

## Group 12.—NONFERROUS METALS AND THEIR PRODUCTS

### THE GROUP AS A WHOLE

[See p. 39]

This group comprises industries engaged in the production of nonferrous metals from the ores or from scrap metals; in the refining or alloying of such metals; and in the manufacture, from these metals or alloys as basic materials, of finished products or products for use in further manufacturing processes.

The principal metals or ores which form the basic materials used in these industries are copper, lead, zinc, tin, gold, silver, and aluminum. It should be noted, however, that these same basic metals are used to a large extent in certain industries assigned to other groups; for example, "Electrical machinery, apparatus, and supplies" and other industries of the "Machinery, not including transportation equipment" group. A number of industries in Groups 11 and 16 also manufacture various commodities made wholly or in part from metals other than iron and steel.

Since the metals and alloys produced by the basic industries of Group 12 are used as materials by other industries in the group, there are considerable amounts of duplication in the total cost of materials and the total value of products for the group as a whole. (See Ch. I, sec. 18.)

The basic industries that extract the metals from the ore or refine or alloy them usually add relatively little to the value of the raw materials which they use, while the more highly elaborated manufacturing processes employed by the industries that use these metals and alloys as materials add very considerably to their value.

## GROUP 12.—NONFERROUS METALS AND THEIR PRODUCTS: 1927 TO 1933

INDUSTRY	Census year	Number of establishments	Wage earners (average for the year)	Wages	Cost of materials, containers, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>1</sup>
Aggregate for the group.	1933	4, 919	188, 271	\$166, 721, 547	\$641, 126, 563	1,068,753,411	\$427, 626, 848
	1931	6, 310	208, 855	240, 177, 110	862, 187, 480	1,449,261,562	587, 074, 082
	1929	7, 522	314, 741	443, 466, 623	2, 465, 444, 198	3, 597, 057, 717	1, 181, 611, 519
	1927	6, 761	272, 667	383, 184, 696	1, 783, 213, 469	2, 677, 107, 246	893, 893, 777
	Smelting and refining, total.	1933	214	18, 236	17, 022, 889	302, 327, 629	359, 011, 960
1931		237	21, 906	27, 063, 949	401, 151, 441	484, 681, 787	83, 530, 346
1929		250	36, 046	56, 447, 479	1, 344, 040, 270	1, 519, 641, 736	175, 601, 466
1927		228	34, 687	50, 614, 720	935, 014, 146	1, 086, 152, 537	151, 138, 391
Primary, total.....		1933	59	14, 567	13, 549, 271	231, 884, 679	273, 285, 575
	1931	76	18, 477	22, 716, 192	335, 713, 021	408, 588, 765	72, 875, 744
	1929	75	30, 981	49, 239, 819	1, 199, 025, 259	1, 345, 799, 941	146, 774, 682
	1927	69	30, 510	44, 799, 809	807, 242, 176	942, 734, 864	135, 492, 688
	Smelting and refining, copper.	1933	19	5, 596	5, 386, 550	142, 672, 253	158, 610, 406
1931		27	8, 642	10, 708, 010	226, 519, 918	269, 383, 991	42, 864, 073
1929		26	14, 544	23, 951, 955	920, 351, 441	994, 783, 862	74, 432, 421
1927		26	13, 924	20, 681, 865	527, 763, 711	609, 299, 017	81, 535, 306
Smelting and refining, lead..		1933	14	2, 106	2, 324, 913	60, 533, 700	70, 453, 429
	1931	16	2, 584	3, 569, 193	78, 744, 573	90, 726, 257	11, 981, 684
	1929	19	4, 819	7, 577, 094	203, 913, 730	232, 115, 009	28, 201, 279
	1927	18	5, 398	7, 689, 680	202, 859, 134	225, 137, 872	22, 278, 738
	Smelting and refining, zinc..	1933	26	6, 866	5, 837, 808	28, 678, 726	44, 221, 740
1931		33	7, 251	8, 438, 989	30, 448, 530	48, 478, 517	18, 029, 987
1929		30	11, 618	17, 710, 270	74, 760, 088	118, 901, 070	44, 140, 982
1927		25	11, 188	16, 528, 264	76, 619, 331	108, 297, 975	31, 078, 644
Secondary, total.....		1933	155	3, 669	3, 473, 618	70, 442, 950	85, 726, 385
	1931	161	3, 429	4, 347, 757	65, 438, 420	76, 093, 022	10, 654, 602
	1929	175	5, 065	7, 208, 160	145, 015, 011	173, 841, 795	28, 826, 784
	1927	159	3, 577	5, 714, 911	127, 771, 970	143, 417, 673	15, 645, 703
	Gold, silver, and platinum, refining and alloying.	1933	61	745	980, 020	39, 036, 288	44, 603, 744
1931		63	803	1, 185, 570	36, 892, 897	41, 397, 662	4, 504, 765
1929		69	931	1, 633, 838	61, 570, 093	67, 959, 140	6, 389, 047
1927		57	801	1, 434, 620	58, 877, 476	62, 647, 127	3, 769, 651
Smelting and refining, non-ferrous metals other than gold, silver, and platinum, not from the ore.		1933	94	2, 924	2, 493, 598	31, 406, 662	41, 122, 641
	1931	98	2, 626	3, 162, 137	28, 545, 523	34, 695, 360	6, 149, 837
	1929	106	4, 134	5, 574, 322	83, 444, 918	105, 882, 655	22, 437, 737
	1927	102	2, 776	4, 280, 291	68, 894, 494	80, 770, 546	11, 876, 052
	Alloys and manufactures of metals and of alloys, total.	1933	4, 705	170, 036	149, 698, 658	338, 798, 934	709, 741, 451
1931		6, 073	186, 683	213, 113, 161	461, 036, 039	964, 579, 775	503, 543, 736
1929		7, 272	278, 695	387, 019, 144	1, 121, 403, 928	2, 077, 415, 981	956, 012, 053
1927		6, 533	238, 580	332, 669, 876	848, 199, 323	1, 590, 954, 709	742, 755, 386
Aluminum products.....		1933	109	13, 634	11, 900, 016	34, 027, 142	61, 463, 949
	1931	138	13, 803	16, 106, 331	41, 605, 065	76, 299, 567	34, 694, 502
	1929	150	21, 210	29, 692, 727	94, 036, 463	153, 457, 248	59, 420, 785
	1927	139	14, 798	20, 891, 843	79, 838, 509	123, 557, 112	43, 718, 603
	Clocks, watches, time-recording devices, and materials and parts except watchcases.	1933	53	12, 850	10, 003, 392	9, 468, 454	31, 656, 023
1931		75	16, 213	15, 685, 615	12, 880, 086	45, 563, 375	32, 683, 289
1929		81	21, 460	25, 750, 088	21, 388, 018	77, 467, 111	56, 079, 093
1927		80	22, 472	27, 248, 194	16, 249, 635	71, 783, 468	55, 533, 833
Collapsible tubes.....		1933	17	1, 750	1, 482, 341	3, 894, 460	*6, 924, 109
	1931	17	1, 737	1, 634, 463	4, 142, 410	7, 634, 190	3, 491, 780
	1929	17	1, 821	1, 782, 024	5, 385, 906	8, 912, 977	3, 527, 071
	1927	17	1, 984	1, 918, 065	7, 103, 927	11, 350, 710	4, 245, 783
	Electroplating.....	1933	423	3, 956	3, 715, 379	2, 352, 202	10, 032, 076
1931		464	4, 107	5, 641, 654	2, 802, 451	13, 084, 240	10, 281, 789
1929		534	5, 928	9, 536, 800	4, 798, 667	23, 727, 916	18, 929, 249
1927		419	3, 566	5, 629, 104	3, 335, 140	13, 930, 321	10, 595, 181
Fire extinguishers, chemical.		1933	22	589	603, 628	1, 720, 483	3, 775, 061
	1931	25	571	616, 882	1, 796, 421	4, 452, 815	2, 659, 394
	1929	28	740	958, 570	4, 187, 524	8, 566, 089	4, 378, 565
	1927	26	532	1, 191, 708	4, 009, 775	8, 035, 156	4, 025, 381

