.	
Number of establish- ments.	1914 1909	6,097 5,186	3,629 3,104	59.5 59.9	2,468 2,082	40.5 40.1	
Total number of persons engaged in the industry.	1914 1909	149,100 124,214	125,229 103,503	84.0 83.3	23,871 20,711	16.0 16.7	
Wage earners (average number).	1914 1909	130,641 109,484	110,693 92,233	84.7 84.2	19,948 17,251	15.3 15.8	
Wages.....	1914 1909	\$59,471,244 44,826,978	\$51,079,052 38,274,513	85.9 85.4	\$8,392,192 6,552,465	14.1 14.6	
Amount received for work done.	1914 1909	142,503,253 104,680,086	121,350,144 88,428,911	85.2 84.5	21,153,109 16,251,175	14.8 15.5	

**Character of ownership.**—Table 8 presents comparative data for 1914 and 1909 with respect to the character of ownership of the laundries, for the United States as a whole and for each state separately, showing the distribution among individual, corporate, and other forms of ownership, with the average number of wage earners and the amount received for work done, for establishments under each form of ownership.

Table 8

STATE.	Census year.	POWER LAUNDRIES. <sup>1</sup>																
		Number of establishments owned by—			Average number of wage earners.						Amount received for work done.							
					In establishments owned by—			Per cent of total.			In establishments owned by—			Per cent of total.				
		Indi-vid-u-als.	Cor-pora-tions.	All other.	Total.	Indi-vid-u-als.	Cor-pora-tions.	All other.	Indi-vid-u-als.	Cor-pora-tions.	All other.	Total.	Indi-vid-u-als.	Cor-pora-tions.	All other.	Indi-vid-u-als.	Cor-pora-tions.	All other.
UNITED STATES..	1914 1909	3,125 2,770	1,541 1,163	1,431 1,268	130,641 109,484	34,344 32,754	73,135 55,485	23,162 21,245	26.3 29.9	56.0 50.7	17.7 19.4	\$142,503,253 104,680,086	\$35,809,083 30,320,840	\$32,653,996 54,111,978	\$24,040,174 20,247,268	25.1 29.0	58.0 51.7	16.9 19.3
Alabama.....	1914 1909	15 15	19 18	7 5	1,388 1,108	280 237	1,012 814	116 57	18.7 21.4	72.9 73.5	8.4 5.1	1,360,688 909,180	222,683 171,899	1,055,061 677,287	82,944 59,944	16.4 18.9	77.5 74.5	6.1 6.6
Arizona.....	1914 1909	7 7	6 4	4 2	335 283	142 156	159 128	34 X	42.4 54.8	47.5 45.2	10.1 X	425,999 369,282	191,914 205,983	186,671 163,299	47,414 X	45.1 55.8	43.8 44.2	11.1 X
Arkansas.....	1914 1909	23 22	11 9	19 14	832 741	316 226	281 272	255 243	38.0 30.5	31.4 36.7	30.6 32.8	836,457 684,036	305,446 201,684	273,434 256,796	257,577 225,556	36.5 29.5	32.7 37.5	30.8 33.0
California.....	1914 1909	256 146	128 109	148 66	10,416 8,038	1,757 1,293	6,960 5,640	1,699 1,105	16.9 16.1	66.8 70.2	16.3 18.7	13,948,738 9,541,795	2,299,542 1,608,513	9,435,000 6,629,830	2,214,196 1,303,952	16.5 16.8	67.6 69.5	15.9 13.7
Colorado.....	1914 1909	36 45	31 26	27 28	1,759 1,833	258 500	1,239 1,063	262 280	14.7 27.3	70.4 57.4	14.9 15.3	2,163,263 1,930,693	296,090 530,407	1,534,574 1,118,387	332,599 311,899	13.7 27.8	70.9 56.5	15.4 15.7
Connecticut.....	1914 1909	76 53	28 19	23 23	1,913 1,441	784 630	857 565	272 246	41.0 43.7	44.8 39.2	14.2 17.1	2,108,011 1,416,122	832,704 616,449	948,073 545,113	327,234 254,560	39.5 43.5	45.0 33.5	15.5 18.0
Delaware.....	1914 1909	6 9	2 3	4 3	326 222	42 110	X 52	284 60	12.9 49.6	X 23.4	87.1 27.0	242,897 187,038	27,687 90,258	X 47,500	215,210 49,280	11.4 48.3	X 25.4	88.6 26.3
District of Columbia.....	1914 1909	4 8	11 7	3 2	1,217 993	142 423	856 570	219 X	11.7 42.6	70.3 57.4	18.0 X	1,023,475 795,999	143,345 312,185	718,824 483,814	161,306 X	14.0 32.2	70.2 60.8	15.8 X
Florida.....	1914 1909	22 13	15 8	8 7	864 571	289 132	439 330	136 109	33.5 23.1	50.8 57.8	15.7 19.1	946,314 474,088	292,608 136,793	510,194 241,181	143,512 96,114	30.9 28.8	53.9 50.9	15.2 20.3
Georgia.....	1914 1909	17 15	18 17	8 10	1,776 1,332	292 275	1,306 875	178 182	16.5 20.6	73.5 65.7	10.0 13.7	1,632,221 1,006,724	258,254 189,983	1,227,152 680,110	146,815 136,631	15.8 18.9	75.2 67.5	9.0 13.6
Idaho.....	1914 1909	22 13	6 2	8 9	442 357	249 164	124 X	69 193	56.3 45.9	28.1 X	15.6 34.1	592,749 394,226	303,959 X	185,412 X	103,378 250,738	51.3 41.5	31.3 X	17.4 55.6
Illinois.....	1914 1909	239 250	130 98	92 100	11,004 9,705	2,938 2,822	6,248 5,077	1,818 1,806	26.7 29.1	56.8 52.3	16.5 18.6	12,546,432 10,049,445	3,282,293 2,882,560	7,504,351 5,382,622	2,059,788 1,784,263	25.6 27.3	58.4 53.6	16.0 17.7
Indiana.....	1914 1909	85 90	53 32	36 41	3,750 2,901	1,025 1,169	2,136 1,188	589 544	27.3 40.3	57.0 40.9	15.7 18.8	3,697,112 2,445,355	1,011,264 975,655	2,157,063 1,004,831	528,785 467,869	28.3 39.8	58.4 41.0	14.3 19.2
Iowa.....	1914 1909	104 122	34 20	39 39	2,518 2,123	798 904	1,187 649	533 570	31.7 42.6	47.1 30.6	21.2 26.8	2,882,005 2,063,451	936,340 909,688	1,461,197 624,188	484,468 529,575	32.5 44.1	50.7 30.2	16.8 25.7
Kansas.....	1914 1909	105 96	8 8	37 34	1,607 1,490	831 807	315 260	461 423	51.7 54.2	19.6 17.4	28.7 28.4	1,695,799 1,485,967	845,899 779,994	339,939 261,041	509,961 444,959	49.9 52.5	20.0 17.5	30.1 30.0

<sup>1</sup> For some states, in order to avoid disclosing the operations of individual establishments, the figures for two groups have been consolidated. In such cases an "X" is placed in the column from which the figures have been omitted, and the figures for the group with which they have been combined are printed in *italics*.



Table 8—Contd.

Table 8—Contd.		POWER LAUNDRIES. <sup>1</sup>																	
STATE.	Census year.	Number of establishments owned by—			Average number of wage earners.									Amount received for work done.					
					Total.	In establishments owned by—			Per cent of total.			Total.	In establishments owned by—			Per cent of total.			
		Indi-vid-u-als.	Cor-pora-tions.	All other.		Indi-vid-u-als.	Cor-pora-tions.	All other.	Indi-vid-u-als.	Cor-pora-tions.	All other.		Indi-vid-u-als.	Cor-pora-tions.	All other.	Indi-vid-u-als.	Cor-pora-tions.	All other.	
Kentucky	1914	32	33	10	1,873	429	1,176	268	22.9	62.8	14.3	\$1,665,979	\$352,007	\$1,098,090	\$215,882	21.1	65.9	13.0	
	1909	30	26	17	1,554	548	747	259	35.3	48.1	16.6	1,208,811	425,858	575,933	206,990	35.2	47.7	17.1	
Louisiana	1914	10	11	7	1,243	331	722	190	26.6	58.1	15.3	1,190,148	302,185	728,302	159,661	25.4	61.2	13.4	
	1909	11	11	3	1,036	334	670	32	32.2	64.7	3.1	852,021	246,076	587,325	18,620	28.9	68.9	2.2	
Maine	1914	62	13	17	930	569	211	150	61.2	22.7	16.1	939,021	575,205	204,195	159,618	61.3	21.7	17.0	
	1909	54	9	15	816	482	158	176	59.1	19.3	21.6	736,367	431,109	141,067	164,191	58.5	19.2	22.3	
Maryland	1914	27	11	16	1,715	597	794	324	34.8	46.3	18.9	1,391,902	511,576	589,003	291,323	36.8	42.3	20.9	
	1909	19	11	11	1,278	518	596	164	40.6	46.6	12.8	993,766	391,340	476,754	125,672	39.4	48.0	12.6	
Massachusetts	1914	219	87	85	7,771	2,591	3,911	1,269	33.4	50.3	16.3	8,661,830	2,884,039	4,426,291	1,351,500	33.3	51.1	15.6	
	1909	168	45	67	5,958	2,403	2,136	1,359	41.3	35.9	22.8	5,754,572	2,356,819	2,108,433	1,289,320	41.0	36.6	22.4	
Michigan	1914	129	43	62	4,902	1,097	2,293	1,512	22.4	46.8	30.8	5,115,286	1,019,899	2,616,599	1,478,788	19.9	51.2	28.9	
	1909	137	33	49	3,729	1,034	1,792	903	27.7	48.1	24.2	3,261,841	882,209	1,589,279	790,353	27.1	48.7	24.2	
Minnesota	1914	104	39	45	3,494	990	1,726	778	28.3	49.4	22.3	4,100,464	1,142,350	2,105,482	852,632	27.9	51.3	20.8	
	1909	99	24	35	2,916	1,091	1,240	585	37.4	42.5	20.1	2,855,738	1,034,615	1,237,526	583,597	36.2	43.3	20.5	
Mississippi	1914	14	0	7	606	283	230	93	46.7	38.0	15.3	540,209	261,251	202,092	76,866	48.4	37.4	14.2	
	1909	14	7	9	529	177	148	204	33.4	28.0	38.6	440,579	135,906	122,484	182,189	30.8	27.8	41.4	
Missouri	1914	66	79	32	5,899	1,056	4,365	478	17.9	74.0	8.1	6,316,206	1,066,279	4,787,218	462,709	16.9	75.8	7.3	
	1909	62	69	40	5,438	720	4,041	677	13.2	74.3	12.5	4,904,249	666,104	3,612,775	625,370	13.6	73.7	12.7	
Montana	1914	17	19	6	819	151	607	61	18.4	74.1	7.5	1,266,552	227,321	948,209	91,022	7.9	74.9	7.2	
	1909	8	11	7	652	151	398	103	23.2	61.0	15.8	935,260	203,398	577,883	153,979	21.7	61.8	16.5	
Nebraska	1914	35	17	22	1,303	375	672	256	28.8	51.6	19.6	1,517,924	401,206	832,808	283,910	26.4	54.9	18.7	
	1909	43	14	19	1,110	390	454	266	35.1	40.9	24.0	1,197,374	406,274	505,408	285,692	33.9	42.2	23.9	
Nevada	1914	5	3	4	124	35	67	22	28.2	54.0	17.8	216,193	66,115	112,157	37,921	30.6	51.9	17.5	
	1909	.....	4	1	105	.....	105	X	.....	100.0	X	165,037	.....	165,037	X	.....	100.0	X	
New Hampshire	1914	57	4	13	760	542	59	159	71.3	7.8	20.9	728,733	496,906	69,101	162,726	68.2	9.5	22.3	
	1909	43	.....	18	608	417	.....	191	68.6	.....	31.4	518,660	343,754	.....	174,906	66.3	.....	33.7	
New Jersey	1914	68	50	24	3,642	846	2,268	528	23.2	62.3	14.5	3,590,739	777,587	2,301,689	511,463	21.7	64.1	14.2	
	1909	62	32	18	2,984	810	1,702	472	27.2	57.0	15.8	2,779,277	812,794	1,534,502	431,981	29.2	55.2	15.6	
New Mexico	1914	7	5	3	240	66	132	42	27.5	55.0	17.5	280,373	76,824	157,069	46,480	27.4	56.0	16.6	
	1909	4	3	1	146	45	101	X	30.8	69.2	X	156,419	45,868	110,551	X	29.8	70.7	X	
New York	1914	345	138	131	13,751	3,639	8,227	1,885	26.5	59.8	13.7	14,304,964	3,682,556	8,668,304	1,974,104	25.6	60.6	13.8	
	1909	292	111	105	12,578	3,442	6,995	2,141	27.4	55.6	17.0	11,446,663	3,170,473	6,294,542	1,981,648	27.6	55.0	17.3	
North Carolina	1914	31	16	12	1,165	520	464	181	44.6	39.8	15.6	1,026,358	430,263	439,007	157,088	41.9	42.8	15.3	
	1909	18	13	12	812	362	313	137	44.6	38.5	16.9	559,942	228,295	227,526	104,128	40.8	40.6	18.6	
North Dakota	1914	15	7	8	409	150	152	107	36.7	37.2	26.1	592,843	186,808	229,293	176,742	31.5	38.7	29.8	
	1909	20	5	9	434	201	109	124	46.3	25.1	28.6	548,175	242,880	133,825	171,470	44.3	24.4	31.3	
Ohio	1914	133	83	80	7,265	1,450	4,477	1,338	20.0	61.6	18.4	7,822,491	1,420,076	4,908,232	1,494,183	18.2	62.7	19.1	
	1909	125	59	69	5,893	1,505	3,335	1,053	25.5	56.6	17.9	5,388,954	1,255,180	3,182,754	951,020	23.3	59.1	17.6	
Oklahoma	1914	49	25	27	1,416	457	593	366	32.3	41.9	25.8	1,669,721	529,190	767,398	373,133	31.7	46.0	22.3	
	1909	47	19	27	1,101	403	383	315	36.6	34.8	28.6	1,197,978	468,325	584,490	345,163	39.1	32.1	28.8	
Oregon	1914	34	27	17	1,745	246	1,305	194	14.1	74.8	11.1	2,146,868	295,837	1,620,579	230,452	13.8	75.5	10.7	
	1909	20	22	16	1,457	245	1,045	167	16.8	71.7	11.5	1,569,982	213,069	1,169,103	187,790	13.6	74.5	11.9	
Pennsylvania	1914	214	79	103	10,410	3,226	4,777	2,407	31.0	45.9	23.1	10,225,004	3,069,286	4,961,155	2,194,563	30.0	48.5	21.5	
	1909	218	67	100	9,639	3,430	4,152	2,057	35.6	43.1	21.3	8,331,834	2,853,064	3,703,859	1,774,912	34.2	44.5	21.3	
Rhode Island	1914	41	7	18	1,192	411	499	282	34.5	41.9	23.6	1,260,942	441,046	535,686	284,210	35.0	42.5	22.5	
	1909	28	5	20	1,076	450	403	223	41.8	37.5	20.7	1,019,404	388,068	401,499	229,637	38.1	39.4	22.5	
South Carolina	1914	7	9	7	517	114	287	116	22.1	55.5	22.4	422,212	97,614	229,748	94,550	23.1	54.4	22.5	
	1909	8	8	8	373	75	168	130	20.1	45.0	34.9	269,112	58,975	119,935	90,142	21.9	44.6	33.5	
South Dakota	1914	18	3	5	400	181	77	142	45.2	19.3	35.5	477,474	245,105	75,494	156,875	51.3	15.8	32.9	
	1909	16	4	8	386	126	102	158	32.7	26.4	40.9	423,092	144,933	99,964	178,195	34.3	23.6	42.1	
Tennessee	1914	17	31	19	2,580	230	1,573	777	8.9	61.0	30.1	2,296,797	201,873	1,406,568	688,356	8.8	61.2	30.0	
	1909	22	19	22	2,149	406	910	831	19.0	42.3	38.7	1,643,407	272,739	706,792	663,876	16.6	43.0	40.4	
Texas	1914	80	48	57	4,605	1,196	2,436	973	26.0	52.9	21.1	5,521,841	1,313,900	3,208,552	999,389	23.8	58.1	18.1	
	1909	50	36	41	3,073	721	1,505	847	23.5	49.0	27.5	3,220,315	688,475	1,664,934	866,906	21.4	51.7	26.9	
Utah	1914	20	12	4	1,070	109	937	24	10.2	87.6	2.2	1,367,433	125,750	1,215,243	26,440	9.2	88.9	1.9	
	1909	10	9	3	738	85	642	11	11.5	87.0	1.5	794,091	78,813	704,028	11,250	9.9	88.7	1.4	
Vermont	1914	34	.....	7	378	294	.....	84											

Of the 6,097 laundry establishments reported for 1914, 3,125, or 51.2 per cent, were owned by individuals and 1,541, or 25.3 per cent, by corporations, while the ownership of the remaining 1,431 establishments comprised partnerships, firms, and all other forms of organization. In 1909, individuals owned 53.4 per cent of the establishments and corporations 22.3 per cent, while the remaining 24.3 per cent represented partnerships, firms, and all other forms of ownership.

The most important group, however, is that under corporate ownership, since, although corporations controlled only about one-fourth of the total number of laundries at the last two censuses, they reported much larger proportions of the total number of wage earners and of the total amount received for work done. The laundries under corporate ownership employed 56 per cent of the total number of wage earners in 1914 and 50.7 per cent in 1909, and their receipts for work done aggregated 58 per cent of the total in the later year and 51.7 per cent in the earlier. There was thus a material increase in the importance of the corporate form of ownership in the laundry industry during the five-year period. This was due not only to the increase in the business of corporations already in existence at the beginning of the period, but to the large increase in the number of corporations engaging in the industry. In some cases laundries operating under individual or firm ownership in 1909 became incorporated prior to the census of 1914.

**Classification according to size.**—The increase in the extent to which the large laundries predominate in the industry is brought out by grouping the establishments according to the amount received for work done and according to the number of wage earners employed in each.

Table 9 classifies the laundries according to amount received for work done and shows, with respect to each size group for 1914 and 1909, the number of establishments, average number of wage earners, and amount received for work done.

The table shows that during the period between 1909 and 1914 there was a marked increase in the relative importance of the laundries whose annual receipts for work done amounted to \$100,000 and over.

Of the four groups shown, by far the greatest number of establishments—about 45 per cent of the total at each census—was reported for the group in which the annual receipts were between \$5,000 and \$20,000; but the laundries in this group gave employment in 1914 to only a little more than one-fifth (21.5 per cent) of the wage earners engaged, and their receipts for work done formed but 20.4 per cent of the total receipts for all laundries. The establishments included in the group in which the receipts were between \$20,000 and \$100,000 per annum gave employment to the largest number of wage earners, 48.9 per cent of the total for

all laundries, while their receipts for work done formed 48.5 per cent of the total.

**Table 9**

AMOUNT RECEIVED PER ESTABLISHMENT FOR WORK DONE.

	Census year.	Number of establishments.	Wage earners (average number).	Amount received for work done.
Total.....	1914 1909	6,097 5,186	130,641 109,484	\$142,503,233 104,680,086
Less than \$5,000.....	1914 1909	1,458 1,341	3,976 4,268	4,130,136 3,779,904
\$5,000 and less than \$20,000.....	1914 1909	2,756 2,359	28,064 27,622	29,074,703 25,027,052
\$20,000 and less than \$100,000.....	1914 1909	1,630 1,346	63,915 56,605	69,077,362 54,383,604
\$100,000 and over.....	1914 1909	253 140	34,686 21,089	40,220,992 21,489,526
Per cent of total.....	1914 1909	100.0 100.0	100.0 100.0	100.0 100.0
Less than \$5,000.....	1914 1909	23.9 25.9	3.0 3.9	2.9 3.6
\$5,000 and less than \$20,000.....	1914 1909	45.2 45.5	21.5 25.1	20.4 23.9
\$20,000 and less than \$100,000.....	1914 1909	26.7 26.0	48.9 51.7	48.5 52.0
\$100,000 and over.....	1914 1909	4.2 2.7	26.6 19.3	28.2 20.5

The laundries with receipts of \$100,000 and over employed 26.6 per cent of the wage earners in 1914 and reported 28.2 per cent of the total receipts; while in the case of each of the other three groups the percentage of the total receipts was slightly lower than the percentage of the total number of wage earners.

By grouping the laundries according to the number of wage earners employed in individual establishments there is shown the extent of employment in plants of different sizes. This is done in Table 10, which classifies the laundries and the wage earners according to the numbers employed in individual establishments in 1914 and 1909. This table covers only the states for which 500 or more wage earners were reported at each census.

There were 165 establishments in 1914, and 59 in 1909, for which no wage earners were reported. In some of these small establishments the proprietor, in some cases assisted by his family, did all the work; in others two or more persons worked together under a profit-sharing arrangement. There were 193 laundries in 1914, and 143 in 1909, in which more than 100 wage earners were employed. The largest group of establishments in each year was that comprising laundries which employed from 6 to 20 wage earners, while the greatest number of wage earners at each census was reported for the group employing from 21 to 50 wage earners. Only one establishment employing more than 500 wage earners was reported in 1914, and one in 1909. There was a slight increase, from 21.4 in 1909 to 22 in 1914, in average number of wage earners per establishment employing wage earners.

Of the 13 establishments employing more than 250 wage earners in 1914, 6 were in New York and 1 each in California, Illinois, Maryland, Missouri, Ohio, Pennsylvania, and Tennessee.



## POWER LAUNDRIES.

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Table 10

Table 10		POWER LAUNDRIES EMPLOYING—															
		Census year.	TOTAL.		No wage earners.	1 to 5 wage earners.		6 to 20 wage earners.		21 to 50 wage earners.		51 to 100 wage earners.		101 to 250 wage earners.		251 to 600 wage earners.	
			Estab-lish-ments.	Wage earners (average number).		Estab-lish-ments.	Wage earners.	Estab-lish-ments.	Wage earners.	Estab-lish-ments.	Wage earners.	Estab-lish-ments.	Wage earners.	Estab-lish-ments.	Wage earners.	Estab-lish-ments.	Wage earners.
STATE.																	
UNITED STATES.....	1914	6,097	130,641	165	1,663	5,129	2,460	27,570	1,175	37,844	441	30,522	180	25,405	13	4,171	
	1909	5,186	109,484	59	1,434	4,555	2,200	25,707	1,000	32,719	350	24,244	128	17,569	15	4,690	
Alabama.....	1914	41	1,388		5	12	13	165	13	422	9	659	1	130			
	1909	38	1,108		3	8	19	231	9	361	6	406	1	102			
Arkansas.....	1914	53	832		11	46	30	318	9	282	3	206					
	1909	45	741		14	58	20	199	8	274	3	210					
California.....	1914	532	10,416	38	183	546	173	1,843	84	2,679	34	2,366	19	2,705	1	277	
	1909	321	8,038	9	85	254	120	1,353	58	1,976	32	2,197	17	2,258			
Colorado.....	1914	94	1,759	1	26	81	41	436	16	473	10	769					
	1909	99	1,833	3	29	97	40	435	18	603	9	698					
Connecticut.....	1914	127	1,913	2	36	120	58	658	25	754	6	381					
	1909	95	1,441		29	95	43	534	22	742	1	70					
District of Columbia.....	1914	18	1,217				4	48	4	146	5	412	5	611			
	1909	17	993	1	2	2	3	50	2	72	5	386	4	483			
Florida.....	1914	45	864		11	37	19	225	13	426	2	176					
	1909	28	571		9	30	8	101	8	269	3	171					
Georgia.....	1914	43	1,776		3	14	16	199	13	427	5	325	6	811			
	1909	42	1,332	1	3	11	17	211	15	456	2	175	4	479			
Illinois.....	1914	461	11,004	8	101	324	193	2,199	104	3,446	42	2,909	12	1,797	1	329	
	1909	448	9,705	4	119	390	190	2,177	96	3,234	28	1,861	9	1,204	2	839	
Indiana.....	1914	174	3,750	3	35	110	75	893	44	1,447	14	935	3	395			
	1909	163	2,901		33	120	87	952	31	999	11	728	1	102			
Iowa.....	1914	176	2,518	4	61	170	78	884	27	942	8	522					
	1909	181	2,123	5	78	227	70	798	21	659	7	439					
Kansas.....	1914	150	1,607	6	48	151	77	788	17	540	2	128					
	1909	138	1,490	4	40	142	68	745	15	457	2	146					
Kentucky.....	1914	75	1,873		6	25	36	471	25	778	6	395	2	204			
	1909	73	1,554		6	20	42	538	20	687	5	309					
Louisiana.....	1914	28	1,243		2	10	10	126	7	211	6	435	3	461			
	1909	25	1,036		4	16	8	96	6	213	4	265	3	446			
Maine.....	1914	92	930	4	39	129	40	408	7	226	1	59	1	108			
	1909	78	816	1	34	109	35	368	7	221			1	118			
Maryland.....	1914	54	1,715	1	16	52	18	201	10	354	5	327	3	427	1	354	
	1909	41	1,278		7	24	16	177	11	389	5	380	2	308			
Massachusetts.....	1914	391	7,771	6	104	354	173	1,946	75	2,463	22	1,549	11	1,459			
	1909	280	5,958	1	68	234	127	1,465	55	1,700	20	1,424	9	1,135			
Michigan.....	1914	234	4,902	13	79	215	73	876	46	1,500	14	947	9	1,364			
	1909	219	3,729	6	95	272	68	806	35	1,220	10	658	5	773			
Minnesota.....	1914	188	3,494	5	61	158	74	847	29	960	13	816	6	713			
	1909	158	2,916	2	51	155	66	800	24	882	14	967	1	112			
Mississippi.....	1914	27	606	1	1	1	14	170	10	356	1	79					
	1909	30	529		2	4	19	241	9	284							
Missouri.....	1914	177	5,899	5	31	103	61	753	41	1,327	29	2,056	9	1,408	1	252	
	1909	171	5,438	3	33	83	64	808	37	1,189	24	1,716	9	1,314	1	328	
Montana.....	1914	42	819	1	9	33	20	265	7	208	5	313					
	1909	26	652				15	215	9	288	2	151					
Nebraska.....	1914	74	1,303	4	19	57	31	365	14	412	5	346	1	123			
	1909	76	1,110	4	30	89	25	330	13	371	4	320					
New Hampshire.....	1914	74	760	1	21	68	45	489	7	203		56					
	1909	61	608		22	71	35	391	3	90	1						
New Jersey.....	1914	142	3,642	1	35	120	53	621	36	1,127	9	535	8	1,239			
	1909	112	2,984	1	22	71	49	580	25	782	10	618	4	620	1	313	
New York.....	1914	614	13,751	21	232	681	200	2,127	88	2,932	51	3,567	16	2,371	6	2,073	
	1909	508	12,578	4	165	531	199	2,297	73	2,600	46	3,248	16	2,426	5	1,576	
North Carolina.....	1914	59	1,165		9	35	31	362	15	494	4	274					
	1909	43	812		9	32	23	302	9	325	2	153					
Ohio.....	1914	296	7,265	3	75	224	124	1,357	58	1,907	21	1,434	14	2,026	1	317	
	1909	253	5,893	1	68	214	108	1,193	52	1,698	12	991	10	1,302	2	525	
Oklahoma.....	1914	101	1,416	1	25	84	60	664	12	365	2	116	1	187			
	1909	93	1,101		23	64	55	589	15	448							
Oregon.....	1914	78	1,745	4	19	51	33	385	11	354	7	505	4	450			
	1909	58	1,457		14	54	25	295	10	358	7	513	2	237			
Pennsylvania.....	1914	396	10,410	3	101	323	142	1,575	98	3,085	30	2,051	21	3,110	1	266	
	1909	385	9,639	1	92	314	158	1,886	92	2,905	23	1,465	17	2,502	2	567	
Rhode Island.....	1914	66	1,192		25	88	27	234	6	216	6	378	2	276			
	1909	53	1,076		19	59	18	191	10	302	4	270	2	254			
Tennessee.....	1914	67	2,580		8	29	28	312	13	412	13	983	4	541	1	303	
	1909	63	2,149		8	28	26	284	14	416	11	749	3	394	1	278	
Texas.....	1914	185	4,605		23	82	95	1,058	45	1,508	15	1,026	7	931			
	1909	127	3,073		28	94	47	588	40	1,295	10	820	2	276			
Utah.....	1914	36	1,070	4	14	36	7	86	3	102	5	378	3	468			
	1909	22	738	1	8	22	5	77	4	168	3	207			1	264	
Virginia.....	1914	71	1,695		8	21	34	385	21	657	7	523	1	109			
	1909	57	1,351		3	10	30	335	17	543	6	362	1	101			
Washington.....	1914	192	3,298	13	62	179	72	748	26	764	14	995	5	612			
	1909	172	3,264	4	49	154	75	859	29	966	10	632	5	623			
West Virginia.....	1914	44	827	1	7	24	19	227	15	454	2	122					
	1909	43	679	1	6	23	23	261	12	329	1	66					
Wisconsin.....	1914	150	2,265	7	49	153	60	705	28	897	4	282	2	228			
	1909	147	2,014	1	53	165	64	771	24	742	5	336					

**Engines and power.**—Table 11 presents, for the United States as a whole, for the censuses of 1914 and 1909, statistics relative to kind, number, and horsepower of engines and motors, together with percentages of increase; and Table 13 gives horsepower statistics for each state separately, relating to 1914 only.

Table 11

POWER.	NUMBER OF ENGINES OR MOTORS.		HORSEPOWER.				
			Amount.		Per cent distribu- tion.		Per cent of in- crease: 1909- 1914
	1914	1909	1914	1909	1914	1909	
Primary power, total.....	10,830	6,928	174,881	123,477	100.0	100.0	41.6
Owned.....	4,902	4,527	146,817	109,870	84.0	89.0	33.6
Steam engines and turbines.....	4,423	4,119	141,224	105,272	80.8	85.3	34.2
Internal-combustion engines.....	368	379	4,915	4,073	2.8	3.3	20.7
Water wheels, turbines, and motors.....	111	29	678	525	0.4	0.4	29.1
Rented.....	5,928	2,401	28,064	13,607	16.0	11.0	106.2
Electric.....	5,928	2,401	24,655	11,157	14.1	9.0	121.0
Other.....			3,409	2,450	1.9	2.0	3.9
Electric.....	12,260	5,393	44,168	23,916	25.2	19.4	84.7
Rented.....	5,928	2,401	24,655	11,157	14.1	9.0	121.0
Generated by establishments reporting.....	6,332	2,992	19,513	12,759	11.2	10.3	52.9

“Primary horsepower” comprises all power generated in the establishment in which it is used, and all rented power. The power of electric motors run by current generated in the same establishment is disregarded in calculating the amount of primary horsepower, since the inclusion of such power would obviously result in duplication. It should be kept in mind that the figures given relate to the *capacity* of the engines, motors, etc., and not to the amount of power actually in use.

The total primary power reported was 174,881 horsepower in 1914, as against 123,477 in 1909, the increase being 51,404 horsepower, or 41.6 per cent. Although steam furnishes the bulk of the power used, its relative importance diminished somewhat between the two censuses. The capacity of the steam engines and turbines in use was 141,224 horsepower, or 80.8 per cent of the total, in 1914, as compared with 105,272 horsepower, or 85.3 per cent of the total, in 1909. This decrease in relative importance is due to the increasing use of rented electric power, which represented 14.1 per cent of the total primary power in 1914, as against 9 per cent in 1909.

The power of electric motors operated by current generated in the same establishment was equivalent

to 11.2 per cent of the total primary power in 1914 and to 10.3 per cent of the total in 1909. The horsepower of the electric motors operated by purchased or rented electric current thus amounted to considerably more than one-half the total electric power in 1914. The aggregate capacity of the electric motors in use in 1914 was 44,168 horsepower, which is equivalent to 25.2 per cent of the total primary power in that year. The percentage of increase in the use of electric power during the five-year period, 84.7, was more than twice as great as the corresponding percentage for all primary power, 41.6. The increase in the power of motors operated by current generated in the same establishment was 52.9 per cent, and in the power of motors run by rented or purchased current, 121 per cent. In every state there were some establishments which reported electric power, but the largest amounts are shown for New York, California, Ohio, and Illinois, in the order in which named.

**Fuel consumed.**—Anthracite, bituminous coal, coke, oil, and gas were the only kinds of fuel covered by the census inquiry. The quantities of the several kinds used during each census year, in the United States as a whole, with percentages of increase, are shown in Table 12; and in Table 13 are given similar statistics for each state separately, relating to 1914 only.

Table 12

KIND.	FUEL.		
	Quantity.		Per cent of in- crease: 1909- 1914
	1914	1909	
Anthracite, long tons.....	212,892	178,640	19.2
Bituminous coal, short tons.....	1,212,687	886,734	36.8
Coke, short tons.....	16,161	14,785	9.3
Oil, including gasoline, etc., barrels.....	710,506	372,586	90.7
Gas (excluding blast-furnace gas), 1,000 feet.....	3,786,429	2,729,324	38.7

Of the five kinds of fuel shown, bituminous coal was the most important. Of anthracite and bituminous coal combined, there were used 1,425,579 tons in 1914 and 1,065,374 tons in 1909. A considerable amount of oil and gas was also consumed. More than half the oil was used in California, where it furnished the principal fuel. In 1909 the largest quantity of gas employed as fuel was reported from Ohio, but in 1914 Oklahoma was far in the lead in this respect, the quantity consumed in that state being nearly one-third of the total for the United States.

## POWER LAUNDRIES.

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## GENERAL TABLES.

Detailed statistics, by states.—Table 13 presents, by states, for 1914, detailed statistics of the industry.

Laundries in cities.—Table 14 gives comparative statistics, for 1914 and 1909, with respect to laundries

in each state, and in each city having 10,000 or more inhabitants in 1914 for which separate figures can be presented without disclosing the operations of individual establishments.

## POWER LAUNDRIES—DETAILED STATISTICS, BY STATES: 1914.

[Table continued on pages 16 and 17.]

Table 13	STATE.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.						WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				
			Total.	Proprietors and firm members.	Salaried officials, superintendents, and managers.	Clerks, etc.		Wage earners (average number).	Total.	16 and over.		Under 16.	
						Male.	Female.			Male.	Female.	Male.	Female.
UNITED STATES.....	6,097	149,100	6,397	4,180	3,604	4,278	130,641	129,561	40,422	88,559	151	429	
Alabama.....	41	1,569	31	55	48	47	1,388	1,312	406	902	2	2	
Arizona.....	17	379	19	16	1	8	335	350	99	260	.....	.....	
Arkansas.....	53	1,011	76	35	53	15	832	794	228	563	.....	3	
California.....	532	18,077	624	276	352	409	10,416	10,497	4,398	6,095	2	2	
Colorado.....	94	2,079	97	73	93	57	1,759	1,717	512	1,204	1	.....	
Connecticut.....	127	2,184	125	61	26	59	1,913	1,889	745	1,134	1	9	
Delaware.....	12	369	16	10	7	10	326	339	95	241	.....	3	
District of Columbia.....	18	1,351	10	29	33	62	1,217	1,249	350	898	1	.....	
Florida.....	45	991	41	39	37	10	864	892	294	593	1	2	
Georgia.....	43	2,008	35	79	65	53	1,776	1,704	539	1,144	21	.....	
Idaho.....	36	510	42	13	4	9	442	457	142	315	.....	.....	
Illinois.....	461	12,470	437	357	311	361	11,004	10,834	2,899	7,884	2	49	
Indiana.....	174	4,307	170	146	120	121	3,750	3,675	927	2,736	.....	12	
Iowa.....	176	2,883	186	79	20	80	2,518	2,575	775	1,782	6	12	
Kansas.....	150	1,853	180	30	19	17	1,607	1,606	489	1,116	1	.....	
Kentucky.....	75	2,086	54	76	23	60	1,873	1,870	589	1,274	4	3	
Louisiana.....	28	1,369	24	31	41	30	1,243	1,209	320	886	.....	3	
Maine.....	92	1,097	101	31	12	23	930	924	308	611	2	3	
Maryland.....	54	1,921	62	38	29	77	1,715	1,780	509	1,256	2	13	
Massachusetts.....	391	8,861	404	248	155	283	7,771	7,658	2,871	4,723	15	49	
Michigan.....	234	5,637	270	133	154	178	4,902	4,847	1,184	3,642	5	16	
Minnesota.....	188	4,024	203	114	74	139	3,494	3,505	927	2,573	.....	5	
Mississippi.....	27	688	32	21	16	12	607	585	194	390	1	.....	
Missouri.....	177	6,757	144	197	290	227	5,899	5,845	1,445	4,380	7	13	
Montana.....	42	920	37	38	11	15	819	781	249	531	1	.....	
Nebraska.....	74	1,490	85	65	13	24	1,303	1,304	322	980	1	1	
Nevada.....	12	150	13	6	5	2	124	123	54	69	.....	.....	
New Hampshire.....	74	864	86	5	3	10	760	750	261	494	1	.....	
New Jersey.....	142	4,024	124	99	46	113	3,642	3,540	1,353	2,168	.....	19	
New Mexico.....	15	274	14	9	8	3	240	238	63	172	.....	3	
New York.....	614	15,489	638	437	244	419	13,751	13,661	4,337	9,296	10	18	
North Carolina.....	59	1,335	56	48	49	17	1,165	1,116	353	758	5	.....	
North Dakota.....	30	478	31	14	14	10	409	413	113	299	1	.....	
Ohio.....	296	8,434	309	245	310	305	7,265	7,148	2,051	5,090	4	3	
Oklahoma.....	101	1,632	115	58	16	27	1,416	1,439	466	973	.....	.....	
Oregon.....	78	1,969	74	60	32	58	1,745	1,710	560	1,149	1	.....	
Pennsylvania.....	396	11,831	447	270	308	396	10,410	10,338	2,864	7,299	39	136	
Rhode Island.....	66	1,402	70	36	55	49	1,192	1,184	499	683	1	21	
South Carolina.....	23	588	24	27	14	6	517	506	173	332	1	.....	
South Dakota.....	26	454	29	14	4	7	400	388	94	289	.....	5	
Tennessee.....	67	2,898	62	77	101	78	2,580	2,538	704	1,831	2	1	
Texas.....	185	5,254	221	146	181	101	4,605	4,416	1,611	2,801	1	3	
Utah.....	36	1,197	31	37	13	46	1,070	1,073	355	715	1	2	
Vermont.....	41	441	49	2	.....	12	378	385	113	272	.....	.....	
Virginia.....	71	1,965	76	64	88	43	1,694	1,723	462	1,258	3	.....	
Washington.....	192	3,744	205	101	57	83	3,298	3,270	1,236	2,031	.....	3	
West Virginia.....	44	929	35	38	10	19	827	892	285	607	.....	.....	
Wisconsin.....	150	2,645	161	93	39	87	2,265	2,314	557	1,737	5	15	
Wyoming.....	18	212	22	4	.....	1	185	183	42	141	.....	.....	