For footnotes, see end of table.

## GROUP 12.—NONFERROUS METALS AND THEIR PRODUCTS: 1927 TO 1933—Con.

INDUSTRY	Cen- sus year	Num- ber of es- tab- lish- ments	Wage earners (aver- age for the year)	Wages	Cost of ma- terials, con- tainers, fuel, and pur- chased elec- tric energy	Value of products	Value added by manu- facture <sup>1</sup>
Gold leaf and foil.....	1933	31	608	\$348,000	\$683,757	**\$1,401,556	\$717,799
	1931	48	865	630,734	1,015,086	2,217,366	1,202,280
	1929	75	1,177	1,134,044	1,932,667	3,978,024	2,045,857
	1927	77	1,146	1,120,434	1,721,174	3,571,190	1,850,016
	1933	60	1,811	1,604,012	5,503,051	9,249,919	3,746,868
Jewelers' findings and ma- terials. <sup>2</sup>	1931	99	1,899	2,343,295	7,120,906	11,975,592	4,854,686
	1933	779	13,069	11,323,027	16,783,095	42,651,611	25,868,516
Jewelry <sup>3</sup> .....	1931	1,052	16,724	20,230,957	28,684,460	75,122,643	46,438,183
	1929	1,536	27,922	38,979,810	79,804,617	177,386,932	97,582,315
Jewelry (including jewelers' findings and materials). <sup>3</sup>	1927	1,367	24,116	36,765,805	76,915,375	164,865,057	87,949,682
	1933	357	10,538	9,506,299	19,240,956	46,173,480	26,932,524
Lighting equipment.....	1931	523	14,790	18,150,368	30,312,448	75,050,429	44,737,981
	1929	614	23,580	33,268,595	57,918,407	144,965,706	87,047,299
	1927	481	21,030	29,260,824	55,608,545	127,802,407	72,193,862
	1933	45	6,412	5,767,885	5,817,912	22,767,609	16,939,697
Needles, pins, hooks and eyes, and snap fasteners.	1931	46	5,354	5,666,534	4,842,405	20,342,038	15,499,633
	1929	43	6,242	6,665,732	6,187,822	22,030,950	15,843,128
	1927	45	5,606	6,098,477	5,922,844	20,325,250	14,402,406
	1933	875	47,784	43,729,228	128,356,064	239,155,936	110,799,872
Nonferrous-metal alloys; nonferrous-metal products, except aluminum, not elsewhere classified.	1931	1,066	48,913	55,108,824	195,337,534	331,438,974	136,101,440
	1929	1,225	79,133	116,943,996	600,410,913	909,804,050	209,393,137
	1927	1,197	65,923	95,351,041	378,190,134	581,568,767	203,378,633
	1933	1,229	13,050	12,657,804	35,463,376	68,807,223	33,343,847
Sheet-metal work, not spe- cifically classified.	1931	1,762	19,365	25,158,017	56,341,919	116,442,534	60,100,615
	1929	2,161	28,593	43,254,611	112,643,112	222,484,625	109,836,513
	1927	1,981	24,527	38,667,690	98,385,897	191,128,636	92,742,739
	1933	126	9,177	8,228,642	12,425,202	34,332,544	21,907,342
Silverware and plated ware..	1931	163	11,077	12,712,986	11,792,370	45,814,831	34,022,461
	1929	179	15,735	22,577,965	26,885,693	85,882,325	58,996,632
	1927	178	16,719	23,944,684	31,377,409	87,424,200	56,046,791
	1933	552	32,302	26,633,559	54,082,155	117,872,026	62,689,871
Stamped ware, enameled ware, and metal stamp- ings; enameling, japanning, and lacquering.	1931	566	28,378	30,661,855	53,618,345	122,696,407	69,078,062
	1929	582	40,000	50,091,700	87,639,495	204,306,134	116,690,639
	1927	476	30,853	38,172,046	68,880,269	150,936,053	82,055,784
	1933	7	1,337	1,189,058	7,680,282	11,330,927	3,650,645
Tin and other foils, not in- cluding gold foil.	1931	8	1,218	997,847	7,382,938	12,225,641	4,842,703
	1929	7	1,710	1,856,371	13,648,399	20,954,849	7,406,450
	1927	10	1,658	2,083,578	15,350,016	20,951,679	5,601,663
	1933	20	1,169	1,006,388	760,343	2,657,402	1,897,059
Watchcases.....	1931	31	1,669	1,766,749	1,261,195	4,219,133	2,857,938
	1929	40	3,404	4,626,111	4,631,225	13,491,045	8,859,820
	1927	40	3,360	4,326,393	5,310,674	13,724,703	8,414,029

<sup>1</sup> Value of products less cost of materials, containers, fuel, and purchased electric energy. See sec. 20, D. 11.

<sup>2</sup> Revised; revision not carried into aggregate for group.

<sup>3</sup> The manufacture of jewelers' findings and materials was treated as a part of the "Jewelry" industry at the censuses for 1929 and prior years.

<sup>4</sup> Revised; revision carried into total for subgroup but not into aggregate for group.

\*Value of collapsible tubes and miscellaneous products made in "Collapsible tubes" industry. Total value of collapsible tubes made in all industries, so far as reported, was \$6,857,050 (\$3,332,502 gross).

\*\*Gold leaf, 95,859 packs (600 sheets), \$1,116,405; other products, \$285,151.

†Value of foils and miscellaneous products made in the "Tin and other foils, not including gold foil" industry. Total value of tin and other foils, not including gold foil, made in all industries, so far as reported, was \$11,596,326 (64,165,594 lbs.).

## ALUMINUM PRODUCTS

[A preliminary report for this industry was issued on July 28, 1934]

**Description of the industry.**—This industry embraces establishments engaged primarily in the manufacture of aluminum ingots, rolled forms (bars, plates, and sheets), motor-vehicle and other commercial castings, kitchen and other household ware (except electrical appliances), and other aluminum products not classified in other industries. It does not include (a) the primary production of the metal (the reduction of bauxite), (b) the recovery of aluminum from scrap, (c) the manufacture of aluminum parts by certain establishments classified in other industries, for incorporation in finished products of their own manufacture, (d) the production of aluminum foil, and (e) the manufacture of collapsible tubes. (The primary production of aluminum is included in the "Chemicals not elsewhere classified" industry, and the recovery of aluminum from scrap is assigned to the "Smelting and refining, nonferrous metals other than gold, silver, and platinum, not from the ore" industry. Data for the production of aluminum ingots from scrap are, however, included in the figures for "Ingots produced for sale" in table 2, page 495.

**Extent of coverage.**—All the establishments in this industry that reported at the census for 1931 were accounted for in the canvass for 1933.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1</sup>	Number of wage earners (average for the year)	Salaries <sup>2</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>3</sup>
Thousands of dollars. (See sec. 25, p. 13)								
<i>United States</i>								
1933.....	109	1,865	13,634	2,962	11,900	34,027	61,464	27,437
1931.....	138	( <sup>4</sup> )	13,803	( <sup>4</sup> )	16,106	41,605	76,300	34,695
1929.....	160	2,517	21,210	5,749	29,693	94,036	153,457	59,421
1927.....	139	2,093	14,798	5,118	20,892	70,839	123,557	43,719
<i>States</i>								
<i>California:</i>								
1933.....	11	33	147	60	146	213	548	334
1931.....	11	( <sup>4</sup> )	148	( <sup>4</sup> )	197	212	651	439
<i>Illinois:</i>								
1933.....	11	78	612	119	533	893	1,975	1,082
1931.....	14	( <sup>4</sup> )	523	( <sup>4</sup> )	735	1,089	2,466	1,377
<i>Massachusetts:</i>								
1933.....	6	5	35	7	29	98	150	52
1931.....	7	( <sup>4</sup> )	55	( <sup>4</sup> )	57	138	278	140
<i>Missouri:</i>								
1933.....	4	10	108	21	115	315	693	378
1931.....	7	( <sup>4</sup> )	111	( <sup>4</sup> )	129	290	688	398
<i>Ohio:</i>								
1933.....	24	329	2,675	517	2,591	5,475	10,821	5,346
1931.....	27	( <sup>4</sup> )	1,991	( <sup>4</sup> )	2,466	5,395	10,514	5,119
<i>Wisconsin:</i>								
1933.....	12	240	2,985	384	2,442	4,508	10,789	6,281
1931.....	15	( <sup>4</sup> )	3,040	( <sup>4</sup> )	2,898	7,459	14,062	6,604
<i>Other States:<sup>5</sup></i>								
1933.....	41	1,170	7,072	1,853	6,044	22,525	36,488	13,963
1931.....	57	( <sup>4</sup> )	7,930	( <sup>4</sup> )	9,624	27,022	47,641	20,618