## POWER LAUNDRIES—DETAILED STATISTICS, BY STATES: 1914—Continued.

Table 13—Continued.		EXPENSES.							
STATE.	CAPITAL.	Salaries and wages.			For contract work.	Rent and taxes.		For materials.	
		Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, including corporation income.	Principal materials.	Fuel and rent of power.
UNITED STATES.....	\$98,055,001	\$7,109,052	\$5,172,444	\$59,482,563	\$374,448	\$3,226,578	\$878,355	\$19,934,066	\$9,985,134
Alabama.....	784,541	89,048	58,881	480,569	620	45,079	8,376	200,384	56,075
Arizona.....	266,812	23,571	7,427	194,678	.....	7,660	2,742	38,819	37,960
Arkansas.....	577,314	52,975	45,653	338,838	.....	18,702	4,689	99,219	48,607
California.....	9,618,271	543,692	540,858	6,212,685	38,485	271,500	84,342	1,648,997	613,198
Colorado.....	1,440,896	130,978	118,799	849,010	8,679	58,136	12,011	257,825	106,476
Connecticut.....	1,454,961	111,084	50,576	894,291	1,684	48,826	10,895	295,515	112,886
Delaware.....	253,294	17,056	9,240	92,178	416	3,624	1,669	32,121	10,403
District of Columbia.....	971,336	70,761	50,647	440,990	260	21,771	8,136	137,922	43,954
Florida.....	612,525	58,448	33,550	356,124	5,750	36,176	5,168	121,397	60,920
Georgia.....	1,044,728	126,147	81,082	571,737	1,895	30,796	12,356	259,152	70,689
Idaho.....	496,600	18,081	10,763	246,094	3,400	8,775	3,959	86,258	54,328
Illinois.....	8,401,995	683,197	467,269	5,474,339	82,215	315,824	62,223	2,068,520	570,163
Indiana.....	2,295,353	231,920	150,976	1,520,680	10,416	99,005	17,575	527,892	181,445
Iowa.....	1,784,871	122,493	58,141	1,150,519	3,192	90,764	13,367	409,456	178,171
Kansas.....	1,181,164	36,855	22,852	683,703	1,850	38,736	13,000	218,643	106,433
Kentucky.....	1,116,867	102,888	42,749	698,533	326	49,835	12,758	222,872	77,660
Louisiana.....	1,102,216	62,046	52,277	437,252	250	15,236	12,130	187,289	44,348
Maine.....	685,304	34,628	19,328	390,663	2,201	21,837	5,396	112,650	69,827
Maryland.....	1,164,371	57,093	47,082	593,792	.....	31,736	11,653	198,310	61,146
Massachusetts.....	4,695,798	436,343	277,117	3,721,499	59,706	223,490	51,937	965,881	426,019
Michigan.....	3,172,343	235,189	222,957	2,161,118	675	117,932	34,008	690,754	237,748
Minnesota.....	2,708,038	199,829	132,726	1,640,388	17,361	112,084	35,026	637,754	217,689
Mississippi.....	347,909	34,879	18,391	214,578	75	7,221	5,214	89,910	32,334
Missouri.....	4,332,735	342,788	382,978	2,609,155	9,821	147,685	29,140	1,089,153	260,637
Montana.....	954,412	63,834	24,911	599,489	1,600	26,149	7,680	145,161	81,199
Nebraska.....	995,413	106,575	27,069	613,189	933	35,650	7,563	278,236	93,803
Nevada.....	191,392	8,590	8,820	88,054	.....	2,260	1,445	18,345	22,029
New Hampshire.....	440,499	6,252	7,039	324,754	334	20,104	3,091	76,219	56,257
New Jersey.....	2,876,920	191,730	97,888	1,648,758	.....	76,754	23,039	477,229	178,327
New Mexico.....	205,065	20,090	9,354	104,732	200	6,700	1,680	28,027	21,692
New York.....	10,354,297	750,756	385,111	6,062,092	14,506	403,765	72,203	2,094,922	726,889
North Carolina.....	798,650	59,576	41,116	361,497	6,792	27,664	7,597	167,826	73,121
North Dakota.....	552,458	17,674	17,178	207,953	2,155	9,044	4,840	93,551	49,253
Ohio.....	5,066,162	462,326	377,129	3,157,194	2,555	128,041	53,961	1,058,554	302,932
Oklahoma.....	986,074	70,911	29,766	653,320	674	40,021	13,485	263,834	95,909
Oregon.....	1,669,317	111,258	63,124	961,677	.....	34,892	14,163	281,498	103,668
Pennsylvania.....	8,160,248	442,672	441,617	4,236,358	35,041	140,395	68,882	1,442,936	405,173
Rhode Island.....	684,194	65,051	70,229	544,455	1,974	27,278	7,158	162,306	68,298
South Carolina.....	265,692	27,193	10,020	146,556	.....	12,590	2,309	60,843	35,055
South Dakota.....	352,747	18,214	6,345	190,492	2,469	9,365	3,100	68,499	44,056
Tennessee.....	1,558,029	112,715	102,104	908,671	1,519	43,234	23,078	343,246	94,474
Texas.....	3,443,394	238,578	246,974	2,117,949	21,576	101,750	33,097	770,967	300,655
Utah.....	1,213,651	72,479	36,088	580,473	1,600	21,029	10,708	270,838	51,085
Vermont.....	233,682	2,360	5,268	146,014	3,580	8,417	1,892	37,451	25,763
Virginia.....	1,055,152	88,808	78,458	524,337	16,503	27,595	10,937	212,652	73,157
Washington.....	2,838,858	158,514	106,531	1,895,258	7,160	106,672	24,657	456,132	199,168
West Virginia.....	689,640	46,374	15,043	358,301	18	19,411	4,519	102,153	32,966
Wisconsin.....	1,794,553	139,283	61,743	939,939	3,002	65,477	18,004	382,911	143,575
Wyoming.....	174,290	5,240	1,200	147,728	1,000	5,891	1,497	43,047	21,454

## POWER LAUNDRIES.

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## POWER LAUNDRIES—DETAILED STATISTICS, BY STATES: 1914—Continued.

Table 13—Continued.

STATE.	AMOUNT RECEIVED FOR WORK DONE.	PRIMARY HORSEPOWER.							ELECTRIC HORSEPOWER.		FUEL USED.				
		Total.	Owned by establishments reporting.				Rented.		Total rented and generated by establishments.	Generated in establishments reporting.	Coal.		Coke (short tons).	Oil, including gasoline (barrels).	Gas (1,000 cubic feet).
			Total.	Steam engines.	Internal-combustion engines.	Water wheels and motors.	Elec.	Other.			Anthracite (long tons).	Bituminous (short tons).			
UNITED STATES.....	\$142,503,253	174,881	140,817	141,224	4,915	678	24,655	3,409	44,168	19,513	212,892	1,212,687	16,161	710,506	3,786,429
Alabama.....	1,300,088	1,362	1,058	1,056	2	.....	304	.....	589	285	250	17,120	2,045	287	1,107
Arizona.....	425,999	326	264	264	.....	.....	62	.....	62	.....	.....	1,206	345	10,229	2,068
Arkansas.....	836,457	1,092	983	962	21	.....	107	2	157	50	557	7,661	.....	1,351	154,147
California.....	13,948,738	13,503	10,355	10,088	179	88	3,113	35	4,421	1,308	545	2,601	2,845	481,839	83,766
Colorado.....	2,163,263	2,723	2,340	2,332	5	3	383	.....	550	167	156	35,004	.....	120	6,647
Connecticut.....	2,108,011	3,178	2,913	2,913	.....	.....	220	45	393	173	6,027	18,318	344	41	6,479
Delaware.....	242,897	335	326	326	.....	.....	9	.....	9	.....	117	2,320	26	.....	805
District of Columbia.....	1,023,475	1,071	1,065	1,065	.....	.....	6	.....	337	331	6	11,174	.....	150	2,654
Florida.....	946,314	1,120	863	861	2	.....	237	20	262	25	100	8,825	.....	2,867	1,999
Georgia.....	1,632,221	1,773	1,544	1,544	.....	.....	229	.....	333	104	544	18,026	744	64	2,698
Idaho.....	592,749	1,033	709	709	.....	.....	272	52	278	6	.....	7,285	.....	67	300
Illinois.....	12,846,432	13,472	11,193	11,037	134	22	2,204	75	3,371	1,167	4,305	164,198	667	630	73,843
Indiana.....	3,097,112	4,739	3,751	3,689	62	.....	983	.....	1,302	314	782	68,095	211	217	23,565
Iowa.....	2,882,005	3,873	3,210	3,067	143	.....	648	15	952	304	23	56,924	435	709	6,481
Kansas.....	1,065,709	2,664	2,223	1,919	304	.....	441	.....	496	55	.....	19,238	.....	2,354	196,074
Kentucky.....	1,065,979	2,655	2,524	2,520	4	.....	131	.....	409	278	.....	33,618	260	38	23,380
Louisiana.....	1,190,148	1,197	1,076	1,071	5	.....	121	.....	491	370	.....	7,251	.....	788	49,068
Maine.....	939,021	1,741	1,297	1,243	18	36	404	40	522	118	2,846	8,531	.....	48	4,088
Maryland.....	1,391,902	2,211	2,137	2,087	50	.....	74	.....	400	326	603	14,345	.....	220	35,595
Massachusetts.....	8,061,830	11,382	9,287	8,902	310	75	1,508	587	2,434	926	9,100	59,930	3,777	377	25,777
Michigan.....	5,115,286	6,457	5,401	5,429	62	.....	966	.....	1,335	369	1,777	58,417	318	216	14,601
Minnesota.....	4,100,464	4,264	3,322	3,230	92	.....	942	.....	1,506	864	2,148	40,549	12	295	6,786
Mississippi.....	540,209	680	595	553	.....	12	85	.....	108	23	.....	6,947	.....	2,041	1,027
Missouri.....	6,316,203	7,941	7,489	7,176	314	.....	382	70	2,077	1,695	660	72,404	357	48,422	69,329
Montana.....	1,266,552	999	706	655	51	.....	293	.....	310	17	390	14,846	.....	140	3,816
Nebraska.....	1,517,924	1,779	1,625	1,355	270	.....	154	.....	297	143	320	20,386	115	469	4,624
Nevada.....	216,193	247	223	217	.....	6	24	.....	24	.....	.....	871	.....	4,034	70
New Hampshire.....	728,733	1,269	1,113	1,067	6	10	126	30	145	19	796	7,900	244	92	2,374
New Jersey.....	3,590,739	5,103	4,845	4,796	44	5	203	55	831	628	34,389	8,251	.....	165	10,410
New Mexico.....	280,373	396	262	262	.....	.....	134	.....	134	.....	1,061	2,967	.....	77	43
New York.....	14,304,964	19,288	13,081	13,181	614	186	3,194	2,113	4,807	1,703	80,732	55,150	1,363	538	87,448
North Carolina.....	1,026,358	1,359	1,126	1,074	14	38	213	20	283	70	651	13,670	.....	127	2,475
North Dakota.....	592,849	725	556	536	20	.....	169	.....	177	8	40	9,564	.....	80	528
Ohio.....	7,822,491	10,609	9,629	8,902	669	25	1,228	55	3,423	2,195	1,994	57,922	651	116	742,424
Oklahoma.....	1,669,721	1,766	1,345	1,255	82	8	421	.....	443	22	1,292	9,161	550	188	1,220,414
Oregon.....	2,146,868	2,338	2,133	2,095	26	12	205	.....	482	277	200	1,525	150	53,969	3,325
Pennsylvania.....	10,225,004	12,602	11,624	10,675	937	12	904	74	2,223	1,319	51,621	67,650	.....	562	194,879
Rhode Island.....	1,260,942	1,829	1,716	1,711	5	.....	83	30	215	132	1,282	11,723	.....	.....	4,109
South Carolina.....	422,212	604	470	470	.....	.....	134	.....	175	41	1,500	6,834	.....	107	424
South Dakota.....	477,474	520	305	288	17	.....	215	.....	226	11	10	8,141	.....	99	537
Tennessee.....	2,296,797	3,107	2,715	2,683	2	30	391	1	1,261	870	315	39,431	280	64	16,897
Texas.....	5,521,841	6,063	5,312	5,109	101	102	751	.....	1,395	644	1,146	50,461	.....	51,189	468,096
Utah.....	1,367,433	1,926	1,332	1,762	64	6	94	.....	1,261	1,167	.....	15,819	.....	5	2,418
Vermont.....	302,041	518	415	413	2	.....	103	.....	119	16	360	3,481	104	18	1,056
Virginia.....	1,453,912	1,918	1,633	1,615	18	.....	247	38	373	120	1,372	18,716	.....	29	6,377
Washington.....	4,251,620	4,022	3,049	3,024	23	2	961	12	1,273	312	250	9,880	809	44,724	9,500
West Virginia.....	785,782	1,305	1,227	1,022	205	.....	78	.....	106	28	74	4,355	.....	7	179,868
Wisconsin.....	2,353,183	3,175	2,696	2,690	6	.....	439	40	911	472	1,951	25,799	4	296	23,729
Wyoming.....	238,048	822	267	265	2	.....	55	.....	90	35	600	3,904	.....	32	2,304

POWER LAUNDRIES—STATISTICS FOR STATES AND FOR CITIES HAVING, IN 1914, 10,000 INHABITANTS OR MORE:  
1914 AND 1909.

Table 14

STATE AND CITY.	Census year.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Amount received for work done.
			Total.	Proprietors and firm members.	Salaries employees.	Wage earners (average number).						
ALABAMA.....	1914	41	1,569	31	150	1,388	1,362	\$784,541	\$147,929	\$480,569	\$256,459	\$1,360,688
	1909	38	1,274	26	140	1,108	1,041	548,892	126,579	343,183	146,657	909,130
Birmingham.....	1914	10	781	3	80	698	681	456,048	86,609	254,513	129,832	755,530
	1909	11	684	7	76	608	542	276,767	74,015	217,031	85,027	521,761
Mobile.....	1914	4	228	1	20	207	157	80,024	20,686	84,141	29,859	197,991
	1909	4	191	2	27	162	197	93,276	20,280	44,002	14,636	120,183
Montgomery.....	1914	3	149	4	13	132	111	81,905	15,231	42,523	27,414	121,328
	1909	3	124	3	15	106	64	60,529	15,949	26,614	13,468	90,663
ARIZONA.....	1914	17	379	19	25	335	326	266,812	30,998	194,678	76,779	425,999
	1909	13	309	11	15	283	298	193,351	16,288	153,467	74,153	369,282
Phoenix.....	1914	3	130	4	9	117	80	68,000	10,256	67,581	24,019	133,147
	1909	3	90	1	7	82	85	46,500	7,120	38,038	22,374	97,077
ARKANSAS.....	1914	53	1,011	76	103	832	1,092	577,314	98,628	338,838	147,826	836,457
	1909	45	850	53	56	741	900	568,411	50,532	266,279	122,806	684,036
Fort Smith.....	1914	4	108	14	10	84	88	66,020	12,684	35,910	11,568	93,438
	1909	3	98	6	6	86	85	49,558	5,822	31,541	13,387	79,151
Hot Springs.....	1914	3	103	4	14	85	125	100,400	10,549	38,670	27,128	87,280
	1909	3	105	4	8	93	205	123,150	7,376	30,280	22,181	106,600
Little Rock.....	1914	6	301	5	30	266	187	138,540	34,257	118,172	41,015	277,736
	1909	6	282	3	17	262	154	203,833	22,376	103,949	47,461	253,413
Pine Bluff.....	1914	3	62	2	19	41	60	32,414	15,362	16,859	9,566	54,244
CALIFORNIA.....	1914	532	12,077	624	1,037	10,416	13,503	9,618,271	1,084,550	6,212,685	2,282,195	13,948,738
	1909	321	9,060	308	714	8,038	8,961	6,295,915	789,726	4,471,017	1,612,112	9,541,795
Alameda.....	1914	9	114	18	4	92	96	79,866	4,420	56,273	23,668	119,167
	1909	9	105	11	5	89	77	77,995	5,404	44,168	17,673	109,066
Bakersfield.....	1914	5	101	5	5	91	105	115,873	4,788	55,666	26,474	134,505
	1909	5	107	16	9	142	131	139,217	10,348	84,317	22,992	181,183
Berkeley.....	1914	14	167	3	9	90	108	68,964	10,127	47,934	15,769	103,733
	1909	5	102	3	9	90	108	68,964	10,127	47,934	15,769	103,733
Eureka.....	1914	5	67	9	4	54	92	90,804	3,764	26,536	10,472	63,446
	1909	4	59	3	7	49	72	72,978	7,470	26,938	11,970	65,667
Fresno.....	1914	8	163	11	9	148	207	166,970	9,359	93,543	31,433	227,972
	1909	4	98	2	3	93	114	100,492	4,890	67,300	18,876	130,651
Long Beach.....	1914	4	145	4	20	121	220	151,113	17,770	81,840	33,180	175,289
	1909	3	93	2	8	83	155	79,774	7,884	37,490	26,349	85,785
Los Angeles.....	1914	42	3,179	33	394	2,752	3,053	2,697,607	316,224	1,561,456	565,167	3,553,871
	1909	31	2,385	21	155	2,209	1,977	1,822,333	153,459	1,201,049	468,294	2,364,051
Oakland.....	1914	60	1,125	76	98	951	1,143	855,138	119,506	590,816	201,020	1,350,680
	1909	41	993	50	98	845	751	681,861	115,300	468,218	141,947	1,066,514
Pasadena.....	1914	7	307	8	28	271	263	263,918	29,235	169,697	52,603	381,950
	1909	3	210	.....	33	177	135	79,992	41,274	99,267	30,213	225,991
Sacramento.....	1914	12	373	15	30	328	350	337,707	44,354	211,749	77,804	463,322
	1909	10	293	12	22	259	250	238,843	19,095	155,611	56,947	333,755
San Diego.....	1914	13	461	12	27	422	442	349,796	30,133	221,478	85,469	465,802
	1909	8	281	8	13	230	287	167,238	13,172	102,873	42,132	226,997
San Francisco.....	1914	110	2,799	128	225	2,446	3,425	2,192,830	298,433	1,576,651	530,282	3,430,092
	1909	87	2,257	87	169	2,001	2,698	1,497,254	236,795	1,266,299	413,181	2,693,235
San Jose.....	1914	16	233	27	17	189	306	113,283	18,845	117,257	36,065	269,594
	1909	7	200	11	19	170	181	86,802	16,371	103,665	30,330	193,781
Santa Barbara.....	1914	4	79	3	1	75	80	61,710	1,200	49,763	13,130	94,092
	1909	4	61	2	5	54	80	61,531	4,400	33,235	8,232	60,731
Santa Cruz.....	1914	5	68	10	3	55	75	37,338	3,340	25,500	12,193	52,635
Stockton.....	1914	11	227	13	9	205	209	164,050	10,018	134,863	34,639	279,814
	1909	7	173	5	8	160	98	130,919	7,432	82,235	25,173	167,149
Vallejo.....	1914	6	84	4	6	74	89	67,029	10,100	49,125	18,741	99,231
COLORADO.....	1914	94	2,079	97	223	1,759	2,723	1,440,896	249,777	849,010	364,301	2,163,263
	1909	99	2,076	103	140	1,833	1,895	1,270,656	150,107	905,354	290,314	1,980,093
Colorado Springs.....	1909	4	197	4	8	185	123	144,960	6,845	90,045	23,534	177,973
Denver.....	1914	38	1,235	27	149	1,059	1,383	869,665	168,268	511,294	200,546	1,296,056
	1909	36	1,174	25	100	1,049	892	606,825	113,231	528,889	177,166	1,172,363
Pueblo.....	1914	3	139	1	14	124	337	150,167	19,013	63,726	60,150	158,485
	1909	5	182	3	13	166	165	114,172	16,690	76,473	16,350	144,073
CONNECTICUT.....	1914	127	2,184	125	146	1,913	3,178	1,454,961	161,660	594,291	408,401	2,108,011
	1909	95	1,838	101	96	1,441	1,852	870,567	99,535	584,838	246,066	1,416,122
Bridgeport.....	1914	8	270	9	27	234	435	198,595	24,792	116,087	48,220	266,474
	1909	7	166	11	5	150	238	99,526	8,296	59,451	26,168	156,031
Bristol.....	1914	3	30	3	1	26	62	18,606	2,000	11,837	5,095	28,443
	1909	5	85	2	8	74	140	52,076	5,943	32,863	9,822	75,751
Danbury.....	1914	4	80	4	5	71	94	68,461	3,347	30,505	5,897	56,676
Hartford.....	1914	17	386	19	19	348	435	277,436	22,514	172,664	86,424	410,678
	1909	12	278	11	19	248	212	127,925	28,846	110,903	36,608	292,916
Meriden.....	1914	4	91	4	13	74	100	65,083	9,352	31,883	8,834	78,893
	1909	4	64	4	2	58	56	34,800	1,664	23,796	7,474	55,400
New Britain.....	1914	4	77	2	5	70	137	102,637	10,732	37,646	16,620	96,770

## POWER LAUNDRIES.

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POWER LAUNDRIES—STATISTICS FOR STATES AND FOR CITIES HAVING, IN 1914, 10,000 INHABITANTS OR MORE:  
1914 AND 1909—Continued.

Table 14—Continued.	STATE AND CITY.	Census year.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Amount received for work done.
				Total.	Proprietors and firm members.	Salaried employees.	Wage earners (average number).						
CONNECTICUT—Continued.													
	New Haven.....	1914	18	430	12	29	389	596	\$281,860	\$35,145	\$175,356	\$70,201	\$395,540
		1909	15	318	12	24	282	411	151,377	25,382	121,627	67,441	276,926
	New London.....	1914	4	66	3	2	61	105	54,156	1,650	23,566	7,766	52,851
		1909	5	65	5	0	60	110	40,725	.....	13,816	7,850	38,854
	Norwich.....	1914	3	55	4	3	48	65	25,215	5,564	18,790	10,293	50,300
		1909	3	56	4	2	50	59	19,700	844	18,039	7,578	59,071
	Stamford.....	1914	3	64	3	4	57	80	25,021	10,847	25,411	9,003	60,499
		1909	4	65	7	2	56	56	20,272	1,456	18,527	5,398	49,187
	Waterbury.....	1914	7	127	3	7	117	210	56,108	9,865	58,831	28,156	126,116
		1909	7	111	8	6	97	149	69,232	6,128	38,317	10,758	87,941
DELAWARE.....													
		1914	12	369	16	27	326	335	253,264	26,296	92,178	42,524	242,897
		1909	15	283	17	44	222	235	103,025	25,932	71,844	29,633	187,038
	Wilmington.....	1914	9	346	11	27	308	301	236,664	26,296	86,610	39,869	226,332
		1909	11	257	12	44	201	189	83,200	25,932	65,393	26,652	164,960
DISTRICT OF COLUMBIA.....													
		1914	18	1,351	10	124	1,217	1,071	971,336	121,408	440,990	181,876	1,023,475
		1909	17	1,096	13	90	993	998	699,007	71,492	347,793	126,256	795,999
	Washington.....	1914	18	1,351	10	124	1,217	1,071	971,336	121,408	440,990	181,876	1,023,475
		1909	17	1,096	13	90	993	998	699,007	71,492	347,793	126,256	795,999
FLORIDA.....													
		1914	45	991	41	86	864	1,120	612,525	91,998	356,124	182,317	946,314
		1909	28	633	28	39	571	528	401,038	36,130	196,509	77,221	474,088
	Jacksonville.....	1914	6	234	2	28	204	372	139,157	39,000	77,195	39,073	275,155
		1909	6	248	3	16	229	185	128,870	16,516	62,073	29,005	167,726
	Pensacola.....	1914	3	97	4	16	77	69	33,439	18,053	22,186	17,607	79,454
		1909	3	86	1	7	78	50	79,091	6,526	18,863	6,081	46,067
	Tampa.....	1914	3	191	4	14	173	168	110,919	10,114	95,748	51,249	210,557
		1909	4	130	5	5	120	118	109,185	5,090	62,932	19,750	138,465
GEORGIA.....													
		1914	43	2,008	35	197	1,776	1,773	1,044,728	207,229	571,737	335,841	1,632,221
		1909	42	1,525	37	156	1,332	1,180	654,756	131,877	384,198	191,654	1,006,724
	Atlanta.....	1914	13	1,039	4	119	916	901	505,786	130,495	306,561	192,244	912,952
		1909	10	775	6	106	663	450	265,049	93,057	175,680	109,234	515,816
	Augusta.....	1914	3	80	4	9	67	105	61,173	7,094	22,452	15,248	60,448
	Macon.....	1914	3	175	.....	17	158	84	83,725	16,872	49,491	22,048	131,486
		1909	3	120	2	7	111	65	41,850	7,018	27,896	14,712	69,275
	Savannah.....	1914	4	300	1	24	275	236	150,960	24,854	78,257	53,543	222,415
		1909	4	222	3	20	199	201	75,409	15,688	79,865	20,883	157,568
IDAHO.....													
		1914	36	510	42	26	442	1,033	486,600	28,844	246,094	140,586	592,749
		1909	24	410	31	22	357	489	252,110	22,621	179,215	94,879	334,226
	Boise.....	1914	3	85	2	7	76	70	98,952	7,545	55,036	15,987	117,267
		1909	3	81	3	4	74	33	58,600	4,680	37,909	24,369	87,623
	Pocatello.....	1914	3	56	3	4	49	140	88,915	3,014	27,888	9,344	48,006
ILLINOIS.....													
		1914	461	12,470	437	1,029	11,004	13,472	8,401,995	1,150,466	5,474,339	2,638,683	12,846,432
		1909	448	10,916	470	741	9,705	10,780	5,540,003	718,986	4,316,666	1,721,845	10,049,445
	Alton.....	1914	3	52	2	2	48	55	44,275	2,300	23,742	13,891	66,406
	Aurora.....	1914	3	98	2	10	86	105	38,404	8,272	37,790	16,430	81,541
		1909	5	105	7	5	93	109	45,424	4,336	41,496	13,108	78,784
	Bloomington.....	1914	4	149	4	14	131	138	77,144	14,850	61,526	23,366	164,270
		1909	4	145	4	8	133	80	52,757	8,315	51,766	17,317	127,380
	Champaign.....	1914	3	62	6	14	42	57	39,325	10,008	16,800	8,201	50,652
		1909	3	44	9	1	34	38	27,032	780	12,482	3,162	27,328
	Chicago.....	1914	222	8,398	190	807	7,401	8,010	5,395,721	847,328	3,918,958	1,863,017	8,949,896
		1909	226	7,321	218	502	6,601	6,548	3,325,881	524,084	3,133,790	1,195,679	7,108,126
	Danville.....	1914	4	132	4	25	103	163	118,345	25,629	30,366	21,691	133,614
		1909	3	116	4	10	102	100	89,609	12,789	37,111	12,017	109,439
	Decatur.....	1914	5	192	6	10	176	305	115,900	10,730	73,447	35,849	153,794
		1909	6	126	5	11	120	156	79,980	6,523	44,496	12,901	97,256
	East St. Louis.....	1914	4	110	.....	12	98	206	142,724	19,002	41,197	34,468	119,435
		1909	3	91	.....	21	70	112	71,737	26,006	31,159	9,733	89,750
	Elgin.....	1914	3	64	3	4	57	95	34,450	5,170	29,400	20,165	65,000
		1909	3	63	3	5	55	71	24,120	3,056	24,681	4,487	53,922
	Evanston.....	1914	6	194	4	22	168	124	133,914	21,522	96,634	29,107	215,005
		1909	7	148	6	9	133	145	149,610	7,020	64,112	25,236	164,058
	Galesburg.....	1914	5	77	3	11	63	86	48,699	8,344	28,590	15,544	74,212
		1909	4	88	6	4	78	100	23,780	1,456	30,795	8,094	64,543
	Jacksonville.....	1909	3	45	3	4	38	60	31,250	1,196	10,572	3,944	32,060
	Joliet.....	1914	6	115	1	13	101	141	104,137	17,496	40,591	30,743	133,622
		1909	4	79	3	9	67	105	90,825	8,272	28,860	28,740	85,978
	Moline.....	1914	5	89	7	8	74	76	154,077	5,533	34,427	14,549	84,629
		1909	5	71	6	6	59	51	59,617	2,744	21,930	14,027	65,500
	Peoria.....	1914	11	335	18	22	295	449	281,928	14,874	126,857	65,248	316,696
		1909	7	295	11	16	268	367	187,850	13,230	104,084	54,930	239,153

## MANUFACTURES.

POWER LAUNDRIES—STATISTICS FOR STATES AND FOR CITIES HAVING, IN 1914, 10,000 INHABITANTS OR MORE:  
1914 AND 1909—Continued.

Table 14—Continued.		Census year.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Amount received for work done.
STATE AND CITY.				Total.	Proprietors and firm members.	Salaried employees.	Wage earners (average number).						
ILLINOIS—Continued.													
Quincy.....		1914	3	206	19	187	157	\$167,362	\$21,160	\$66,187	\$27,967	\$179,713	
		1909	5	185	2	22	161	260	136,722	15,568	37,449	15,150	117,317
Rock Island.....		1914	7	102	8	86	108	87,451	6,456	33,687	16,813	85,394	
		1909	5	62	7	9	46	47	41,759	4,386	19,843	6,738	53,088
Rockford.....		1914	8	178	9	20	149	176	62,025	19,124	66,387	25,271	150,418
		1909	8	160	7	8	145	127	32,845	6,561	46,419	29,732	118,060
Springfield.....		1914	8	324	6	21	297	315	161,650	18,912	128,785	57,255	290,274
		1909	6	275	6	17	252	329	182,841	11,059	89,816	48,625	227,866
Waukegan.....		1909	3	52	3	2	47	143	10,935	2,468	21,470	11,890	44,985
INDIANA.....		1914	174	4,307	170	387	3,750	4,739	2,295,353	382,896	1,520,680	709,337	3,637,112
		1909	163	3,308	184	223	2,901	3,746	1,236,060	191,883	1,020,675	371,178	2,448,355
Elkhart.....		1914	3	67	1	12	54	48	51,600	10,780	22,200	18,985	53,249
Evansville.....		1914	6	370	2	31	337	285	240,983	30,459	109,419	51,741	271,955
		1909	7	304	4	20	280	300	102,525	20,862	93,093	31,262	206,368
Fort Wayne.....		1914	3	194	3	18	173	205	70,987	13,769	65,568	20,171	134,838
		1909	3	133	5	6	122	130	61,413	4,185	46,463	14,825	107,881
Hammond.....		1909	3	51	4	1	46	52	20,050	1,300	20,684	7,189	54,088
Indianapolis.....		1914	26	1,406	12	151	1,243	1,452	678,750	171,807	546,013	241,150	1,283,137
		1909	23	973	16	74	883	960	296,245	77,422	319,668	104,818	748,258
Kokomo.....		1914	3	62	3	1	58	45	20,375	390	16,938	6,623	49,500
		1909	3	37	3	1	33	136	23,010	260	12,450	2,734	23,230
Lafayette.....		1909	3	70	4	5	61	80	28,050	6,610	22,189	10,331	61,406
Logansport.....		1914	3	109	4	4	101	146	69,523	2,704	45,231	14,456	97,420
		1909	3	80	4	3	73	89	28,422	1,900	25,902	10,073	58,295
Marion.....		1914	4	91	5	6	80	76	62,537	4,210	35,216	11,428	74,204
		1909	3	53	6	8	39	93	16,898	7,696	15,172	5,572	46,609
Michigan City.....		1914	3	45	3	3	39	39	28,815	2,000	15,759	7,126	36,422
		1909	3	44	3	1	40	32	16,871	364	12,357	4,769	39,327
Muncie.....		1914	3	89	2	7	80	71	59,875	5,740	34,915	9,725	83,655
		1909	3	65	3	2	62	41	41,375	.....	21,560	7,469	48,200
Richmond.....		1909	4	62	6	2	54	42	21,815	618	15,860	12,944	44,742
South Bend.....		1914	8	139	4	20	115	351	101,517	16,781	67,405	43,777	169,118
		1909	6	162	6	10	146	133	36,252	9,394	53,941	20,587	114,844
Terre Haute.....		1914	4	253	1	41	211	248	165,521	45,924	72,690	48,207	257,982
		1909	5	160	3	19	138	270	100,051	13,806	52,565	21,249	119,012
Vincennes.....		1914	3	74	4	2	68	57	39,334	936	22,787	8,801	65,003
		1909	3	64	4	5	55	125	13,825	3,228	15,680	6,306	42,210
IOWA.....		1914	176	2,883	186	179	2,518	3,873	1,784,871	180,634	1,150,519	587,627	2,882,005
		1909	181	2,488	206	139	2,123	2,941	1,261,954	107,500	806,489	428,771	2,063,451
Burlington.....		1914	4	90	7	7	76	76	29,549	7,090	32,408	11,006	74,407
		1909	3	76	7	3	66	147	20,963	1,680	23,495	12,106	54,581
Cedar Rapids.....		1914	7	210	7	18	185	292	123,662	17,616	94,568	45,452	237,771
		1909	8	140	6	17	117	142	71,074	8,630	36,614	29,517	112,250
Clinton.....		1914	3	98	4	3	91	80	54,150	2,398	32,896	12,725	77,712
Council Bluffs.....		1914	5	163	4	13	146	270	100,990	15,928	59,780	52,882	156,555
		1909	3	150	2	10	138	131	70,800	9,428	44,924	34,340	110,984
Davenport.....		1914	7	171	3	13	155	159	55,960	17,766	62,343	18,849	162,384
		1909	8	154	9	6	139	189	93,051	5,060	61,756	22,321	126,561
Des Moines.....		1914	12	392	10	19	363	486	191,790	24,436	197,049	86,187	433,783
		1909	15	388	14	19	355	429	122,219	23,626	158,573	74,067	347,711
Dubuque.....		1914	6	79	5	4	70	110	63,478	2,756	33,319	20,559	70,873
		1909	5	76	7	11	58	107	42,076	4,732	19,777	11,501	57,848
Fort Dodge.....		1914	3	93	2	8	83	131	74,706	8,944	37,633	13,753	97,069
Iowa City.....		1914	3	41	2	3	36	40	39,468	2,860	16,788	12,567	48,382
		1909	3	30	5	.....	25	44	33,727	.....	10,164	4,183	20,690
Keokuk.....		1909	3	21	5	1	15	43	6,175	28	5,822	1,999	12,850
Mason City.....		1914	4	82	.....	11	71	239	67,325	7,298	34,005	21,431	86,812
Muscatine.....		1914	4	42	6	.....	36	44	40,485	.....	15,075	9,176	39,741
		1909	4	36	4	.....	32	43	16,700	.....	12,357	4,030	33,600
Sioux City.....		1914	8	276	6	24	246	318	197,650	27,633	124,289	43,932	293,580
		1909	8	234	5	16	213	185	120,590	11,656	92,340	60,238	220,903
Waterloo.....		1914	5	184	3	11	170	118	112,494	11,589	83,508	49,023	202,068
		1909	3	114	3	9	102	75	38,243	7,252	44,624	14,414	95,691
KANSAS.....		1914	150	1,853	180	66	1,607	2,664	1,181,164	59,707	683,703	325,076	1,695,799
		1909	138	1,761	168	93	1,490	1,958	1,026,904	67,329	566,423	285,734	1,485,967
Atchison.....		1909	3	68	5	2	61	42	20,120	525	17,735	7,348	36,516
Chanute.....		1914	3	29	5	.....	24	34	17,610	.....	11,433	2,742	25,200
Hutchinson.....		1914	5	123	7	4	112	206	98,985	3,760	40,989	19,771	110,262
Independence.....		1914	3	37	2	.....	35	29	21,720	.....	13,680	4,761	24,575
		1909	3	34	3	.....	31	51	23,625	.....	10,576	5,638	36,020
Kansas City.....		1914	7	97	8	2	87	151	47,400	396	42,331	18,376	87,337
		1909	6	80	5	5	70	87	54,815	4,106	27,209	11,120	74,462
Lawrence.....		1914	3	43	4	.....	39	48	25,725	.....	13,029	5,930	32,400
		1909	3	47	4	1	42	39	18,220	416	11,224	4,290	26,733
Leavenworth.....		1909	3	70	5	16	49	55	41,520	9,463	13,417	8,474	50,880



## POWER LAUNDRIES.

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POWER LAUNDRIES—STATISTICS FOR STATES AND FOR CITIES HAVING, IN 1914, 10,000 INHABITANTS OR MORE:  
1914 AND 1909—Continued.

Table 14—Continued.		Census year.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Amount received for work done.
STATE AND CITY.				Total.	Proprietors and firm members.	Salaried employees.	Wage earners (average number).						
KANSAS—Continued.													
Parsons.....		1914	3	46	4	4	38	48	\$40,567	\$2,080	\$13,106	\$8,744	\$37,993
		1909	3	42	6	1	35	52	38,450	900	13,635	6,391	36,164
Pittsburg.....		1914	3	35	5	—	30	66	15,400	—	14,100	4,877	37,500
		1909	3	35	4	1	30	42	18,377	572	11,780	6,480	31,801
Salina.....		1914	3	46	4	1	41	54	22,780	416	20,221	15,442	51,100
Topeka.....		1914	10	206	10	11	185	226	96,260	9,938	78,049	39,629	184,517
		1909	7	201	6	20	175	161	68,355	15,760	56,139	25,542	155,506
Wichita.....		1914	8	235	9	21	265	291	211,465	22,679	132,420	82,089	315,498
		1909	11	269	13	23	233	226	160,927	20,161	106,261	38,805	270,391
KENTUCKY.....													
		1914	75	2,086	54	159	1,873	2,655	1,116,867	145,637	698,533	300,532	1,665,979
		1909	73	1,749	67	128	1,554	2,139	730,112	99,263	519,442	202,229	1,208,811
Frankfort.....		1914	3	37	4	—	33	86	26,400	—	10,630	6,310	31,100
Lexington.....		1914	6	277	6	19	252	376	125,282	16,150	97,593	44,793	199,672
		1909	6	207	6	12	189	257	67,235	7,401	54,918	33,580	122,964
Louisville.....		1914	20	893	9	83	806	967	469,915	83,167	325,388	138,787	775,986
		1909	22	799	15	66	718	643	322,411	58,451	252,965	86,623	583,448
Owensboro.....		1914	3	56	1	3	52	108	59,880	3,800	15,685	5,937	35,857
		1909	3	53	1	4	48	72	29,934	3,570	13,778	3,533	34,777
Paducah.....		1914	3	69	4	4	61	105	51,834	2,790	21,641	10,210	54,888
		1909	4	64	5	4	55	107	40,788	2,738	19,232	10,091	55,233
LOUISIANA.....													
		1914	28	1,369	24	102	1,243	1,197	1,102,216	114,323	437,252	231,637	1,190,148
		1909	25	1,117	19	62	1,036	1,109	795,657	82,433	363,945	132,328	852,021
New Orleans.....		1914	9	849	8	42	799	721	582,875	53,438	285,833	136,085	689,747
		1909	9	708	3	42	663	681	519,134	60,258	220,956	77,233	522,090
MAINE.....													
		1914	92	1,097	101	66	930	1,741	685,304	53,956	380,603	182,477	939,021
		1909	78	956	87	53	816	1,085	536,361	36,902	298,338	115,661	736,367
Auburn.....		1914	6	68	10	4	54	89	36,053	2,912	23,884	11,433	59,044
Augusta.....		1914	2	36	3	1	32	53	20,483	1,590	15,872	9,630	36,028
Bangor.....		1914	5	102	2	16	84	166	64,585	13,827	29,855	32,670	86,172
		1909	5	105	3	13	89	69	33,650	8,792	27,463	15,212	73,254
Biddeford.....		1914	3	39	4	1	34	50	31,715	325	13,060	5,194	34,264
Lewiston.....		1914	4	41	5	—	36	98	13,600	—	18,567	6,565	33,611
		1909	3	30	4	1	25	36	20,960	600	10,712	3,265	28,000
Portland.....		1914	11	335	11	17	307	436	246,084	14,527	131,388	38,773	323,559
		1909	12	312	14	22	276	293	183,979	15,403	107,929	37,905	252,211
Sanford.....		1914	3	23	4	—	19	68	10,325	—	8,161	2,968	16,241
MARYLAND.....													
		1914	54	1,921	62	144	1,715	2,211	1,164,371	104,175	593,792	259,456	1,391,902
		1909	41	1,497	44	175	1,278	1,091	643,458	117,996	348,573	155,695	993,766
Baltimore.....		1914	25	1,420	25	120	1,275	1,561	827,250	84,923	437,699	176,179	1,019,230
		1909	18	1,141	14	153	969	702	415,402	107,462	263,909	121,896	773,225
Cumberland.....		1914	4	145	2	8	135	121	157,574	7,862	46,810	21,194	117,331
		1909	4	116	2	12	102	125	93,877	8,232	30,151	13,258	83,891
MASSACHUSETTS.....													
		1914	391	8,861	404	686	7,771	11,382	4,695,798	713,460	3,721,409	1,391,900	8,661,830
		1909	280	6,655	313	384	5,958	6,802	2,951,025	336,326	2,582,593	993,845	5,754,572
Attleborough.....		1914	4	48	5	3	40	93	28,361	1,544	18,904	5,041	36,904
Beverly.....		1914	4	80	3	11	66	60	27,943	10,060	30,175	10,033	81,840
		1909	3	51	4	3	44	80	16,995	3,140	12,014	6,023	34,950
Boston.....		1914	55	2,353	42	189	2,127	2,769	1,108,103	243,501	941,278	363,223	2,267,350
		1909	53	1,860	56	104	1,700	1,626	705,104	104,746	700,077	260,187	1,577,643
Brockton.....		1914	6	165	10	15	140	195	120,999	14,288	81,475	18,825	160,609
		1909	3	129	5	8	116	93	51,687	5,148	57,894	18,441	115,368
Cambridge.....		1914	9	542	6	88	448	585	367,717	90,811	224,900	66,962	563,183
		1909	7	532	6	45	481	567	349,011	40,879	216,961	67,235	494,843
Chelsea.....		1914	4	67	3	2	62	115	31,200	1,664	29,405	12,032	64,440
Chicopee.....		1914	3	30	4	—	26	65	16,916	—	10,745	5,843	28,175
Clinton.....		1909	3	25	4	—	21	35	5,825	—	8,508	3,455	18,280
Everett.....		1914	3	27	2	9	76	72	31,782	12,122	27,603	15,009	82,352
Fall River.....		1914	13	278	16	12	250	531	263,308	10,251	137,099	63,111	302,077
		1909	10	219	13	16	190	413	198,243	9,743	97,652	36,476	216,838
Fitchburg.....		1914	5	93	7	3	83	111	37,198	1,024	36,529	12,851	68,252
		1909	4	68	6	—	62	88	17,211	—	25,197	6,290	52,096
Haverhill.....		1914	16	205	25	9	171	315	65,050	7,155	82,007	32,192	180,000
		1909	6	97	8	2	87	55	23,320	1,063	40,940	10,469	86,034
Holyoke.....		1914	5	82	11	3	68	135	88,030	2,300	36,312	16,242	95,481
		1909	4	86	6	2	78	93	72,610	1,716	39,860	19,605	82,800
Lawrence.....		1914	11	144	13	8	123	203	64,900	6,620	58,504	23,535	132,377
		1909	9	81	12	1	68	129	40,220	364	26,024	10,679	66,405
Leominster.....		1914	3	40	3	2	35	43	13,335	834	14,895	3,578	33,500
Lowell.....		1914	9	233	10	6	217	328	66,955	4,766	94,742	33,810	199,347
		1909	9	207	11	8	188	145	54,814	3,512	80,577	30,974	170,085
Lynn.....		1914	16	399	16	35	348	443	257,228	26,732	151,526	44,967	353,098
		1909	10	297	11	16	270	229	107,874	11,929	118,929	48,173	276,314
Malden.....		1914	4	139	3	14	122	170	42,549	13,174	54,600	26,299	119,937
		1909	3	91	2	7	82	60	14,000	4,992	42,349	6,274	64,986

POWER LAUNDRIES—STATISTICS FOR STATES AND FOR CITIES HAVING, IN 1914, 10,000 INHABITANTS OR MORE:  
1914 AND 1909—Continued.

Table 14—Continued.		Census year.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Amount received for work done.
STATE AND CITY.				Total.	Proprietors and firm members.	Salaries and employees.	Wage earners (average number).						
MASSACHUSETTS—Continued.													
Melrose.....	1914	3	22	5	.....	17	34	\$9,860	.....	\$9,187	\$4,874	\$25,996	
Methuen.....	1914	3	56	1	4	51	56	14,643	\$2,832	22,834	4,167	36,651	
Natick.....	1914	3	28	4	.....	24	32	19,050	.....	11,363	3,690	27,400	
New Bedford.....	1914	13	257	14	14	229	559	142,976	11,819	126,809	47,846	294,490	
	1909	10	193	12	1	180	266	76,374	2,115	85,740	27,299	175,172	
Newburyport.....	1914	5	47	5	4	38	91	17,340	2,662	17,390	8,285	41,980	
	1909	3	28	3	.....	25	27	10,761	.....	10,021	3,213	25,253	
North Adams.....	1914	4	75	5	5	65	105	41,103	4,836	29,340	11,240	62,366	
Northampton.....	1914	4	57	4	.....	53	172	16,018	.....	23,390	7,320	50,734	
	1909	3	42	3	.....	39	25	15,057	.....	15,281	6,320	31,551	
Pittsfield.....	1914	3	57	2	4	51	53	37,016	3,895	27,041	8,787	52,764	
Quincy.....	1914	7	85	5	11	60	214	51,730	11,120	34,668	14,985	86,516	
	1909	4	52	4	8	40	87	36,828	6,948	20,666	11,850	56,393	
Salem.....	1914	5	166	4	10	152	148	62,298	13,845	82,714	22,535	176,825	
	1909	3	160	2	9	149	95	31,736	9,652	69,614	16,598	152,212	
Somerville.....	1914	5	75	5	4	66	122	19,916	7,252	40,894	19,908	96,781	
	1909	5	68	2	7	59	121	32,415	6,706	26,977	8,822	64,676	
Springfield.....	1914	13	414	9	47	358	313	278,335	48,043	182,159	57,299	421,202	
	1909	12	287	11	24	252	258	163,668	25,500	97,496	36,303	284,732	
Taunton.....	1914	5	108	8	5	95	169	58,325	3,701	47,319	27,962	103,066	
	1909	5	108	10	6	92	142	42,775	3,068	34,508	13,238	72,216	
Wakefield.....	1909	3	27	4	.....	23	45	11,123	.....	9,734	4,425	25,234	
Waltham.....	1914	3	116	1	15	100	102	27,501	12,935	51,726	12,475	115,399	
	1909	3	90	3	12	75	102	34,422	6,687	31,536	10,416	73,708	
Watertown.....	1914	4	283	2	9	272	127	87,091	7,890	147,265	44,829	270,686	
Worcester.....	1914	11	403	8	37	358	444	254,079	36,272	184,063	84,786	416,376	
	1909	13	387	10	20	357	378	174,255	21,478	144,116	59,656	316,215	
MICHIGAN.....													
	1914	234	5,637	270	465	4,902	6,457	3,172,343	458,146	2,161,118	928,502	5,115,286	
	1909	219	4,328	249	350	3,729	4,071	2,009,251	275,133	1,327,818	621,786	3,261,841	
Adrian.....	1914	3	30	6	.....	24	53	16,260	.....	8,093	3,888	22,870	
	1909	4	46	6	2	38	52	14,460	1,008	11,872	5,010	22,362	
Ann Arbor.....	1914	5	84	9	5	70	137	65,273	2,056	26,651	23,922	70,380	
	1909	5	85	10	23	52	69	44,701	6,048	16,512	11,161	55,754	
Battle Creek.....	1914	4	137	5	5	127	78	69,637	7,020	49,337	21,477	101,949	
	1909	5	145	7	29	109	99	57,194	16,702	37,555	24,256	105,518	
Detroit.....	1914	46	2,662	43	265	2,354	2,782	1,436,227	286,126	1,153,957	432,854	2,623,299	
	1909	35	1,717	34	175	1,508	1,438	671,913	149,506	536,474	293,281	1,345,728	
Flint.....	1909	3	96	3	11	82	67	43,709	8,116	35,776	9,793	69,507	
Grand Rapids.....	1914	7	549	3	89	457	933	355,485	81,052	196,663	68,322	529,858	
	1909	5	396	2	33	361	415	282,685	36,022	132,167	45,101	333,911	
Jackson.....	1914	4	92	3	7	82	163	44,347	5,855	37,210	14,663	75,510	
	1909	4	84	3	5	76	68	18,275	4,004	31,408	6,894	62,800	
Kalamazoo.....	1914	4	203	7	3	193	178	183,904	4,160	86,410	55,853	175,355	
	1909	3	149	5	2	142	172	136,402	2,250	55,504	18,730	118,854	
Lansing.....	1914	11	141	14	7	120	180	57,077	4,274	53,459	28,417	119,244	
	1909	8	127	13	4	110	94	45,756	2,305	45,203	16,817	101,365	
Muskegon.....	1914	3	69	2	9	53	65	20,931	7,816	17,623	15,690	46,019	
	1909	3	52	1	5	46	46	20,617	2,808	19,389	9,371	38,100	
Port Huron.....	1914	3	112	2	8	102	120	73,109	4,280	36,398	17,934	87,232	
	1909	4	115	4	12	99	95	58,963	11,510	27,253	13,315	80,460	
Saginaw.....	1914	5	164	7	14	143	156	100,008	10,028	52,650	26,523	135,695	
	1909	4	169	3	10	156	107	86,414	5,371	54,743	23,973	117,225	
MINNESOTA.....													
	1914	188	4,024	203	327	3,494	4,264	2,708,038	332,555	1,640,388	855,443	4,100,464	
	1909	158	3,338	187	235	2,916	2,919	1,821,191	210,323	1,132,851	514,354	2,855,738	
Duluth.....	1914	15	423	12	57	854	371	425,348	57,894	173,209	110,819	480,882	
	1909	10	369	10	44	315	299	360,313	38,394	130,022	59,677	352,325	
Mankato.....	1914	3	40	5	1	34	91	28,925	750	12,892	5,958	34,460	
Minneapolis.....	1914	50	1,614	54	129	1,431	1,667	966,388	142,893	727,840	347,243	1,743,943	
	1909	43	1,237	47	78	1,112	859	505,667	86,832	445,329	194,147	1,084,260	
St. Paul.....	1914	23	1,079	19	96	964	927	677,216	96,516	437,282	235,119	1,036,597	
	1909	22	939	23	86	830	812	474,508	66,527	325,544	128,409	773,832	
Winona.....	1914	4	62	4	5	53	90	23,700	2,640	20,054	17,954	50,073	
	1909	3	77	1	4	72	67	36,175	3,271	21,324	12,378	57,433	
MISSISSIPPI.....													
	1914	27	688	32	49	607	680	347,909	53,270	214,578	122,244	540,209	
	1909	30	603	32	42	529	821	332,302	38,925	162,983	80,973	440,579	
Jackson.....	1914	3	84	4	8	72	85	41,500	13,166	27,765	7,985	69,957	
MISSOURI.....													
	1914	177	6,757	144	714	5,899	7,941	4,332,735	725,766	2,609,155	1,349,790	6,316,206	
	1909	171	6,113	152	523	5,438	5,727	3,407,985	428,263	2,135,742	892,197	4,904,249	
Joplin.....	1914	6	140	3	16	121	178	106,185	18,213	45,893	19,449	111,355	
	1909	7	134	5	12	117	162	82,234	9,334	38,969	19,972	97,476	
Kansas City.....	1914	35	2,160	19	352	1,789	2,886	1,378,004	361,210	855,626	476,574	2,217,291	
	1909	32	1,890	29	116	1,735	1,686	988,318	105,122	725,721	333,342	1,656,680	
St. Joseph.....	1914	6	324	4	38	282	286	157,185	31,902	109,067	20,392	281,854	
	1909	6	269	3	34	232	270	156,484	33,036	85,280	37,447	218,017	

## POWER LAUNDRIES.

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POWER LAUNDRIES—STATISTICS FOR STATES AND FOR CITIES HAVING, IN 1914, 10,000 INHABITANTS OR MORE:  
1914 AND 1909—Continued.

Table 14—Continued.

STATE AND CITY.	Census year.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Amount received for work done.
			Total.	Proprietors and firm members.	Salaried employees.	Wage earners (average number).						
MISSOURI—Continued.												
St. Louis.....	1914	42	2,800	19	210	2,571	2,764	\$1,755,148	\$205,207	\$1,192,580	\$608,706	\$2,589,167
	1909	40	2,722	16	202	2,414	2,158	1,577,465	232,133	945,419	360,925	2,100,604
Sedalia.....	1909	3	97	4	8	85	160	67,124	3,192	28,561	15,350	85,494
Springfield.....	1914	5	210	4	17	189	118	137,345	18,370	64,901	30,724	175,499
	1909	8	152	9	12	131	195	77,488	8,300	38,180	18,983	117,728
MONTANA.....												
	1914	42	920	37	64	819	999	954,412	88,745	599,489	226,350	1,266,552
	1909	26	723	24	47	652	851	677,089	64,365	457,643	154,426	935,260
Butte.....	1914	4	242	.....	16	226	271	365,518	25,805	172,979	53,205	327,148
	1909	4	235	.....	14	221	181	277,214	25,838	170,619	52,841	342,463
Great Falls.....	1914	3	127	2	10	115	89	64,766	13,660	83,494	36,725	195,617
	1909	3	72	1	8	63	75	71,217	8,553	45,333	7,319	95,014
Missoula.....	1914	3	80	7	8	65	90	50,800	10,695	49,168	18,213	104,778
	1909	3	90	6	8	76	69	42,050	10,470	42,449	17,677	100,419
NEBRASKA.....												
	1914	74	1,490	85	102	1,303	1,779	995,413	133,644	613,189	372,039	1,517,924
	1909	76	1,314	84	120	1,110	1,510	871,600	117,467	436,778	255,620	1,197,374
Grand Island.....	1914	3	63	2	2	59	95	68,991	1,485	26,129	15,192	58,754
Lincoln.....	1914	6	239	5	20	214	167	122,880	26,978	100,242	67,452	253,071
	1909	7	224	7	16	201	312	128,105	15,919	82,439	58,051	213,800
Omaha.....	1914	19	670	15	52	603	804	436,995	77,445	310,015	178,666	725,221
	1909	17	573	17	81	475	566	336,913	85,044	190,854	112,628	538,539
NEVADA.....												
	1914	12	150	13	13	124	247	191,392	17,410	88,054	40,374	216,193
	1909	5	119	2	12	105	149	166,131	15,900	82,129	26,913	165,037
NEW HAMPSHIRE.....												
	1914	74	864	86	18	760	1,269	440,499	13,291	324,754	132,476	728,733
	1909	61	706	82	16	608	988	303,013	9,531	223,555	80,027	518,660
Concord.....	1914	5	118	6	4	108	135	44,410	4,966	43,800	12,859	100,967
	1909	4	137	6	4	127	128	46,525	2,756	40,903	12,905	85,525
Dover.....	1914	4	30	6	.....	24	46	11,905	.....	8,218	4,568	18,292
	1909	3	23	6	.....	17	41	10,700	.....	5,928	3,799	18,500
Keene.....	1914	3	54	4	2	48	55	18,087	915	18,547	4,035	35,414
	1909	3	48	4	2	42	47	24,650	920	17,100	4,765	31,368
Laconia.....	1914	3	30	2	1	27	34	23,836	520	11,147	6,444	31,896
Manchester.....	1914	13	176	13	4	159	251	83,287	2,748	83,820	31,206	170,053
	1909	13	132	20	6	106	171	43,714	2,977	40,669	11,341	104,227
Nashua.....	1914	9	86	15	2	69	161	27,185	1,024	29,295	16,326	77,178
	1909	5	56	7	2	47	57	18,870	1,248	20,165	8,605	49,528
Portsmouth.....	1914	5	58	6	.....	52	82	29,700	.....	19,739	7,708	44,123
	1909	3	45	3	.....	42	49	26,095	.....	13,335	7,558	34,442
NEW JERSEY.....												
	1914	142	4,024	124	258	3,642	5,103	2,876,920	289,618	1,648,758	655,556	3,590,739
	1909	112	3,334	101	249	2,984	3,917	2,137,243	209,409	1,185,926	439,861	2,779,277
Asbury Park.....	1914	3	47	5	.....	42	59	16,575	.....	15,041	4,475	28,202
	1909	3	52	2	3	47	145	43,946	2,700	17,584	8,546	39,716
Atlantic City.....	1914	5	83	3	10	70	154	82,803	7,022	27,832	8,535	68,768
	1909	3	98	2	5	91	74	91,320	3,623	31,150	9,800	82,758
Bridgeton.....	1914	3	26	4	.....	22	60	15,485	.....	8,210	2,069	18,130
Camden.....	1914	6	132	4	11	117	150	73,135	11,412	45,515	17,803	114,923
	1909	8	168	9	7	152	332	66,070	5,328	52,992	18,475	149,292
East Orange.....	1909	3	28	2	3	23	21	17,790	1,916	10,186	5,169	21,800
Elizabeth.....	1914	3	234	4	15	215	125	177,028	12,038	109,612	45,295	218,517
	1909	3	198	2	9	187	117	213,800	10,660	87,649	20,462	180,908
Hoboken.....	1914	3	122	1	7	114	185	106,286	10,191	60,589	33,235	151,834
	1909	3	121	1	5	115	170	121,330	5,716	60,496	37,677	139,646
Jersey City.....	1914	16	804	15	47	742	1,168	700,580	86,821	347,612	142,607	788,328
	1909	17	871	14	69	788	957	520,316	66,983	272,051	141,935	681,132
Newark.....	1914	18	646	10	48	588	815	466,705	49,631	277,612	107,069	632,286
	1909	17	470	17	41	412	535	259,358	29,167	186,111	56,241	419,293
Orange.....	1914	3	126	1	8	117	122	54,490	5,048	64,093	19,113	110,265
	1909	3	126	4	7	115	105	49,779	4,384	60,726	8,221	106,590
Passaic.....	1914	4	227	4	8	215	102	115,510	5,795	83,773	15,016	117,638
	1909	4	148	3	5	140	133	130,185	5,580	51,438	9,332	85,760
Paterson.....	1914	12	228	7	21	200	400	133,598	24,016	92,079	58,813	219,279
	1909	6	123	5	14	104	260	57,567	10,182	47,109	13,788	117,532
Plainfield.....	1914	3	66	2	6	58	95	41,640	4,162	23,920	8,860	44,810
	1909	4	62	3	3	56	145	50,300	1,126	20,695	11,496	58,600
Trenton.....	1914	5	232	4	19	209	242	210,249	21,169	81,436	42,469	185,169
	1909	5	244	4	19	221	225	171,735	20,362	77,185	23,204	182,388
NEW MEXICO.....												
	1914	15	274	14	20	240	396	205,065	29,444	104,732	49,719	280,373
	1909	8	168	6	16	146	146	164,187	12,455	65,243	20,481	156,419

## MANUFACTURES.

POWER LAUNDRIES—STATISTICS FOR STATES AND FOR CITIES HAVING, IN 1914, 10,000 INHABITANTS OR MORE:  
1914 AND 1909—Continued.

Table 14—Continued.

STATE AND CITY.	Census year.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Amount received for work done.
			Total.	Proprietors and firm members.	Salaried employees.	Wage earners (average number).						
NEW YORK.....	1914	614	15,489	638	1,100	13,751	19,288	10,354,297	1,135,867	6,062,092	2,821,811	14,804,964
	1909	593	14,063	523	962	12,578	12,037	7,316,808	869,183	5,212,128	1,856,703	11,446,663
Albany.....	1914	15	353	9	36	308	428	269,605	45,291	136,387	61,950	354,047
	1909	10	295	8	20	267	245	185,060	17,067	109,463	35,781	252,800
Amsterdam.....	1914	6	60	9	1	50	139	34,508	260	25,615	8,533	70,640
	1909	3	29	4	3	22	39	16,686	1,240	8,771	2,864	20,245
Auburn.....	1914	8	118	12	3	103	161	62,450	2,040	36,757	22,080	98,243
	1909	7	90	10	1	79	72	59,602	468	29,674	11,337	77,570
Binghamton.....	1914	7	161	8	8	145	125	96,065	10,178	60,027	18,780	129,911
	1909	10	151	10	2	139	160	47,910	1,720	52,760	19,747	115,920
Buffalo.....	1914	29	1,605	25	167	1,413	1,666	1,292,704	170,529	669,994	265,314	1,532,612
	1909	25	1,333	16	141	1,176	1,212	852,197	96,987	438,933	154,427	1,044,945
Cohoes.....	1914	3	93	4	5	84	70	30,268	5,530	31,017	7,561	55,184
Cortland.....	1914	3	63	5	2	56	96	37,125	983	19,544	7,762	53,445
Elmira.....	1914	4	137	6	7	124	108	115,117	4,425	45,009	26,882	105,001
	1909	6	131	10	10	111	100	52,187	7,120	32,293	14,757	83,586
Fulton.....	1914	3	14	3	—	11	29	10,975	—	3,463	2,381	14,388
Geneva.....	1914	4	51	7	—	44	46	46,332	—	19,593	11,172	45,065
	1909	3	38	5	1	32	73	10,803	520	13,000	3,992	30,507
Glens Falls.....	1914	4	55	4	9	42	41	30,304	5,339	16,322	6,149	38,450
	1909	3	90	6	6	32	32	32,205	2,400	40,223	4,697	73,536
Gloversville.....	1914	8	74	10	1	63	247	33,479	468	33,039	18,394	72,356
	1909	4	62	8	—	54	50	30,015	—	19,613	12,463	52,140
Hornell.....	1914	3	58	5	3	50	161	37,172	2,132	21,939	11,761	51,290
Ithaca.....	1914	5	131	4	4	123	95	103,640	2,995	50,999	16,281	110,692
	1909	3	89	3	3	83	48	83,505	1,330	25,613	4,844	69,041
Jamestown.....	1914	7	112	13	7	92	156	88,646	8,433	46,212	13,347	104,783
	1909	6	80	8	—	72	85	29,241	—	28,357	7,543	65,677
Johnstown.....	1914	4	20	7	—	13	75	12,169	—	6,567	5,369	21,327
	1909	3	18	4	—	14	35	8,600	—	5,975	2,337	13,080
Kingston.....	1914	5	43	5	2	36	119	33,735	720	14,252	5,557	29,650
	1909	4	42	5	8	29	55	21,725	4,840	12,527	4,277	31,447
Little Falls.....	1914	3	23	5	—	18	5	20,550	—	9,300	4,190	26,261
Lockport.....	1914	3	41	2	5	34	69	44,965	4,040	11,180	4,958	30,275
Middletown.....	1914	5	39	5	3	31	83	28,262	1,424	13,353	9,157	35,264
Mount Vernon.....	1909	4	131	3	6	122	110	82,544	6,842	63,501	17,204	138,003
New York.....	1914	149	7,180	118	503	5,559	8,730	4,354,648	597,732	2,936,220	1,427,651	6,897,649
	1909	126	6,273	106	516	5,651	5,042	2,807,375	516,706	2,422,324	859,964	5,362,722
Manhattan Borough.....	1914	68	4,395	46	330	4,019	5,381	2,454,496	378,938	1,766,770	877,735	4,324,720
	1909	68	4,031	47	347	3,637	3,373	1,842,102	365,641	1,589,035	570,675	3,622,886
Bronx Borough.....	1914	12	207	10	16	181	318	160,550	12,628	100,173	35,205	255,119
	1909	6	54	6	8	40	125	26,188	3,780	21,480	5,060	41,770
Brooklyn Borough.....	1914	62	2,376	58	147	2,171	2,746	1,651,551	181,803	995,050	478,458	2,128,635
	1909	44	2,034	46	155	1,833	1,395	872,306	143,159	744,919	252,497	1,566,495
Queens Borough.....	1914	7	202	4	10	188	285	88,051	24,363	74,227	38,253	189,175
	1909	8	154	7	6	141	149	66,779	4,126	66,890	31,732	131,572
Newburgh.....	1914	6	52	7	2	43	143	41,935	936	20,592	8,099	55,241
	1909	4	39	4	—	35	44	49,710	—	16,109	5,021	37,583
Niagara Falls.....	1909	3	130	2	9	119	103	81,386	6,067	52,008	15,982	107,275
Ogdensburg.....	1914	3	42	2	1	39	44	30,350	800	12,585	8,550	40,400
	1909	3	34	3	4	27	21	28,722	1,318	6,647	3,286	16,612
Olean.....	1914	3	51	6	9	36	43	44,676	7,656	13,758	8,885	42,972
	1909	3	34	7	1	26	33	10,550	520	9,474	3,242	20,671
Oswego.....	1914	6	49	7	1	41	47	28,147	1,560	17,160	6,457	48,032
	1909	5	28	7	2	19	25	10,988	664	11,104	6,051	25,659
Poughkeepsie.....	1914	10	140	11	4	125	105	64,862	3,432	71,972	18,967	142,463
	1909	10	159	12	8	139	93	50,834	5,668	71,024	16,037	131,907
Rensselaer.....	1914	4	26	4	—	22	60	24,005	—	9,320	5,379	27,485
	1909	3	27	3	1	23	31	15,271	1,300	10,768	2,890	22,437
Rochester.....	1914	18	1,460	9	120	1,331	1,565	841,957	101,157	587,716	304,654	1,310,458
	1909	16	1,003	10	54	939	1,008	662,170	45,191	380,519	183,134	834,484
Rome.....	1914	6	48	8	2	38	76	33,937	2,080	14,254	7,624	39,805
	1909	4	26	5	1	20	47	17,665	750	7,329	2,079	17,368
Schenectady.....	1914	7	95	7	—	88	226	175,229	—	41,593	21,571	83,154
	1909	7	101	9	3	89	106	147,725	1,038	38,353	19,210	94,400
Syracuse.....	1914	27	544	29	40	475	639	480,467	29,658	217,778	93,404	477,429
	1909	23	411	22	29	360	432	220,201	21,174	151,944	56,860	355,700
Troy.....	1914	16	322	19	20	283	453	178,296	14,548	125,367	53,602	277,527
	1909	15	932	15	23	894	586	285,542	38,080	400,857	100,602	675,060
Utica.....	1914	15	217	20	16	181	253	173,516	11,873	84,790	26,948	216,517
	1909	12	214	17	20	177	238	128,680	15,592	66,153	29,743	171,404
Watertown.....	1914	5	78	6	5	67	58	111,916	5,096	24,154	9,584	60,717
	1909	7	73	9	2	62	53	75,358	2,736	19,563	7,317	56,882
Yonkers.....	1909	3	109	3	7	99	58	161,348	10,244	36,199	19,204	88,053
NORTH CAROLINA.....	1914	59	1,335	56	114	1,165	1,359	798,650	100,692	361,497	240,947	1,026,358
	1909	43	924	43	69	812	1,000	424,642	53,519	211,519	107,865	559,949
Asheville.....	1914	4	186	4	10	172	90	93,800	10,360	57,702	27,462	136,810
	1909	3	138	2	11	125	78	42,110	6,584	37,251	20,875	77,462
Charlotte.....	1914	6	226	5	40	181	259	211,203	34,780	55,684	77,051	219,555
	1909	3	202	1	13	188	215	87,173	14,865	50,562	19,825	130,008
Raleigh.....	1914	3	115	—	9	106	77	48,716	9,470	39,944	22,987	91,497
	1909	3	76	2	8	66	66	35,875	6,096	15,455	13,275	48,299

## POWER LAUNDRIES.

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POWER LAUNDRIES—STATISTICS FOR STATES AND FOR CITIES HAVING, IN 1914, 10,000 INHABITANTS OR MORE:  
1914 AND 1909—Continued.

Table 14—Continued.

Table 14—Continued.		Census year.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Amount received for work done.
STATE AND CITY.				Total.	Proprietors and firm members.	Salaried employees.	Wage earners (average number).						
NORTH CAROLINA—Continued.													
Wilmington.....		1914	4	102	3	6	93	85	\$52,960	\$7,368	\$30,825	\$10,653	\$76,737
		1909	3	90	2	7	81	55	29,943	6,601	17,940	8,519	52,607
Winston-Salem.....		1914	3	72	6	1	65	65	49,125	910	20,537	10,120	64,071
NORTH DAKOTA.....													
		1914	30	478	31	38	409	725	552,458	34,852	207,953	142,804	592,843
		1909	34	503	39	30	434	606	444,817	20,366	188,126	102,412	548,175
Fargo.....		1914	5	122	2	16	104	166	162,983	15,512	54,636	43,636	153,102
		1909	6	128	6	3	119	189	142,672	2,520	51,093	25,116	131,636
Grand Forks.....		1914	3	126	3	10	113	83	119,482	8,880	46,530	26,288	120,155
		1909	4	128	4	10	114	79	82,499	8,218	44,708	23,734	126,941
OHIO.....													
		1914	296	8,434	309	860	7,265	10,909	5,066,162	839,455	3,157,194	1,361,546	7,822,491
		1909	253	6,773	277	603	5,893	7,431	3,802,957	512,958	2,259,179	871,722	5,388,954
Akron.....		1914	10	232	12	15	205	264	168,433	12,810	97,280	41,777	224,672
		1909	7	151	7	15	129	105	73,104	13,238	53,280	14,531	111,632
Ashtabula.....		1914	3	57	1	3	53	92	67,959	2,739	22,912	13,317	43,936
Canton.....		1914	5	183	7	29	147	206	155,728	24,873	63,593	22,718	194,878
		1909	3	132	3	7	122	111	86,270	3,302	54,158	17,020	86,148
Cincinnati.....		1914	25	1,712	19	199	1,494	2,011	794,293	194,568	639,736	261,111	1,553,889
		1909	18	1,414	14	144	1,256	1,381	715,436	125,717	489,780	197,187	1,144,366
Cleveland.....		1914	27	1,818	15	275	1,528	1,962	948,720	292,041	703,067	306,600	1,810,406
		1909	22	1,461	11	196	1,254	1,298	619,429	185,324	529,549	149,452	1,255,547
Columbus.....		1914	17	695	15	67	613	948	465,396	63,076	250,748	81,441	631,896
		1909	11	538	9	58	471	437	417,499	37,118	183,009	88,547	485,402
Dayton.....		1914	7	432	4	47	431	694	435,723	49,685	181,613	54,651	430,663
		1909	6	336	3	32	301	379	296,619	31,076	116,517	37,065	288,663
East Liverpool.....		1914	3	87	10	-----	77	46	53,960	-----	33,476	8,411	67,012
		1909	3	65	10	3	50	75	44,600	3,154	21,420	9,407	60,734
Findlay.....		1914	3	42	3	3	36	67	33,145	1,610	14,639	7,606	30,015
Hamilton.....		1914	4	57	4	7	46	59	29,318	4,970	18,081	7,214	43,392
		1909	5	69	4	11	54	138	30,101	8,584	19,238	9,822	53,576
Lima.....		1914	3	114	4	11	99	180	70,715	6,796	41,811	15,550	98,124
Lorain.....		1909	4	60	1	7	52	103	63,981	5,724	21,894	10,088	52,995
Mansfield.....		1914	3	55	5	1	49	87	48,111	425	18,986	7,408	43,425
		1909	4	64	5	2	57	59	25,281	1,092	17,877	6,276	38,811
Marion.....		1914	3	64	3	2	59	55	22,465	853	24,202	5,850	51,434
		1909	4	47	4	5	38	36	34,166	2,601	13,654	5,664	46,929
Newark.....		1914	3	64	2	7	55	130	38,125	5,148	20,331	11,101	56,490
Piqua.....		1909	3	34	4	-----	30	32	27,475	-----	11,848	6,586	28,000
Portsmouth.....		1914	3	90	2	9	79	105	46,910	7,830	30,761	12,662	71,977
Sandusky.....		1914	3	82	6	2	74	100	34,125	1,030	33,050	9,719	71,360
Springfield.....		1914	5	108	4	9	95	97	72,600	11,876	36,749	14,672	80,456
		1909	4	100	6	7	87	85	38,850	7,174	27,484	14,469	61,800
Steubenville.....		1914	3	117	6	7	104	95	68,200	5,850	42,180	10,696	105,480
		1909	3	92	6	3	83	115	42,900	1,336	26,825	10,246	58,020
Tiffin.....		1914	3	32	5	1	26	34	15,539	780	10,352	3,538	27,980
		1909	3	21	4	-----	17	25	6,350	-----	5,874	2,488	13,272
Toledo.....		1914	16	499	7	66	426	830	292,681	63,520	203,344	74,233	565,203
		1909	19	380	20	25	335	650	184,984	25,063	139,930	52,073	330,336
Warren.....		1914	4	63	5	1	57	81	42,125	1,273	30,681	7,100	70,983
		1909	3	48	5	3	40	45	32,444	2,448	16,910	5,802	40,334
Youngstown.....		1914	5	274	6	19	249	278	187,025	16,502	132,205	65,114	286,136
		1909	4	242	5	10	227	161	162,860	7,332	74,288	24,426	159,185
Zanesville.....		1914	4	117	1	16	100	814	88,127	15,196	37,490	17,318	97,256
		1909	3	102	1	7	94	255	84,685	5,004	31,063	18,574	78,643
OKLAHOMA.....													
		1914	101	1,632	115	101	1,416	1,766	986,074	100,677	663,320	359,743	1,669,721
		1909	93	1,301	105	95	1,101	1,484	781,531	75,690	487,995	200,679	1,197,078
Enid.....		1909	3	60	1	8	60	56	34,349	9,005	25,380	11,680	64,443
McAlester.....		1914	3	42	-----	6	36	75	20,822	4,658	17,009	9,447	42,077
Muskogee.....		1914	7	148	7	8	133	171	59,980	8,572	59,545	41,286	152,934
		1909	6	181	4	24	153	121	38,709	19,172	66,015	20,997	168,252
Oklahoma City.....		1914	5	330	7	28	295	252	199,648	20,518	149,713	64,531	373,912
		1909	9	235	8	27	200	193	177,490	18,459	94,756	39,489	229,703
Shawnee.....		1914	3	38	3	1	34	41	57,834	1,580	18,868	7,736	50,327
Tulsa.....		1914	6	170	7	12	151	174	71,190	13,120	83,939	47,169	196,152
		1909	5	82	6	4	72	109	50,725	3,685	39,322	10,807	81,344
OREGON.....													
		1914	78	1,969	74	150	1,745	2,338	1,669,317	174,382	961,677	385,166	2,146,868
		1909	53	1,674	51	163	1,467	1,585	991,017	160,547	684,767	263,593	1,569,982
Portland.....		1914	31	1,320	20	115	1,185	1,514	1,155,750	135,241	681,399	259,111	1,489,862
		1909	20	1,131	13	132	986	1,019	681,331	132,048	474,216	191,742	1,130,701
Salem.....		1914	3	59	3	4	52	111	42,575	4,640	24,738	5,154	45,991
PENNSYLVANIA.....													
		1914	390	11,831	447	974	10,410	12,602	8,160,248	884,289	4,236,358	1,848,109	10,225,004
		1909	385	10,915	436	840	9,639	10,730	6,685,132	680,843	3,486,993	1,449,517	8,331,834
Allentown.....		1914	5	86	6	5	75	91	58,501	3,186	27,079	6,336	69,092
		1909	5	49	6	4	39	50	78,690	1,012	15,232	4,605	35,640
Altoona.....		1914	3	60	4	2	54	44	37,159	624	22,876	8,485	52,159
		1909	4	74	5	4	65	118	30,690	933	22,940	6,370	47,324
Beaver Falls.....		1914	3	59	2	3	54	46	23,516	3,536	21,861	10,452	47,202
		1909	3	39	2	3	34	34	16,193	3,172	12,748	5,164	33,160

## MANUFACTURES.

POWER LAUNDRIES—STATISTICS FOR STATES AND FOR CITIES HAVING, IN 1914, 10,000 INHABITANTS OR MORE:  
1914 AND 1909—Continued.

Table 14—Continued.		Census year.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Amount received for work done.
STATE AND CITY.				Total.	Proprietors and firm members.	Salaries employees.	Wage earners (average number).						
PENNSYLVANIA—Continued.													
Rethlehem.....	1909	3	33	2	3	23	32	\$17,262	\$1,680	\$9,158	\$2,298	\$21,633	
Easton.....	1909	3	81	2	13	66	53	25,096	12,840	17,826	6,972	58,756	
Erie.....	1914	7	219	3	12	204	227	85,036	10,540	92,911	28,435	177,678	
	1909	7	166	5	10	151	217	120,729	7,978	56,176	22,013	119,124	
Harrisburg.....	1914	8	363	11	36	316	335	293,729	29,010	119,222	77,761	281,558	
	1909	9	328	12	14	302	266	182,563	9,426	94,636	33,141	188,100	
Johnstown.....	1914	3	114	5	6	103	99	47,420	4,208	39,069	16,457	80,264	
Lancaster.....	1914	3	161	3	14	144	211	139,684	11,899	57,209	10,256	150,159	
	1909	3	156	4	16	136	162	159,210	10,972	53,519	17,603	136,573	
Lebanon.....	1914	3	42	4	3	35	80	26,550	978	11,395	5,795	28,151	
	1909	4	99	4	28	67	45	46,454	6,602	23,119	7,448	49,516	
Meadville.....	1914	3	52	5	5	42	50	21,840	3,700	15,684	9,562	37,925	
	1909	3	32	4	2	26	39	12,694	900	7,770	12,131	28,157	
New Castle.....	1909	3	71	4	5	62	115	46,044	3,888	21,672	13,909	50,010	
Philadelphia.....	1914	91	4,277	113	330	3,834	3,533	2,733,662	278,000	1,603,193	801,356	3,974,099	
	1909	92	4,148	95	276	3,777	2,983	1,873,668	222,189	1,372,765	607,307	3,208,369	
Pittsburgh.....	1914	25	2,169	11	254	1,904	2,467	1,713,036	283,446	854,984	324,777	2,035,245	
	1909	26	1,677	16	193	1,668	2,058	1,522,448	203,770	695,139	288,712	1,668,441	
Pottsville.....	1914	3	71	4	1	66	61	31,996	1,800	22,850	10,475	43,506	
	1909	3	54	4	—	50	58	30,685	—	15,623	4,257	31,600	
Reading.....	1914	12	175	12	8	155	294	109,655	6,016	62,266	24,128	135,477	
	1909	8	159	8	9	142	205	108,780	5,659	53,436	13,514	96,940	
Scranton.....	1914	4	350	4	66	280	293	280,069	47,832	93,567	35,718	296,474	
	1909	4	295	5	15	275	152	228,399	9,694	102,028	22,701	235,486	
Sunbury.....	1914	3	20	3	—	17	34	5,502	—	7,882	2,079	18,910	
	1909	3	25	4	—	21	20	21,890	—	7,006	1,995	19,781	
Warren.....	1914	3	37	6	2	29	62	32,339	882	10,275	5,561	26,317	
Wilkes-Barre.....	1914	7	195	5	15	175	234	131,392	13,072	63,242	20,668	143,249	
	1909	7	197	9	11	177	144	102,393	5,984	57,241	15,955	119,618	
Williamsport.....	1914	7	113	9	4	100	136	64,080	3,504	33,985	18,234	78,232	
	1909	7	117	7	4	106	135	54,836	1,765	29,168	9,885	68,415	
York.....	1914	7	143	9	4	130	188	142,600	2,636	60,643	19,406	136,770	
	1909	7	145	9	13	123	184	132,510	14,028	46,078	17,272	130,574	
RHODE ISLAND.....													
	1914	66	1,402	70	140	1,192	1,829	684,194	135,280	544,455	230,604	1,260,942	
	1909	53	1,211	70	65	1,076	1,368	612,524	61,761	461,284	158,443	1,019,404	
Lincoln.....	1914	3	13	2	—	11	65	7,750	—	6,344	2,155	14,500	
Newport.....	1914	7	127	8	8	111	187	51,331	6,800	50,088	16,608	84,248	
	1909	5	135	6	7	122	77	60,395	6,241	36,555	18,122	73,162	
Pawtucket.....	1914	6	185	10	10	165	265	63,934	6,153	76,958	27,612	151,421	
	1909	5	166	7	5	154	175	80,550	3,796	65,960	27,566	142,500	
Providence.....	1914	27	915	25	115	775	860	503,169	117,860	348,184	156,088	856,110	
	1909	24	739	23	51	660	767	393,689	50,319	304,511	91,718	669,435	
Warwick.....	1909	3	22	5	—	17	40	9,475	—	5,543	3,592	14,408	
Woonsocket.....	1914	8	64	10	3	51	168	27,672	1,900	23,992	12,108	64,020	
	1909	5	59	8	1	50	100	24,395	780	20,882	5,824	52,415	
SOUTH CAROLINA.....													
	1914	23	588	24	47	517	604	265,692	37,213	146,556	95,898	422,212	
	1909	24	440	26	41	373	591	183,975	30,344	87,428	51,765	269,112	
Charleston.....	1914	4	166	2	18	146	140	83,222	11,609	47,689	32,070	120,900	
	1909	3	123	2	14	107	108	50,430	10,820	20,844	13,930	68,000	
Columbia.....	1914	3	149	2	7	140	82	53,228	8,900	31,047	22,310	108,678	
Greenville.....	1914	3	79	7	8	64	115	34,016	5,103	20,713	11,046	49,592	
	1909	3	65	6	7	52	87	24,625	5,564	14,798	8,485	43,300	
SOUTH DAKOTA.....													
	1914	26	454	29	25	400	520	352,747	24,559	190,492	112,555	477,474	
	1909	28	447	33	28	386	519	336,276	22,864	167,966	81,770	423,092	
Aberdeen.....	1914	3	114	6	10	98	88	55,644	11,457	42,527	22,843	107,032	
	1909	4	90	5	5	80	121	92,105	4,404	29,834	11,212	73,700	
Sioux Falls.....	1914	3	93	4	4	85	93	79,603	3,128	44,789	28,326	123,147	
	1909	3	73	3	4	66	95	41,300	3,670	28,885	10,201	64,898	
TENNESSEE.....													
	1914	67	2,898	62	256	2,580	3,107	1,558,029	214,819	908,671	437,720	2,296,797	
	1909	63	2,392	68	175	2,149	1,863	1,283,583	137,680	673,533	297,691	1,643,407	
Chattanooga.....	1914	6	379	7	26	346	273	160,349	22,047	121,932	45,333	297,562	
	1909	6	335	7	30	298	245	177,396	18,529	100,055	26,988	251,693	
Jackson.....	1914	3	64	1	9	54	149	14,610	5,778	13,015	9,633	38,620	
	1909	3	55	5	1	49	45	25,283	960	16,662	10,213	46,095	
Knoxville.....	1914	8	327	8	24	295	302	105,469	18,042	88,821	72,307	224,389	
	1909	7	257	9	30	218	215	122,699	16,199	77,722	16,387	156,410	
Memphis.....	1914	8	1,042	2	67	973	1,239	673,517	66,826	402,426	166,931	869,847	
	1909	8	892	5	50	837	680	509,660	57,236	282,750	149,116	634,289	
Nashville.....	1914	6	636	6	100	530	497	370,115	76,664	163,349	73,943	565,471	
	1909	10	535	12	47	476	381	300,498	31,433	125,378	60,239	364,494	

## POWER LAUNDRIES.

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POWER LAUNDRIES—STATISTICS FOR STATES AND FOR CITIES HAVING, IN 1914, 10,000 INHABITANTS OR MORE:  
1914 AND 1909—Continued.