<sup>1</sup> Not including proprietors and firm members, as follows: 1933, 32; 1931, no data; 1929, 61; 1927, 54.<sup>2</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations, and therefore are not strictly comparable with the corresponding figures for 1929 and 1927, in which such data are included. No data for employees of central administrative offices are included in the figures for any year.<sup>3</sup> Value of products less cost of materials, fuel, and purchased electric energy. See sec. 20, p. 11.<sup>4</sup> No data.<sup>5</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Colo., 0, 2; Conn., 4, 6; Ind., 2, 2; Mich., 3, 14; Minn., 0, 1; Nebr., 1, 1; N. J., 6, 7; N. Y., 9, 11; Pa., 6, 7; Tenn., 1, 2; Tex., 1, 1; Wash., 2, 2; W. Va., 1, 1.

TABLE 2.—PRODUCTS, BY KIND, QUANTITY, AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929

	1933	1931	1929
1. "Aluminum products" industry, all products, total value...	\$61,463,949	\$76,299,567	\$153,457,248
2. Aluminum products <sup>1</sup> .....	\$59,507,345	\$71,891,137	\$147,351,351
3. Other products (not normally belonging to the industry).....	\$1,956,604	\$4,408,430	\$6,105,897
4. Aluminum articles made as secondary products in other industries <sup>1</sup> .....	\$6,643,960	\$7,623,448	\$14,643,047
Aluminum products, <sup>1</sup> aggregate value (2 and 4).....	\$66,151,305	\$79,514,585	\$161,994,398
Aluminum ware:			
Kitchen and other household ware (except electrical appliances), stamped, spun, and cast, value.....	\$13,744,935	\$17,593,758	\$35,100,001
Other aluminum ware, value.....	\$2,656,477	\$4,680,227	
Motor-vehicle parts: <sup>2</sup>			
Pounds.....	20,909,320	45,976,324	15,333,432
Value.....	\$7,363,455		\$7,466,752
Castings (not included above):			
Pounds.....	26,991,826	\$19,859,131	82,979,337
Value.....	\$9,246,533		\$38,267,674
Ingots produced for sale (from pig and scrap):			
Pounds.....	70,763,755	48,016,829	120,721,143
Value.....	\$9,913,532	\$7,550,919	\$26,299,723
Other aluminum products <sup>3</sup> .....	\$23,222,373	\$29,825,550	\$54,860,248

<sup>1</sup> Not including aluminum electrical appliances and other aluminum products specifically classified in other industries.

<sup>2</sup> Includes pistons for all types of internal-combustion engines (motor-vehicle and other).

<sup>3</sup> Includes rolled forms (bars, plates, and sheets).

TABLE 3.—WAGE EARNERS, BY MONTHS, FOR SELECTED STATES: 1933 AND 1931

[For average for the year, see table 1. The month of maximum employment is indicated by bold-faced figures and that of minimum employment by *italic* figures. See sec. 26, p. 13]

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<i>United States</i>												
1933.....	<i>11,264</i>	11,460	11,284	11,458	11,833	12,755	14,052	15,942	16,719	16,385	15,348	15,108
1931.....	14,002	14,399	14,742	14,936	14,593	14,082	13,837	13,588	12,974	<i>12,762</i>	12,971	12,755
<i>States</i>												
California:												
1933.....	117	123	126	127	147	149	164	172	175	169	154	136
1931.....	150	158	161	169	157	154	137	143	150	129	134	<i>125</i>
Connecticut:												
1933.....	<i>215</i>	239	244	262	261	290	350	334	340	393	454	406
1931.....	291	286	288	328	262	252	253	<i>228</i>	253	296	311	299
Illinois:												
1933.....	530	616	594	670	641	631	637	700	657	612	547	<i>509</i>
1931.....	473	471	499	517	498	494	471	473	418	569	734	719
Massachusetts:												
1933.....	31	41	38	32	27	34	35	35	39	47	30	35
1931.....	52	<i>51</i>	60	63	55	54	54	52	57	53	54	<i>51</i>
Michigan:												
1933.....	1,231	1,116	1,013	1,163	1,212	1,253	1,333	1,378	1,511	1,182	<i>1,004</i>	1,083
1931.....	1,419	1,515	1,659	1,676	1,676	1,442	1,286	1,194	1,096	1,008	1,126	1,294
Missouri:												
1933.....	59	70	<i>52</i>	101	106	115	109	157	147	137	126	121
1931.....	67	89	83	89	87	92	121	155	182	137	122	125
New Jersey:												
1933.....	503	502	<i>482</i>	499	507	532	525	643	703	785	764	702
1931.....	541	537	560	555	546	512	504	496	484	500	493	498
New York:												
1933.....	843	826	<i>815</i>	818	860	864	870	890	888	886	865	874
1931.....	1,893	1,890	1,879	1,937	1,870	1,806	1,782	1,749	1,271	1,189	<i>1,139</i>	1,146
Ohio:												
1933.....	2,083	2,109	2,062	<i>2,015</i>	2,098	2,389	2,768	3,322	3,715	3,539	3,016	3,014
1931.....	1,974	2,153	2,153	2,191	2,042	1,972	1,969	<i>1,835</i>	1,911	1,904	1,957	1,838
Pennsylvania:												
1933.....	<i>2,118</i>	2,161	2,166	2,133	2,207	2,380	2,665	2,922	3,120	3,204	3,431	3,362
1931.....	3,149	3,077	3,052	3,124	3,114	3,058	3,038	3,089	3,052	2,944	2,872	<i>2,820</i>
Wisconsin:												
1933.....	<i>2,449</i>	2,875	2,605	2,559	2,673	2,866	3,100	3,372	3,503	3,494	3,343	3,275
1931.....	2,592	3,034	3,192	3,136	3,147	3,117	3,118	3,107	3,056	2,969	2,906	<i>2,804</i>