STATE AND CITY.	Census year.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Amount received for work done.
			Total.	Proprietors and firm members.	Salaries employees.	Wage earners (average number).						
TEXAS.....	1914	185	5,254	221	428	4,005	6,063	\$3,443,394	\$485,562	\$2,117,949	\$1,071,622	\$5,521,841
	1909	127	3,514	150	291	3,073	3,195	2,003,200	261,198	1,293,801	471,421	3,220,315
Amarillo.....	1914	3	82	.....	9	73	85	72,173	9,526	45,533	18,603	110,384
Austin.....	1914	4	118	5	5	108	104	33,653	4,217	41,795	19,223	93,267
	1909	3	96	2	23	71	94	40,750	14,512	24,664	14,118	68,757
Beaumont.....	1914	3	167	3	25	139	214	97,112	32,216	69,245	23,763	238,926
	1909	3	146	3	26	117	98	99,891	28,126	59,249	24,551	175,527
Dallas.....	1914	10	637	4	83	550	815	375,626	109,058	253,621	108,862	755,897
	1909	6	400	6	30	364	350	204,407	32,212	146,026	50,965	401,091
Denison.....	1914	4	64	6	1	57	38	29,102	1,500	23,830	11,309	52,546
	1909	3	44	4	4	36	30	20,723	3,474	16,735	6,238	33,684
El Paso.....	1914	8	289	6	24	259	260	237,423	26,673	101,770	63,341	280,046
	1909	5	185	6	19	160	155	121,274	23,139	53,754	25,987	167,532
Fort Worth.....	1914	7	400	6	33	361	336	334,262	30,788	171,172	53,007	423,867
	1909	9	366	9	16	341	217	253,242	16,440	157,197	54,042	328,558
Galveston.....	1914	3	255	.....	41	214	175	195,610	55,447	96,811	51,487	308,764
	1909	3	145	.....	19	126	82	61,041	19,384	56,805	17,746	136,578
Houston.....	1914	8	648	6	83	559	640	422,509	89,851	266,630	226,024	748,419
	1909	9	463	7	34	422	291	269,782	31,141	224,395	73,503	499,705
Paris.....	1914	3	125	17	5	103	135	109,500	7,236	42,082	22,866	101,232
San Antonio.....	1914	9	472	4	31	437	577	313,898	33,270	212,728	73,668	462,348
	1909	8	360	6	53	301	205	226,910	46,838	103,287	41,458	339,007
Waco.....	1914	5	244	6	5	233	164	73,310	5,950	111,625	47,743	191,398
	1909	5	214	7	2	205	145	57,557	768	74,402	23,210	133,300
Wichita Falls.....	1914	3	89	2	5	82	80	80,485	3,849	42,479	19,825	105,444
UTAH.....	1914	36	1,197	31	96	1,070	1,926	1,213,651	108,567	580,473	321,923	1,367,433
	1909	22	811	16	57	738	969	500,276	72,717	342,592	143,041	794,091
Ogden.....	1914	8	169	8	13	148	239	186,283	15,502	82,467	66,502	202,018
	1909	4	117	1	6	110	167	104,187	8,709	53,388	28,650	111,577
Salt Lake City.....	1914	12	846	9	80	757	1,400	903,093	89,655	412,938	215,514	998,749
	1909	7	605	3	48	554	701	333,169	60,824	258,183	97,319	610,330
VERMONT.....	1914	41	441	49	14	378	518	233,682	7,628	146,014	63,214	362,041
	1909	32	342	37	6	299	349	144,393	3,024	101,745	32,217	243,753
Burlington.....	1914	5	98	6	4	88	76	34,017	2,536	36,660	10,270	87,080
	1909	3	75	3	2	70	53	12,621	728	21,123	5,643	46,876
Rutland.....	1914	5	56	6	4	46	73	46,605	1,656	22,189	9,724	48,302
	1909	3	34	4	1	29	27	18,440	416	13,135	2,646	27,238
VIRGINIA.....	1914	71	1,965	76	195	1,694	1,918	1,055,132	167,266	524,337	285,809	1,453,012
	1909	57	1,523	63	109	1,351	1,199	835,607	89,569	414,377	173,097	1,003,191
Lynchburg.....	1914	3	210	1	18	191	109	85,085	26,602	58,608	31,836	183,113
	1909	3	166	1	19	146	80	59,754	20,100	35,119	17,475	105,401
Norfolk.....	1914	8	344	7	57	280	266	316,118	50,549	82,156	44,403	301,480
	1909	6	227	3	21	203	182	232,850	20,727	67,021	25,030	186,228
Petersburg.....	1914	3	61	4	2	55	54	41,218	1,940	19,086	7,008	44,540
	1909	3	53	6	5	42	50	19,720	1,612	13,907	3,726	34,140
Portsmouth.....	1914	3	69	3	5	61	53	26,820	4,240	14,740	9,515	45,500
Richmond.....	1914	10	559	11	68	480	460	253,802	47,988	167,856	96,341	429,599
	1909	9	430	13	20	397	257	170,460	13,364	141,114	55,932	295,814
Roanoke.....	1914	6	151	6	8	137	188	94,852	10,052	46,336	24,123	109,151
	1909	4	92	4	7	81	84	60,065	7,152	24,440	11,105	65,833
Staunton.....	1914	3	46	6	2	38	85	19,400	900	8,780	2,794	20,000
WASHINGTON.....	1914	192	3,744	205	241	3,298	4,022	2,838,858	265,045	1,895,258	655,300	4,251,620
	1909	172	3,731	195	272	3,264	3,084	2,165,715	275,057	1,757,646	546,545	3,814,825
Aberdeen.....	1914	4	69	7	5	57	91	25,430	3,036	34,378	12,200	68,784
Bellingham.....	1914	4	80	6	5	69	105	78,826	3,078	43,239	15,348	81,643
	1909	6	122	7	1	114	108	73,187	720	52,833	8,178	105,452
Everett.....	1914	6	107	6	6	95	109	108,590	8,990	47,939	25,390	107,012
	1909	7	103	7	8	88	89	65,097	6,004	45,232	13,079	113,691
Hoquiam.....	1914	3	55	4	2	49	83	34,736	1,240	28,300	9,064	55,100
Seattle.....	1914	49	1,545	32	112	1,401	1,241	1,146,093	121,003	840,928	258,013	1,837,555
	1909	51	1,520	53	140	1,327	883	1,008,293	146,009	765,079	227,095	1,697,325
Spokane.....	1914	17	585	13	45	527	659	514,385	59,945	321,255	99,089	745,375
	1909	23	646	23	48	575	660	399,621	47,455	328,245	109,240	680,391
Tacoma.....	1914	17	385	15	20	350	383	206,389	22,590	198,817	66,079	415,836
	1909	14	426	15	26	385	245	118,562	31,668	189,328	60,906	399,739
Walla Walla.....	1914	3	86	1	15	70	95	64,930	10,461	34,497	12,253	91,035
	1909	4	111	2	6	103	60	52,733	5,658	57,713	15,728	95,603

## MANUFACTURES.

POWER LAUNDRIES—STATISTICS FOR STATES AND FOR CITIES HAVING, IN 1914, 10,000 INHABITANTS OR MORE:  
1914 AND 1909—Continued.

Table 14—Continued.													
STATE AND CITY.	Census year.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.				Primary horse-power.	Capital.	Salaries.	Wages.	Cost of materials.	Amount received for work done.	
			Total.	Proprietors and firm members.	Salaries employees.	Wage earners (average number).							
WEST VIRGINIA.....	1914 1909	44 43	929 793	35 41	67 73	827 679	1,305 1,048	\$689,640 415,216	\$61,417 54,819	\$358,301 242,922	\$135,119 102,057	\$785,782 581,865	
Charleston.....	1914 1909	3 4	115 86	..... .....	10 11	105 75	129 90	41,827 26,505	10,216 8,460	44,502 31,361	15,242 10,185	98,613 62,801	
Clarksburg.....	1914 1909	4 3	86 100	..... 1	6 6	93 75	176 160	140,643 76,787	6,833 4,870	49,408 32,990	11,951 8,555	97,500 62,748	
Fairmont.....	1914	3	81	.....	6	75	160	76,787	4,870	32,990	8,555	62,748	
Huntington.....	1914 1909	4 3	89 62	5 4	7 3	77 55	92 78	28,650 14,698	6,140 2,680	34,303 18,196	16,650 6,851	78,992 41,208	
Parkersburg.....	1914 1909	3 3	129 106	2 1	10 12	117 93	100 84	110,741 52,242	8,217 7,852	46,863 32,128	24,505 13,355	104,217 78,658	
Wheeling.....	1914 1909	3 5	132 185	..... 4	12 9	120 172	129 185	103,683 97,755	12,833 8,602	57,759 62,936	18,200 24,417	127,513 147,039	
WISCONSIN.....	1914 1909	150 147	2,645 2,332	161 159	219 159	2,265 2,014	3,175 2,373	1,794,553 1,379,730	201,026 127,038	939,939 736,557	526,486 331,907	2,353,183 1,840,327	
Appleton.....	1914 1909	3 3	28 21	4 3	1 .....	23 18	36 33	15,550 9,745	1,500 .....	7,480 7,412	3,780 3,558	19,123 18,220	
Deloit.....	1914 1909	4 3	57 49	7 4	..... 2	50 43	53 50	53,251 43,905	..... 624	21,412 13,476	14,329 5,924	44,957 40,943	
Green Bay.....	1914 1909	3 3	66 50	5 2	7 4	54 50	78 63	40,394 17,043	5,798 2,448	21,604 17,788	8,507 8,914	53,938 40,143	
Janesville.....	1914 1909	6 4	60 56	8 4	2 .....	59 50	122 62	29,584 40,716	701 1,366	23,344 20,652	18,871 10,330	52,235 57,336	
Kenosha.....	1914 1909	4 4	124 132	1 1	11 9	112 122	129 59	64,999 48,882	10,008 6,892	46,831 43,624	18,203 23,031	122,734 120,702	
La Crosse.....	1914 1909	4 3	97 123	5 6	1 8	91 109	85 102	115,947 98,725	1,140 5,308	43,934 44,426	21,703 20,792	90,724 122,158	
Madison.....	1914 1909	3 3	18 24	6 5	..... .....	12 19	35 42	28,950 22,350	..... .....	2,953 5,818	3,644 3,851	17,495 16,813	
Manitowoc.....	1914 1909	3 3	18 24	6 5	..... .....	12 19	35 42	28,950 22,350	..... .....	2,953 5,818	3,644 3,851	17,495 16,813	
Milwaukee.....	1914 1909	33 33	1,133 920	24 30	111 73	998 817	1,422 811	592,941 444,529	109,602 64,940	443,904 326,223	222,873 112,919	1,012,804 712,054	
Oshkosh.....	1914 1909	3 3	45 51	4 2	2 4	39 45	110 41	32,992 33,048	500 3,020	15,379 14,492	9,262 7,539	37,270 37,696	
Racine.....	1914 1909	4 5	98 82	5 6	11 4	82 72	108 74	84,190 32,875	12,181 3,687	35,085 25,990	14,063 11,308	98,237 59,740	
Sheboygan.....	1914 1909	3 3	49 158	4 .....	8 18	37 140	57 144	28,900 194,250	5,527 24,005	14,061 58,795	9,388 31,660	39,471 168,719	
Superior.....	1914	4	61	1	10	50	38	36,092	9,256	18,472	9,110	51,368	
Wausau.....	1914	3	61	1	10	50	38	36,092	9,256	18,472	9,110	51,368	
WYOMING.....	1914 1909	18 14	212 203	22 20	5 18	185 171	322 319	174,290 99,573	6,440 10,392	147,728 78,911	64,501 38,238	238,048 216,847	
Cheyenne.....	1914 1909	3 3	69 84	1 3	4 6	64 75	113 35	89,740 40,083	5,240 5,400	34,426 34,070	31,651 14,399	87,171 91,483	



# SHIPBUILDING, INCLUDING BOAT BUILDING.

By EVERETT SPRING.

## GENERAL STATISTICS.

**Scope and character of the industry.**—The statistics for this industry cover establishments engaged in the construction and repair of vessels, ships, and boats of all classes. Data for shipyards operated by the Federal Government were also collected, but are shown separately and are not included in the totals for the industry. A number of establishments, not properly classified with the shipbuilding industry, also incidentally built or repaired ships or boats, but the amount contributed to the industry by these establishments was small, and unless so stated, the tables do not include statistics relating to them. As generally used in this report the term "ship" or "vessel" refers to craft of 5 gross tons measurement or over, while craft under 5 gross tons are designated as boats.

In compiling the statistics for the shipbuilding industry the Bureau of the Census distinguishes between establishments in the steel shipbuilding branch of the industry and those engaged in wooden shipbuilding and boat building. The first group is divided into (1) establishments doing construction work on steel vessels of 5 gross tons or over and (2) establishments doing repair work only on steel vessels. The second group, wooden shipbuilding and boat building, is divided into four classes: (1) Establishments engaged in new construction work on wooden vessels of 5 gross tons or over; (2) establishments doing repair work only, on wooden vessels; (3) establishments engaged mainly in building or repairing boats of less than 5 gross tons; and (4) establishments making masts, spars, oars, and ship accessories, and those engaged in rigging vessels. These divisions and groups are used for purposes of comparison as they are as nearly as possible the same for all censuses.

Although the statistics for the industry for 1914 were collected in connection with the quinquennial census of manufactures for that year, they were not published at the time, owing to the inadvisability of making public the information during the war, but the figures were used by the Shipping Board and the other war agencies of the Government; later a further canvass was made of the industry, to cover the operations of the year 1916, for the use of the various war boards, and these statistics have been incorporated in the present bulletin.

**Summary for the industry: 1916 and 1914.**—Table 1 presents a comparative summary of the principal statistics of establishments in the shipbuilding industry, by branches and by subbranches, for the years 1916 and 1914.

A marked feature of the industry shown by the table is the large increase in the capital invested. The increase for the year 1916, as compared with 1914, was \$87,157,931, or 55.8 per cent. In steel shipbuilding establishments the increase in capital for the two-year period was \$76,805,484, or 57.9 per cent, while the wooden branch of the industry increased \$10,352,447, or 44.3 per cent, in the same period. The great majority of the establishments engaged in the construction of steel vessels are large plants, with costly and expensive equipment, whereas a large proportion of the establishments building wooden vessels are small yards engaged in repair work or the building of vessels of comparatively small tonnage.

As compared with the total number of establishments reported for the entire shipbuilding industry, those plants constructing and repairing steel ships form but a small proportion, 6.9 per cent in 1914 and 9.6 per cent in 1916. The relative importance of this branch of the industry, however, is shown by the fact that in 1914 and 1916 it gave employment to 75.3 per cent and 77.6 per cent, respectively, of the total number of wage earners, and contributed 74.7 per cent and 77.8 per cent, respectively, of the aggregate value of products.

In considering the extent of that branch of the industry engaged in constructing wooden vessels, it is well to remember that there are many establishments making small boats, masts, spars, and oars, or in rigging vessels, the figures for which are included in the totals for wooden shipbuilding and boat building.

The relative importance of the various divisions of the shipbuilding industry may be seen from the relation that the value of the products for each branch bears to the total products of the industry, which were \$88,682,071 in 1914 and \$185,852,192 in 1916. In steel shipbuilding the value of products of establishments doing new construction work, on vessels launched and on the ways, was 61.3 per cent

of the total for all products of the industry in 1914 and 64.1 per cent in 1916, while the percentage of products for those establishments doing repair work only was 13.4 per cent in 1914 and 13.7 per cent in 1916. The proportion of the total value of products contributed by establishments in wooden shipbuilding engaged in new construction was 11.8 per cent in 1914 and 13.4 per cent in 1916; by those establishments doing repair work only, 8.2 per cent in 1914 and 4.7 per cent in 1916; and by those establishments

constructing boats of less than 5 gross tons and manufacturing masts, spars, and oars, and in rigging vessels, 5.4 per cent in 1914 and 4.1 per cent in 1916.

There were 907 establishments in 1914 and 827 in 1916 engaged mainly in new construction on ships and boats of all classes. These gave employment to 78.2 per cent of all persons employed in 1914 and 82.4 per cent in 1916, and likewise reported 78 per cent of the value of all products in 1914 and 81.3 per cent in 1916.

Table 1

	Census year.	SHIPBUILDING, INCLUDING BOAT BUILDING.								
		Aggregate.	Steel vessels.			Wooden, including boat building.				
			Total.	New construction on vessels of 5 tons and over.	Repair work only.	Total.	Vessels.		Boats under 5 tons—construction and repairs.	Masts, spars, oars, and rigging vessels.
							New construction on vessels of 5 tons and over.	Repair work only.		
Number of establishments.....	1916	1,137	109	72	37	1,028	339	248	416	25
	1914	1,147	79	46	33	1,068	273	179	588	28
Persons engaged.....	1916	78,333	59,802	51,230	8,572	18,531	10,395	4,932	2,949	255
	1914	48,667	35,664	29,848	5,816	13,003	5,472	4,571	2,749	211
Proprietors and firm members.....	1916	1,103	35	15	20	1,068	364	216	461	27
	1914	1,192	24	7	17	1,168	332	152	657	27
Salaried employees.....	1916	4,733	3,530	3,073	457	1,203	667	311	213	12
	1914	2,986	2,132	1,699	433	854	338	310	197	9
Wage earners (average number).....	1916	72,497	56,237	48,142	8,095	16,260	9,364	4,405	2,275	216
	1914	44,489	33,508	28,142	5,366	10,981	4,802	4,109	1,885	175
Primary horsepower.....	1916	115,333	83,706	63,888	19,818	31,627	14,148	11,180	5,770	529
	1914	156,059,938	132,712,414	112,630,389	20,082,025	23,347,524	9,579,832	8,946,660	4,614,178	206,854
Capital.....	1916	\$243,217,869	\$209,517,898	\$190,391,607	\$19,126,291	\$33,699,971	\$17,394,882	\$10,204,049	\$5,403,418	\$697,622
	1914	156,059,938	132,712,414	112,630,389	20,082,025	23,347,524	9,579,832	8,946,660	4,614,178	206,854
Salaries and wages.....	1916	67,526,623	53,367,771	43,816,888	9,550,883	14,158,852	8,253,659	3,830,740	1,891,039	183,414
	1914	37,689,965	28,752,404	23,520,313	5,232,091	8,937,561	3,940,934	3,360,143	1,502,905	133,579
Salaries.....	1916	6,950,722	5,347,648	4,672,207	675,441	1,603,074	915,618	437,173	234,205	16,078
	1914	4,758,809	3,586,612	2,801,588	785,024	1,172,197	525,032	414,155	223,061	9,949
Wages.....	1916	60,575,901	48,020,123	39,144,681	8,875,442	12,555,778	7,338,041	3,393,567	1,656,834	167,336
	1914	32,931,155	25,165,792	20,718,725	4,447,067	7,765,364	3,415,902	2,945,988	1,279,844	123,630
Paid for contract work.....	1916	4,092,789	3,911,332	3,268,575	642,757	181,457	118,012	55,193	8,147	105
	1914	531,779	442,135	206,194	235,941	89,644	34,094	39,257	15,717	576
Rent and taxes (including internal revenue).....	1916	1,123,144	668,965	419,286	249,679	454,179	151,623	189,218	104,474	8,864
	1914	1,123,144	668,965	419,286	249,679	454,179	151,623	189,218	104,474	8,864
Cost of materials.....	1916	89,268,830	69,961,072	61,957,923	8,003,149	19,307,758	11,700,716	3,160,413	4,241,368	205,261
	1914	38,596,970	29,269,727	25,825,634	3,444,093	9,327,243	4,691,331	2,517,787	1,956,374	161,751
Value of products.....	1916	185,852,192	144,619,111	119,155,601	25,463,510	41,233,081	24,902,116	8,763,825	7,059,017	508,123
	1914	88,682,071	66,216,692	54,339,778	11,876,914	22,465,379	10,427,681	7,255,951	4,413,757	367,990
Value added by manufacture (value of products less cost of materials).....	1916	96,583,362	74,658,039	57,197,678	17,460,361	21,925,323	13,201,400	5,603,412	2,817,649	302,862
	1914	50,085,101	36,946,965	28,514,144	8,432,821	13,138,136	5,736,350	4,738,164	2,457,383	206,239

<sup>1</sup> Includes 4 establishments making boats under 5 tons, and 1 making masts, spars, oars, and the rigging of vessels.

<sup>2</sup> Not reported.

**Comparison with earlier censuses.**—Table 2 summarizes the statistics of the establishments engaged in shipbuilding for each census from 1879 to 1916, inclusive, and gives percentages of increase or decrease from census to census. The figures for 1869, comparable with corresponding items given in the table for 1879 and later years, were: Number of establishments, 964; wage earners (average number), 13,915; primary horsepower, 5,136; capital, \$11,463,076; salaries and wages, \$7,073,400; cost of materials, \$9,379,980; value of products, \$21,483,967; and value added by manufacture, \$12,103,987. The financial figures for 1869 are given in currency, which at the time was worth only about 80 cents gold to

the dollar. For strict comparison, therefore, these figures should be reduced about 20 per cent.

While there was a decrease in the number of establishments from 1914 to 1916, all of the other items except number of proprietors and firm members showed a decided increase for this period. During the 37 years covered by the table, the average number of wage earners increased from 21,345 to 72,497, or 239.6 per cent, while the total value of products, including repair work, increased from \$36,800,327 to \$185,852,192, or 405 per cent. The capital invested in the industry shows a large increase during the period, from \$20,979,874 in 1879 to \$243,217,869 in 1916, or nearly twelffold, and the average capital

per establishment increased from \$9,589 to \$213,912. These increases indicate that, as the construction of steel ships has grown in importance, capital has become far more necessary to the development of the industry than was the case when ships were constructed of wood only. In 1879 the value of products

was nearly twice the capital invested, the ratio being 1.75. In 1899, for the first time, the value of products was less than the capital invested and the ratio of value of products to the capital decreased until 1914, when it was 0.57, with an increase to 0.76 in 1916, due largely to the increase in values incident to the war.

Table 2

	SHIPBUILDING, INCLUDING BOAT BUILDING.							PER CENT OF INCREASE. <sup>1</sup>					
	1916	1914	1909	1904	1899	1889	1879	1914-1916	1909-1914	1904-1909	1899-1904	1889-1899	1879-1889
Number of establishments	1,137	1,147	1,353	1,097	1,107	1,006	2,188	-0.9	-15.2	23.3	-0.9	10.0	-54.0
Persons engaged	78,333	48,667	44,949	54,424	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	61.0	8.3	-17.4			
Proprietors and firm members	1,103	1,192	1,463	1,190	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	-7.5	-18.5	22.9			
Salaried employees	4,733	2,986	2,980	2,480	1,405	( <sup>2</sup> )	( <sup>2</sup> )	58.5	0.2	20.2	76.5		
Wage earners (average number)	72,497	44,489	40,506	50,754	46,747	22,143	21,345	63.0	9.8	-20.2	8.6	111.1	( <sup>3</sup> )
Primary horsepower	( <sup>4</sup> )	115,333	88,063	78,127	61,797	18,192	( <sup>2</sup> )		31.0	12.7	26.4	239.7	
Capital	\$243,217,869	\$150,059,938	\$126,118,489	\$121,623,700	\$77,341,001	\$27,262,892	\$20,979,874	55.8	23.7	3.7	57.3	183.7	29.9
Salaries and wages	67,526,623	37,689,965	29,303,132	32,580,828	26,831,975	14,278,819	12,713,813	79.2	28.6	-10.1	21.4	87.9	12.3
Salaries	6,950,722	4,758,809	4,035,446	3,339,741	2,007,237	( <sup>2</sup> )	( <sup>2</sup> )	46.1	17.9	20.8	66.4		
Wages	60,575,901	32,931,156	25,267,686	29,241,087	24,824,738	( <sup>2</sup> )	( <sup>2</sup> )	83.9	30.3	-13.6	17.8	80.7	2.9
Paid for contract work	4,062,789	531,779	1,185,579	674,418	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	669.6	-55.1	75.8			
Rent and taxes (including internal revenue)	( <sup>4</sup> )	1,123,144	835,656	564,519	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )		34.4				
Cost of materials	89,268,830	38,596,970	31,214,358	37,463,179	33,474,898	16,521,246	19,736,358	131.3	23.7	-16.7	11.9	102.6	-16.3
Value of products	185,852,192	88,652,071	73,360,315	82,769,239	74,532,277	38,065,410	36,800,327	109.6	20.9	-11.4	11.1	95.8	8.4
Value added by manufacture (value of products less cost of materials)	96,583,362	50,055,101	42,145,957	45,306,060	41,057,381	21,544,164	17,063,969	92.8	18.8	-7.0	10.3	90.6	26.3

<sup>1</sup> A minus sign (-) denotes decrease.<sup>2</sup> Figures not available.<sup>3</sup> Figures not strictly comparable.<sup>4</sup> Not reported.<sup>5</sup> Exclusive of internal revenue.

Government shipyards.—Table 3 presents, for 1916, 1914, 1909, and 1904, a comparative summary of the more important statistics of shipbuilding establishments operated by the Federal Government.

Table 3

	GOVERNMENT SHIPYARDS.			
	1916	1914	1909	1904
Number of establishments	30	13	12	9
Persons engaged	23,528	18,328	16,425	13,932
Salaried employees	3,404	2,543	1,888	1,728
Wage earners (average number)	20,064	15,785	14,537	12,204
Primary horsepower	( <sup>1</sup> )	82,498	32,525	13,933
Salaries and wages	\$22,232,813	\$16,428,497	\$15,817,330	\$11,853,239
Salaries	4,451,210	3,336,830	2,646,806	2,130,475
Wages	17,781,103	13,091,667	12,070,524	9,722,764
Cost of materials	14,077,767	11,103,113	9,520,109	6,731,931
Value of work done during the year	33,674,491	29,217,265	25,872,033	17,265,469
New vessels (5 gross tons and over)	8,811,863	4,612,311	1,977,977	3,610,270
Vessels launched	3,376,710	1,385,131	150,141	( <sup>2</sup> )
Steel vessels	3,021,645	1,298,511	34,106	( <sup>2</sup> )
Steam	2,922,566	966,502	( <sup>2</sup> )	( <sup>2</sup> )
Unrigged	99,079	332,009	34,106	( <sup>2</sup> )
Wooden vessels	355,065	86,620	122,035	( <sup>2</sup> )
Steam	127,702	31,346	68,104	( <sup>2</sup> )
Motor	138,912	30,097	( <sup>2</sup> )	( <sup>2</sup> )
Unrigged	88,451	25,177	53,931	( <sup>2</sup> )
Vessels building but not launched	5,435,153	3,227,180	1,821,836	( <sup>2</sup> )
Steel	5,361,448	3,101,014	1,821,836	( <sup>2</sup> )
Wooden	73,705	126,166	( <sup>2</sup> )	( <sup>2</sup> )
Boats (less than 5 gross tons)	351,339	175,730	153,346	376,250
All other products including repair work	29,511,289	24,429,224	23,740,710	13,278,949

<sup>1</sup> Not reported.<sup>2</sup> Figures not available.

From 1914 to 1916 the number of shipbuilding plants owned by the Federal Government more than doubled, increasing from 13 to 30. In 1916, 21 of these plants were operated by the Office of Chief of Engineers of the War Department, 8 by the Bureau of Yards and Docks of the Navy Department, and 1 by the Bureau of Lighthouses of the Department of Commerce.

During 1916 these establishments gave employment to an average of 20,064 wage earners, an in-

crease of 4,279, or 27.1 per cent, over the number employed in 1914, and representing 21.7 per cent of the total number employed in shipyards, private and Government combined. The value of all work done in the Government shipyards in 1916 was \$33,674,491, an increase of \$9,457,226, or 32.4 per cent of the amount reported in 1914.

Nearly every item shows increases for the different periods covered by the table, but the increases are considerably greater between 1914 and 1916 than during any other period, the only decreases during this period being in the value of work done during the year on unrigged steel vessels and on wooden vessels not launched during 1916. The table shows that in 1916 there were constructed and launched steel vessels, both steam and unrigged, to the value of \$3,021,645, and wooden vessels, steam, motor, and unrigged, valued at \$355,065. This is an increase over 1914 of \$1,723,134, or 132.7 per cent, for the former class, and \$268,445, or 309.9 per cent, for the latter class.

The work performed at the several Government shipyards consisted of the repair of naval vessels, the construction of ships, boats, signal apparatus, and buoy lanterns, and the building and repair of machinery, etc. It was impossible to make a separate presentation of each kind of work done and the figures presented in Table 3 include, therefore, statistics that do not properly pertain to shipbuilding or repairing. The value of "all other products including repair work," amounted to \$29,511,289 in 1916 and represented 76.3 per cent of the total value of the work done during the year. The corresponding percentages for 1904, 1909, and 1914 were 76.9, 91.8, and 83.6, respectively.

This table brings out the fact that between 1914 and 1916 there was a great increase in the construction of steel vessels propelled by steam and a decrease in that of unrigged steel vessels. In 1916 the value of the former class of vessels amounted to \$2,922,566, an increase over 1914 of \$1,956,064, or 202.4 per cent. The decrease in the value of the latter class of vessels was \$232,930, or 70.2 per cent. The largest relative increases are shown in the value of wooden vessels constructed and launched in 1916, the increases over 1914 being as follows: Wooden vessels propelled by steam, 307.4 per cent; propelled by motors, 361.5 per cent; unrigged, 251.3 per cent.

The Government shipyards did a large amount of construction work in 1916 on vessels not launched during the year, the value of such work amounting to

\$5,435,153. More than 98 per cent of it was done on steel vessels, and nearly all on battleships, destroyers, and submarines, in the three navy yards located at Brooklyn, N. Y., Portsmouth, N. H., and Mare Island, Calif.

Summary by states.—Tables 4 and 5 summarize the more important statistics of the shipbuilding industry by states for 1916 and 1914, respectively, the states being arranged according to the value of the products. Percentages of increase or decrease for the period from 1914 to 1916 are given in the former table, and for each five-year period from 1899 to 1914 in the latter table. Some of the states, for which data can not be shown separately without disclosing the operations of individual establishments, ranked higher than some of those named in the tables.

Table 4	SHIPBUILDING, INCLUDING BOAT BUILDING: 1916.												PER CENT OF INCREASE. <sup>1</sup>			
	STATE.	Number of establishments.	Wage earners.			Value of products.			Value added by manufacture.			Wage earners (average number) 1914-1916.	Value of products 1914-1916.	Value added by manu- facture, 1914- 1916.		
			Average number.	Per cent distribution.	Rank.	Amount.	Per cent distribution.	Rank.	Amount.	Per cent distribution.	Rank.					
															1916	1914
United States.....	1,137	72,497	100.0	-----	-----	\$185,852,192	100.0	-----	-----	\$96,583,362	100.0	-----	-----	63.0	109.6	92.8
New York.....	200	9,928	13.7	1	2	31,357,645	16.9	1	1	19,827,785	20.5	1	1	63.4	120.9	119.8
New Jersey.....	76	7,777	10.7	2	1	20,311,529	10.9	2	2	10,407,893	10.8	2	2	23.0	71.2	67.2
California.....	50	7,113	9.8	4	6	19,777,911	10.6	3	5	9,533,318	9.9	3	4	105.8	144.1	106.5
Pennsylvania.....	30	6,440	8.9	5	4	16,816,071	9.1	4	3	7,563,887	7.8	4	3	34.9	76.3	59.5
Maryland.....	50	5,326	7.3	6	8	12,205,557	6.6	5	8	6,360,889	6.6	5	8	115.8	170.0	162.9
Massachusetts.....	85	4,373	6.0	8	5	12,185,354	6.6	6	4	5,252,662	5.4	8	5	-----	-----	-----
Ohio.....	32	5,059	7.0	7	7	12,160,007	6.5	7	7	6,083,255	6.3	6	7	75.7	157.8	116.6
Washington.....	57	3,744	5.2	9	9	10,829,812	5.8	9	9	4,323,909	4.5	10	9	159.3	249.2	104.5
Connecticut.....	31	1,312	1.8	13	16	6,217,274	3.3	10	12	4,080,719	5.2	9	12	155.3	273.3	276.4
Michigan.....	55	2,225	3.1	10	10	5,637,103	3.0	11	10	2,517,300	2.6	11	10	76.4	99.7	61.0
Maine.....	100	1,857	2.6	12	11	4,882,131	2.6	12	11	2,306,326	2.4	12	11	-----	-----	-----
Delaware.....	9	1,938	2.7	11	12	4,328,002	2.3	13	14	1,732,165	1.8	14	16	-----	-----	-----
Wisconsin.....	30	1,250	1.7	15	13	3,826,847	2.1	14	13	2,214,902	2.3	13	14	79.9	205.1	175.9
Oregon.....	26	1,003	1.4	17	22	2,915,346	1.6	15	21	1,304,030	1.4	16	20	-----	-----	-----
Louisiana.....	26	1,306	1.8	14	14	2,606,767	1.4	16	16	1,672,215	1.6	15	15	-----	-----	-----
Florida.....	57	1,172	1.6	16	17	1,795,519	1.0	17	17	886,326	0.9	18	17	-----	-----	-----
Rhode Island.....	14	616	0.8	18	15	1,523,614	0.8	18	15	1,122,480	1.2	17	13	-----	-----	-----
Alabama.....	8	541	0.7	20	18	1,048,578	0.6	19	25	650,303	0.7	19	23	16.6	823.4	277.6
Illinois.....	18	598	0.8	19	19	760,307	0.4	20	18	492,244	0.5	20	18	-----	-----	-----
Texas.....	14	250	0.3	21	21	515,972	0.3	21	20	306,448	0.3	21	22	48.8	9.0	57.3
Indiana.....	10	184	0.2	24	20	463,069	0.2	22	19	172,154	0.2	25	19	-18.2	-8.5	-27.9
Georgia.....	7	216	0.3	22	33	454,390	0.2	23	34	236,448	0.2	22	34	-----	-----	-----
West Virginia.....	7	202	0.3	23	23	308,872	0.2	24	24	172,450	0.2	24	25	-----	-----	-----
Mississippi.....	18	118	0.2	28	28	304,578	0.2	25	28	184,909	0.2	23	28	-----	-----	-----
Kentucky.....	17	168	0.2	25	26	279,168	0.2	26	26	138,849	0.1	28	26	25.9	59.2	-----
Minnesota.....	28	115	0.2	29	24	269,256	0.1	27	22	150,173	0.2	26	24	-8.0	-15.1	-5.9
North Carolina.....	12	141	0.2	27	27	183,640	0.1	29	27	144,988	0.2	27	27	-----	-----	-----
Iowa.....	10	26	( <sup>2</sup> )	32	25	83,199	( <sup>2</sup> )	30	23	38,200	( <sup>2</sup> )	30	21	-----	-----	-----
New Hampshire.....	6	17	( <sup>2</sup> )	35	32	47,952	( <sup>2</sup> )	31	29	35,131	( <sup>2</sup> )	31	29	-----	-----	-----
Tennessee.....	4	43	0.1	30	29	35,143	( <sup>2</sup> )	33	30	22,577	( <sup>2</sup> )	34	31	-----	-----	-----
Vermont.....	4	25	( <sup>2</sup> )	37	35	33,521	( <sup>2</sup> )	34	35	27,140	( <sup>2</sup> )	33	35	-----	-----	-----
Arkansas.....	4	-----	( <sup>2</sup> )	37	-----	8,945	( <sup>2</sup> )	36	-----	5,145	( <sup>2</sup> )	37	-----	-----	-----	-----
All other States.....	42	7,414	10.2	-----	-----	11,674,113	6.3	-----	-----	5,816,142	6.0	-----	-----	-----	-----	-----

<sup>1</sup> Percentages are based on figures in Table 35; a minus sign (-) denotes decrease. Percentages are omitted where base is less than 100 for wage earners or less than \$100,000 for value of products or value added by manufacture, or where comparable figures can not be given.

<sup>2</sup> Less than one-tenth of 1 per cent.

New York, the most important state in the industry, reported in 1914 nearly twice, and in 1916 just double the number of establishments as Maine, the second state in rank in this respect. In 1914 the seven states next in rank in number of establishments were New Jersey, Massachusetts, Florida, Washington, Michigan, California, and Maryland in the order named; this same order prevailed in 1916, except that Massachusetts supplanted New Jersey in third place, Washington equaled Florida, and Maryland equaled

California. These nine states had 67 per cent of all shipbuilding establishments in 1914, and 64.2 per cent in 1916. Although individually Maryland gained eight establishments and Massachusetts gained one, the nine states combined lost 39 establishments between 1914 and 1916. The states making the largest relative gains in new shipbuilding plants during this period were Louisiana, Maryland, Kentucky, Mississippi, and Oregon. These five states show an increase of 34 establishments.

STATE.	SHIPBUILDING, INCLUDING BOAT BUILDING: 1914.										PER CENT OF INCREASE. <sup>1</sup>								
	Number of establishments.	Wage earners.			Value of products.			Value added by manufacture.			Wage earners (average number).			Value of products.			Value added by manufacture.		
		Average number.	Per cent distribution.	Rank.	Amount.	Per cent distribution.	Rank.	Amount.	Per cent distribution.	Rank.	1909-1914	1909-1909	1899-1904	1909-1914	1909-1909	1899-1904	1909-1914	1909-1909	1899-1904
United States.....	1,147	44,489	100.0		\$88,682,071	100.0		\$50,085,101	100.0		9.8	-20.2	8.6	20.9	-11.4	11.1	18.8	-7.0	10.3
New York.....	207	6,076	13.7	2	14,195,298	16.0	1	9,022,520	18.0	1	7.7	-12.2	15.4	24.3	1.3	30.3	20.4	3.0	31.5
New Jersey.....	85	6,324	14.2	1	11,860,965	13.4	2	6,224,671	12.4	2	20.9	0.1	69.2	34.2	14.3	60.8	35.6	7.5	49.4
Pennsylvania.....	33	4,773	10.7	4	9,539,805	10.8	5	4,742,590	9.5	3	34.1	-45.4	-8.0	54.4	-40.2	-28.7	36.7	-32.6	-29.7
California.....	52	3,457	7.8	6	8,104,033	9.1	5	4,617,449	9.2	4	87.5	.....	.....	96.1	.....	.....	59.5	.....	.....
Ohio.....	29	2,879	6.5	7	4,716,787	5.3	7	2,808,207	5.6	7	-10.0	.....	.....	-16.9	.....	.....	12.6	.....	.....
Maryland.....	42	2,468	5.5	8	4,521,169	5.1	8	2,419,339	4.8	8	37.6	-35.3	7.4	27.9	-22.2	10.3	43.5	-38.8	18.3
Washington.....	64	1,444	3.2	9	3,101,440	3.5	9	2,114,583	4.2	9	94.1	.....	.....	100.1	.....	.....	114.1	.....	.....
Michigan.....	62	1,261	2.8	10	2,822,557	3.2	10	1,563,814	3.1	10	-46.2	17.3	-31.5	-43.9	69.3	-32.9	-38.5	34.3	-15.2
Connecticut.....	37	514	1.2	16	1,665,293	1.9	12	1,323,092	2.6	12	20.4	-78.6	118.4	124.4	-83.7	271.6	209.8	-75.6	220.5
Wisconsin.....	34	695	1.6	13	1,254,088	1.4	13	802,933	1.6	14	-23.3	.....	.....	-34.0	.....	.....	-25.7	.....	.....
Indiana.....	9	225	0.5	20	506,362	0.6	19	238,891	0.5	19	-11.1	-16.2	.....	35.2	-21.5	.....	81.9	-49.0	4.1
Texas.....	14	168	0.4	21	473,524	0.5	20	194,874	0.4	22	.....	.....	.....	.....	-59.5	.....	.....	.....	.....
Minnesota.....	30	125	0.3	24	317,111	0.4	22	159,617	0.3	24	-40.2	-6.7	.....	-16.0	10.2	.....	-27.4	-8.8	72.7
Kentucky.....	11	90	0.2	26	221,788	0.3	26	87,223	0.2	26	-42.7	36.5	10.6	-18.2	79.5	.....	-24.7	12.6	.....
New Hampshire.....	7	14	(2)	32	38,525	(2)	29	26,257	0.1	29	.....	.....	.....	.....	.....	.....	.....	.....	.....
Georgia.....	4	14	(2)	33	15,840	(2)	34	11,503	(2)	34	.....	.....	.....	.....	.....	.....	.....	.....	.....
All other states.....	427	13,962	31.4		25,327,420	28.6		13,727,538	27.4		.....	.....	.....	.....	.....	.....	.....	.....	.....

<sup>1</sup> Percentages are based on figures in Table 35; a minus sign (-) denotes decrease. Percentages are omitted where base is less than 100 for wage earners, or less than \$100,000 for value of products, or value added by manufacture, or where comparable figures cannot be given.

<sup>2</sup> Less than one-tenth of 1 per cent.

In 1916 the value of products for New York, the leading state, equaled 16.9 per cent of the total for the United States, as against 16 per cent in 1914, and exceeded the value of products for New Jersey, the state second in importance, by 54.4 per cent; California, Pennsylvania, Maryland, Massachusetts, Ohio, and Washington ranked next in the order named. New York and New Jersey held the same rank in 1916 as in 1914 and 1909, first and second, respectively. Pennsylvania, which was third in 1914, fell to fourth place in 1916, and Massachusetts, which was fourth in 1914, ranked sixth in 1916. California advanced from eighth place in 1909 to fifth in 1914 and to third in 1916, and Maryland from ninth in 1909 to eighth in 1914 and to fifth in 1916. Ohio and Washington held the same rank in 1916 as in 1914, seventh and ninth, respectively. These eight states combined reported, in 1916, 73 per cent of the total value of products for the industry in the United States, and 71.8 per cent in the value added by manufacture.

An increase of 63 per cent in average number of wage earners was reported for the industry as a whole in 1916 as compared with 1914, and an increase of 9.8 per cent in 1914 as compared with 1909. Of the states shown in Tables 4 and 5, the highest percentages of gain in 1914 were reported for Washington and California, amounting to 94.1 per cent and 87.5 per cent, respectively, while in 1916 Washington, Connecticut, Maryland, and California each showed an increase of more than 100 per cent, while the increase for Oregon was much greater. The states showing decreases in the number of wage earners in 1914 are Michigan, Kentucky, Minnesota, Wisconsin, Indiana, and Ohio; and in 1916, Iowa, Indiana, and Minnesota.