## CLOCKS, WATCHES, TIME-RECORDING DEVICES, AND MATERIALS AND PARTS WATCHCASES

[Preliminary reports for these industries were issued on June 18 and Sept. 11, 1934]

**Description of the industries.**—The “Clocks, watches, time-recording devices, and materials and parts except watchcases” industry covers establishments engaged primarily in the manufacture of clocks, watches, and clock and watch movements; time-recording clocks, instruments, and stamps; time switches, time locks, etc.; and clock and watch materials and parts except watchcases. Establishments which install purchased movements in cases of their own make are classified as manufacturers of watches; but those which merely install purchased watch movements (whether imported or of domestic manufacture) in purchased cases do not come within the scope of the census.

The “Watchcases” industry covers establishments engaged primarily in the manufacture of watchcases for sale as such. Establishments which install purchased movements in cases of their own manufacture are assigned to the “Clocks, watches, time-recording devices, and materials and parts except watchcases” industry, and their products are reported as watches.

**Extent of coverage.**—All the establishments in these industries that reported at the census for 1931 were accounted for in the canvass for 1933.

TABLE 1.--SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1, 2</sup>	Number of wage earners (average for the year)	Salaries <sup>2</sup>	Wages	Cost of materials, containers, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>3</sup>
<i>Thousands of dollars. (See sec. 25, p. 13)</i>								
<b>CLOCKS, WATCHES, TIME-RECORDING DEVICES, AND MATERIALS AND PARTS EXCEPT WATCHCASES</b>								
<i>United States</i>								
1933.....	53	1,392	12,850	2,242	10,003	9,468	31,656	22,188
1931.....	75	( <sup>4</sup> )	16,213	( <sup>4</sup> )	15,686	12,880	45,563	32,683
1929.....	81	2,474	21,450	5,672	25,750	21,388	77,467	56,079
1927.....	80	2,284	22,472	5,138	27,248	16,260	71,783	55,584
<i>States</i>								
<b>Connecticut:</b>								
1933.....	11	356	5,544	622	4,560	3,178	10,513	7,336
1931.....	10	( <sup>4</sup> )	5,752	( <sup>4</sup> )	5,369	3,179	11,841	8,662
<b>Illinois:</b>								
1933.....	8	332	2,656	746	2,110	1,729	7,707	5,978
1931.....	14	( <sup>4</sup> )	6,108	( <sup>4</sup> )	5,403	4,340	17,195	12,855
<b>Massachusetts:</b>								
1933.....	10	319	2,062	420	1,571	1,318	4,045	2,726
1931.....	10	( <sup>4</sup> )	1,598	( <sup>4</sup> )	1,781	2,243	6,380	4,137
<b>New Jersey:</b>								
1933 <sup>5</sup> .....	5	16	82	17	63	181	323	142
<b>New York:</b>								
1933.....	10	164	1,443	242	864	936	4,940	4,005
1931.....	19	( <sup>4</sup> )	1,137	( <sup>4</sup> )	1,595	1,236	4,615	3,279
<b>Other States:<sup>6</sup></b>								
1933.....	9	205	1,066	195	836	2,127	4,128	2,001
1931.....	22	( <sup>4</sup> )	1,618	( <sup>4</sup> )	1,588	1,881	5,632	3,751
<b>WATCHCASES</b>								
<i>United States</i>								
1933.....	20	147	1,169	209	1,006	760	7,265 <sup>7</sup>	1,897
1931.....	31	( <sup>4</sup> )	1,669	( <sup>4</sup> )	1,767	1,361	4,219	2,858
1929.....	40	517	3,404	1,326	4,626	4,631	13,491	8,860
1927.....	40	534	3,360	1,473	4,326	5,311	13,725	8,414
<i>States</i>								
<b>New York:</b>								
1933.....	15	36	273	48	274	308	878	570
1931.....	24	( <sup>4</sup> )	242	( <sup>4</sup> )	412	473	1,157	684
<b>Other States:<sup>8</sup></b>								
1933.....	5	111	895	161	733	452	1,779	1,327
1931.....	7	( <sup>4</sup> )	1,427	( <sup>4</sup> )	1,355	888	3,062	2,174

<sup>1</sup> Not including proprietors and firm members, as follows: "Clocks, watches, time-recording devices, etc."—1933, 7; 1931, no data; 1929, 15; 1927, 22. "Watchcases"—1933, 8; 1931, no data; 1929, 23; 1927, 22.

<sup>2</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations, and therefore are not strictly comparable with the corresponding figures for 1929 and 1927, in which such data are included. No data for employees of central administrative offices are included in the figures for any year.

<sup>3</sup> Value of products less cost of materials, containers, fuel, and purchased electric energy. See sec. 20, p. 11.

<sup>4</sup> No data.

<sup>5</sup> Figures for 1931 withheld to avoid disclosing approximations of data for individual establishments; included in items for "Other States."

<sup>6</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: California, 1, 4; Indiana, 1, 1; Maryland, 1, 1; Michigan, 1, 1; New Jersey (1931), 7; Ohio, 2, 6; Pennsylvania, 2, 2; Rhode Island, 1, 0.

<sup>7</sup> Includes \$1,020,452, value of products other than watchcases (normally belonging to other industries); does not include \$35,801, value of watchcases made as secondary products in other industries.

<sup>8</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Illinois, 1, 1; Kentucky, 1, 1; Michigan, 1, 1; New Jersey, 1, 1; Ohio, 1, 1; Rhode Island, 0, 2.

TABLE 2.—PRODUCTS, BY KIND, NUMBER, AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929

CLOCKS, WATCHES, MATERIALS, AND PARTS	1933	1931	1929
1. "Clocks, watches, time-recording devices, and materials and parts except watchcases" industry, all products, total value.....	\$31,656,023	\$45,563,375	\$77,467,111
2. Clocks, watches, time-recording devices, and materials and parts, value.....	27,272,683	41,769,109	73,537,323
3. Other products (not normally belonging to the industry), value.....	1,307,058	1,490,323	3,128,269
4. Receipts for contract, custom, and repair work, value.....	3,076,282	2,303,938	803,514
5. Clocks, watches, time-recording devices, and materials and parts made as secondary products in other industries, value.....	254,992	1,061,247	1,716,576

	NUMBER IN THOUSANDS <sup>1</sup>			VALUE IN THOUSANDS OF DOLLARS <sup>1</sup>		
	1933	1931	1929	1933	1931	1929
Clocks, watches, time-recording devices, and materials and parts except watchcases, aggregate value (2 and 5).....				27,528	42,830	75,254
Clocks, complete, for use as timepieces only, total.....	9,651	10,657	12,295	11,474	20,391	25,512
Electric clocks.....	2,009	3,797	447	4,822	12,905	5,193
Alarm clocks, except electric.....	6,699	5,681	9,462	5,159	5,111	10,765
Clocks, other than alarm and electric, total.....	943	1,179	2,386	1,493	2,375	9,554
With domestic movements.....	903	1,118	2,224	1,363	2,117	8,358
With imported movements.....	40	62	163	130	259	1,196
Clock movements:						
For use as timepieces only.....	216	715	669	288	952	730
For use in time-recording instruments and devices.....	94	149	239	254	567	1,634
Instruments and devices, complete with clock mechanism:						
Time-recording clocks.....	12	20	47	511	1,479	5,160
Other devices.....	36	38	129	738	932	1,750
Clock materials and parts, including cases.....				329	1,854	1,071
Watches, watch movements, and materials and parts except watchcases, total value.....				13,933	16,605	39,356
Nonjeweled watches.....	5,747	5,137	9,480	5,182	4,541	9,673
Jeweled watches, complete <sup>2</sup> .....	685	859	1,524	7,040	10,288	23,773
Jeweled movements, and materials and parts except watchcases <sup>3</sup> .....				1,711	1,776	5,911

For footnotes, see end of table.

TABLE 2.—PRODUCTS, BY KIND, NUMBER, AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929—Continued

WATCHCASES	1933			1931			1929		
1. "Watchcases" industry, all products, total value.....	\$2,657,402			\$4,219,133			\$13,491,045		
2. Watchcases, value.....	1,638,950			3,307,417			11,503,586		
3. Other products (not normally belonging to the industry), value.....	1,020,452			911,716			1,987,459		
4. Watchcases made as secondary products in other industries, value.....	35,801			41,500			(4)		

  

	NUMBER IN THOUSANDS 1			VALUE IN THOUSANDS OF DOLLARS 1		
	1933	1931	1929	1933	1931	1929
Watchcases, aggregate value (2 and 4).....				1,673	3,349	11,504
Watchcases produced for sale as such:						
Number reported.....	1,491	1,232	3,757	1,673	2,325	9,460
Number not reported.....					1,024	2,044

1 See sec. 25, p. 13.

2 Not including watches assembled by establishments which purchase both cases and movements. See "Description of the industries," p. 496.

3 Combined to avoid disclosing data for individual establishments manufacturing jeweled movements

4 No data.

TABLE 3.—CLOCKS, WATCHES, ETC.—WAGE EARNERS, BY MONTHS, FOR SELECTED STATES: 1933 AND 1931

For average for the year, see table 1. The month of maximum employment is indicated by bold-faced figures and that of minimum employment by *italic* figures. See sec. 26, p. 13]

	NUMBER REPORTED FOR—											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<i>United States</i>												
1933.....	11,130	11,447	11,013	<b>10,547</b>	10,781	11,667	12,466	13,661	14,742	15,770	15,969	15,009
1931.....	17,459	17,245	16,938	17,186	16,314	<i>13,543</i>	16,050	15,577	16,253	16,647	18,309	15,030
<i>States</i>												
Connecticut:												
1933.....	4,851	4,971	4,812	<i>4,426</i>	4,636	5,314	5,638	6,014	6,416	6,718	6,815	5,922
1931.....	6,563	6,492	6,176	6,027	5,585	5,421	5,322	5,366	5,536	5,743	5,648	5,149
Illinois:												
1933.....	<b>2,242</b>	2,348	2,276	2,287	2,260	2,290	2,531	2,817	3,088	3,238	3,242	<b>3,251</b>
1931.....	7,029	6,697	6,653	6,357	6,276	<i>3,938</i>	6,117	6,140	6,195	6,351	6,071	5,422
Massachusetts:												
1933.....	1,763	1,811	1,819	<b>1,767</b>	1,837	1,953	1,996	2,077	2,178	2,444	2,571	2,537
1931.....	<i>1,178</i>	1,351	1,324	1,924	1,598	1,408	1,893	1,343	1,760	1,819	1,823	1,749
New Jersey:												
1933.....	<i>56</i>	58	58	58	60	58	94	86	102	114	<b>124</b>	111
1931.....	111	110	114	113	101	97	103	126	169	196	174	172
New York:												
1933.....	1,041	1,043	1,049	<b>1,035</b>	1,114	1,177	1,346	1,652	1,819	2,029	2,038	1,977
1931.....	<i>1,063</i>	1,081	1,125	1,165	1,169	1,150	1,180	1,162	1,148	1,127	1,142	1,135