The states reporting reductions in the average number of wage earners also show decreases in the value of products and in value added by manufacture for both 1914 and 1916, except that for 1914, as compared with 1909, Ohio showed an increase of 12.6 per cent in value added by manufacture and Indiana, an increase of 35.2 per cent in value of products and 81.9 per cent in value added by manufacture.

In value of products, the shipbuilding industry in the United States as a whole showed an increase of 109.6 per cent between 1914 and 1916. The percentage of increase was greatest for the state of Oregon, Alabama following with the next largest increase, while of the states shown in Table 4, Connecticut, Washington, and Wisconsin each shows a gain of over 200 per cent. Other states prominent in the shipbuilding industry—California, Maryland, New York, and Ohio—each made a gain of over 100 per cent in value of products.

Coast divisions and inland waters.—Table 6 shows for 1916 and 1914 the more important statistics for the shipbuilding industry as a whole and for each of its branches, by coastal areas and inland waters, designated as North Atlantic, South Atlantic, Gulf, Pacific, Great Lakes, Mississippi River and its tributaries, and Other inland waters.

At both the censuses of 1914 and 1916 over one-half of the aggregate value of all products of the shipbuilding industry was reported by establishments located in the North Atlantic division, which embraces the Atlantic seaboard and the navigable rivers of the New England states, and of New York, New Jersey, Pennsylvania, and Delaware. The value of products in this division for 1916 was \$93,307,475,

as compared with \$48,897,075 for 1914, an increase of \$44,410,400, or 90.8 per cent. The value of work done on steel vessels in this district during 1916 was more than three and a third times greater than the value of work on wooden vessels.

The Pacific division, made up of the states of California, Oregon, and Washington, stands next in rank in value of products. This division has advanced from a position of comparatively small importance to a prominent place in the shipbuilding industry. There was an increase in the total value of products of \$21,983,396, or 190.5 per cent, during the period 1914-1916. Of the total products, \$33,523,069, reported for the industry in this division in 1916, \$26,210,745 was for work on steel vessels, which is nearly three times the amount reported for the same class of products in 1914.

The South Atlantic division includes Maryland, the District of Columbia, Virginia, North Carolina, South Carolina, Georgia, and the east coast of Florida. The total value of shipbuilding in this division aggregated \$25,501,945 in 1916, which was an increase over 1914 of \$12,537,415, or 96.7 per cent.

The shipbuilding industry in the Great Lakes division, which is composed of the territory bordering on the Great Lakes and the St. Lawrence River,

shows remarkable development between 1914 and 1916. In 1914 the value of products for the industry as a whole was \$9,270,488, but in 1916 it had advanced to \$22,094,456, an increase of \$12,823,968, or 138.3 per cent. Steel shipbuilding was by far the more important branch of the industry in both 1914 and 1916, and in the latter year contributed 90.2 per cent of the value of products.

The division designated "Mississippi River and its tributaries" includes establishments located on these rivers, while the Gulf division includes the establishments located on the Gulf of Mexico and on waters tributary to the Gulf, other than the Mississippi River, in the states of Florida, Alabama, Mississippi, Louisiana, and Texas. These two divisions combined reported in 1916 an aggregate of \$10,063,777, an increase over 1914 of \$5,337,732. In both divisions the construction of wooden vessels predominated.

The division "Other inland waters" includes the establishments, chiefly boat-building plants, located on inland lakes or rivers connecting such bodies of water. Establishments located on canals and engaged in the building of canal boats are included in this group. The value of work done in this division, chiefly on small boats, aggregated \$1,361,470 in 1916, as compared with \$1,284,260 in 1914.

Table 6

	Census year.	United States.	COAST DIVISIONS.				INLAND WATERS.		
			North Atlantic.	South Atlantic.	Gulf.	Pacific.	Great Lakes.	Mississippi River and its tributaries.	Other inland waters.
Number of establishments.....	1916	1,137	459	126	90	133	131	101	97
	1914	1,147	485	115	84	137	142	75	109
Steel shipbuilding.....	1916	109	42	14	11	14	19	9	.....
	1914	79	31	9	4	12	16	6	1
New construction.....	1916	72	25	6	7	8	18	8	.....
	1914	46	15	5	3	6	11	6	.....
Repair work only.....	1916	37	17	8	4	6	1	1	.....
	1914	133	16	4	1	6	5	1	1
Wooden shipbuilding and boat building.....	1916	1,028	417	112	79	119	112	92	97
	1914	1,068	454	106	80	125	126	69	108
New construction.....	1916	339	127	42	28	69	22	37	14
	1914	273	102	32	29	57	28	16	9
Repair work only.....	1916	248	87	38	32	20	32	23	16
	1914	179	71	29	24	14	17	18	8
Boats less than 5 gross tons.....	1916	416	187	32	18	27	58	31	63
	1914	588	263	45	27	49	81	36	87
Masts, spars, oars, and the rigging of vessels ..	1916	25	16	.....	1	3	.....	1	4
	1914	28	18	.....	.....	5	.....	1	4
Persons engaged.....	1916	78,333	35,604	14,753	2,697	12,614	9,567	2,419	679
	1914	48,667	25,364	8,213	1,580	5,554	5,570	1,553	833
Steel shipbuilding.....	1916	59,802	27,182	12,915	1,084	9,714	8,324	583	.....
	1914	35,664	18,872	6,727	288	4,441	4,465	460	411
Wooden shipbuilding and boat building.....	1916	18,531	8,422	1,838	1,613	2,900	1,243	1,836	679
	1914	13,003	6,492	1,486	1,292	1,113	1,105	1,093	422
Proprietors and firm members.....	1916	1,103	448	137	77	123	120	102	96
	1914	1,192	492	125	87	149	135	83	121
Steel shipbuilding.....	1916	35	13	9	4	1	8	.....	.....
	1914	24	12	2	3	2	5	.....	.....
Wooden shipbuilding and boat building.....	1916	1,068	435	128	73	122	112	102	96
	1914	1,168	480	123	84	147	130	83	121
Salaried employees.....	1916	4,733	2,442	799	137	631	461	201	62
	1914	2,986	1,760	351	69	340	315	105	56
Steel shipbuilding.....	1916	3,530	1,901	660	64	473	356	76	.....
	1914	2,132	1,266	271	33	273	218	39	32
Wooden shipbuilding and boat building.....	1916	1,203	541	139	73	158	105	125	62
	1914	854	484	80	36	67	97	66	24
Wage earners.....	1916	72,497	32,714	13,817	2,483	11,860	8,986	2,116	521
	1914	44,489	23,122	7,737	1,424	5,065	5,120	1,365	656
Steel shipbuilding.....	1916	56,237	25,268	12,246	1,016	9,240	7,960	507	.....
	1914	33,508	17,594	6,454	252	4,166	4,242	421	379
Wooden shipbuilding and boat building.....	1916	16,260	7,446	1,571	1,467	2,620	1,026	1,609	521
	1914	10,981	5,528	1,283	1,172	899	944	944	277

<sup>1</sup> Includes 4 establishments making boats under 5 tons, and 1 making masts, spars, oars, and the rigging of vessels.



Table 6—Continued.

	Census year.	United States.	COAST DIVISIONS.				INLAND WATERS.		
			North Atlantic.	South Atlantic.	Gulf.	Pacific.	Great Lakes.	Mississippi River and its tributaries.	Other inland waters.
Capital.....	1916	\$243,217,869	\$130,407,981	\$35,444,646	\$6,448,055	\$23,953,175	\$36,024,371	\$4,570,879	\$1,368,762
	1914	156,059,938	84,651,964	25,269,023	1,950,331	13,184,213	26,616,164	2,831,203	1,538,040
Steel shipbuilding.....	1916	209,517,898	113,759,845	32,295,177	4,306,259	24,425,454	32,916,718	1,814,445	.....
	1914	132,712,414	71,211,793	22,863,261	709,988	11,178,169	24,697,843	1,139,909	911,471
Wooden shipbuilding and boat building.....	1916	33,699,971	16,648,136	3,149,469	2,141,796	4,527,721	3,107,653	2,756,434	1,368,762
	1914	23,347,524	13,440,171	2,405,702	1,240,363	2,009,044	1,917,321	1,091,291	646,569
Salaries and wages.....	1916	67,526,623	33,325,236	10,232,832	1,746,410	12,370,558	7,649,783	1,804,818	390,986
	1914	37,689,965	20,688,781	5,355,950	862,965	5,151,170	4,129,986	1,027,998	473,109
Steel shipbuilding.....	1916	53,367,771	26,379,108	9,130,089	726,396	9,851,894	6,711,860	568,424	.....
	1914	28,752,404	15,599,035	4,528,100	249,578	4,295,921	3,436,564	374,166	269,040
Wooden shipbuilding and boat building.....	1916	14,158,852	6,946,128	1,102,743	1,020,014	2,518,664	937,923	1,230,394	396,986
	1914	8,837,561	5,089,746	827,850	613,387	855,255	603,422	653,832	204,069
Salaries.....	1916	6,950,722	3,815,617	1,021,036	185,580	882,818	690,457	292,196	63,018
	1914	4,758,809	2,835,896	453,901	109,950	644,724	478,355	173,563	62,420
Steel shipbuilding.....	1916	5,347,648	2,926,792	899,252	106,203	691,420	566,462	157,519	.....
	1914	3,586,612	2,104,968	347,187	51,264	567,155	373,750	100,789	41,499
Wooden shipbuilding and boat building.....	1916	1,603,074	888,825	121,784	79,377	121,398	123,995	134,677	63,018
	1914	1,172,197	730,928	106,714	58,686	77,569	104,605	72,774	20,921
Wages.....	1916	60,575,901	29,509,619	9,211,796	1,560,830	11,487,740	6,959,326	1,512,622	333,968
	1914	32,931,156	17,852,885	4,602,049	753,015	4,506,452	3,651,631	854,435	410,689
Steel shipbuilding.....	1916	48,020,123	23,452,316	8,230,837	620,193	9,180,474	6,145,398	410,905	.....
	1914	25,168,792	13,494,067	4,180,913	198,314	3,728,766	3,002,814	273,377	227,541
Wooden shipbuilding and boat building.....	1916	12,555,778	6,057,303	980,959	940,037	2,327,266	813,928	1,101,717	333,968
	1914	7,765,364	4,358,818	721,136	554,701	777,686	588,817	581,058	183,148
Paid for contract work.....	1916	4,092,789	3,642,561	9,378	45,067	340,773	42,984	10,045	1,981
	1914	531,779	378,560	3,850	32,013	66,906	6,248	41,298	2,904
Steel shipbuilding.....	1916	3,911,332	3,557,071	.....	37,694	273,702	38,990	3,875	.....
	1914	442,135	316,533	.....	27,115	60,585	.....	37,902	.....
Wooden shipbuilding and boat building.....	1916	181,457	85,490	9,378	7,373	67,071	3,994	6,170	1,981
	1914	89,644	62,027	3,850	4,898	6,321	6,248	3,396	2,904
Cost of materials.....	1916	89,268,830	42,804,947	12,474,463	2,053,328	18,361,812	10,259,172	2,656,660	658,448
	1914	38,596,970	21,402,078	6,308,075	818,894	4,588,205	3,540,673	1,258,203	590,242
Steel shipbuilding.....	1916	69,961,072	32,503,724	11,330,553	924,477	14,889,674	9,416,573	896,071	.....
	1914	29,269,727	16,138,273	5,694,961	90,494	3,748,176	2,792,432	452,873	352,518
Wooden shipbuilding and boat building.....	1916	19,307,758	10,301,223	1,143,910	1,128,851	3,472,138	842,599	1,760,589	658,448
	1914	9,327,243	5,283,805	703,714	728,400	840,029	748,241	805,330	237,724
Value of products.....	1916	185,852,192	93,307,475	25,501,945	5,029,103	33,523,060	22,004,456	5,034,674	1,361,470
	1914	88,682,071	48,897,075	12,964,530	2,102,610	11,639,673	9,270,488	2,623,435	1,284,260
Steel shipbuilding.....	1916	144,610,111	71,967,166	22,694,150	2,055,320	20,210,745	19,918,911	1,772,819	.....
	1914	66,216,692	36,039,370	11,113,526	743,956	9,376,847	7,552,601	1,020,487	679,905
Wooden shipbuilding and boat building.....	1916	41,233,081	21,340,305	2,807,795	2,973,783	7,312,324	2,175,545	3,261,855	1,361,470
	1914	22,465,379	12,857,709	1,851,004	1,668,654	2,162,826	1,717,887	1,002,948	604,355
Work done during the year on new vessels.....	1916	101,531,210	41,770,276	17,013,871	1,683,473	26,335,563	13,101,506	1,560,337	66,184
	1914	42,645,445	22,827,958	8,964,228	1,017,254	5,432,486	3,112,927	1,151,894	38,698
Launched.....	1916	50,424,700	16,967,190	7,918,211	1,203,914	14,097,159	8,811,264	1,395,862	31,100
	1914	27,126,809	13,542,501	4,447,050	975,094	4,134,239	3,054,739	937,773	35,413
Not launched.....	1916	51,106,610	24,803,086	9,095,660	479,559	12,238,404	4,290,242	164,475	35,084
	1914	15,418,636	9,285,457	4,517,178	42,160	1,298,247	58,188	214,121	3,285
Steel vessels.....	1916	85,418,066	34,670,071	15,885,632	282,782	20,797,266	12,703,430	1,078,828	.....
	1914	36,295,458	20,079,151	8,639,307	119,900	4,221,113	6,938,339	697,645	.....
Launched.....	1916	40,156,820	11,361,080	7,443,771	180,811	11,695,697	8,556,913	918,548	.....
	1914	21,540,428	11,162,435	4,074,329	99,900	3,063,024	2,625,398	515,342	.....
Not launched.....	1916	45,261,186	23,308,991	8,441,861	101,971	9,101,569	4,146,517	160,277	.....
	1914	14,755,030	8,916,716	4,464,978	20,000	1,158,089	12,941	182,306	.....
Wooden vessels.....	1916	16,113,204	7,100,205	1,128,239	1,400,691	5,538,297	398,076	481,512	66,184
	1914	6,249,987	2,748,807	424,921	897,354	1,211,373	474,588	454,246	38,698
Launched.....	1916	10,267,880	5,606,110	474,440	1,023,103	2,401,462	254,351	477,314	31,100
	1914	5,686,381	2,380,066	372,721	875,194	1,071,215	429,341	422,431	35,413
Not launched.....	1916	5,845,324	1,494,095	653,799	377,588	3,136,835	143,725	4,198	35,084
	1914	663,606	368,741	52,200	22,160	140,158	45,247	31,815	3,285
Repair work on vessels.....	1916	63,508,514	39,961,717	7,280,250	3,133,266	5,347,079	6,465,800	1,063,853	258,549
	1914	32,835,212	17,527,151	3,280,157	995,385	4,894,438	4,877,278	1,078,064	182,739
Steel vessels.....	1916	44,821,223	28,023,310	5,757,141	1,888,057	3,909,146	(1)	(1)	.....
	1914	20,537,928	9,858,707	2,087,200	(1)	4,033,590	(1)	(1)	.....
Wooden vessels.....	1916	18,687,291	11,938,407	1,523,109	1,245,209	1,437,933	(1)	(1)	256,549
	1914	12,297,284	7,668,444	1,192,957	(1)	860,848	(1)	(1)	182,739
Boats less than 5 gross tons.....	1916	3,739,725	1,638,467	87,692	67,473	298,003	476,024	327,655	844,411
	1914	3,788,689	2,074,313	121,414	69,962	324,276	505,972	163,691	529,061
All other products.....	1916	17,072,743	9,937,015	1,120,132	144,891	1,542,424	2,051,126	2,082,829	194,326
	1914	9,512,725	6,467,653	598,731	20,009	888,473	774,311	229,786	533,762
Value added by manufacture.....	1916	96,583,362	50,502,528	13,027,482	2,975,775	15,161,257	11,835,284	2,378,014	703,022
	1914	50,085,101	27,494,997	6,565,855	1,283,716	6,951,468	5,729,815	1,365,232	694,018
Steel shipbuilding.....	1916	74,658,039	39,463,442	11,363,597	1,130,843	11,321,071	10,502,338	876,748	.....
	1914	38,946,969	19,901,097	5,418,565	343,462	5,628,671	4,760,169	567,614	327,387
Wooden shipbuilding and boat building.....	1916	21,925,323	11,039,086	1,663,885	1,844,932	3,840,186	1,332,946	1,501,266	703,022
	1914	13,138,136	7,593,900	1,147,290	940,254	1,322,797	969,646	797,618	366,631

<sup>1</sup> Figures not shown separately, to avoid disclosure of individual operations.

## MANUFACTURES.

During 1916 the shipbuilding industry gave employment to 72,497 wage earners, as compared with 44,489, in 1914. In 1916 the North Atlantic division reported 45.1 per cent of the total number of wage earners; the South Atlantic, 19.1 per cent; the Pacific, 16.4 per cent; and the Great Lakes, 12.4 per cent. Nearly 80 per cent of the wage earners were engaged in the construction and repair of steel vessels.

Table 7 shows the number of shipbuilding establishments in the United States for 1916 and 1914, dis-

tributed according to the geographic divisions, states, and by coast divisions and inland waters. A number of the states reported establishments classified in two or more of the water divisions. For example, Louisiana reported establishments classified in the "Gulf," "Mississippi River and its tributaries," and "Other inland waters"; and Pennsylvania reported establishments classified in the "North Atlantic," "Great Lakes," "Mississippi River and its tributaries," and "Other inland waters" divisions.

GEOGRAPHIC DIVISION AND STATE.	Census year.	NUMBER OF ESTABLISHMENTS.						
		United States.	Coast divisions.				Inland waters.	
			North Atlantic.	South Atlantic.	Gulf.	Pacific.	Great Lakes.	Mississippi River, etc.
United States.....	1916	1,137	459	126	90	133	131	101
	1914	1,147	485	115	84	137	142	75
New England.....	1916	240	218					22
	1914	252	231					21
Maine.....	1916	100	89					11
	1914	107	97					10
New Hampshire.....	1916	6						6
	1914	7						7
Vermont.....	1916	4						4
	1914	2						2
Massachusetts.....	1916	85	84					1
	1914	84	82					2
Rhode Island.....	1916	14	14					
	1914	15	15					
Connecticut.....	1916	31	31					
	1914	37	37					
Middle Atlantic.....	1916	306	232				39	10
	1914	325	246				44	10
New York.....	1916	200	142				37	21
	1914	207	144				40	23
New Jersey.....	1916	76	74					2
	1914	85	83					2
Pennsylvania.....	1916	30	16				2	10
	1914	33	19				4	10
East North Central....	1916	145					89	33
	1914	156					95	28
Ohio.....	1916	32					15	16
	1914	29					17	9
Indiana.....	1916	10						1
	1914	9						1
Illinois.....	1916	18					9	6
	1914	22					9	10
Michigan.....	1916	55					50	5
	1914	62					54	8
Wisconsin.....	1916	30					15	2
	1914	34					15	2
West North Central....	1916	44					3	22
	1914	45					3	18
Minnesota.....	1916	28					3	10
	1914	30					3	8
Iowa.....	1916	10						6
	1914	11						7
Missouri.....	1916	5						5
	1914	3						2
South Dakota.....	1916	1						1
	1914	1						1
South Atlantic.....	1916	176	9	126	33			7
	1914	169	8	115	40			5
Delaware.....	1916	9	9					
	1914	8	8					
Maryland.....	1916	50		49				
	1914	42		41				
District of Columbia, Virginia.....	1916	2		2				
	1914	2		2				
West Virginia.....	1916	30		30				
	1914	29		29				
North Carolina.....	1916	7						7
	1914	5						5
South Carolina.....	1916	12		12				
	1914	11		11				
Georgia.....	1916	2		2				
	1914	2		2				
Florida.....	1916	7		7				
	1914	4		4				
East South Central....	1916	57		24	33			
	1914	66		26	40			
Kentucky.....	1916	47		21				26
	1914	30		16				13
Tennessee.....	1916	17						17
	1914	11						10
Alabama.....	1916	4						4
	1914	3						3
Mississippi.....	1916	8		7				1
	1914	4		4				
West South Central....	1916	18		14				4
	1914	12		12				
Arkansas.....	1916	44		36				3
	1914	31		28				1
Louisiana.....	1916	4						4
	1914							
Texas.....	1916	26		22				3
	1914	17		14				1
Mountain.....	1916	14		14				
	1914	14		14				
Idaho.....	1916	2						2
	1914	2						2
Pacific.....	1916	133				133		
	1914	137				137		
Washington.....	1916	57				57		
	1914	64				64		
Oregon.....	1916	26				26		
	1914	21				21		
California.....	1916	50				50		
	1914	52				52		

In 1916 the North Atlantic division contained 40.4 per cent of all the shipbuilding plants in the United States as compared with 42.3 per cent in 1914, a decrease of 26 establishments in two years. The Mississippi division shows the largest relative increase in the number of shipbuilding plants, amounting to 26, or 34.7 per cent. There was also an increase of 9.6 per cent and 7.1 per cent in the number of establishments in the South Atlantic and Gulf divisions, respectively, between 1914 and 1916. In the other

three divisions, the number of establishments shows an aggregate loss of 27 plants.

**Persons engaged in the industry.**—Table 8 shows, for 1916, 1914, and 1909, the number of persons engaged in the industry as a whole and in the two main branches, classified according to occupational status and sex, and, in the case of wage earners, according to age. It should be borne in mind that the sex and age classification is an estimate obtained by the method described in the "Explanation of terms."



Table 8	INDUSTRY AND CLASS.	Cen- sus year.	PERSONS ENGAGED IN THE INDUSTRY.						INDUSTRY AND CLASS.	Cen- sus year.	PERSONS ENGAGED IN THE INDUSTRY.					
			Total.	Male.	Fe- male.	Per cent of total.		Total.			Male.	Fe- male.	Per cent of total.			
						Male.	Fe- male.						Male.	Fe- male.		
	SHIPBUILDING, INCLUDING BOAT BUILDING.	1916	78,333	77,802	531	99.3	0.7									
		1914	48,667	48,314	353	99.3	0.7									
		1909	44,940	44,597	352	99.2	0.8									
Proprietors and officials.....		1916	2,653	2,605	48	98.2	1.8		SHIPBUILDING, STEEL—continued.							
		1914	2,187	2,154	33	98.5	1.5		Clerks and other subordinate sala- ried employees.	1916	2,558	2,335	223	91.3	8.7	
		1909	2,471	2,447	24	99.0	1.0			1914	1,571	1,447	124	92.1	7.9	
Proprietors and firm members...		1916	1,103	1,062	41	96.3	3.7		Wage earners (average number).....	1909	1,407	1,302	105	92.5	7.5	
		1914	1,192	1,163	29	97.6	2.4			1916	56,237	56,138	99	99.8	0.2	
		1909	1,463	1,440	23	98.4	1.6		16 years of age and over.....	1914	33,508	33,441	67	99.8	0.2	
Salaried officers of corporations..		1916	399	394	5	98.7	1.3			1909	28,143	28,097	46	99.8	0.2	
		1914	323	320	3	99.1	0.9		Under 16 years of age.....	1916	55,850	55,760	99	99.8	0.2	
		1909	367	366	1	99.7	0.3			1914	33,323	33,257	66	99.8	0.2	
Superintendents and managers..		1916	1,151	1,149	2	99.8	0.2			1909	27,794	27,748	46	99.8	0.2	
		1914	672	671	1	99.9	0.1			1916	378	378	100.0	.....	.....	
		1909	641	641	.....	100.0	.....		SHIPBUILDING, WOODEN, IN- CLUDING BOAT BUILDING.	1914	185	184	1	99.5	0.5	
Clerks and other subordinate sala- ried employees.		1916	3,183	2,818	365	88.5	11.5			1909	349	349	100.0	.....	.....	
		1914	1,991	1,765	226	88.6	11.4			1916	18,531	18,326	205	98.9	1.1	
		1909	1,972	1,706	266	86.5	13.5		Proprietors and officials.....	1914	13,003	12,844	159	98.8	1.2	
Wage earners (average number).....		1916	72,497	72,379	118	99.8	0.2			1909	14,908	14,707	201	98.7	1.3	
		1914	44,489	44,395	94	99.8	0.2			1916	1,646	1,602	44	97.3	2.7	
		1909	40,506	40,444	62	99.8	0.2		Proprietors and firm members...	1914	1,602	1,572	30	98.1	1.9	
16 years of age and over.....		1916	72,097	71,979	118	99.8	0.2			1909	1,980	1,956	24	98.8	1.2	
		1914	44,288	44,195	93	99.8	0.2		Salaried officers of corporations...	1916	1,068	1,029	39	96.3	3.7	
		1909	40,135	40,073	62	99.8	0.2			1914	1,168	1,141	27	97.7	2.3	
Under 16 years of age.....		1916	400	400	.....	100.0	.....		Superintendents and managers...	1909	1,442	1,419	23	98.4	1.6	
		1914	201	200	1	99.5	0.5			1916	205	201	4	98.0	2.0	
		1909	371	371	.....	100.0	.....			1914	157	155	2	98.7	1.3	
SHIPBUILDING, STEEL.....		1916	59,802	59,476	326	99.5	0.5		Clerks and other subordinate sala- ried employees.	1909	245	244	1	99.6	0.4	
		1914	35,664	35,470	194	99.5	0.5			1916	373	373	1	99.7	0.3	
		1909	30,041	29,890	151	99.5	0.5			1914	277	276	1	99.6	0.4	
Proprietors and officials.....		1916	1,007	1,003	4	99.6	0.4		Wage earners (average number).....	1909	293	293	.....	100.0	.....	
		1914	585	582	3	99.5	0.5			1916	625	483	142	77.3	22.7	
		1909	491	491	.....	100.0	.....			1914	420	318	102	75.7	24.3	
Proprietors and firm members...		1916	35	33	2	94.3	5.7		16 years of age and over.....	1909	565	404	161	71.5	28.5	
		1914	24	22	2	91.7	8.3			1916	16,260	16,241	19	99.9	0.1	
		1909	21	21	.....	100.0	.....			1914	10,981	10,954	27	99.8	0.2	
Salaried officers of corporations..		1916	194	193	1	99.5	0.5		Under 16 years of age.....	1909	12,363	12,347	16	99.9	0.1	
		1914	166	165	1	99.4	0.6			1916	16,236	16,217	19	99.9	0.1	
		1909	122	122	.....	100.0	.....			1914	10,965	10,938	27	99.8	0.2	
Superintendents and managers..		1916	778	777	1	99.9	0.1			1909	12,341	12,325	16	99.9	0.1	
		1914	395	395	.....	100.0	.....			1916	24	24	.....	100.0	.....	
		1909	348	348	.....	100.0	.....			1914	16	16	.....	100.0	.....	
										1909	22	22	.....	100.0	.....	

The average number of persons engaged in the industry as a whole during 1916 was 78,333 as compared with 48,667 in 1914 and 44,949 in 1909. Of these persons in 1916, 72,497, or 92.5 per cent, were wage earners; 2,653, or 3.4 per cent, proprietors and officials; and 3,183, or 4.1 per cent, clerks and other subordinate salaried employees. Of the total number of persons employed, 77,802, or 99.3 per cent, were males, and 531, or seven-tenths of 1 per cent, females. Most of the females were clerks, only 118 being wage earners. The average number of boys under 16 years of age was 400, and nearly all of these were employed

in steel shipbuilding. The greater prevalence of individual ownership in the wooden ship and boat building branch of the industry is shown by the fact that 5.8 per cent of the persons engaged were proprietors and firm members, while less than 1 per cent of the persons engaged in the steel branch of the industry belong to this class.

Table 9 shows the per cent of increase in the number of persons engaged in the industry, by occupational status and sex, for the periods 1909-1914 and 1914-1916, together with the per cent distribution for the three censuses.

CLASS.	PERSONS ENGAGED IN THE INDUSTRY.														
	Per cent of increase. <sup>1</sup>						Per cent distribution.								
	1914-1916			1909-1914			Total.			Male.			Female.		
	Total.	Male.	Female.	Total.	Male.	Female.	1916	1914	1909	1916	1914	1909	1916	1914	1909
All classes.....	61.0	61.0	50.4	8.3	8.3	0.3	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Proprietors and officials.....	21.3	20.9	.....	-11.5	-12.0	.....	3.3	4.5	5.5	3.4	4.5	5.5	9.0	9.3	6.8
Proprietors and firm members.....	-7.5	-8.7	.....	-18.5	-19.2	.....	1.4	2.4	3.3	1.4	2.4	3.2	7.7	8.2	6.5
Salaried officers of corporations.....	23.5	23.1	.....	-12.0	-12.6	.....	0.5	0.7	0.8	0.5	0.7	0.8	0.9	0.8	0.3
Superintendents and managers.....	71.3	71.2	.....	4.8	4.7	.....	1.5	1.4	1.4	1.5	1.4	1.5	0.4	0.3	.....
Clerks and other subordinate salaried employees.....	59.9	59.7	61.5	1.0	3.5	-15.0	4.1	4.1	4.4	3.6	3.6	3.8	68.7	64.0	75.6
Wage earners (average number).....	63.0	63.0	.....	9.8	9.8	.....	92.5	91.4	90.1	93.0	91.9	90.7	22.2	26.6	17.6
16 years of age and over.....	62.8	62.9	.....	10.3	10.3	.....	92.0	91.0	89.3	92.5	91.5	89.9	22.2	26.3	17.6
Under 16 years of age.....	99.0	100.0	.....	-45.8	-46.1	.....	0.5	0.4	0.8	0.5	0.4	0.8	.....	0.3	.....

<sup>1</sup> A minus sign (—) denotes decrease; percentages are omitted where base is less than 100.

The total number of persons engaged in the industry increased by 29,666, or 61 per cent, during the two-year period 1914-1916, as compared with an increase of only 3,718, or 8.3 per cent, for the five-year period 1909-1914.

The only class of persons employed which showed a decrease between 1914 and 1916 was proprietors and firm members, which decreased 7.5 per cent. The number of salaried officers of corporations and of superintendents and managers increased 23.5 per cent and 71.3 per cent, respectively, indicating an increase in the size of the establishments though the number of these decreased between 1914 and 1916. Wage earners 16 years of age and over represented 92 per cent of the total number of persons engaged in shipbuilding in 1916, 91 per cent in 1914, and 89.3 per cent in 1909. Though the number of wage earners under 16 years of age almost doubled between 1914 and 1916, they represented only five-tenths of 1 per cent of the total number of wage earners in 1916, four-tenths of 1 per cent in 1914, and eight-tenths of 1 per cent in 1909.

**Wage earners employed, by months.**—Table 10 presents the total number of wage earners employed in the shipbuilding industry on the 15th of each month, or the nearest representative day, for 1916, 1914, and 1909, and the average number employed during each month in 1904, together with the percentage which the number reported for each month forms of the greatest number reported for any month.

In 1916 the maximum number employed in the entire industry was 85,928 in December; in 1914, 49,567 in May; and in 1909 and 1904, 42,256 and 53,975, respectively, in April. The month of minimum employment was January in both 1916 and 1904; November, in 1914; and February, in 1909. For the steel shipbuilding branch the maximum number was employed in March in 1914, in December in 1909, and in April in 1904, while for the wooden ship and boat building branch of the industry for these years, May and June were the months of maximum employment. For these census years there was no general trend from the season of minimum employment to that of maximum, but for 1916, the maximum month of employment for the industry and the two branches was December, and an almost steady increase in the number employed is shown from the month of January to December. This fact is undoubtedly due to the great acceleration in the shipbuilding industry due to the war.

Table 10

INDUSTRY AND MONTH.	WAGE EARNERS IN THE INDUSTRY.							
	Number. <sup>1</sup>				Per cent of maximum.			
	1916	1914	1909	1904	1916	1914	1909	1904
<b>SHIPBUILDING, INCLUDING BOAT BUILDING.</b>								
January.....	59,433	47,038	38,516	47,476	69.2	94.9	91.1	88.0
February.....	61,615	45,776	37,565	47,790	71.7	92.4	88.9	88.5
March.....	64,782	48,534	39,922	49,982	75.4	97.9	94.5	92.6
April.....	67,801	48,941	42,256	53,975	78.9	98.7	100.0	100.0
May.....	70,157	49,567	42,244	53,944	81.6	100.0	99.9	99.9
June.....	73,251	48,610	41,690	53,585	85.2	98.1	98.7	98.3
July.....	72,788	46,164	40,190	52,141	84.7	93.1	95.1	96.6
August.....	74,259	43,606	39,149	51,637	86.4	88.0	92.6	93.7
September.....	77,069	39,870	40,283	51,214	89.7	80.4	95.3	94.9
October.....	79,281	39,162	41,151	50,209	92.3	79.0	97.4	93.0
November.....	83,600	37,843	41,023	48,980	97.3	76.3	97.1	90.7
December.....	85,928	38,757	42,075	48,115	100.0	78.2	99.6	89.1
<b>SHIPBUILDING, STEEL.</b>								
January.....	47,087	36,262	27,831	36,544	70.9	98.6	91.1	95.5
February.....	48,674	35,435	26,279	36,203	73.3	96.3	86.0	94.6
March.....	51,376	36,788	27,299	36,697	77.4	100.0	89.4	95.9
April.....	52,633	36,636	28,641	38,255	79.3	99.6	93.8	100.0
May.....	53,809	36,773	28,445	37,053	81.0	99.9	93.1	96.9
June.....	55,944	36,222	27,623	36,820	84.3	94.7	90.4	96.2
July.....	55,659	34,822	26,927	36,350	83.8	89.6	88.2	95.1
August.....	57,257	32,967	26,823	36,384	86.2	86.6	87.8	95.1
September.....	59,565	29,808	28,435	36,523	89.7	81.0	93.1	95.5
October.....	61,756	28,743	29,415	36,712	93.0	78.0	96.3	96.0
November.....	64,804	28,107	29,449	36,651	97.6	76.4	96.4	95.8
December.....	66,399	29,533	30,545	36,722	100.0	80.3	100.0	96.0
<b>SHIPBUILDING, WOODEN, INCLUDING BOAT BUILDING.</b>								
January.....	12,346	10,776	10,685	10,932	63.2	84.2	76.0	64.7
February.....	12,941	10,341	11,285	11,587	66.3	80.8	80.2	68.6
March.....	13,406	11,746	12,623	13,295	68.6	91.8	87.6	78.7
April.....	15,168	12,305	13,615	15,720	77.7	96.2	96.8	93.1
May.....	16,348	12,794	13,799	16,891	83.7	100.0	98.1	100.0
June.....	17,307	12,388	14,067	16,765	88.6	96.8	100.0	99.3
July.....	17,129	11,342	13,263	15,791	87.7	88.7	94.3	93.5
August.....	17,002	10,639	12,326	15,253	87.1	83.2	87.6	90.3
September.....	17,504	10,062	11,848	14,691	89.6	78.6	84.2	87.0
October.....	17,525	10,419	11,736	13,497	89.7	81.4	83.4	79.9
November.....	18,796	9,736	11,574	12,329	96.2	76.1	82.3	73.0
December.....	19,529	9,224	11,530	11,393	100.0	72.1	82.0	67.4

<sup>1</sup> The figures for 1916, 1914, and 1909 represent the number employed on the 15th of each month, or the nearest representative day; those for 1904, the average number employed during the month.

Table 11 gives the total average number of wage earners, and the number employed on the 15th of each month, or the nearest representative day, for the shipbuilding industry as a whole and for each of its branches, for 1916 and 1914. The table also shows for both years corresponding numbers for each state reporting 500 or more wage earners in 1916.

In 1914, the month of maximum employment in 13 of the 20 states shown in the table was a spring or early summer month or during the period from March to June, while in 1916 the month of greatest activity in 15 of the 20 states was in the latter part of the year—namely, from September to the end of the year. This again reflects war conditions in 1916.

New York, which ranked first in number of wage earners employed in 1916, showed December as the month of maximum employment; New Jersey, which

ranked second, and California, fourth, also reported the largest number employed in December. Virginia, which ranked third, showed the maximum

number for March. In 1914, the maximum number for New York was employed in May; for New Jersey, in June; for California and Virginia, in January.

Table 11

WAGE EARNERS: 1916 AND 1914.  
[The month of maximum employment is indicated by boldface figures and that of minimum by *italic* figures.]

INDUSTRY AND STATE.	Census year.	Average number employed during year.	Number employed on 15th day of the month or nearest representative day.												Per cent minimum is of maximum.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
United States.....	1916	72,497	<b>59,433</b>	61,615	<b>64,782</b>	67,801	70,157	73,251	72,788	74,259	77,069	79,281	83,600	<b>85,928</b>	69.2
	1914	44,489	<b>47,038</b>	45,776	<b>48,534</b>	48,941	49,567	48,610	40,164	43,006	39,870	39,162	<b>37,843</b>	38,757	76.3
Shipbuilding, steel.....	1916	56,237	<b>47,087</b>	48,674	51,376	52,633	53,809	55,944	55,659	57,257	59,565	61,756	64,804	<b>66,399</b>	70.9
	1914	33,508	<b>36,262</b>	35,435	<b>36,788</b>	36,636	36,773	36,222	34,822	32,667	29,808	28,743	<b>28,107</b>	29,533	76.4
Shipbuilding, wooden, including boat building.	1916	16,260	<b>12,346</b>	12,941	13,406	15,468	16,348	17,307	17,129	17,002	17,504	17,525	18,796	<b>19,529</b>	68.2
	1914	10,981	<b>10,776</b>	10,341	11,746	12,305	12,794	12,388	11,342	10,639	10,062	10,419	9,736	<b>8,224</b>	72.1
Alabama.....	1916	541	<b>385</b>	493	534	422	395	510	453	540	582	669	747	<b>762</b>	50.5
	1914	464	<b>433</b>	453	535	445	480	512	431	521	452	530	573	<b>403</b>	69.7
California.....	1916	7,113	<b>4,952</b>	5,703	5,865	6,763	6,285	7,101	7,160	7,433	7,875	7,953	9,026	<b>9,240</b>	58.6
	1914	3,457	<b>3,817</b>	3,759	3,715	3,360	3,335	3,739	3,547	3,010	3,005	3,111	3,259	<b>3,727</b>	76.7
Connecticut.....	1916	1,312	<b>976</b>	909	977	1,096	1,095	1,063	1,557	1,588	1,552	1,487	1,741	<b>1,703</b>	52.2
	1914	514	<b>406</b>	402	471	559	594	574	550	538	543	517	507	<b>507</b>	67.7
Delaware.....	1916	1,038	<b>1,948</b>	1,909	1,822	2,066	2,072	2,126	1,448	1,686	2,258	2,037	1,883	<b>2,001</b>	64.1
	1914	784	<b>771</b>	779	918	976	966	928	896	713	655	671	588	<b>547</b>	56.0
Florida.....	1916	1,172	<b>1,018</b>	954	934	1,072	1,070	1,097	1,232	1,255	1,265	1,272	1,416	<b>1,459</b>	64.0
	1914	489	<b>540</b>	483	503	485	515	451	416	473	434	604	528	<b>450</b>	68.9
Illinois.....	1916	598	<b>527</b>	605	618	626	517	516	567	600	583	713	667	<b>737</b>	67.8
	1914	418	<b>557</b>	595	513	520	422	396	411	332	261	262	260	<b>446</b>	43.7
Louisiana.....	1916	1,306	<b>893</b>	994	971	794	1,063	1,262	1,435	1,486	1,563	1,674	1,639	<b>1,898</b>	41.8
	1914	666	<b>880</b>	913	904	741	684	616	642	704	487	496	450	<b>475</b>	49.3
Maine.....	1916	1,857	<b>1,461</b>	1,487	1,572	1,699	1,756	1,818	1,866	1,979	1,990	2,123	2,192	<b>2,341</b>	62.4
	1914	1,122	<b>1,101</b>	1,139	1,338	1,341	1,333	1,157	1,155	1,150	1,068	970	858	<b>834</b>	63.7
Maryland.....	1916	5,326	<b>4,999</b>	4,473	5,040	5,280	5,211	5,281	5,426	5,224	5,539	6,007	5,805	<b>5,627</b>	74.5
	1914	2,468	<b>2,651</b>	2,271	2,555	2,407	2,439	2,618	2,681	2,638	2,489	2,433	2,263	<b>2,171</b>	81.0
Massachusetts.....	1916	4,373	<b>4,925</b>	4,483	4,422	4,505	4,308	4,489	4,244	4,175	4,079	4,024	4,256	<b>4,566</b>	81.7
	1914	3,044	<b>3,890</b>	3,818	4,304	4,436	4,537	4,709	4,472	4,115	3,158	2,968	3,244	<b>3,587</b>	68.0
Michigan.....	1916	2,225	<b>2,057</b>	2,145	2,482	2,869	2,748	2,921	1,804	1,872	1,939	1,784	1,895	<b>2,172</b>	61.1
	1914	1,261	<b>1,025</b>	1,301	1,562	1,745	1,783	1,660	1,430	1,349	1,148	903	795	<b>481</b>	24.2
New Jersey.....	1916	7,777	<b>6,629</b>	6,546	7,078	7,256	8,053	7,632	7,897	7,947	8,081	8,536	8,788	<b>8,981</b>	72.7
	1914	6,324	<b>6,291</b>	6,100	6,324	6,623	6,790	6,827	6,687	6,259	5,921	5,958	5,926	<b>6,092</b>	86.7
New York.....	1916	9,928	<b>7,909</b>	8,381	8,528	9,540	10,171	10,451	10,523	10,220	10,424	10,493	10,959	<b>11,516</b>	68.7
	1914	6,076	<b>6,475</b>	5,706	6,359	6,812	7,078	6,632	5,988	5,689	5,359	5,733	5,546	<b>5,535</b>	75.7
Ohio.....	1916	5,059	<b>4,005</b>	4,573	4,800	5,079	4,998	5,326	5,403	5,412	5,298	5,259	5,198	<b>5,369</b>	74.0
	1914	2,879	<b>3,175</b>	3,431	3,566	3,443	3,209	2,852	2,890	2,752	2,444	2,077	2,076	<b>2,633</b>	58.2
Oregon.....	1916	1,003	<b>300</b>	500	475	472	554	738	797	1,031	1,374	1,638	2,002	<b>2,171</b>	13.8
	1914	164	<b>163</b>	209	224	197	209	196	156	147	127	122	141	<b>107</b>	47.8
Pennsylvania.....	1916	6,440	<b>5,082</b>	5,348	5,751	5,189	6,236	6,640	6,886	7,154	7,169	7,419	7,226	<b>7,180</b>	68.5
	1914	4,773	<b>5,261</b>	4,668	5,045	5,321	5,629	5,710	5,180	4,938	4,367	4,019	3,624	<b>3,514</b>	61.5
Rhode Island.....	1916	610	<b>616</b>	722	727	739	704	794	473	467	501	520	551	<b>578</b>	58.8
	1914	581	<b>544</b>	680	737	719	762	649	514	481	500	474	482	<b>480</b>	56.4
Virginia.....	1916	7,222	<b>7,068</b>	7,401	7,570	7,514	7,559	7,269	6,954	7,165	6,921	6,788	7,071	<b>7,384</b>	89.7
	1914	4,846	<b>5,456</b>	5,381	5,002	4,826	4,956	4,853	4,949	4,951	4,725	4,539	4,298	<b>4,216</b>	77.3
Washington.....	1916	3,744	<b>1,890</b>	1,710	2,184	2,235	2,546	3,150	3,408	3,941	4,825	5,532	6,839	<b>6,668</b>	25.0
	1914	1,444	<b>1,649</b>	1,717	1,663	1,608	1,639	1,474	1,375	1,271	1,273	1,182	1,186	<b>1,255</b>	65.6
Wisconsin.....	1916	1,280	<b>666</b>	993	1,153	1,174	1,218	1,310	1,353	1,336	1,314	1,433	1,571	<b>1,479</b>	42.4
	1914	695	<b>625</b>	750	947	1,016	1,048	919	691	513	356	517	457	<b>501</b>	34.0

Prevailing hours of labor.—In Table 12 the wage earners in the industry as a whole, in 1914 and 1909, have been classified according to the number of hours of labor per week prevailing in the establishments in which they were employed. In making this classification the average number of wage earners employed

during the year in each establishment was classified as a total according to the hours prevailing in that establishment, even though a few employees worked a greater or smaller number of hours. Figures for 1916 were not obtained.