**JEWELRY**  
**JEWELERS' FINDINGS AND MATERIALS**  
**SILVERWARE AND PLATED WARE**

[Preliminary reports for these industries were issued on Aug. 29 and Nov. 19, 1934]

**Description of the industries.**—The "Jewelry" industry embraces establishments engaged in manufacturing articles, chiefly for personal adornment, made of gold, silver, platinum, gold-filled metal, rolled-gold plate, brass, bronze, copper, or other metals, plain, engraved, or chased, and with or without precious or semiprecious stones.

The "Jewelers' findings and materials" industry covers the manufacture of jewelry findings—unassembled parts except gems and stones—and jewelers' materials or stock shop products.

The principal products of the "Silverware and plated ware" industry are knives, forks, spoons, and other flatware, hollow ware, toilet ware, ornaments, ecclesiastical ware, novelties, etc., of solid silver, nickel-silver, or pewter, or of metal plated with silver, gold, or other metal.

**Extent of coverage.**—As the result of a variety of causes, including the numerous industrial changes in progress during the period, all of which were beyond the control of the Bureau of the Census, the 1933 coverage of the "Jewelry" industry was slightly, but not seriously, incomplete. Of the 1,052 establishments reporting in this industry for 1931, 79 failed to supply any information in regard to their status (active, idle, etc.) or their activities in 1933, but these establishments accounted for less than 2 percent of the total number of wage earners and of the total value of products reported for the industry at the census for 1931. The 1933 coverage of the establishments reporting in the "Jewelers' findings and materials" and the "Silverware and plated ware" industries was practically complete. Only three establishments in each of these industries failed to supply information regarding their activities in 1933, and these establishments accounted for less than one-half of 1 percent of the employment and the production reported for the respective industries for 1931.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employes 1 2	Number of wage earners (average for the year)	Salaries 1	Wages	Cost of materials, containers, fuel, and purchased electric energy	Value of products	Value added by manufacture 1
<i>Thousands of dollars. (See sec. 25, p. 13)</i>								
<b>JEWELRY AND JEWELERS' FINDINGS AND MATERIALS, total</b>								
<i>United States</i>								
1933.....	839	2,709	14,879	3,530	12,927	22,286	51,902	29,615
1931.....	1,151	(*)	18,623	(*)	22,574	35,505	87,068	51,293
1929.....	1,536	5,535	27,922	16,091	38,980	79,805	177,387	97,582
1927.....	1,367	5,721	24,116	13,948	36,766	76,915	164,865	87,950
<b>JEWELRY</b>								
<i>United States</i>								
1933.....	779	2,405	13,069	3,021	11,323	16,783	42,652	25,869
1931.....	1,052	(*)	16,724	(*)	20,231	28,684	75,123	46,433
<i>States</i>								
<b>California:</b>								
1933.....	51	58	312	72	316	370	1,002	632
1931.....	67	(*)	424	(*)	555	701	1,833	1,133
<b>Colorado:</b>								
1933.....	7	12	34	16	31	24	81	57
1931.....	11	(*)	51	(*)	69	49	190	142
<b>Georgia:</b>								
1933.....	4	10	22	8	24	18	54	36
1931.....	4	(*)	29	(*)	33	23	101	78
<b>Illinois:</b>								
1933.....	42	94	294	117	310	601	1,306	705
1931.....	64	(*)	687	(*)	969	1,097	3,111	2,014
<b>Kentucky:</b>								
1933.....	4	5	18	6	19	9	41	32
1931.....	7	(*)	30	(*)	41	25	91	66
<b>Maryland:</b>								
1933.....	10	10	42	7	40	69	173	104
1931.....	10	(*)	55	(*)	69	81	260	179
<b>Massachusetts:</b>								
1933.....	72	378	2,654	498	2,478	2,723	7,879	5,156
1931.....	93	(*)	3,324	(*)	4,033	3,730	11,680	7,941
<b>Michigan:</b>								
1933.....	12	33	94	45	83	177	465	283
1931.....	14	(*)	130	(*)	184	414	942	523
<b>Minnesota:</b>								
1933.....	13	80	171	71	170	281	825	544
1931.....	18	(*)	204	(*)	264	339	1,044	705
<b>Missouri:</b>								
1933.....	20	46	221	46	224	180	582	402
1931.....	26	(*)	325	(*)	444	363	1,138	775
<b>New Jersey:</b>								
1933.....	59	258	1,221	367	975	1,663	4,059	2,396
1931.....	79	(*)	1,672	(*)	2,154	2,544	7,116	4,672
<b>New York:</b>								
1933.....	269	603	2,153	764	2,264	5,391	11,595	6,204
1931.....	375	(*)	3,098	(*)	4,547	10,055	23,410	13,355
<b>Ohio:</b>								
1933.....	26	68	177	72	145	256	675	413
1931.....	31	(*)	339	(*)	444	664	1,753	1,089
<b>Pennsylvania:</b>								
1933.....	35	80	265	93	273	370	973	603
1931.....	45	(*)	327	(*)	434	563	1,491	923
<b>Rhode Island:</b>								
1933.....	112	518	4,884	663	3,497	4,143	11,196	7,052
1931.....	145	(*)	5,430	(*)	5,207	7,173	18,255	11,082