Table 12

INDUSTRY AND STATE.	Cen- sus year.	AVERAGE NUMBER OF WAGE EARNERS.					
		Total.	In establishment where the prevailing hours of labor per week were—				
			48 and under.	Be- tween 48 and 54.	54.	Be- tween 54 and 60.	60. Be- tween 60 and 72.
United States.....	1914	44,489	14,730	7,638	12,320	1,524	7,771
	1909	40,506	3,865	2,674	9,883	10,045	14,038
Shipbuilding, steel	1914	33,508	11,928	6,861	6,900	928	6,393
	1909	28,143	1,758	1,811	4,188	8,810	11,576
Shipbuilding, wooden, includ- ing boat build- ing.	1914	10,981	2,802	777	5,420	596	1,378
	1909	12,363	2,107	863	5,695	1,235	2,462
California.....	1914	3,457	3,035	.....	61	.....	361
	1909	1,844	228	1,144	400	.....	72
Connecticut.....	1914	514	252	37	209	7	9
	1909	427	4	23	268	116	18
Delaware.....	1914	784	8	5	746	.....	25
	1909	1,239	.....	.....	1,159	50	30
Louisiana.....	1914	666	6	.....	323	110	87
	1909	374	33	.....	258	.....	83
Maine.....	1914	1,122	649	39	199	60	175
	1909	1,755	26	3	179	1,265	282
Maryland.....	1914	2,468	185	1,378	678	91	136
	1909	1,793	74	32	464	1,056	167
Massachusetts.....	1914	3,944	3,130	333	463	7	11
	1909	3,604	94	170	658	2,673	9
Michigan.....	1914	1,261	98	30	730	14	389
	1909	2,344	2	3	85	1,093	1,161
New Jersey.....	1914	6,324	5,065	652	599	1	35
	1909	4,869	150	191	1,278	340	2,910
New York.....	1914	6,076	877	1,009	3,725	173	287
	1909	5,644	2,271	882	2,000	160	331
Ohio.....	1914	2,879	9	11	327	794	1,738
	1909	3,200	3	16	131	375	2,675
Pennsylvania.....	1914	4,773	344	4,111	163	118	37
	1909	3,558	378	156	143	2,842	39
Rhode Island.....	1914	581	1	1	578	.....	1
	1909	535	1	.....	512	.....	22
Virginia.....	1914	4,846	11	1	405	7	4,422
	1909	5,382	13	4	259	11	5,095
Washington.....	1914	1,444	351	.....	1,085	.....	8
	1909	744	272	2	452	.....	18
Wisconsin.....	1914	695	45	7	554	15	73
	1909	906	4	.....	501	33	368

The figures in this table emphasize the tendency toward the shortening of the working-day of wage earners. During the year 1909 only 40.5 per cent of the total number of wage earners worked in establishments where the prevailing hours were 54 or less per week, while during 1914, 78 per cent worked in establishments where these hours prevailed. The largest number of wage earners employed by any one group of establishments in 1909 was 14,038, or 34.7 per cent of the entire number employed in those establishments which operated 60 hours per week. In 1914 the largest number, practically the same proportion (33.1 per cent), were employed in establishments operating 48 hours or fewer per week. Some of the states display even more remarkable changes. In the state of Maine, in 1909, 1.7 per cent of the wage earners worked less than 54 hours per week, while by 1914 the proportion employed less than 54 hours had increased to 61.3 per

cent. In Maryland wage earners in establishments operating less than 54 hours increased from 5.9 per cent of the entire number in 1909 to 63.3 per cent in 1914; in Massachusetts, from 7.3 per cent to 87.8 per cent; in New Jersey, from 7 per cent to 90.4 per cent; and in Pennsylvania, from 15 per cent to 93.3 per cent. Maine, which in 1909 reported 88.1 per cent of the wage earners as working more than 54 hours per week, in 1914 reported only 20.9 per cent as being employed that length of time; for Maryland corresponding percentages were 68.2 per cent in 1909 and 9.2 per cent in 1914; for Massachusetts, 74.4 and five-tenths of 1 per cent; for New Jersey, 66.7 per cent and six-tenths of 1 per cent; and for Pennsylvania, 81 and 3.2 per cent. In 1909 the prevailing hours of labor in California were between 48 and 54 hours per week; in 1914, 48 hours and under.

**Character of ownership.**—Table 13 presents statistics concerning the character of ownership or legal organization of establishments in the shipbuilding industry for 1914 and 1909.

The shipbuilding and boat-building plants owned by corporations represented 27.3 per cent of the total number of establishments in 1916 as against 21.1 per cent in 1914, and 18.3 per cent in 1909. Corporations reported, for 1916, 91.6 per cent of the total average number of wage earners, and 92.2 per cent of the total value of products, and the corresponding percentages for 1914 were 89.8 and 89.1, respectively.

In all the states shown in the table, except Ohio and Washington, the number of establishments owned individually formed the largest class, both in 1916 and in 1914, but as in the United States as a whole, the corporations were the most important. In Michigan, during 1914, the establishments under corporate ownership gave employment to a fraction less than 75 per cent of the total average number of wage earners, but in 1916 the percentage thus employed increased to nearly 77 per cent. In all of the other states, both in 1916 and 1914, the corporations employed more than 75 per cent of the wage earners, and in California, Massachusetts, New Jersey, Ohio, Pennsylvania, and Rhode Island the proportion of wage earners employed under the corporate form of ownership exceeded 90 per cent in both years. The largest increase in the proportion of wage earners employed by corporations was in the state of Washington, the increase being from 85.5 per cent in 1914 to 95.6 per cent in 1916.

Maine was the only state showing a decrease from 1914 to 1916 in the proportion of the value of products of establishments under corporate ownership. All the states in the table, however, showed that corporations produced over 75 per cent of the total value of products, and California, Connecticut, Massachusetts, New Jersey, Ohio, Pennsylvania, and Rhode Island showed a production exceeding 90 per cent for both

years. Washington, which showed the largest increase in the proportion of wage earners employed by corporations, also showed the largest increase in the

proportion of total value of products, the increase being from 82.3 per cent in 1914 to 96.1 per cent in 1916.

Table 13	INDUSTRY AND STATE.	Cen- sus year.	NUMBER OF ESTABLISHMENTS OWNED BY—			AVERAGE NUMBER OF WAGE EARNERS.									VALUE OF PRODUCTS.								
						In establishments owned by—			Per cent of total.			Of establishments owned by—			Per cent of total.								
			Total.	Indi- vid- uals.	Cor- pora- tions.	All oth- ers.	Indi- vid- uals.	Cor- pora- tions.	All oth- ers.	Indi- vid- uals.	Cor- pora- tions.	All oth- ers.	Total.	Individ- uals.	Corpora- tions.	All others.	Indi- vid- uals.	Cor- pora- tions.	All oth- ers.				
United States.....	1916	630	310	197	72,497	3,647	66,442	2,408	5.0	91.6	3.3	\$185,852,192	\$8,849,579	\$171,361,267	\$5,641,346	4.8	92.2	3.0					
	1914	695	242	210	44,489	2,666	39,967	1,856	6.0	89.8	4.2	88,682,071	5,598,619	79,046,032	4,037,420	6.3	89.1	4.6					
	1909	824	247	282	40,506	3,660	34,475	2,371	9.0	85.1	5.9	73,360,315	6,796,334	61,646,548	4,917,433	9.3	84.0	6.7					
Shipbuilding, steel...	1916	11	87	11	50,236	618	55,244	374	1.1	98.2	0.7	144,619,111	1,420,661	142,255,944	942,596	1.0	98.4	0.6					
	1914	7	64	8	33,508	189	33,019	300	0.6	98.5	0.9	66,216,692	434,942	64,973,326	808,424	0.7	98.1	1.2					
Shipbuilding, wood- en, including boat building.	1916	619	223	186	16,261	3,029	11,198	2,034	18.6	68.9	12.5	41,233,081	7,428,918	29,105,323	4,698,840	18.0	70.6	11.4					
	1914	688	178	202	10,981	2,477	6,948	1,556	22.6	63.3	14.2	22,465,379	5,163,677	14,072,706	3,228,996	23.0	62.6	14.4					
California.....	1916	23	17	10	7,113	404	6,623	86	5.7	93.1	1.2	19,777,911	1,530,807	18,036,821	210,283	7.7	91.2	1.1					
	1914	28	17	7	3,457	203	3,171	83	5.9	91.7	2.4	8,104,033	550,871	7,350,730	202,432	6.8	90.7	2.5					
Connecticut.....	1916	20	9	2	1,312	100	1,212	.....	7.6	92.4	.....	6,217,274	1,163,835	6,053,439	.....	2.6	97.4	.....					
	1914	24	10	3	514	49	460	5	9.5	89.5	1.0	1,665,293	98,255	1,567,038	13,120	5.9	93.3	0.8					
Louisiana.....	1916	14	9	3	1,306	74	1,171	61	5.7	89.7	4.7	2,606,767	127,836	2,395,786	83,145	4.9	91.9	3.2					
	1914	7	6	4	666	45	534	87	6.8	80.2	13.1	1,080,319	31,580	956,732	92,007	2.9	88.6	8.5					
Maine.....	1916	62	18	20	1,857	163	1,452	242	8.8	78.1	13.0	4,882,131	475,171	3,797,229	609,731	9.7	77.8	12.5					
	1914	75	13	19	1,122	95	893	134	8.5	79.6	11.9	2,482,518	190,833	2,007,196	284,489	7.7	80.9	11.5					
Maryland.....	1916	29	14	7	5,326	259	4,879	188	4.9	91.6	3.5	12,205,557	483,147	11,268,684	453,726	4.0	92.3	3.7					
	1914	23	12	7	2,468	168	2,126	174	6.8	86.1	7.1	4,521,169	254,161	3,919,507	347,501	5.6	86.7	7.7					
Massachusetts.....	1916	60	15	10	4,373	202	4,115	56	4.6	94.1	1.3	12,185,354	440,007	11,573,772	171,575	3.6	95.0	1.4					
	1914	57	15	12	3,944	139	3,750	55	3.5	95.1	1.4	8,627,481	330,618	8,139,590	157,273	3.8	94.3	1.8					
Michigan.....	1916	37	11	7	2,225	381	1,712	132	17.1	76.9	5.9	5,637,103	679,570	4,620,709	336,824	12.1	82.0	5.9					
	1914	42	11	9	1,261	175	940	146	13.9	74.5	11.6	2,822,557	336,488	2,134,864	351,205	11.9	75.6	12.4					
New Jersey.....	1916	41	24	11	7,777	160	7,495	122	2.1	96.4	1.6	20,311,529	322,038	19,751,940	237,551	1.6	97.2	1.2					
	1914	51	23	11	6,324	148	6,095	81	2.3	96.4	1.3	11,860,965	331,988	11,336,979	195,298	2.8	95.6	1.6					
New York.....	1916	116	50	34	9,928	830	8,527	571	8.4	85.9	5.7	31,357,645	2,326,178	27,394,616	1,636,851	7.4	87.4	5.2					
	1914	129	39	39	6,076	697	4,935	444	11.5	81.2	7.3	14,195,298	1,619,349	11,433,607	1,142,342	11.4	80.5	8.0					
Ohio.....	1916	11	13	8	5,059	35	4,989	35	0.7	98.6	0.7	12,160,007	83,976	12,009,771	66,290	0.7	98.8	0.5					
	1914	12	12	5	2,879	74	2,769	36	2.6	96.2	1.3	4,716,787	105,840	4,537,147	73,800	2.2	96.2	1.6					
Pennsylvania.....	1916	14	11	5	6,440	123	6,282	35	1.9	97.5	0.5	16,816,071	282,145	16,397,417	136,509	1.7	97.5	0.8					
	1914	17	9	7	4,773	131	4,531	111	2.7	94.9	2.3	9,539,865	275,820	9,084,585	179,460	2.9	95.2	1.9					
Rhode Island.....	1916	7	4	3	616	44	567	5	7.1	92.0	0.8	1,523,614	86,770	1,421,910	14,934	5.7	93.3	1.0					
	1914	8	4	3	581	43	535	3	7.4	92.1	0.5	1,209,372	80,807	1,116,634	11,931	6.7	92.3	1.0					
Washington.....	1916	21	23	13	3,744	49	3,581	114	1.3	95.6	3.0	10,829,812	118,980	10,406,725	304,107	1.1	96.1	2.8					
	1914	35	11	18	1,444	95	1,234	115	6.6	85.5	8.0	3,101,446	273,265	2,551,020	277,161	8.8	82.3	8.9					
Wisconsin.....	1916	13	11	6	1,250	22	1,157	71	1.8	92.6	5.6	3,826,847	40,019	3,649,285	137,543	1.0	95.4	3.6					
	1914	17	12	5	695	24	1,006	65	3.5	87.2	9.4	1,254,088	50,202	1,099,122	104,764	4.0	87.6	8.4					

<sup>1</sup> Includes the group "All others."

Classification according to size.—The tendency of the industry to become concentrated in large estab-

lishments is indicated by the statistics given in Table 14.

Table 14												
VALUE OF PRODUCT.	Census year.	Num- ber of estab- lish- ments.	Aver- age num- ber of wage earners.	Value of products.	Value added by manu- facture.	VALUE OF PRODUCT.	Census year.	Num- ber of estab- lish- ments.	Aver- age num- ber of wage earners.	Value of products.	Value added by manu- facture.	
All classes. ....	1916 1914 1909	1,137 1,147 1,353	72,497 44,489 40,506	\$185,852,192 88,682,071 73,360,315	\$96,583,362 50,085,101 42,145,957	Per cent distribution: Less than \$5,000. ....	1916 1914 1909	40.5 47.9 50.4	0.7 1.3 1.8	0.6 1.4 2.1	0.7 1.6 2.4	
Less than \$5,000. ....	1916 1914 1909	461 549 682	472 558 724	1,019,222 1,199,688 1,534,941	682,718 822,896 1,032,169	\$5,000 to \$20,000. ....	1916 1914 1909	26.4 27.4 26.7	2.4 3.8 5.3	1.7 3.6 5.0	2.1 4.1 5.5	
\$5,000 to \$20,000. ....	1916 1914 1909	300 314 361	1,764 1,669 2,147	3,101,970 3,216,529 3,688,013	2,015,011 2,066,431 2,326,787	\$20,000 to \$100,000. ....	1916 1914 1909	17.3 15.9 16.1	6.0 9.4 13.4	4.8 8.9 12.8	5.3 8.9 13.1	
\$20,000 to \$100,000. ....	1916 1914 1909	197 182 218	4,364 4,162 5,422	9,006,099 7,916,358 9,388,497	5,132,024 4,442,517 5,538,002	\$100,000 to \$1,000,000. ....	1916 1914 1909	12.7 7.6 5.8	23.2 26.0 26.0	22.8 28.5 28.8	23.1 30.2 29.9	
\$100,000 to \$1,000,000. ....	1916 1914 1909	144 87 78	16,827 11,581 10,550	42,396,128 25,230,918 21,143,086	22,343,535 15,108,403 12,602,776	\$1,000,000 and over. ....	1916 1914 1909	3.1 1.3 1.0	67.7 59.6 53.5	70.1 57.6 51.3	68.8 55.2 49.0	

Table 15		Census year.	ESTABLISHMENTS EMPLOYING—																			
			TOTAL.		No wage earners.		1 to 5 wage earners.		6 to 20 wage earners.		21 to 50 wage earners.		51 to 100 wage earners.		101 to 250 wage earners.		251 to 500 wage earners.		501 to 1,000 wage earners.		Over 1,000 wage earners.	
			Establishments.	Wage earners (average number).	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.	Establishments.	Wage earners.
INDUSTRY AND STATE.																						
United States.....	1916	1,137	72,497	146	485	1,024	230	2,371	113	3,515	60	5,095	50	7,730	21	7,690	8	6,502	15	38,570		
	1914	1,147	44,489	170	602	1,334	194	2,157	81	2,644	40	2,966	32	4,593	13	4,138	7	5,337	8	21,320		
	1909	1,353	40,506	192	711	1,456	257	2,841	94	3,089	52	3,632	33	3,972	10	3,355	6	4,311	8	17,844		
Shipbuilding, steel.....	1916	109	50,236	1	4	16	12	151	16	563	16	1,182	20	3,198	18	6,614	7	5,937	15	38,570		
	1914	79	33,503	-----	4	9	11	137	10	369	10	763	20	2,928	10	3,235	6	4,747	8	21,320		
	1909	53	28,143	-----	2	9	4	53	6	227	8	611	9	1,733	10	3,355	6	4,311	8	17,844		
Shipbuilding, wooden, including boat building..	1916	1,028	16,261	145	481	1,008	218	2,220	97	2,947	53	3,913	30	4,532	3	1,076	1	565	-----	-----		
	1914	1,063	10,981	170	593	1,325	183	2,020	71	2,275	30	2,203	12	1,665	3	903	1	590	-----	-----		
	1909	1,300	12,363	192	709	1,447	253	2,788	88	2,821	44	3,021	14	2,245	-----	-----	-----	-----	-----	-----		
Alabama.....	1916	8	541	-----	-----	-----	3	40	1	49	2	157	2	295	-----	-----	-----	-----	-----	-----		
	1914	4	464	-----	2	9	-----	-----	-----	-----	1	78	-----	-----	1	377	-----	-----	-----	-----		
	1909	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----		
California.....	1916	50	7,113	1	19	45	13	137	8	236	2	146	4	563	1	332	1	833	1	4,820		
	1914	52	3,457	2	24	64	16	190	4	137	1	98	2	303	2	666	-----	-----	1	1,999		
	1909	43	1,844	3	19	46	11	124	5	133	1	73	3	502	-----	-----	1	966	-----	-----		
Connecticut.....	1916	31	1,312	6	11	25	6	61	1	34	4	270	1	166	2	756	-----	-----	-----	-----		
	1914	37	514	5	22	47	4	48	2	54	2	151	2	214	-----	-----	-----	-----	-----	-----		
	1909	43	427	7	21	40	10	126	2	56	3	205	-----	-----	-----	-----	-----	-----	-----	-----		
Delaware.....	1916	9	1,938	-----	2	6	3	24	1	25	-----	-----	1	172	1	322	-----	-----	1	1,399		
	1914	8	784	-----	4	16	1	6	1	25	-----	-----	1	121	-----	-----	1	616	-----	-----		
	1909	10	1,239	-----	3	12	3	24	2	53	-----	-----	-----	-----	1	484	-----	666	-----	-----		
Florida.....	1916	57	1,172	9	24	59	16	160	6	178	-----	-----	1	150	-----	-----	1	625	-----	-----		
	1914	66	489	9	43	90	12	108	1	31	-----	-----	-----	-----	1	260	-----	-----	-----	-----		
	1909	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----		
Illinois.....	1916	18	598	1	7	14	8	91	1	40	-----	-----	-----	-----	1	453	-----	-----	-----	-----		
	1914	22	418	4	8	13	9	123	-----	-----	-----	-----	-----	-----	1	282	-----	-----	-----	-----		
	1909	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----		
Louisiana.....	1916	26	1,306	3	9	23	4	42	3	76	2	114	4	684	1	367	-----	-----	-----	-----		
	1914	17	666	1	8	21	-----	-----	3	92	2	149	3	404	-----	-----	-----	-----	-----	-----		
	1909	25	374	2	8	21	10	111	3	109	2	133	-----	-----	-----	-----	-----	-----	-----	-----		
Maine.....	1916	100	1,857	24	42	76	21	224	7	205	3	238	2	324	-----	-----	1	790	-----	-----		
	1914	107	1,122	31	56	95	14	128	4	143	-----	-----	1	121	-----	-----	1	635	-----	-----		
	1909	156	1,765	33	93	125	21	237	6	227	2	117	-----	-----	-----	-----	-----	-----	1	1,049		
Maryland.....	1916	50	5,326	3	23	55	5	57	13	435	2	154	2	340	-----	-----	-----	-----	2	4,285		
	1914	42	2,468	6	12	27	10	127	9	281	1	66	2	340	1	255	-----	-----	1	1,372		
	1909	46	1,793	3	22	43	7	63	10	321	2	132	1	228	-----	-----	-----	-----	1	1,001		
Massachusetts.....	1916	85	4,373	9	48	101	17	145	5	143	1	63	3	580	1	279	-----	-----	1	3,062		
	1914	84	3,944	9	54	128	15	144	2	82	1	81	2	435	-----	-----	-----	-----	1	3,074		
	1909	115	3,604	10	80	184	15	171	5	148	2	120	2	329	-----	-----	-----	-----	1	2,652		
Michigan.....	1916	55	2,225	5	29	59	11	113	3	76	3	256	1	172	2	643	1	906	-----	-----		
	1914	62	1,261	8	38	84	6	66	4	137	4	315	1	182	1	477	-----	-----	-----	-----		
	1909	91	2,344	23	45	95	11	118	2	65	4	312	4	774	1	314	1	666	-----	-----		
New Jersey.....	1916	76	7,777	8	36	76	12	115	2	70	5	399	3	1,283	3	959	-----	-----	2	4,875		
	1914	85	6,324	13	41	84	14	135	5	187	5	335	5	738	-----	-----	1	965	1	3,832		
	1909	97	4,869	8	57	116	13	124	6	206	8	588	3	523	1	453	-----	-----	1	2,859		
New York.....	1916	200	9,928	29	76	143	41	406	21	696	18	1,273	7	1,061	5	1,956	1	864	2	3,592		
	1914	207	6,076	34	103	225	31	362	18	544	10	708	6	785	2	534	2	1,393	1	1,525		
	1909	255	5,644	37	121	264	61	724	17	600	13	934	2	348	2	584	1	548	1	1,642		
Ohio.....	1916	32	5,059	5	10	22	7	63	2	44	3	249	-----	-----	1	384	1	506	3	3,731		
	1914	29	2,579	3	13	27	4	42	2	59	2	128	1	232	2	663	2	1,728	-----	-----		
	1909	39	3,200	8	13	27	8	90	4	154	2	108	-----	-----	1	282	2	1,465	1	1,074		
Oregon.....	1916	26	1,003	2	11	20	2	30	5	147	2	172	4	634	-----	-----	-----	-----	-----	-----		
	1914	21	164	6	9	15	3	35	2	54	1	60	-----	-----	-----	-----	-----	-----	-----	-----		
	1909	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----		

Table 15—Continued.

INDUSTRY AND STATE.	Cen- sus year.	TOTAL.		ESTABLISHMENTS EMPLOYING—											
				No wage earn- ers.		1 to 5 wage earn- ers.		6 to 20 wage earn- ers.		21 to 50 wage earn- ers.		51 to 100 wage earn- ers.		101 to 250 wage earn- ers.	
		Estab- lish- ments.	Wage earn- ers (average num- ber).	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.	Estab- lish- ments.	Wage earn- ers.
Pennsylvania.....	1916	30	6,440	4	7	18	8	70	3	88	4	276	2	318	1
	1914	33	4,773	3	15	45	6	94	3	123	3	244	2	213	1
	1909	31	3,558	2	12	26	7	70	2	61	3	199	3	366	1
Rhode Island.....	1916	14	616	3	5	11	2	19	2	53	.....	.....	1	156	1
	1914	15	581	1	9	17	2	33	1	36	.....	.....	1	134	1
	1909	13	535	.....	7	18	3	47	1	36	1	91	.....	343	.....
Virginia.....	1916	30	7,221	1	15	40	5	58	3	88	2	113	3	341	.....
	1914	29	4,846	1	16	46	6	54	1	25	3	219	1	103	.....
	1909	36	5,382	2	25	68	4	31	1	21	3	197	.....	.....	.....
Washington.....	1916	57	3,744	8	18	34	15	165	5	176	6	470	3	353	1
	1914	64	1,444	13	31	81	14	135	4	135	1	75	.....	.....	951
	1909	60	744	8	28	57	18	201	4	124	1	75	.....	1	287
Wisconsin.....	1916	30	1,250	1	16	28	6	59	3	107	2	194	.....	2	862
	1914	34	695	2	20	33	7	93	2	65	1	98	1	142	1
	1909	52	906	5	33	59	8	85	3	82	.....	.....	2	406	1

Considering the total for all states there were 146 establishments in operation during 1916 in which no wage earners were employed, as compared with 170 in 1914 and 192 in 1909. In some cases a few wage earners were employed for short periods, but the periods were so short and the numbers so small that in computing the average number as described in the "Explanation of terms," no wage earners could be shown.

Of the total number of wage earners, 60,492, or 83.4 per cent, in 1916; 35,388, or 79.5 per cent, in 1914; and 29,488, or 72.8 per cent, in 1909 were reported by establishments which employed more than 100 wage earners. The most important group at each census was that comprising establishments which employed more than 1,000 wage earners. This group reported 53.2 per cent, 47.9 per cent, and 44.1 per cent of the total number of wage earners in 1916, 1914, and 1909, respectively. It is noteworthy that of the establishments employing more than 1,000 wage earners in 1916, three were located in Ohio and two each in Maryland, New Jersey, and New York, although the three largest were in California, Pennsylvania, and Virginia. The group of establishments which employed from one to five wage earners shows a decrease both in number of establishments and number of wage earners in 1916 as compared with 1914 and 1909. Each of the groups of establishments employing from 6 to 100 wage earners, increased both in number of establishments and in number of wage earners between 1914 and 1916, although these groups decreased between 1904 and 1914. The states showing the largest percentage of increase between 1914 and 1916 in the number of wage earners employed in the shipbuilding plants were Oregon, 511.6 per cent; Washington, 159.3 per cent; Connecticut, 155.3 per cent; Delaware, 147.2 per cent; Florida, 193.7 per cent; and Maryland, 115.8 per cent.

**Engines and power.**—Table 16 shows, for 1914, 1909, and 1904, for the industry, the number and horsepower of engines or motors employed in generating current (including electric motors operated by purchased current). It also shows separately the number and horsepower of electric motors operated by current generated in the establishments reporting. This information was not called for on the schedule for 1916.

The total primary horsepower used in the shipbuilding and the boat-building industry increased 47.6 per cent between 1904 and 1914. Owned power shows a proportional decrease from 96.7 per cent in 1904 to 73.7 per cent in 1914, due to the relative increase of the use of rented electric power, which increased from 3 per cent in 1904 to 26.1 per cent in 1914. The proportion which the power generated by steam engines and turbines formed of the total owned primary power shows a decrease from 94.3 per cent in 1904 to 69 per cent in 1914. The use of power generated by internal-combustion engines shows a marked increase, from 2.3 per cent in 1904 to 4.6 per cent in 1914. The proportion of the power generated by water wheels, turbines, and motors did not differ from one census to another, the percentage of the total—one-tenth of 1 per cent—being the same for each census period.

Rented power, which formed 3.3 per cent of the total power used in 1904, increased to 26.3 per cent of the total in 1914. Since the census of 1904, electricity has assumed an increasingly important place in the shipbuilding industry. The total horsepower of electric motors in use in 1914 amounted to 66,275, a little over one-half of which represented the power of motors run by current generated in the establishments reporting. Table 37 shows for 1914 the amount of each of the several kinds of power used in each of the states.



Table 16

POWER.	NUMBER OF ENGINES OR MOTORS.			HORSEPOWER.					
				Amount.			Per cent distribution.		
	1914	1909	1904	1914	1909	1904	1914	1909	1904
Primary power, total.....	2,999	1,960	1,359	115,333	88,063	78,127	100.0	100.0	100.0
Owned.....	1,338	1,416	1,206	85,029	78,769	75,529	73.7	89.4	95.7
Steam engines and turbines <sup>1</sup> .....	831	991	1,015	79,599	75,180	73,657	69.0	85.4	94.3
Internal-combustion engines.....	502	420	182	5,336	3,503	1,785	4.6	4.0	2.3
Water wheels, turbines, and motors.....	5	5	9	94	86	87	0.1	0.1	0.1
Rented.....	1,661	544	153	30,304	9,294	2,598	26.3	10.6	3.3
Electric.....	1,661	544	153	30,085	9,264	2,367	26.1	10.6	3.0
Other.....				219	30	231	0.2	(?)	0.3
Electric.....	3,989	2,266	1,290	66,275	35,334	17,630	100.0	100.0	100.0
Rented.....	1,661	544	153	30,085	9,264	2,367	45.4	26.2	13.4
Generated by establishments reporting.....	2,328	1,722	1,137	36,190	26,070	15,263	54.6	73.8	86.6

<sup>1</sup> Figures for horsepower include for 1909 and 1904 the amount reported under the head of "other" owned power.<sup>2</sup> Less than one-tenth of 1 per cent.

The states which, in 1914, ranked highest with respect to the amount of power used in the shipbuilding industry were New York, New Jersey, Pennsylvania, and Ohio in the order named. The total horsepower reported for these four states in 1914 was 48,963, or 42.5 per cent of the total for the United States. Although steam was the power most commonly used in all the states, New York and Pennsylvania reported more rented electric power than any other kind and New York also reported a large amount of power derived from internal-combustion engines.

**Fuel.**—Table 17 shows for 1914 the kind and quantity of fuel used, for which data were obtained, for the industry as a whole and for 16 of the leading states.

Bituminous coal was the principal fuel used in the shipbuilding industry, 251,820 tons being consumed in 1914. The largest amount was reported for New Jersey, which state also reported the largest consumption of anthracite coal. California reported 78,596 barrels of oil, or 63.9 per cent of the total quantity of this

kind of fuel consumed in the industry, while Ohio reported 95.6 per cent of all the gas used.

Table 17

STATE.	SHIPBUILDING, INCLUDING BOAT BUILDING: 1914.				
	Coal.		Coke (short tons).	Oil, including gasoline (barrels).	Gas (1,000 cubic feet).
	Anthracite (long tons).	Bituminous (short tons).			
United States.....	13,441	251,820	10,548	122,929	404,785
California.....	15	175	.....	78,596	30
Connecticut.....	91	2,227	108	317	112
Delaware.....	512	7,209	451	3,471	167
Louisiana.....	4	740	34	1,452	.....
Maine.....	19	4,871	1	254	140
Maryland.....	481	19,677	364	1,205	370
Massachusetts.....	325	28,652	350	475	237
Michigan.....	19	22,594	410	2,290	194
New Jersey.....	6,179	36,101	1,397	7,170	520
New York.....	4,255	23,347	639	2,657	5,741
Ohio.....	64	24,434	1,851	4,174	387,074
Pennsylvania.....	140	33,877	1,552	245	219
Rhode Island.....	69	4,582	9	43	82
Virginia.....	83	23,693	2,984	6,804	660
Washington.....	5	61	190	11,079	.....
Wisconsin.....	49	5,762	39	113	.....
All other states.....	1,125	13,818	169	1,984	9,239

## SPECIAL STATISTICS.

**Statistics covered and terms used.**—The schedules used in collecting the statistics of shipbuilding required a detailed statement of the number, kind, and tonnage of vessels launched; the number, kind, and value of boats built; and a statement of the value of the different kinds of work done. These statistics were collected for the years 1914 and 1916. For 1914 additional information regarding the repair facilities of shipyards was required.

In explanation of the terms gross and net tons, it should be stated that gross tonnage is the total internal cubic capacity of a vessel, expressed in tons of 100 cubic feet each, while net tonnage is the internal cubical capacity remaining after deductions have been made from gross tonnage for quarters of officers and crew, for boilers, machinery, and coal bunkers, and for navigation and other purposes. Net tonnage, therefore, may be regarded as that portion of the vessel which is available for passengers and cargo. Tonnage measurements are not altogether uniform among maritime nations, but vary with the laws of the nation under which registry is made. Displacement tonnage, which is used in stating the size of vessels of the United States Navy, differs from gross and net tonnage as applied to merchant vessels, and is merely the weight of the volume of water displaced, equivalent, of course, to the weight of the vessel. The tonnage of vessels of the United States Navy, as given in the statistics, is always displacement tonnage. While gross tonnage and displacement tonnage are not by any means the same, it is necessary to combine the tonnage of vessels whose capacity is reckoned in one way with that of vessels whose capacity is reckoned by the other method in order to obtain a total which should represent approximately the total tonnage launched during the year.

In the tables which follow, gross tonnage is shown for 1916 and 1914 unless otherwise specified, and the statistics do not include the products of Government shipyards nor the subsidiary products of establishments in other industries unless specifically stated.

**Vessels and boats.**—Table 18 shows the number and gross tonnage of all vessels launched during the census years 1916, 1914, 1909, and 1904 and distinguishes three classes of establishments reporting for 1914, 1909, and 1904, and two classes of establishments for 1916. In many cases a large part of the work on vessels launched during the census years was done in prior years, and, on the other hand, much work was done during each census year on vessels which were not launched.

In 1914, 1909, and 1904 shipbuilding statistics were collected as a part of the quinquennial census of manufactures for these years and include data for vessels and boats built by establishments engaged primarily in other lines of manufacture and hence not classed as shipbuilding, whereas the census of 1916 did not cover other manufacturing industries but was limited to the shipbuilding industry proper. The statistics for 1916, therefore, are those of establishments engaged primarily in ship and boat building and repairs, and include Government shipyards but do not include any ships or boats that may have been built in establishments designated as "Private establishments in other industries." The number, as well as the tonnage, of vessels launched by these private establishments is relatively small, the tonnage amounting to only 3 per cent of the total in 1914, 2.6 per cent in 1909, and 3.1 per cent in 1904.

The decline in shipbuilding during the 10-year period from 1904 to 1914 is clearly brought out by the fact that there was a decrease in number and tonnage of both steel and wooden vessels of 5 tons and over. The depression in the shipbuilding industry during this 10-year period was somewhat relieved by 1916, as the table shows an increase in 1916 over 1914 both in number and tonnage of vessels launched.

The total gross tonnage of vessels launched in 1916 by private establishments in the shipbuilding industry was 734,108, an amount exceeding that launched in 1914 by 309,048 gross tons, or 72.7 per cent. The construction of steel vessels, which decreased both in number and in gross tonnage between 1909 and 1914, shows a great increase between 1914 and 1916, the increase being 104, or 82.5 per cent, in number of vessels built, and 242,901, or practically 100 per cent, in gross tonnage. The tonnage of the steel vessels amounted to 66.2 per cent of the total tonnage launched by private establishments. The year 1916 also shows an increased activity in the building of wooden vessels, the period between 1909 and 1904 having been one of depression in the wooden shipbuilding industry. The number of wooden vessels launched decreased from 1,426 in 1909 to 987 in 1914, and the gross tonnage of these from 212,233 to 182,101, but in 1916 there was a gain over 1914 of 160 in number and 66,147, or 36.3 per cent, in gross tonnage. The number of small power boats of less than 5 tons built in 1916 was 3,606, as compared with 3,706 in 1914, 8,577 in 1909, and 3,499 in 1904.

Table 18

CLASS.	Census year.	NUMBER AND GROSS TONNAGE OF VESSELS LAUNCHED DURING THE YEAR, AND NUMBER OF POWER BOATS.							
		All establishments.		Private establishments in the shipbuilding industry.		Private establishments in other industries. <sup>1</sup>		Government shipyards.	
		Number.	Gross tonnage.	Number.	Gross tonnage.	Number.	Gross tonnage.	Number.	Displacement tonnage.
Vessels of 5 gross tons and over.....	1916	1,463	772,167	1,377	734,108	.....	.....	86	38,059
	1914	1,255	455,567	1,113	425,060	94	13,654	48	16,853
	1909	1,637	481,813	1,584	467,219	22	12,535	31	2,059
	1904	2,279	728,104	2,114	678,525	134	22,327	31	27,252
Classified by materials:									
Steel.....	1916	244	518,858	230	485,860	.....	.....	14	32,998
	1914	215	268,870	126	242,939	69	9,792	20	16,119
	1909	169	200,765	158	254,986	8	5,429	3	350
	1904	172	352,699	152	328,411	3	408	17	23,850
Wooden.....	1916	1,219	253,309	1,147	248,248	.....	.....	72	5,061
	1914	1,040	186,697	987	182,101	25	3,862	28	734
	1909	1,468	221,048	1,426	212,233	14	7,106	28	1,709
	1904	2,107	375,435	1,962	350,114	131	21,919	14	8,402
Classified by power:									
Steam.....	1916	206	472,597	186	442,354	.....	.....	20	30,243
	1914	148	243,011	139	234,636	.....	.....	9	8,375
	1909	194	235,315	181	234,633	3	429	10	253
	1904	320	368,117	308	349,600	6	467	6	18,050
Motor.....	1916	434	30,316	403	29,866	.....	.....	31	450
	1914	382	10,867	370	10,821	4	6	8	40
	1909	447	9,413	445	9,589	2	24	.....	.....
	1904	311	3,247	307	3,157	4	90	.....	.....
Sail, with auxiliary power.....	1916	62	30,625	62	30,625	.....	.....	.....	.....
	1914	66	6,575	58	2,799	8	3,776	.....	.....
	1909	68	2,652	68	2,652	.....	.....	.....	.....
	1904	352	68,615	349	64,615	.....	.....	3	4,000
Sail, without auxiliary power.....	1916	62	15,456	62	15,456	.....	.....	.....	.....
	1914	40	2,224	40	2,224	.....	.....	.....	.....
	1909	51	14,807	51	14,807	.....	.....	.....	.....
	1904	.....	.....	.....	.....	.....	.....	.....	.....
Unrigged.....	1916	699	223,173	664	215,807	.....	.....	35	7,366
	1914	610	192,890	506	174,580	82	9,872	31	8,438
	1909	877	219,626	839	205,738	17	12,082	21	1,806
	1904	1,206	288,125	1,159	261,153	124	21,770	22	5,202
Power boats of less than 5 gross tons.....	1916	3,710	.....	3,606	.....	.....	.....	104	.....
	1914	4,518	.....	3,706	.....	758	.....	54	.....
	1909	9,042	.....	8,577	.....	412	.....	53	.....
	1904	3,916	.....	3,499	.....	365	.....	52	.....

<sup>1</sup> Not reported in 1916.<sup>2</sup> Includes sail, without auxiliary power.

Of the 1,377 vessels of all kinds launched by private establishments in the industry in 1916, 186 with a total gross tonnage of 442,354 were steam vessels, an increase of 47 over the number and 207,718 over the gross tonnage of steam vessels launched in 1914. Motor craft launched in 1916 were 403 and the gross tonnage was 29,866. Sailboats, both with and without auxiliary power, show an increase in number launched and gross tonnage between 1914 and 1916.

Establishments in the industry show the increase in average gross tonnage of vessels launched in 1916, as compared with those of 1914. The increase in the average tonnage of steam vessels amounted to 690 tons, or 40.8 per cent; that of motor craft from an average of about 29 gross tons to 74, while the average tonnage of sailboats with auxiliary power in 1916 was more than ten times the average of 48 gross tons shown for 1914. Sailboats without auxiliary power

also show an increase in average tonnage from about 56 tons in 1914 to nearly 250 in 1916.

Unrigged craft, although declining in both number and tonnage of vessels launched from 1904 to 1914, shows a decided increase from 1914 to 1916.

The number of vessels of 5 tons and over launched in Government shipyards in 1916 was almost double the number launched in 1914 and the total tonnage more than double. Of the 86 vessels launched 14 were steel vessels and 72 wooden. The total tonnage of steam vessels launched in Government shipyards increased more than 260 per cent between 1914 and 1916.

Table 19 shows, for private establishments in the shipbuilding industry, the number of vessels launched and the gross tonnage and the number of power boats built of less than 5 tons, for 1916 and 1914, by coast divisions and inland waters.

Table 19

CLASS.	Census year.	NUMBER AND GROSS TONNAGE OF VESSELS LAUNCHED, AND NUMBER OF POWER BOATS.							
		United States.	Coast divisions.				Inland waters.		
			North Atlantic.	South Atlantic.	Gulf.	Pacific.	Great Lakes.	Mississippi River and its tributaries.	Other inland waters.
Vessels launched during the year, 5 gross tons and over:									
Number.....	1916	1,377	597	138	87	223	89	234	9
	1914	1,113	401	99	126	231	82	153	21
Gross tonnage.....	1916	734,108	280,249	128,614	18,507	134,086	121,134	50,593	925
	1914	425,060	174,632	69,288	23,733	41,112	43,251	71,612	1,434
Steel:									
Number.....	1916	230	64	27	7	20	57	55	-----
	1914	126	41	21	6	15	21	22	-----
Gross tonnage.....	1916	485,860	136,909	108,929	1,990	102,119	118,600	17,313	-----
	1914	242,959	108,042	60,114	1,931	23,973	39,929	8,970	-----
Wooden:									
Number.....	1916	1,147	533	111	80	203	32	179	9
	1914	987	360	78	120	216	61	131	21
Gross tonnage.....	1916	248,248	143,340	19,685	16,517	31,967	2,534	33,280	925
	1914	182,101	66,590	9,172	21,802	17,139	3,322	62,642	1,434
Steam:									
Number.....	1916	186	58	22	7	33	46	20	-----
	1914	139	44	18	4	22	29	20	2
Gross tonnage.....	1916	442,354	126,319	95,897	2,652	111,404	102,464	3,618	-----
	1914	234,636	104,100	57,544	415	28,890	38,811	4,798	78
Motor:									
Number.....	1916	403	170	38	22	123	22	24	4
	1914	370	123	33	23	132	39	8	7
Gross tonnage.....	1916	29,866	7,052	13,960	466	7,315	479	549	45
	1914	10,821	2,221	593	1,909	4,996	972	86	44
Sail, with auxiliary power:									
Number.....	1916	62	31	3	12	9	7	-----	-----
	1914	58	35	3	2	15	3	-----	-----
Gross tonnage.....	1916	30,625	2,854	1,420	4,595	9,985	11,771	-----	-----
	1914	2,799	1,746	56	72	835	90	-----	-----
Sail, without auxiliary power:									
Number.....	1916	62	33	1	12	15	1	-----	-----
	1914	40	18	2	5	15	-----	-----	-----
Gross tonnage.....	1916	15,456	9,395	75	2,298	1,368	2,320	-----	-----
	1914	2,224	1,844	64	194	122	-----	-----	-----
Unrigged:									
Number.....	1916	664	305	74	34	43	13	190	5
	1914	506	181	43	87	47	11	125	12
Gross tonnage.....	1916	215,807	134,629	17,262	8,496	4,014	4,100	46,426	830
	1914	174,580	64,721	11,029	21,143	6,269	3,378	66,728	1,312
Power boats launched during the year of less than 5 gross tons.....	1916	3,606	1,946	143	152	191	412	462	300
	1914	3,706	1,265	206	127	363	541	427	777

The North Atlantic division ranked first in 1916 and 1914, both in gross tonnage and in the number of vessels launched. There was constructed in this division in 1916, 43.3 per cent of all the vessels built in the United States, comprising 38.2 per cent of the total tonnage, as compared with 36 and 41.1 per cent, respectively, in 1914. There was an increase in 1916 over 1914 in the gross tonnage of steel and wooden vessels launched in the North Atlantic division, the increase being 26.7 per cent and 115.1 per cent, respectively.

There were six establishments in the South Atlantic division which constructed 27 steel vessels of 108,929 gross tons during 1916. The vessels built in this coast district were of much greater tonnage per vessel than those constructed in the North Atlantic division. The higher average tonnage, 4,034, was caused by one establishment building 8 vessels of nearly 8,000 tons each. There was a great increase in the size of motor vessels; in 1916, 38 such craft were launched with an average tonnage of 367, as compared with 33 built in 1914 with an average of 18 gross tons.

In the Gulf division the table shows for 1916, as compared with 1914, a decrease in number and tonnage of vessels launched. In 1916 there were 87 vessels of

all kinds launched as compared with 126 in 1914, a decrease of 39. In the later year the total gross tonnage of vessels launched was 18,507, as compared with 23,733 in the earlier year, a decrease of 5,226 tons, or 22 per cent. The decrease in the number and tonnage of vessels launched was chiefly due to the smaller number and tonnage of unrigged craft built and does not necessarily indicate a decline in shipbuilding activities, for Table 6, shows that the number of wage earners employed in 1916 and the value of work done in the Gulf district exceeded that of 1914.

The Pacific division, which holds an important position in the shipbuilding industry, has made rapid progress since 1904, at which time California held fifth place among the states in the value of products; Oregon, twenty-first; and Washington, twelfth place. Although there was a slight decrease in the number of vessels built from 1914 to 1916, there was a large increase in tonnage launched. The total gross tonnage of all classes of vessels constructed in this division in 1916 was 134,086, an increase over 1914 of 92,974, or 226.1 per cent. The relative increase in tonnage of steel vessels launched during the same period was even greater, amounting to 326 per cent. While there were only 5 more steel vessels launched on the Pacific

coast in 1916 than in 1914, there was a large increase in the mean tonnage per vessel, from 1,598 to 5,106 tons. This large increase in tonnage per vessel was, in a measure, due to the fact that 10 steel vessels for the coastwise or foreign trade, with an average tonnage of 7,494, were constructed by one establishment in California. In total tonnage launched in 1916 this division holds second place, being outranked only by the North Atlantic division.

The steel tonnage launched in the Great Lakes division in 1916 was 118,600, or 197 per cent greater than that launched in 1914. The number and gross tonnage of steam vessels built show increases, between 1914 and 1916, while decreases are shown for motor vessels. In 1914 three sail vessels with auxiliary power, having an average gross tonnage of 30, were built in this district, but in 1916 seven such vessels were constructed with an average tonnage of 1,682.

The number and gross tonnage of steel vessels launched during 1916 on the Mississippi River and its

tributaries were much greater than in 1914. In 1916, 55 steel vessels with a gross tonnage of 17,313 were launched as compared with 22 vessels with a total gross tonnage of 8,970 in 1914. In 1916 the same number of steam vessels was built in this division as in 1914, but the total tonnage was 1,180 less. Motor craft were the only class showing an increase between 1914 and 1916, in both number and average tonnage.

No steel vessels were constructed either in 1914 or 1916 in "Other inland waters" and only 9 wooden vessels were built in 1916 with a gross tonnage of 925 and these were motor and unrigged vessels. There was a relatively large number of small power boats under 5 gross tons constructed, in 1916, in this division, but the number, 300, was 477 less than the number constructed in 1914.

Table 20 shows the number, class, gross tonnage, and place where launched of all steel vessels built in the United States in 1916, exclusive of Government vessels.

Table 20

LOCATION OF SHIPYARD.		STEEL VESSELS LAUNCHED: 1916.									
		Total.		Steam.		Motor.		Sail.		Unrigged.	
		Num-ber.	Tonnage.	Num-ber.	Tonnage.	Num-ber.	Tonnage.	Num-ber.	Tonnage.	Num-ber.	Tonnage.
Total.....		230	485,860	126	424,791	25	18,200	8	14,191	71	28,678
ALABAMA.....	Mobile.....	1	70	1	70						
CALIFORNIA.....	Long Beach.....	3	2,250	1	1,250	2	1,000				
	Oakland.....	1	4,823	1	4,823						
	San Francisco.....	10	74,939	10	74,939						
CONNECTICUT.....	Bridgeport.....	2	795			2	795				
DELAWARE.....	Wilmington.....	12	14,998	6	13,532	3	482			3	984
FLORIDA.....	Jacksonville.....	1	318	1	258	1	60				
	Tampa.....	1	1,566	1	1,566						
ILLINOIS.....	Chicago.....	1	2,029	1	2,029						
INDIANA.....	Jeffersonville.....	5	1,018	5	1,018						
IOWA.....	Dubuque.....	2	165			1	15			1	150
KENTUCKY.....	Bowling Green.....	1	28			1	28				
LOUISIANA.....	Harvey.....	1	30			1	30				
	Violet.....	1	80							1	80
MAINE.....	Bath.....	5	4,199	3	2,599					2	1,600
MARYLAND.....	Baltimore.....	9	13,881	4	836	5	13,045				
	Sparrows Point.....	8	31,952	8	31,952						
MASSACHUSETTS.....	Boston.....	1	204			1	204				
	Quincy.....	10	38,646	7	36,776	3	1,870				
MICHIGAN.....	Detroit.....	15	36,566	12	35,618					3	948
	Ferrysburg.....	2	940							2	940
	Marine City.....	2	400							2	400
NEW JERSEY.....	Camden.....	2	25,285	3	19,559					6	5,726
	Elizabethport.....	9	762	2	762						
NEW YORK.....	Buffalo.....	4	276	2	26					2	250
	City Island.....	2	284	1	269	1	15				
	Croton on Hudson.....	1	50	1	50						
	Newburgh.....	3	1,624							3	1,624
	Port Richmond.....	5	1,844	5	1,844						
OHIO.....	Ashtabula.....	4	7,910	4	7,910						
	Cleveland.....	8	8,860	7	6,540			1	2,320		
	Elmwood.....	6	792							6	792
	Lorain.....	6	37,542	5	37,542						
	Toledo.....	5	11,743					6	11,743		
PENNSYLVANIA.....	Ambridge.....	39	14,624							39	14,624
	Chester.....	2	11,290	2	11,290						
	Dravosburg.....	1	186	1	186						
	Philadelphia.....	9	36,890	8	36,890					1	560
	Pittsburgh.....	1	500	1	500						
RHODE ISLAND.....	Bristol.....	1	128					1	128		
TEXAS.....	Beaumont.....	2	54			2	54				
	Galveston.....	1	190			1	190				
VIRGINIA.....	Newport News.....	8	62,778	8	62,778						
WASHINGTON.....	Seattle.....	6	20,107	5	19,695	1	412				
WISCONSIN.....	Green Bay.....	2	755	2	755						
	Manitowoc.....	6	2,320	6	2,320						
	Superior.....	2	9,259	2	9,259						

The greatest tonnage, 74,939, was launched in San Francisco, Calif., and the second greatest tonnage in Newport News, Va. While San Francisco holds first place in aggregate tonnage, the vessels launched in Newport News were of larger average tonnage, the figures being 7,494 and 7,847, respectively. For

these two places was reported 28.3 per cent of the total steel tonnage launched in the United States in 1916.

Table 21 shows, by coast divisions and inland waters, steel vessels launched during 1916, classified according to screw and stern wheel.

**Table 21**

DIVISION.	STEEL POWER VESSELS LAUNCHED: 1916.											
	Total.				Screw.				Stern wheel.			
	Steam.		Motor.		Steam.		Motor.		Steam.		Motor.	
	Num- ber.	Tonnage.	Num- ber.	Tonnage.	Num- ber.	Tonnage.	Num- ber.	Tonnage.	Num- ber.	Tonnage.	Num- ber.	Tonnage.
United States.....	126	424,791	25	18,200	117	422,999	24	18,172	9	1,792	1	28
North Atlantic.....	38	122,921	10	3,366	38	122,921	10	3,366				
South Atlantic.....	21	95,824	6	13,105	21	95,824	6	13,105				
Gulf.....	2	1,636	4	274	1	1,566	4	274	1	70		
Pacific.....	17	100,707	3	1,412	17	100,707	3	1,412				
Great Lakes.....	41	101,999			40	101,981			1	18		
Mississippi River and its tributaries.....	7	1,704	2	43			1	15	1	1,704	1	28
Other inland waters.....												

<sup>1</sup> Includes 1 steam vessel propelled by side wheel and 3 catamarans propelled by center wheel.

Of the 126 steam and 25 motor equipped vessels, 117 steam and 24 motor were screw propelled; 5 steam and 1 motor were propelled by stern wheel and 1 steam was propelled by side wheel, while 3 steam were center wheel catamarans built in Jeffersonville, Ind., for use on the Mississippi River.

Table 22 shows by coast divisions and inland waters the gross tonnage of vessels launched during 1914 and 1916, according to the service in which vessels are to be used. In this and the following tables data does not include the products of Government shipyards.

The bulk of the shipbuilding in the United States has heretofore been the tonnage built for the domestic and coastwise trade, which combined, represented 70.7 per cent of the entire tonnage launched in 1914, and 65.9 per cent in 1916. Notwithstanding an increase of 574.1 per cent over 1914, the tonnage of vessels constructed primarily for the foreign trade represents but a small proportion of the entire output of the shipyards, or 29.2 per cent in 1916. The domestic water transportation of the United States is confined to vessels constructed and owned in the United States. Shipbuilding for this trade amounted to 43.8 per cent of the total construction in 1916.

The Commissioner of Navigation, in his annual report for the fiscal year ended June 30, 1916, says:

"Of the steel tonnage under construction in the United States, American builders, according to their returns to the Bureau of Navigation, before June 30, 1917, will launch 326 ships of 998,035 gross tons. In that event the product of American yards will exceed that of all foreign yards outside of the United Kingdom combined, and will probably exceed the output of the British yards."<sup>1</sup>

In 1914 the North Atlantic division built 41.1 per cent of the total tonnage constructed in American shipyards, but in 1916 only 38.2 per cent. The Pacific division, which ranked fifth in total tonnage launched in 1914, held second place in 1916. The largest amount of tonnage constructed for the foreign trade in 1916 was built in the shipyards located in the Pacific division, 43.8 per cent of the total. In 1914 the South Atlantic division led all others in this respect. In 1916 the largest amount of domestic tonnage was built in the North Atlantic division, the amount built in the Great Lakes division closely following, and these two divisions, combined, built 73.6 per cent of the total output of domestic tonnage. Over one-half of the coastwise tonnage was also constructed in the North Atlantic division in 1916.

<sup>1</sup> Report of Commissioner of Navigation, 1916, p. 19.

## MANUFACTURES.

Table 22

Table 22	CHARACTER OF SERVICE.	Census year.	GROSS TONNAGE OF VESSELS LAUNCHED.							
			United States.	Coast divisions.				Inland waters.		
				North Atlantic.	South Atlantic.	Gulf.	Pacific.	Great Lakes.	Mississippi River and its tributaries.	Other inland waters.
Total tonnage.....	1916	734,108	280,249	128,614	18,507	134,088	121,134	50,593	925	
	1914	425,060	174,032	69,286	23,733	41,112	43,251	71,612	1,434	
Foreign.....	1916	214,582	38,581	65,092	1,845	93,939	14,525			
	1914	31,832	13,149	18,448	100	135				
Coastwise.....	1916	161,894	88,194	46,282	8,647	18,771				
	1914	48,952	1,456	26,035	643	20,818				
Domestic.....	1916	321,722	131,977	15,864	7,767	13,398	104,937	46,869	910	
	1914	251,066	92,067	20,619	22,587	11,287	42,932	60,718	1,396	
Fishing.....	1916	3,858	1,481		114	2,062	201			
	1914	2,747			279	2,417	51			
Government.....	1916	16,267	9,965	133	15	2,662	50	3,442		
	1914	71,655	63,540	3,113		2,982		2,020		
Pleasure.....	1916	6,527	4,170	503	59	77	1,421	282	15	
	1914	3,769	2,722	641		115	268	6	17	
All other.....	1916	9,258	5,881	140	60	3,177				
	1914	14,499	1,098	430	124	3,358		8,868	21	
Iron and steel tonnage.....	1916	485,860	136,909	108,929	1,990	102,119	118,600	17,313		
	1914	242,959	108,042	60,114	1,931	23,973	39,929	8,970		
Foreign.....	1916	209,323	37,859	65,692		91,247	14,525			
	1914	31,412	12,904	18,448						
Coastwise.....	1916	131,959	80,905	43,144		7,820				
	1914	45,367	844	24,150		20,373				
Domestic.....	1916	125,799	7,150	33	1,990		102,755	13,871		
	1914	80,558	28,521	14,662	1,894	893	39,929	659		
Fishing.....	1916									
	1914									
Government.....	1916	15,521	9,357	60		2,662		3,442		
	1914	71,121	63,540	2,854		2,707		2,020		
Pleasure.....	1916	2,403	1,083				1,320			
	1914	1,109	1,109							
All other.....	1916	855	465			390				
	1914	7,392	1,064		37			6,201		
Wooden tonnage.....	1916	248,248	143,340	19,685	16,517	31,967	2,534	33,280	925	
	1914	182,101	66,590	9,172	21,802	17,139	3,322	62,642	1,434	
Foreign.....	1916	5,259	722		1,845	2,692				
	1914	420	185		100	135				
Coastwise.....	1916	29,935	7,199	3,138	8,647	10,951				
	1914	3,585	612	1,885	643	445				
Domestic.....	1916	195,923	124,827	15,831	5,777	13,398	2,182	32,998	910	
	1914	165,048	63,546	5,957	20,693	10,394	3,003	60,059	1,396	
Fishing.....	1916	3,858	1,481		114	2,062	201			
	1914	2,747			279	2,417	51			
Government.....	1916	746	608	73	15		50			
	1914	534		259		275				
Pleasure.....	1916	4,124	3,087	503	59	77	101	282	15	
	1914	2,660	1,613	641		115	268	6	17	
All other.....	1916	8,403	5,416	140	60	2,787				
	1914	7,107	634	430	87	3,358		2,577	21	



Table 23 shows, by classes, the number and gross tonnage of vessels launched during 1916 grouped according to tonnage.

The group "Less than 100 gross tons," contains 44.3 per cent of the total number of vessels launched and only 2.4 per cent of the tonnage, while the group "3,000 gross tons and over" (3,000 tons being virtually

the minimum tonnage for overseas trade) shows only 5.4 per cent of the number but 54.2 per cent of the tonnage launched in 1916. In the first group mentioned, but 18 of the vessels were constructed of steel, while in the group having the tonnage of 3,000 and over, all were of metal construction, no wooden vessels of this size being built during 1916.

Table 23

## VESSELS LAUNCHED—GROUPED ACCORDING TO TONNAGE: 1916.

CLASS.	Total.		Less than 100 gross tons.		100 but less than 500 gross tons.		500 but less than 1,000 gross tons.		1,000 but less than 3,000 gross tons.		3,000 gross tons and over.	
	Number.	Tons.	Number.	Tons.	Number.	Tons.	Number.	Tons.	Number.	Tons.	Number.	Tons.
All vessels.....	1,377	734,108	610	17,878	503	144,561	141	97,797	49	75,920	74	397,952
Steel.....	230	485,860	18	890	95	29,493	21	15,099	22	42,426	74	397,952
Wooden.....	1,147	248,248	592	16,988	408	115,068	120	82,698	27	33,494	.....	.....
Steam and motor.....	589	472,220	407	9,943	69	18,337	18	13,127	21	34,861	74	397,952
Steel.....	151	442,991	17	810	36	10,277	10	6,689	14	27,263	74	397,952
Wooden.....	438	29,229	390	9,133	33	6,060	8	6,438	7	7,598	.....	.....
Sail.....	124	46,081	77	1,869	13	2,332	17	11,921	17	29,959	.....	.....
Steel.....	8	14,191	.....	.....	1	128	.....	.....	7	14,063	.....	.....
Wooden.....	116	31,890	77	1,869	12	2,204	17	11,921	10	15,896	.....	.....
Unrigged.....	664	215,807	126	6,066	427	119,747	100	68,894	11	11,100	.....	.....
Steel.....	71	28,678	1	80	58	19,088	11	8,410	1	1,100	.....	.....
Wooden.....	593	187,129	125	5,986	363	106,804	89	64,339	10	10,000	.....	.....

Table 24 gives, by states, the total number and gross tonnage of all vessels of 5 tons and over launched in 1916, 1914, and 1909 by establishments in the shipbuilding industry, exclusive of Government shipyards.

Table 24

## VESSELS LAUNCHED.

STATE.	1916		1914		1909	
	Num-ber.	Tonnage (gross).	Num-ber.	Tonnage (gross).	Num-ber.	Tonnage (gross).
United States.....	1,377	734,108	1,113	425,060	2,154	467,219
California.....	118	89,108	88	31,500	59	8,563
Connecticut.....	18	3,305	19	1,965	45	5,447
Delaware.....	44	29,472	10	6,624	16	10,871
Florida.....	45	6,614	22	1,141	35	3,215
Illinois.....	4	2,058	4	85	9	991
Kentucky.....	65	16,163	51	40,000	90	41,240
Louisiana.....	40	11,074	73	17,501	69	7,012
Maine.....	45	15,486	43	3,072	44	12,654
Maryland.....	66	57,707	58	36,961	52	34,160
Massachusetts.....	55	42,484	45	32,056	82	17,703
Michigan.....	29	38,340	21	12,405	53	41,847
Minnesota.....	7	1,446	4	1,195	6	231
Mississippi.....	17	2,358	13	1,420	31	8,086
New Jersey.....	75	33,752	65	67,860	90	53,261
New York.....	337	111,709	220	49,911	309	60,152
North Carolina.....	8	2,208	11	730	17	858
Ohio.....	54	74,320	35	36,824	88	81,803
Oregon.....	36	11,652	41	2,495	34	4,718
Pennsylvania.....	128	71,836	56	30,533	205	12,775
Texas.....	12	2,205	29	4,293	19	1,080
Virginia.....	36	63,943	24	31,538	38	44,388
Washington.....	69	33,326	102	7,117	137	5,256
Wisconsin.....	21	13,436	29	3,048	29	6,453
All other states.....	48	2,966	50	14,760	27	3,855

<sup>1</sup> Exclusive of 94 vessels, with an aggregate gross tonnage of 13,654, launched by establishments in other industries.

<sup>2</sup> Exclusive of 22 vessels, with an aggregate gross tonnage of 12,535, launched by establishments in other industries.

Of the total number of vessels of 5 tons and over launched in 1916, New York built 24.5 per cent, and Pennsylvania built the next largest number. New York also built the greatest tonnage in 1916, with California, Ohio, and Pennsylvania following in the order named. This order was somewhat different in 1914 when New Jersey ranked first, followed by New York, Kentucky, and Maryland, and in 1909 when Ohio ranked first, followed by New York, New Jersey, and Virginia in the order named.

Table 25 shows for the United States and for 15 states separately, for 1916, 1914, and 1909, the number, and the gross and net tonnage of steam vessels of 5 tons and over launched in private shipyards.

In 1916, of the states for which totals are presented, California, Virginia, Ohio, and Pennsylvania led in the order named, and combined represented 246,679 gross tons, or 55.8 per cent of the total for steam vessels, of 5 tons and over, launched in private yards. Virginia, the second state in total tonnage launched, led in respect to average gross tonnage per vessel with an average for the 8 steamships launched in 1916 of 7,847 per vessel. In 1914 the leading states in respect to tonnage of steam vessels were New Jersey, Virginia, Massachusetts, and Maryland, in the order named, and in 1909, Ohio, Michigan, Virginia, and New Jersey.

Table 25

STATE.	STEAM VESSELS LAUNCHED.								
	1916			1914			1909		
	Num-ber.	Tonnage.		Num-ber.	Tonnage.		Num-ber.	Tonnage.	
		Gross.	Net.		Gross.	Net.		Gross.	Net.
United States.....	186	442,354	297,724	139	234,636	175,094	181	234,633	168,959
California.....	16	82,766	46,622	9	26,420	17,490	9	4,933	3,264
Delaware.....	8	13,965	9,642	8	6,266	3,796	8	8,296	5,432
Indiana.....	8	1,645	1,641	11	3,800	2,550	8	1,386	619
Maine.....	5	3,417	2,957	5	1,400	1,317	8	3,888	2,953
Maryland.....	13	32,861	20,513	11	27,368	16,794	7	17,733	10,007
Massachusetts.....	12	37,732	27,169	4	29,940	19,200	20	12,881	8,232
Michigan.....	13	35,945	23,303	6	11,512	7,273	15	41,231	31,073
New Jersey.....	6	20,331	12,021	6	41,182	36,137	10	27,395	26,322
New York.....	17	3,281	2,595	19	3,056	1,900	30	7,528	5,185
Ohio.....	17	52,046	41,154	6	26,205	19,778	16	57,764	44,171
Oregon.....	5	4,719	3,209	5	251	171	8	1,522	1,164
Pennsylvania.....	19	49,089	31,407	18	23,547	23,374	9	2,841	2,660
Virginia.....	8	62,778	47,703	7	30,176	22,896	8	40,730	23,065
Washington.....	12	23,919	16,258	8	2,219	1,453	5	800	574
Wisconsin.....	12	12,415	7,917	6	362	251	7	4,094	3,121
All other states.....	15	5,445	3,613	10	932	714	13	1,451	1,077

Table 26 shows, by states, the number and the gross and net tonnage of motor vessels, including sail ves- sels with auxiliary power, of 5 tons and over, launched in private shipyards in 1916, 1914, and 1909.

Table 26

Table 26	STATE.	Census year.	MOTOR VESSELS LAUNCHED, INCLUDING SAILING VES- SELS WITH AUXILIARY POWER.			STATE.	Census year.	MOTOR VESSELS LAUNCHED, INCLUDING SAILING VES- SELS WITH AUXILIARY POWER.		
			Num- ber.	Tonnage.				Num- ber.	Tonnage.	
				Gross.	Net.				Gross.	Net.
United States.....	1916	465	60,491	45,251	New Jersey.....	1916	45	1,022	800	
	1914	428	13,620	9,974		1914	22	1,419	1,256	
	1909	513	12,041	9,204		1909	31	469	347	
Motor.....	1916	403	29,866	19,198	New York.....	1916	72	1,735	1,379	
	1914	370	10,821	7,789		1914	60	958	653	
	1909	445	9,389	7,224		1909	91	1,949	1,486	
Sail, with auxiliary power.....	1916	62	30,625	26,053	North Carolina.....	1916	2	81	61	
	1914	58	2,799	2,185		1914	8	175	121	
	1909	68	2,652	1,980		1909	13	158	138	
California.....	1916	76	3,511	2,003	Ohio.....	1916	12	11,974	9,424	
	1914	70	2,815	1,971		1914	6	129	89	
	1909	20	534	395		1909	16	432	336	
Connecticut.....	1916	10	1,174	1,132	Oregon.....	1916	14	6,205	5,875	
	1914	12	180	127		1914	7	317	234	
	1909	27	553	492		1909	21	368	281	
Florida.....	1916	15	194	149	Pennsylvania.....	1916	5	116	111	
	1914	15	247	177		1914	8	66	52	
	1909	25	337	232		1909	1	5	5	
Louisiana.....	1916	14	3,017	2,767	Texas.....	1916	6	1,925	1,566	
	1914	13	1,593	1,301		1914	9	198	124	
	1909	8	68	52		1909	3	40	27	
Maine.....	1916	23	1,812	1,469	Virginia.....	1916	12	183	150	
	1914	34	541	339		1914	11	118	72	
	1909	26	431	288		1909	6	118	70	
Maryland.....	1916	20	14,997	10,003	Washington.....	1916	42	7,584	5,910	
	1914	6	194	114		1914	70	2,699	2,032	
	1909	8	593	518		1909	88	1,526	1,075	
Massachusetts.....	1916	37	3,278	1,092	Wisconsin.....	1916	7	221	183	
	1914	34	899	550		1914	15	413	331	
	1909	51	3,271	2,604		1909	19	259	204	
Michigan.....	1916	9	107	89	All other states.....	1916	44	1,355	1,058	
	1914	11	361	252		1914	17	298	179	
	1909	34	408	330		1909	25	522	324	

<sup>1</sup> Exclusive of 2 vessels, with an aggregate gross tonnage of 24, launched by establishments in other industries.

Motor vessels, which now form such a large and distinct class, were reported separately for the first time in 1904. At that time they numbered 311, and averaged slightly over 10 gross tons in size. In 1909 their average capacity was 21 tons; in 1914 over 29 tons; and in 1916 nearly 75 tons. The change from 1904 to 1916 in the size of motor craft is due to the building of internal-combustion engines in larger units, of improved reliability and compactness, making them practical for use in larger vessels. California reported the largest number of vessels of this class launched in 1916. In 1914 California and Washington each reported the largest number, and in 1909 Washington reported the largest number.

Sail vessels with auxiliary power, launched in 1916, included in the preceding table along with motor vessels were distributed as follows:

	Num-ber.	Gross tons.	Net tons.
Total.....	62	30,625	26,053
Ohio.....	6	11,743	9,205
Oregon.....	5	6,087	5,787
Washington.....	2	3,788	3,040
Louisiana.....	5	2,830	2,610
Maine.....	15	1,720	1,351
Texas.....	1	1,660	1,390
Maryland.....	2	1,360	1,360
Massachusetts.....	8	755	688
New York.....	4	166	162
California.....	2	110	110
All other states.....	12	406	322

In the construction of sail vessels with auxiliary power Ohio led in tonnage, but Maine launched the greater number. The tonnage launched in Ohio represented 38.3 per cent of the total gross tonnage launched in the United States in 1916. The vessels were built at Toledo, Ohio, 6 in number, and were of steel; 2 had a gross tonnage of 1,930 each; 1 of 1,955; and 3 of 1,976 tons each, and were designed for the coastwise trade. The largest wooden vessel of this class, one of 2,492 gross tons, intended for the foreign trade, was built and launched at Aberdeen, Wash. Another vessel of this class of 1,660 gross tonnage was launched in Orange, Tex. There is a wide variation in the tonnage of vessels of this class due to the diversified character and class of service. Some are for pleasure, while others are for fishing and freighting.

Table 27 gives for the United States and 10 states separately, the number and the gross and net tonnage of sail vessels without auxiliary power, of 5 tons and over, launched in private shipyards in 1916, 1914, and 1909.

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Table 27

STATE.	Census year.	SAIL VESSELS WITHOUT AUXILIARY POWER LAUNCHED.		
		Num-ber.	Tonnage.	
			Gross.	Net.
United States.....	1916	62	15,456	14,048
	1914	40	2,224	1,874
	1909	51	14,807	12,710
Florida.....	1916	1	8	8
	1914	5	194	157
	1909	2	69	39
Maine.....	1916	8	4,772	4,118
	1914	3	687	596
	1909	10	8,335	6,861
Maryland.....	1916	1	75	75
	1914	2	64	45
	1909	4	1,150	1,146
Massachusetts.....	1916	6	1,474	1,365
	1914	6	667	487
	1909	9	1,343	1,100
Mississippi.....	1916	8	751	751
	1914	8	2,910	2,770
	1909	8	2,910	2,770
New Jersey.....	1916	4	1,488	1,377
	1914	2	40	23
	1909	4	130	89
New York.....	1916	2	26	18
	1914	5	38	32
	1909	2	19	16
Ohio.....	1916	1	2,320	2,070
	1914	1	513	405
	1909	1	513	405
Oregon.....	1916	14	168	168
	1914	14	112	112
	1909	14	112	112
Washington.....	1916	1	1,200	1,200
	1914	1	1,200	1,200
	1909	1	1,200	1,200
All other states.....	1916	16	3,174	2,898
	1914	3	422	422
	1909	11	338	284

From 1909 to 1914 there was a large decrease in the tonnage launched of sail vessels without auxiliary power, from 14,807 gross tons to 2,224 gross tons or 85 per cent, while from 1914 to 1916 the tonnage of this class of vessels increased 13,232 gross tons, or nearly 600 per cent.

Maine led in amount of gross tonnage launched in 1916 as well as in 1914 and 1909; Ohio and New Jersey ranked second and third, respectively, in 1916. The combined tonnage launched in these three states represented 55.5 per cent of the total tonnage of this class of vessels launched in the United States during 1916.

The largest sailing vessel without auxiliary power launched in 1916 was one of 2,320 gross tons built in Cleveland, Ohio. It was of steel construction and was designed for the coastwise trade. The largest wooden vessel of this class was one of 1,891 gross tons, built in Bath, Me., for the coastwise and foreign trade.

Table 28 gives for the United States and for 12 states separately the number and gross and net tonnage of unriggered vessels launched by private shipyards in 1916, 1914, 1909, and 1904.

STATE.	Census year.	UNRIGGERED VESSELS LAUNCHED.		
		Number.	Tonnage.	
			Gross.	Net.
United States.....	1916	664	215,807	197,018
	1914	1,506	174,580	156,397
	1909	2,839	205,738	190,325
	1904	1,150	261,153	230,571
California.....	1916	26	2,831	2,811
	1914	8	2,255	1,910
	1909	29	3,016	2,971
	1904	48	5,777	5,562
Kentucky.....	1916	59	15,880	15,843
	1914	47	39,968	24,983
	1909	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
	1904	17	4,898	4,898
Louisiana.....	1916	19	6,422	6,237
	1914	58	15,848	13,748
	1909	58	6,830	6,816
	1904	73	11,450	10,055
Maryland.....	1916	32	9,534	9,534
	1914	39	9,335	9,305
	1909	33	14,684	9,564
	1904	49	20,133	19,104
Mississippi.....	1916	4	1,500	1,500
	1914	9	1,200	1,200
	1909	20	5,051	5,016
	1904	13	1,955	1,570
New Jersey.....	1916	20	10,911	10,911
	1914	35	15,225	14,956
	1909	45	25,267	24,488
	1904	35	19,005	19,481
New York.....	1916	246	106,667	105,186
	1914	136	45,859	45,106
	1909	186	50,656	44,903
	1904	211	84,311	80,694
Ohio.....	1916	24	7,980	7,626
	1914	23	10,490	9,490
	1909	55	23,094	20,304
	1904	41	8,434	8,245
Oregon.....	1916	3	560	560
	1914	15	1,815	1,665
	1909	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
	1904	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Pennsylvania.....	1916	103	22,616	7,463
	1914	30	6,920	6,920
	1909	195	9,929	9,763
	1904	472	66,002	65,660
Virginia.....	1916	16	982	950
	1914	6	1,244	1,244
	1909	23	3,531	3,478
	1904	12	2,280	2,215
Washington.....	1916	14	623	503
	1914	24	2,199	2,199
	1909	44	2,930	2,930
	1904	34	4,437	3,816
All other states.....	1916	98	20,001	27,594
	1914	76	22,222	21,671
	1909	151	60,720	59,792
	1904	145	36,841	34,281

<sup>1</sup> Exclusive of 82 vessels, with an aggregate gross tonnage of 9,872, launched by establishments in other industries.

<sup>2</sup> Exclusive of 17 vessels, with an aggregate gross tonnage of 12,082, launched by establishments in other industries.

<sup>3</sup> Exclusive of 124 vessels, with an aggregate gross tonnage of 21,770, launched by establishments in other industries.

<sup>4</sup> Included in "All other states."

Floating dry docks, floating coal docks, and scows constructed for a single trip are not included in

Table 28. There are, however, a considerable number of sand and mud scows, coal boats and lighters, dredges, and pile drivers included in the statistics. In 1916 there were 664 unriggered craft built with a total tonnage of 215,807, as compared with 506, with a total tonnage of 174,580 built in 1914; 839, with a total tonnage of 205,738, in 1909; and 1,150, with a total tonnage of 261,153, in 1904. The principal state in the construction of unriggered craft in 1916 as in 1914 was New York, where there were built, in 1916, 246 barges, lighters, canal boats, and scows, with a total gross tonnage of 106,667. A large number of these were for use in New York Harbor and in the river trade; 3 were steel barges of 1,624 gross tons to be used for carrying oil in bulk. Pennsylvania ranked second in 1916 in both number and gross tonnage. The establishments located in that state built 86 barges for the river trade, with a total gross tonnage of 14,656, of which 23, with a tonnage of 7,224, were constructed of steel; there were also built 4 steel car floats for use in New York Harbor and 2 steel car floats, one to be used in the river trade and the other intended for the coastwise trade. There were also constructed 11 steel barges, floats, etc., for the United States Government, to be used in the rivers and in the Gulf of Mexico. In Kentucky 59 barges, with a gross tonnage of 15,880, were built for use in the river trade, while in Ohio 18 barges were constructed with 7,188 gross tonnage for the same use, and 4 steel flats and two steel barges for the Federal Government for use on the Ohio River.

Among the states shown, California, Kentucky, New York, Ohio, Pennsylvania, and Virginia show increases in the number of boats built, and California, Maryland, Mississippi, New York, and Pennsylvania, increases in tonnage from 1914 to 1916.

Table 29 shows, for the United States and for 18 states separately, for 1916 and 1914, the number of power boats built of less than 5 tons.

Table 29		NUMBER OF POWER BOATS BUILT (less than 5 tons).		STATE.		NUMBER OF POWER BOATS BUILT (less than 5 tons).	
STATE.		1916	1914	STATE.		1916	1914
United States.....		3,606	3,706	Minnesota.....		68	103
California.....		66	158	New Jersey.....		187	477
Connecticut.....		100	49	New York.....		337	377
Florida.....		157	163	Ohio.....		308	567
Illinois.....		104	386	Pennsylvania.....		28	23
Iowa.....		20	27	Rhode Island.....		13	16
Maine.....		198	223	Virginia.....		21	33
Maryland.....		51	75	Washington.....		52	171
Massachusetts.....		1,291	273	Wisconsin.....		109	115
Michigan.....		172	235	All other states.....		324	230

Massachusetts was by far the leading state in 1916 in the manufacture of small power boats. The number of such boats built in that state increased from 273 in 1914 to 1,291 in 1916. New York was second in the number of power boats built in 1916. In 1914 Ohio reported the largest number of these boats and New Jersey the next largest number.

**Value of work done during census year.**—The construction of a vessel frequently takes more than a year; therefore, many vessels launched during the census year were started in previous years, and some upon which work was started during the census year were not finished during that year. For this reason the census office did not require the shipbuilders to report the value of the vessels launched, but only the value of the work done during the census year and the amount received for repair work. For the smaller vessels, those of less than 5 gross tons, the value of work done during the year corresponds very closely with the value of the craft as launched.

Table 30 shows the value of the construction work done, the amount received for repair work, and the value of all other work done by shipbuilding establishments, both private and Government, in 1916, 1914, and 1909, and by private establishments in other industries for 1914 and 1909.

KIND OF WORK.	Census year.	VALUE OF WORK DONE DURING THE YEAR BY—			
		All establishments.	Private establishments in the shipbuilding industry.	Private establishments in other industries. <sup>1</sup>	Government shipyards.
Total.....	1916	\$224,526,683	\$185,852,102	.....	\$38,674,491
	1914	110,423,028	88,682,071	\$1,523,692	20,217,255
	1909	100,009,054	73,360,315	776,706	25,872,033
Work on new vessels and boats, all kinds.	1916	114,434,137	105,270,935	.....	9,163,202
	1914	52,401,805	46,334,134	1,279,630	4,788,041
	1909	45,036,492	42,310,925	594,244	2,131,323
Vessel of 5 gross tons and over.	1916	110,343,073	101,531,210	.....	8,811,863
	1914	48,105,561	42,545,445	947,805	4,612,311
	1909	40,145,084	37,718,018	449,089	1,977,977
Boats of less than 5 gross tons.	1916	4,091,064	3,739,725	.....	351,339
	1914	4,296,244	3,788,689	331,825	175,730
	1909	4,891,408	4,592,907	145,155	163,346
Repair work.....	1916	71,225,368	63,508,514	.....	7,716,854
	1914	36,966,676	32,835,212	185,777	3,945,037
	1909	38,304,658	26,678,643	80,461	11,545,554
All other work done.....	1916	38,867,178	\$17,072,743	.....	\$21,794,435
	1914	30,054,547	9,512,725	58,285	20,483,537
	1909	16,667,904	4,370,747	102,001	12,195,156

<sup>1</sup> Not reported in 1916.

<sup>2</sup> Includes work on engines to the value of \$3,335,055.

<sup>3</sup> Includes work on engines to the value of \$169,141.

<sup>4</sup> Includes work on engines to the value of \$4,468,703.

The value of all work done during the year on new vessels and boats in all shipyards increased from \$52,401,805 in 1914, to \$114,434,137 in 1916, or 118.4 per cent. These figures indicate the impetus given the shipbuilding industry by the world war. The value of work done on new vessels of 5 gross tons and over in private establishments amounted to \$37,718,018 in 1909, to \$42,545,445 in 1914, and to \$101,531,210 in

1916, showing an increase from 1914 to 1916 of 138.6 per cent. Repair work on vessels and boats increased from \$26,678,643 in 1909, to \$32,835,212 in 1914, and to \$63,508,514 in 1916. All other work done, which includes work on engines, and the making of masts, oars, spars, etc., increased from \$4,370,747 in 1909, to \$17,072,743 in 1916. The value of work done on new vessels and boats in Government shipyards alone increased 91.4 per cent between 1914 and 1916.

Table 31 shows the total value of the work done in the privately operated shipbuilding establishments in 1916, 1914, 1909, and 1904, the total being subdivided so as to show the value of work on new vessels; the amount received for repair work, and the value of all other work done during the year. In this table Government shipyards and establishments in other industries doing incidental work on ships and boats are not included.

KIND OF WORK.	VALUE OF WORK DONE DURING THE YEAR BY PRIVATE ESTABLISHMENTS IN THE SHIPBUILDING INDUSTRY.			
	1916	1914	1909	1904
Total.....	\$185,852,102	\$88,682,071	\$73,360,315	\$82,769,239
Work done during the year on new vessels and boats.....	105,270,935	46,334,134	42,310,925	56,121,227
Vessels of 5 gross tons and over..	101,531,210	42,545,445	37,718,018	53,119,935
Steel construction.....	85,418,006	36,295,458	30,038,672	43,395,704
Wooden construction.....	16,113,204	6,249,987	7,679,346	9,724,231
Boats of less than 5 gross tons....	3,739,725	3,788,689	4,592,907	3,001,292
Steam.....	6,544	30,522	20,800	.....
Motor (gasoline, electric, other).....	1,988,862	2,001,284	3,155,375	1,879,288
Sailboats, rowboats, canoes, scows, etc.....	1,744,319	1,756,883	1,416,732	1,122,004
Repair work.....	63,508,514	32,835,212	26,678,643	22,820,040
Steel.....	44,821,223	20,537,928	15,862,659	12,191,854
Wooden.....	18,687,291	12,297,284	10,815,984	10,637,186
All other work done.....	17,072,743	9,512,725	4,370,747	3,818,972

Of the \$101,531,210 representing the work done on new vessels of 5 gross tons and over, \$85,418,006, or 84.1 per cent, was the value of work on new steel vessels, and this shows an increase of 135.3 per cent over the value of work performed on new steel vessels in 1914. The table shows a steady decrease from 1904 to 1914 in the value of work on new wooden vessels, but from 1914 to 1916 the value of this work increased from \$6,249,987 to \$16,113,204, or 157.8 per cent. The value of repair work on steel vessels formed 70.6 per cent of the entire value reported for repair work.

There was a large increase from 1914 to 1916 in the value of repair work on both classes of vessels, that on steel vessels increasing from \$20,537,928 to \$44,821,223, or 118.2 per cent, while the value of repair work on wooden vessels increased from \$12,297,284 to \$18,687,291, or 52 per cent.

Table 32 shows, by states, the value of repair work done in the private establishments in the shipbuilding industry for 1916, 1914, 1909, and 1904.

Table 32

VALUE OF REPAIR WORK REPORTED BY PRIVATE ESTABLISHMENTS IN THE SHIPBUILDING INDUSTRY.

STATE.	1916	1914	1909	1904
United States.....	\$63,503,514	\$32,835,212	\$20,678,643	\$22,829,040
California.....	3,594,445	3,348,852	2,529,188	2,180,542
Connecticut.....	927,579	342,972	319,591	356,032
Delaware.....	110,151	177,318	349,539	454,780
Florida.....	913,678	516,011	536,584	116,300
Illinois.....	434,494	467,979	411,230	439,509
Indiana.....	60,074	83,606	70,933	(1)
Iowa.....	12,277	11,071	42,474	31,075
Kentucky.....	125,246	127,773	85,902	(1)
Louisiana.....	1,466,794	433,555	364,738	(1)
Maine.....	380,474	434,191	346,635	297,855
Maryland.....	3,046,777	1,374,515	985,112	1,010,622
Massachusetts.....	3,104,207	1,069,137	874,433	854,036
Michigan.....	1,455,258	1,081,206	1,126,544	688,482
Minnesota.....	92,156	121,838	136,053	55,900
Mississippi.....	136,278	40,862	50,484	125,851
New Jersey.....	8,313,981	4,206,315	3,123,032	2,254,794
New York.....	23,884,480	10,081,332	6,931,117	6,726,959
North Carolina.....	62,503	62,000	36,569	63,300
Ohio.....	2,125,580	2,058,521	1,324,166	1,229,123
Oregon.....	152,017	98,201	109,788	184,276
Pennsylvania.....	4,249,199	1,512,126	2,531,264	1,762,243
Rhode Island.....	1,197,501	927,833	647,064	660,303
Virginia.....	3,397,591	1,507,320	1,324,045	1,157,595
Washington.....	1,600,617	1,447,385	880,613	712,851
West Virginia.....	206,864	124,933	136,150	86,595
Wisconsin.....	905,834	745,890	1,172,543	571,746
All other states.....	1,519,454	441,870	243,011	808,111

<sup>1</sup> Included in "All other states."

New York was the leading state in the value of repair work in 1916, as it was in 1914, 1909, and 1904, the amount of work done in this state in 1916 being nearly one-third of the total for the United States. New Jersey, Pennsylvania, and California ranked next in the order named. Other states doing work in excess of a million dollars were Louisiana, Maryland, Massachusetts, Michigan, Ohio, Rhode Island, Virginia, and Washington. The states shown in the table not reporting an increase in repair work were Delaware, Illinois, Indiana, Kentucky, Maine, and Minnesota. The value of repair work formed 34.2 per cent of the total value of products of all work done by the shipbuilding industry in 1916, 37 per cent in 1914, 36.4 per cent in 1909, and 27.6 per cent in 1904.

**Dry docks and marine railways.**—When the repair work of shipyards is considered, the question of the equipment of the various plants naturally arises. Table 33 shows the number and kind of dry docks in private and Government shipyards, classified according to dimensions, for 1914, 1909, and 1904. Figures for 1916 were not obtained.

In 1914 there were 250 dry docks in the shipyards of the United States. This is an increase of 34 over 1909, and 90 over 1904. Of the 250 dry docks reported in 1914, 152 were over a hundred feet long in

floor measurement, while 67 of these measured over 300 feet; 104 of the docks measured over 50 feet in width at entrance, among these 47 measured over 75 feet in width, 45 docks had a depth of sill of over 20 feet, sufficient depth to accommodate the largest vessels.

Table 33

CLASS.	DRY DOCKS.		
	1914	1909	1904
Total number.....	250	216	160
Stationary:			
Wooden.....	62	57	74
Masonry, concrete, or steel.....	21	23	
Floating.....	167	136	86
With floor length of—			
Over 300 feet.....	67	53	53
201 to 300 feet.....	27	20	18
101 to 200 feet.....	58	70	75
100 feet or less.....	98	73	14
With entrance width of—			
Over 75 feet.....	47	37	22
51 to 75 feet.....	57	54	53
26 to 50 feet.....	109	89	62
25 feet or less.....	37	36	23
With sill depth of—			
Over 20 feet.....	45	30	25
10 to 20 feet.....	108	98	101
Less than 10 feet.....	97	88	34

Table 34 shows statistics relative to the number, dimensions, and lifting capacity of marine railways in operation in 1914, 1909, and 1904.

Table 34

	MARINE RAILWAYS.		
	1914	1909	1904
Total number.....	678	<sup>1</sup> 606	413
Total lifting capacity, tons.....	129,994	147,031	147,047
With cradle length of—			
Over 200 feet.....	32	38	44
101 to 200 feet.....	123	110	133
50 to 100 feet.....	185	178	107
Less than 50 feet.....	338	370	129
With cradle breadth of—			
Over 50 feet.....	12	5	16
25 to 50 feet.....	133	126	140
Less than 25 feet.....	533	<sup>1</sup> 565	257
With maximum cradle draft submerged of—			
Over 15 feet.....	45	47	51
11 to 15 feet.....	96	86	99
5 to 10 feet.....	411	410	221
Less than 5 feet.....	126	153	42
With lifting capacity of—			
Over 1,000 tons.....	25	22	34
501 to 1,000 tons.....	34	56	54
100 to 500 tons.....	180	172	141
Less than 100 tons.....	439	446	184

<sup>1</sup> Figures do not agree with those published because it was necessary to make certain revisions in order to make them comparable with those for 1914.

Of the 678 marine railways reported in the United States for 1914, 155 had a cradle length of more than 100 feet, 145 had a cradle breadth exceeding 25 feet. Fifty-nine of the railways had a lifting capacity of 500 tons.

## DETAIL STATE TABLES.

The principal data secured by the census inquiry concerning the shipbuilding industry, other than those regarding vessels launched, value of different kinds of work done, and equipment, are presented, by states, in Tables 35, 36, and 37.

Table 35 shows, for 1916, 1914, and 1909, the num-

ber of establishments, average number of wage earners, primary horsepower, capital, wages, cost of materials, and value of products, by states, for the shipbuilding industry.

Tables 36 and 37 give similar statistics in somewhat greater detail for 1916 and 1914, respectively.

TABLE 35.—COMPARATIVE SUMMARY, BY STATES, FOR 1916, 1914, AND 1909.

STATE.	Cen- sus year.	Number of estab- lish- ments.	Wage earn- ers (aver- age num- ber).	Pri- mary horse- power. <sup>1</sup>	Capital.	Wages.	Cost of ma- terials.	Value of prod- ucts.	STATE.	Cen- sus year.	Number of estab- lish- ments.	Wage earn- ers (aver- age num- ber).	Pri- mary horse- power. <sup>1</sup>	Capital.	Wages.	Cost of ma- terials.	Value of prod- ucts.
					Expressed in thousands.									Expressed in thousands.			
United States...	1916	1,137	72,497	.....	\$243,218	\$60,576	\$89,269	\$185,852	New Hampshire.....	1916	6	17	.....	22	9	13	48
	1914	1,147	44,489	115,333	156,060	32,931	38,597	88,682		1914	7	14	50	19	10	12	39
	1909	1,353	40,506	88,063	126,118	25,268	31,214	73,360		1909	8	9	41	11	4	5	17
California.....	1916	50	7,113	.....	11,619	7,199	10,245	19,778	New Jersey.....	1916	76	7,777	.....	37,333	6,576	9,904	20,312
	1914	52	3,457	4,697	8,147	3,196	3,487	8,104		1914	85	6,324	11,944	36,028	4,657	5,636	11,861
	1909	43	1,844	3,129	8,329	1,592	1,237	4,132		1909	97	4,869	9,904	19,176	3,300	4,249	8,841
Connecticut.....	1916	31	1,312	.....	22,689	1,241	1,237	6,217	New York.....	1916	200	9,928	.....	32,010	9,887	11,530	31,358
	1914	37	514	1,303	2,370	458	342	1,665		1914	207	6,076	17,664	17,999	4,971	5,173	14,195
	1909	43	427	1,454	1,468	254	315	742		1909	255	5,644	13,835	14,084	3,780	3,925	11,417
Georgia.....	1916	7	216	.....	942	153	218	454	Ohio.....	1916	32	5,059	.....	21,935	3,908	6,077	12,160
	1914	4	14	26	11	8	4	16		1914	29	2,879	9,661	12,870	1,939	1,909	4,717
	1909	.....	.....	.....	.....	.....	.....	.....		1909	39	3,200	8,125	13,625	1,705	2,462	5,676
Indiana.....	1916	10	184	.....	495	108	291	463	Pennsylvania.....	1916	30	6,440	.....	61,660	5,408	9,252	16,816
	1914	9	225	549	611	134	267	506		1914	33	4,773	9,664	18,285	3,411	4,797	9,540
	1909	15	253	785	484	106	243	375		1909	31	3,558	7,771	15,203	2,120	2,710	6,178
Kentucky.....	1916	17	168	.....	114	112	140	279	Texas.....	1916	14	250	.....	356	160	210	516
	1914	11	90	164	311	52	135	222		1914	14	168	316	104	123	279	474
	1909	10	157	524	271	97	155	271		1909	6	36	21	23	30	34	76
Maryland.....	1916	50	5,326	.....	13,806	3,773	5,845	12,206	Washington.....	1916	57	3,744	.....	14,804	3,455	6,506	10,830
	1914	42	2,468	5,979	4,942	1,573	2,102	4,521		1914	64	1,444	5,866	4,600	1,152	987	3,101
	1909	46	1,793	6,795	4,413	1,098	1,849	3,535		1909	60	744	2,105	2,039	643	562	1,550
Michigan.....	1916	55	2,225	.....	7,673	1,857	3,120	5,637	Wisconsin.....	1916	30	1,250	.....	4,835	822	1,612	3,827
	1914	62	1,261	7,565	6,690	1,040	1,259	2,823		1914	34	695	3,875	4,109	421	451	1,254
	1909	91	2,344	6,485	6,972	1,380	2,490	5,034		1909	52	906	3,506	3,025	540	819	1,900
Minnesota.....	1916	28	115	.....	281	88	119	269	All other states.....	1916	444	21,373	.....	12,644	15,820	22,950	44,682
	1914	30	125	352	223	89	157	317		1914	427	13,962	35,628	38,741	9,697	11,600	25,327
	1909	33	209	419	380	139	158	377		1909	524	14,513	23,164	36,615	8,480	10,001	23,239

<sup>1</sup> Not reported in 1916.

<sup>2</sup> Figures can not be shown without disclosing individual operations.



## MANUFACTURES.

TABLE 36.—DETAIL STATISTICS FOR SHIPBUILDING,

STATE.		Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.										WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				
			Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Average number.	Wage earners.			Total.	16 and over.		Under 16.		
						Male.	Female.		Maximum month.	Number, 15th day of—			Male.	Female.	Male.	Female.	
										Minimum month.							
1	United States.....	1,137	78,333	1,103	1,550	2,818	365	72,497	De	85,928	Ja	59,433	86,324	85,708	140	476	.....
2	Alabama.....	8	509	5	15	8	.....	541	De	762	Ja	385	704	704	.....	.....	.....
3	Arkansas.....	4	4	4	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....
4	California.....	50	7,394	43	69	145	24	7,113	De	9,240	Ja	4,952	9,262	9,258	2	2	.....
5	Connecticut.....	31	1,573	24	71	124	42	1,312	No	1,741	Fe	909	1,559	1,524	27	8	.....
6	Delaware.....	9	2,104	4	66	86	10	1,938	Se	2,258	Jy	1,448	2,183	2,130	.....	53	.....
7	Florida.....	57	1,291	59	39	20	1	1,172	De	1,459	Mh	934	1,373	1,370	1	2	.....
8	Georgia.....	7	232	6	12	13	5	216	De	473	Ap	74	474	474	.....	.....	.....
9	Illinois.....	18	649	18	12	16	5	598	De	737	Aug	500	651	650	1	.....	.....
10	Indiana.....	10	223	9	18	10	2	184	Aug	217	Ja	142	195	195	.....	.....	.....
11	Iowa.....	10	45	12	3	4	.....	26	Fe	44	No	14	38	38	.....	.....	.....
12	Kentucky.....	17	202	15	13	5	1	168	Jy	247	Ja	75	167	167	.....	.....	.....
13	Louisiana.....	26	1,413	21	36	45	5	1,306	De	1,898	Ap	794	1,921	1,911	10	.....	.....
14	Maine.....	100	2,115	110	63	60	25	1,857	De	2,341	Ja	1,461	2,365	2,356	1	8	.....
15	Maryland.....	50	5,680	51	63	224	16	5,326	Oct	6,007	Fe	4,473	5,619	5,607	4	8	.....
16	Massachusetts.....	85	4,093	80	86	124	30	4,373	Ja	4,925	Oct	4,024	4,502	4,501	1	.....	.....
17	Michigan.....	55	2,416	52	34	80	25	2,225	Je	2,921	Oct	1,734	2,816	2,793	1	22	.....
18	Minnesota.....	28	155	30	4	2	4	115	Je	162	De	73	99	99	.....	.....	.....
19	Mississippi.....	18	140	19	1	2	.....	118	Ja	136	Jy	97	146	146	.....	.....	.....
20	New Hampshire.....	6	25	8	.....	.....	.....	17	Je	26	No <sup>1</sup>	12	16	16	.....	.....	.....
21	New Jersey.....	76	8,600	65	173	561	24	7,777	De	8,981	Ja	6,529	9,006	9,005	1	.....	.....
22	New York.....	200	10,739	207	189	399	36	9,928	De	11,516	Ja	7,909	11,139	11,123	15	1	.....
23	North Carolina.....	12	164	14	6	3	.....	141	Oct	208	Mh	81	218	218	.....	.....	.....
24	Ohio.....	32	5,325	31	54	153	28	5,059	Aug	5,412	Ja	4,005	5,634	5,623	5	6	.....
25	Oregon.....	26	1,092	25	24	35	5	1,003	De	2,168	Ja	300	2,175	2,172	3	.....	.....
26	Pennsylvania.....	30	6,811	27	96	242	6	6,440	Oct	7,419	Ja	5,082	6,815	6,771	13	31	.....
27	Rhode Island.....	14	684	13	17	34	4	616	Ja	794	Aug	467	592	587	5	.....	.....
28	Tennessee.....	4	49	4	1	1	.....	43	De	73	Fe	13	64	64	.....	.....	.....
29	Texas.....	14	272	13	6	2	1	250	No	326	Mh	159	313	313	.....	.....	.....
30	Vermont.....	4	32	4	3	.....	.....	25	Ap	34	Se	15	28	28	.....	.....	.....
31	Washington.....	57	4,128	55	99	202	28	3,744	No	6,839	Fe	1,710	6,717	6,717	.....	.....	.....
32	West Virginia.....	7	221	5	8	6	.....	202	No	260	Ja	126	253	253	.....	.....	.....
33	Wisconsin.....	30	1,390	26	34	65	15	1,250	No	1,571	Ja	666	1,644	1,635	9	.....	.....
34	All other states <sup>1</sup> .....	42	7,883	44	255	147	23	7,414	.....	.....	.....	.....	7,575	7,199	60	316	.....

<sup>1</sup> Same number reported for one or more other months.<sup>2</sup> All other states embrace: District of Columbia, 2; Idaho, 2; Missouri, 5; South Carolina, 2; South Dakota, 1; Virginia, 30.

## SHIPBUILDING.

903

INCLUDING BOAT BUILDING, BY STATES: 1916.

Capital.	EXPENSES.						Value of products.	Value added by manufacture.	
	Salaries and wages.			For contract work.	For materials.				
	Officials.	Clerks, etc.	Wage earners.		Principal materials.	Fuel and rent of power.			
\$243,217,869	\$4,032,671	\$2,918,051	\$60,575,901	\$4,092,789	\$86,726,804	\$2,541,936	\$185,852,192	\$96,583,362	1
715,033	31,749	3,672	421,329		351,641	46,634	1,048,578	650,303	2
2,870			240		3,650	150	8,945	5,145	3
11,618,544	173,356	245,051	7,198,585	288,348	10,062,691	181,902	19,777,911	9,533,318	4
22,689,461	351,087	125,195	1,241,117	2,921,576	1,206,952	29,603	6,217,274	4,980,719	5
5,553,744	132,679	76,169	1,409,802	2,200	2,515,542	80,295	4,328,002	1,732,165	6
2,542,824	63,683	19,911	598,205	7,751	879,618	29,575	1,795,519	886,326	7
942,259	14,390	7,460	153,024	5,000	214,336	3,606	454,390	236,448	8
1,836,011	18,900	8,055	326,097	375	252,395	15,668	760,307	492,244	9
495,068	31,650	8,310	107,637	3,875	284,078	6,837	463,069	172,154	10
165,947	4,445	1,111	20,946	64	43,166	1,833	83,199	38,200	11
113,888	14,220	4,223	111,961	925	138,614	1,705	279,168	138,849	12
3,963,065	72,084	36,733	784,154	37,694	1,013,306	21,186	2,606,707	1,572,215	13
4,211,955	139,648	65,094	1,353,755	22,378	2,519,765	50,040	4,882,131	2,306,326	14
13,806,495	108,522	179,925	3,772,631		5,649,835	194,833	12,205,557	6,360,889	15
10,136,060	243,242	111,649	4,409,466	2,652	6,779,288	153,404	12,185,354	5,252,662	16
7,672,524	92,963	65,194	1,857,021	15,916	2,967,064	152,739	5,637,103	2,517,300	17
281,202	5,700	3,988	87,603	1,700	113,805	5,278	269,256	150,173	18
109,761	900	1,800	70,865	1,800	118,019	1,650	304,578	184,909	19
22,415			9,085	892	12,301	520	47,952	35,131	20
37,332,760	519,970	578,996	6,575,530	145,836	9,682,734	220,902	20,311,529	10,407,893	21
32,009,922	554,551	487,928	9,886,899	64,600	11,165,879	363,981	31,357,645	19,827,785	22
200,168	4,498	647	54,364		42,306	1,346	188,640	144,988	23
21,934,830	226,884	192,898	3,907,725	28,443	5,841,702	235,050	12,160,007	6,083,255	24
2,530,166	34,275	20,326	833,841	42	1,585,712	25,604	2,915,346	1,304,030	25
21,660,089	326,511	217,773	5,407,553	2,647	8,962,761	289,423	16,816,071	7,563,887	26
756,561	29,735	29,855	518,374	481,692	380,330	20,804	1,523,614	1,122,480	27
20,514	969	276	22,236		11,836	730	35,143	22,577	28
356,001	12,120	2,536	160,165		207,154	2,370	515,972	306,448	29
115,892	3,640		16,830		5,001	1,380	33,521	27,140	30
14,804,465	204,032	205,778	3,455,314	52,383	6,412,941	92,962	10,829,812	4,323,909	31
357,111	15,428	5,445	118,999		133,510	2,912	308,872	172,450	32
4,835,136	93,464	63,815	821,645		1,561,442	50,503	3,826,847	2,214,902	33
19,424,528	506,170	148,238	4,862,903	4,000	5,607,460	250,511	11,674,113	5,816,142	34

## MANUFACTURES.

TABLE 37.—DETAIL STATISTICS FOR SHIPBUILDING,

STATE.	Number of establishments.	PERSONS ENGAGED IN THE INDUSTRY.								WAGE EARNERS DEC. 15, OR NEAREST REPRESENTATIVE DAY.				Capital.	
		Total.	Proprietors and firm members.	Salaried officers, superintendents, and managers.	Clerks, etc.		Wage earners.			Total.	16 and over.		Under 16.		
					Male.	Female.	Average number.	Number, 15th day of--			Male.	Female.	Male.		Female.
								Maximum month.	Minimum month.						

## SHIPBUILDING, INCLUDING BOAT BUILDING.

1	United States.....	1,147	48,667	1,192	995	1,765	226	44,489	My 49,567	No 37,843	42,735	42,453	90	191	1	\$156,059,938
2	California.....	52	3,730	42	70	146	15	3,457	Ja 3,017	Se 3,005	3,978	3,966	9	3	.....	8,147,431
3	Connecticut.....	37	673	30	40	63	26	514	My 594	Fe 402	552	538	9	5	.....	2,309,613
4	Georgia.....	4	18	4	.....	.....	.....	14	Jy <sup>1</sup> 18	Ja <sup>2</sup> 11	11	11	.....	.....	.....	11,275
5	Indiana.....	9	249	6	8	1	225	Au 265	De 162	168	168	168	.....	.....	.....	610,660
6	Kentucky.....	11	117	13	9	4	1	90	Je 134	Au 29	156	156	.....	.....	.....	311,388
7	Maryland.....	42	2,685	44	68	97	8	2,468	Jy 2,681	De 2,171	2,488	2,474	7	7	.....	4,942,061
8	Michigan.....	62	1,430	61	41	51	16	1,201	My 1,783	De 431	650	647	2	1	.....	6,689,776
9	Minnesota.....	30	109	36	3	2	3	125	My 163	Oc 92	128	128	.....	.....	.....	223,150
10	New Hampshire.....	7	24	10	.....	.....	.....	14	Ap <sup>2</sup> 15	De 12	18	18	.....	.....	.....	19,100
11	New Jersey.....	85	6,981	74	129	438	16	6,324	Je 6,827	Se 5,921	6,129	6,128	1	.....	.....	36,028,113
12	New York.....	207	6,732	224	136	264	32	6,076	My 7,078	Se 5,359	5,762	5,755	6	.....	1	17,998,894
13	Ohio.....	29	3,046	29	45	72	21	2,879	Mh 3,568	No 2,076	2,696	2,694	.....	2	.....	12,870,446
14	Pennsylvania.....	33	5,052	37	67	173	2	4,773	Je 5,710	De 3,514	3,630	3,551	9	40	.....	18,285,168
15	Texas.....	14	189	13	7	1	.....	168	Se 241	Fe 105	170	168	.....	2	.....	103,854
16	Washington.....	64	1,623	75	36	60	8	1,444	Fe 1,717	No 1,126	1,302	1,300	2	.....	.....	4,599,883
17	Wisconsin.....	34	789	33	27	28	6	695	My 1,048	Se 356	660	667	1	1	.....	4,109,355
18	All other states <sup>1</sup> .....	427	15,160	461	308	358	71	13,962	.....	.....	14,228	14,054	44	130	.....	38,739,771

## SHIPBUILDING, STEEL.

1	United States.....	79	35,664	24	561	1,447	124	33,508	Mh 36,788	No 28,107	31,662	31,599	63	175	1	\$132,712,414
2	California.....	8	3,291	.....	53	131	11	3,096	Oc <sup>2</sup> 277	Ja 105	3,554	3,554	.....	.....	.....	7,529,481
3	Connecticut.....	3	331	.....	26	57	22	226	No <sup>2</sup> 277	Ja 105	275	262	9	4	.....	1,202,187
4	Indiana.....	3	202	.....	6	8	1	187	Au 217	De 135	135	135	.....	.....	.....	552,503
5	Maryland.....	7	2,182	2	52	83	6	2,039	Ja 2,274	De 1,823	2,043	2,030	7	6	.....	4,321,595
6	Michigan.....	6	1,010	5	27	36	7	935	My 1,340	De 236	350	350	.....	.....	.....	5,855,576
7	New Jersey.....	6	5,607	2	79	382	2	5,142	Je 5,502	No 4,810	4,985	4,985	.....	.....	.....	33,120,371
8	New York.....	11	3,222	6	32	149	12	3,023	My 3,511	Oc 2,659	2,877	2,874	2	.....	1	10,692,514
9	Ohio.....	5	2,739	.....	32	66	18	2,623	Mh 3,330	No 1,828	2,448	2,446	.....	2	.....	12,410,669
10	Wisconsin.....	3	545	.....	15	23	3	504	My 822	Se 195	450	479	.....	1	.....	3,760,779
11	All other states <sup>2</sup> .....	27	16,535	9	239	512	42	15,733	.....	.....	14,515	14,484	45	162	.....	53,263,439

## SHIPBUILDING, WOODEN, INCLUDING BOAT BUILDING.

1	United States.....	1,068	13,003	1,168	434	318	102	10,981	My 12,794	De 9,224	10,897	10,854	27	16	.....	23,347,524
2	California.....	44	439	42	17	15	4	361	Fe 409	Au 274	424	412	9	3	.....	617,950
3	Connecticut.....	34	342	30	14	6	4	288	My 357	No 230	277	276	.....	1	.....	1,167,426
4	Delaware.....	6	58	5	6	.....	.....	47	Se 67	No 30	59	59	.....	.....	.....	82,675
5	Florida.....	65	584	76	15	6	1	486	Oc 602	Jy 413	484	482	.....	2	.....	1,095,909
6	Georgia.....	4	18	4	.....	.....	.....	14	Au <sup>2</sup> 18	Ja <sup>2</sup> 11	11	11	.....	.....	.....	11,275
7	Illinois.....	21	187	22	18	6	6	137	Ap 179	De 98	137	137	.....	.....	.....	394,351
8	Indiana.....	6	47	6	3	.....	.....	38	Au 48	De 27	33	33	.....	.....	.....	58,157
9	Iowa.....	10	22	13	.....	.....	.....	9	Ap 13	Ja <sup>2</sup> 7	10	10	.....	.....	.....	37,476
10	Kentucky.....	11	117	13	9	4	1	90	Je 134	Au 29	156	156	.....	.....	.....	311,388
11	Louisiana.....	15	454	16	12	6	1	419	Fe 551	No 266	442	439	.....	3	.....	610,809
12	Maine.....	105	621	121	21	6	12	461	Mh 512	De 363	479	475	4	.....	.....	1,062,306
13	Maryland.....	35	503	42	16	14	2	429	Je 502	De 248	445	444	.....	1	.....	620,466
14	Massachusetts.....	81	565	81	31	7	11	435	My 570	Ja 314	429	426	1	2	.....	788,574
15	Michigan.....	56	420	56	14	15	9	326	My 443	De 195	300	297	2	1	.....	890,900
16	Minnesota.....	30	169	36	3	2	3	125	My 163	Oc 92	128	128	.....	.....	.....	223,150
17	Mississippi.....	11	77	12	.....	.....	.....	65	Ja <sup>2</sup> 83	Jy 47	61	61	.....	.....	.....	32,966
18	New Hampshire.....	7	24	10	.....	.....	.....	14	Jy <sup>2</sup> 15	De 12	18	18	.....	.....	.....	19,100
19	New Jersey.....	79	1,374	72	50	56	14	1,182	Je 1,825	Fe 1,057	1,144	1,143	1	.....	.....	2,907,742
20	New York.....	196	3,510	218	104	115	20	3,053	My 3,567	Se 2,654	2,885	2,881	4	.....	.....	7,306,380
21	North Carolina.....	10	69	11	1	1	.....	56	Ja 76	My <sup>2</sup> 51	52	52	.....	.....	.....	85,005
22	Ohio.....	24	307	29	13	6	3	256	Se 298	Mh 230	248	248	.....	.....	.....	459,777
23	Oregon.....	20	199	31	2	2	1	163	Mh 223	De 106	161	161	.....	.....	.....	435,199
24	Rhode Island.....	13	109	14	4	5	.....	86	Mh 119	De 54	72	72	.....	.....	.....	118,044
25	Texas.....	14	189	13	7	1	.....	168	Se 241	Fe 105	170	168	.....	2	.....	103,854
26	West Virginia.....	4	132	4	4	5	.....	119	Ap 153	Oc 86	126	126	.....	.....	.....	187,429
27	Wisconsin.....	31	244	33	12	5	3	191	Je 243	De 150	189	188	1	.....	.....	348,576
28	All other states <sup>3</sup> .....	136	2,223	158	60	35	7	1,963	.....	.....	1,957	1,951	5	1	.....	3,430,580

<sup>1</sup> Owned power only.<sup>2</sup> Includes rented power, other than electric.<sup>3</sup> Same number reported for one or more other months.<sup>4</sup> All other states embrace: Alabama, 4 establishments; Delaware, 8; District of Columbia, 2; Florida, 66; Idaho, 2; Illinois, 22; Iowa, 11; Louisiana, 17; Maine, 107; Massachusetts, 84; Mississippi, 12; Missouri, 3; North Carolina, 11; Oregon, 21; Rhode Island, 15; South Carolina, 2; South Dakota, 1; Tennessee, 3; Vermont, 2; Virginia, 29; West Virginia, 5.

## INCLUDING BOAT BUILDING, BY STATES: 1914.

EXPENSES.								Value of products.	Value added by manufacture.	POWER.					
Salaries and wages.			For contract work.	Rent and taxes.		For materials.				Primary horsepower.					Electric horse-power generated in establishments reporting.
Officials.	Clerks, etc.	Wage earners.		Rent of factory.	Taxes, including internal revenue and corporation income.	Principal materials.	Fuel and rent of power.			Total.	Steam engines. <sup>1</sup>	Internal-combustion engines. <sup>2</sup>	Water wheels and motors. <sup>3</sup>	Electric (rented)	

## SHIPBUILDING, INCLUDING BOAT BUILDING.

\$2,741,432	\$2,017,377	\$32,931,156	\$531,779	\$416,749	\$706,395	\$37,178,602	\$1,418,368	\$88,682,071	\$50,085,101	115,333	79,599	5,555	94	30,085	38,190	1
174,256	254,118	3,196,424	34,726	24,170	72,375	3,377,146	109,438	8,104,033	4,617,449	4,697	2,210	84	.....	2,403	5	2
191,307	112,433	458,379	895	11,069	5,238	327,061	15,140	1,665,293	1,323,032	1,303	646	111	30	516	.....	3
.....	.....	8,055	.....	366	.....	4,231	106	15,840	11,503	26	.....	23	.....	3	.....	4
16,054	8,120	134,404	500	.....	2,994	260,383	7,088	506,362	238,891	549	370	76	.....	103	.....	5
15,271	4,180	52,356	375	835	1,065	131,669	2,896	221,788	87,223	164	95	39	.....	30	11	6
107,746	56,714	1,573,469	.....	13,002	25,772	2,028,870	72,960	4,521,169	2,419,339	5,979	4,797	230	.....	952	2,433	7
84,560	56,743	1,039,516	5,893	5,592	44,553	1,189,847	68,896	2,822,557	1,563,814	7,585	6,898	298	16	353	2,241	8
4,500	3,099	89,323	1,700	1,399	1,529	153,530	3,964	817,111	159,617	352	122	156	.....	4	.....	9
.....	.....	10,138	750	60	266	11,742	526	38,525	26,257	50	25	20	.....	5	.....	10
400,188	455,984	4,657,008	2,757	69,452	54,376	5,486,445	149,849	11,860,965	6,224,671	11,944	10,633	589	.....	742	5,114	11
427,499	330,568	4,971,058	127,112	151,177	112,998	4,954,781	217,997	14,195,298	9,022,520	17,664	7,539	1,203	20	8,902	755	12
169,383	79,059	1,938,565	2,497	3,720	91,629	1,704,752	143,828	4,716,787	2,808,207	9,661	7,970	90	.....	1,601	6,251	13
230,190	143,732	3,411,350	176	4,078	46,782	4,635,922	161,353	9,539,865	4,742,590	9,694	2,243	37	26	7,388	17	14
11,410	1,250	123,256	.....	1,291	270	277,827	823	473,524	194,874	316	222	94	.....	1	15	15
90,250	117,970	1,151,913	32,180	14,168	45,237	951,776	35,087	3,101,446	2,114,583	5,886	3,856	122	.....	1,888	1,055	16
51,064	31,701	420,593	.....	5,106	30,617	424,001	27,154	1,254,088	802,933	3,575	3,108	189	.....	578	717	17
767,154	361,708	9,695,349	322,418	111,203	170,304	11,195,619	401,263	25,327,420	13,727,538	35,628	28,865	2,184	2	4,577	17,590	18

## SHIPBUILDING, STEEL.

\$1,936,266	\$1,650,346	\$25,165,792	\$442,135	\$123,487	\$545,478	\$28,097,457	\$1,172,270	\$66,216,692	\$36,946,965	83,700	60,208	574	.....	22,924	35,376	1
148,781	240,629	2,855,873	32,585	6,000	70,398	2,995,464	103,540	7,130,577	4,031,573	3,456	1,480	.....	.....	1,976	.....	2
104,576	108,752	235,953	.....	7,000	1,305	125,557	5,757	1,107,717	976,403	362	.....	.....	.....	362	.....	3
13,524	8,120	112,309	600	.....	2,614	252,772	6,505	465,936	206,659	433	285	50	.....	98	.....	4
91,206	47,055	1,323,696	.....	2,200	20,337	1,705,212	65,049	3,776,809	2,006,548	4,749	4,177	50	.....	522	2,301	5
63,909	39,219	810,473	.....	.....	37,210	946,590	60,412	2,261,069	1,253,767	4,617	4,525	.....	.....	92	2,241	6
290,352	394,134	3,740,073	898	32,512	31,923	4,439,115	117,145	9,292,706	4,736,446	8,616	8,068	.....	.....	548	4,500	7
183,354	183,547	2,478,255	80,520	38,975	59,697	2,161,352	128,993	6,835,156	4,544,811	9,728	2,850	260	.....	6,618	741	8
148,588	72,970	1,791,649	.....	730	88,626	1,571,269	140,066	4,291,645	2,580,320	8,748	7,242	.....	.....	1,506	6,251	9
34,883	26,917	298,915	.....	.....	27,686	230,524	21,999	851,281	598,758	3,397	2,920	.....	.....	477	714	10
797,033	532,103	11,518,596	321,632	36,070	205,682	13,669,312	522,804	30,203,796	16,011,680	39,600	28,061	214	.....	10,725	18,628	11

## SHIPBUILDING, WOODEN, INCLUDING BOAT BUILDING.

805,166	367,031	7,765,364	89,644	293,262	160,917	9,081,145	246,098	22,465,379	13,138,136	31,627	19,391	4,762	94	7,161	814	1
25,475	13,589	340,551	2,141	18,170	1,977	381,682	5,898	973,456	585,876	1,241	730	84	.....	427	5	2
20,731	6,681	222,426	895	4,069	3,933	201,504	9,383	557,576	346,689	941	646	111	30	154	.....	3
3,694	.....	27,544	.....	700	284	43,617	1,438	82,654	37,599	195	163	27	.....	5	.....	4
46,236	9,280	334,287	3,798	4,825	7,192	268,223	12,178	804,899	523,998	1,489	422	687	.....	380	1	5
.....	.....	8,055	.....	366	90	4,231	106	15,840	11,503	26	.....	23	.....	3	.....	6
22,470	6,817	99,909	524	4,941	1,137	105,307	2,852	283,341	175,182	251	.....	123	.....	128	13	7
2,530	.....	22,095	.....	.....	380	7,611	583	40,426	32,232	116	85	26	.....	5	.....	8
.....	.....	6,128	.....	116	221	12,424	418	32,500	19,658	44	4	33	2	5	.....	9
15,271	4,180	52,356	375	835	1,065	131,669	2,896	221,788	87,223	164	95	39	.....	30	11	10
18,540	5,566	234,769	.....	1,716	3,372	263,113	5,356	663,263	394,794	1,144	940	174	.....	30	.....	11
34,116	11,994	283,776	7,518	4,372	10,480	635,754	10,353	1,192,866	546,759	1,270	575	276	.....	419	.....	12
16,540	9,659	249,773	.....	10,802	5,435	323,658	7,911	744,360	412,791	1,230	620	180	.....	430	132	13
58,607	13,009	328,025	11,842	35,154	8,685	385,373	9,900	1,061,115	665,842	1,513	696	269	.....	548	2	14
20,591	17,524	229,043	5,693	5,592	7,343	242,957	8,484	561,488	310,047	2,948	2,373	298	16	261	.....	15
4,500	3,099	89,323	1,700	1,399	1,829	153,530	3,964	317,111	159,617	352	122	186	.....	44	.....	16
.....	.....	31,278	2,200	519	272	46,072	714	101,362	54,576	170	145	12	.....	13	.....	17
.....	.....	10,138	750	60	266	11,742	526	38,525	26,257	50	25	20	.....	5	.....	18
109,836	61,880	916,935	1,859	36,940	22,453	1,047,330	32,704	2,568,259	1,488,225	3,328	2,565	569	.....	194	614	19
244,145	147,021	2,492,803	40,592	112,202	53,301	2,793,429	89,004	7,360,142	4,477,709	7,936	4,689	943	20	2,284	14	20
1,200	520	33,853	.....	175	1,196	37,471	428	93,175	55,276	100	62	35	.....	3	.....	21
20,795	6,089	146,916	2,497	2,990	3,003	193,493	3,762	425,142	227,887	913	728	90	.....	95	.....	22
5,060	3,070	157,960	.....	4,369	3,734	111,557	2,891	332,074	217,626	445	247	51	.....	147	.....	23
4,175	3,557	61,166	15	5,953	971	40,668	2,208	158,774	115,898	303	230	14	.....	119	1	24
11,410	1,250	123,256	.....	1,291	270	277,827	823	473,524	194,874	316	222	94	.....	1	25	25
7,009	3,921	56,590	.....	736	80,261	752	752	160,898	79,885	138	138	.....	.....	.....	.....	26
16,781	4,784	121,678	.....	5,166	2,931	193,477	5,155	402,807	204,175	478	188	189	.....	101	3	27
89,454	33,571	1,084,731	7,245	30,540	18,361	1,087,165	25,411	2,798,514	1,685,938	4,466	2,681	209	26	1,331	17	28

<sup>1</sup> All other states embrace: Delaware, 2 establishments; Florida, 1; Illinois, 1; Iowa, 1; Louisiana, 2; Maine, 2; Massachusetts, 3; Mississippi, 1; North Carolina, 1; Oregon, 1; Pennsylvania, 5; Rhode Island, 2; Virginia, 1; Washington, 3; West Virginia, 1.

<sup>2</sup> All other states embrace: Alabama, 4 establishments; District of Columbia, 2; Idaho, 2; Missouri, 3; Pennsylvania, 28; South Carolina, 2; South Dakota, 1; Tennessee, 3; Vermont, 2; Virginia, 28; Washington, 61.