For footnotes, see end of table.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931—Continued

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees 1 2	Number of wage earners (average for the year)	Salaries 3	Wages	Cost of materials, contain-ers, fuel, and pur-chased electric energy	Value of prod-ucts	Value added by manu-facture 4
<i>Thousands of dollars. (See sec. 25, p. 13)</i>								
<b>JEWELRY—continued</b>								
<i>States—Continued</i>								
Texas:								
1933.....	3	1	14	( <sup>5</sup> )	14	11	35	23
1931.....	7	( <sup>4</sup> )	45	( <sup>4</sup> )	48	52	146	94
Utah:								
1933.....	3	1	16	( <sup>5</sup> )	11	8	34	26
1931.....	4	( <sup>4</sup> )	21	( <sup>4</sup> )	33	17	73	56
Washington:								
1933.....	5	15	57	14	44	33	109	76
1931.....	9	( <sup>4</sup> )	92	( <sup>4</sup> )	108	157	270	113
Wisconsin:								
1933.....	7	14	40	15	41	34	121	87
1931.....	6	( <sup>4</sup> )	37	( <sup>4</sup> )	49	27	121	94
Other States: 6								
1933.....	25	121	379	148	363	422	1,447	1,025
1931.....	37	( <sup>4</sup> )	404	( <sup>4</sup> )	545	603	2,096	1,494
<b>JEWELERS' FINDINGS AND MATERIALS</b>								
<i>United States</i>								
1933.....	60	304	1,811	509	1,604	5,503	9,250	3,747
1931.....	99	( <sup>4</sup> )	1,899	( <sup>4</sup> )	2,343	7,121	11,976	4,855
<i>States</i>								
Massachusetts:								
1933.....	14	83	536	162	561	2,378	3,655	1,277
1931.....	14	( <sup>4</sup> )	600	( <sup>4</sup> )	793	2,798	4,273	1,475
New York:								
1933.....	8	19	83	26	67	443	639	196
1931.....	41	( <sup>4</sup> )	193	( <sup>4</sup> )	305	1,171	2,165	995
Rhode Island:								
1933.....	33	154	945	238	762	2,361	4,146	1,785
1931.....	38	( <sup>4</sup> )	1,028	( <sup>4</sup> )	1,129	2,946	5,138	2,212
Other States: 7								
1933.....	5	48	247	83	214	321	810	489
1931.....	6	( <sup>4</sup> )	78	( <sup>4</sup> )	117	207	379	173
<b>SILVERWARE AND PLATED WARE</b>								
<i>United States</i>								
1933.....	126	1,163	9,177	1,682	8,229	12,425	34,333	21,907
1931.....	163	( <sup>4</sup> )	11,077	( <sup>4</sup> )	12,713	11,792	45,815	34,022
1929.....	179	2,962	15,735	7,700	22,578	26,886	85,882	58,997
1927.....	178	2,839	16,719	7,040	23,945	31,377	87,424	56,047
<i>States</i>								
Connecticut:								
1933.....	23	417	3,491	598	2,868	4,593	11,791	7,198
1931.....	33	( <sup>4</sup> )	4,448	( <sup>4</sup> )	4,431	2,751	17,103	14,852
Illinois:								
1933.....	5	8	49	8	41	35	132	97
1931.....	6	( <sup>4</sup> )	97	( <sup>4</sup> )	149	127	447	321
Maryland:								
1933.....	4	41	211	66	191	417	1,086	668
1931.....	4	( <sup>4</sup> )	231	( <sup>4</sup> )	389	340	1,212	872

For footnotes, see end of table.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931—Continued

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1, 2</sup>	Number of wage earners (average for the year)	Salaries <sup>2</sup>	Wages	Cost of materials, containers, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>3</sup>
<b>SILVERWARE AND PLATED WARE—continued</b>								
<i>States—Continued</i>								
<b>Massachusetts:</b>								
1933.....	27	241	1, 442	343	1, 251	1, 822	5, 469	3, 648
1931.....	33	( <sup>4</sup> )	1, 968	( <sup>4</sup> )	2, 126	2, 065	6, 749	4, 684
<b>New Jersey:</b>								
1933.....	10	41	434	83	393	452	1, 034	582
1931.....	16	( <sup>4</sup> )	567	( <sup>4</sup> )	736	474	1, 529	1, 055
<b>New York:</b>								
1933.....	46	248	2, 228	351	2, 154	3, 006	9, 150	6, 143
1931.....	52	( <sup>4</sup> )	2, 298	( <sup>4</sup> )	3, 297	3, 975	12, 543	8, 568
<b>Other States:<sup>5</sup></b>								
1933.....	11	167	1, 322	233	1, 329	2, 100	5, 671	3, 571
1931.....	19	( <sup>4</sup> )	1, 468	( <sup>4</sup> )	1, 585	2, 060	6, 231	4, 171

<sup>1</sup> Not including proprietors and firm members, as follows: "Jewelry"—1933, 530; 1931, no data; 1929, 1,340; 1927, 1,337. "Jewelry"—1933, 514; 1931, no data. "Jewelers' findings and materials"—1933, 530; 1931, no data; 1929, 1,340; 1927, 1,337. "Jewelry"—1933, 514; 1931, no data. "Silverware and plated ware"—1933, 33; 1931, no data; 1929, 77; 1927, 103.

<sup>2</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations, and therefore are not strictly comparable with the corresponding figures for 1929 and 1927, in which such data are included. No data for employees of central administrative offices are included in the figures for any year.

<sup>3</sup> Value of products less cost of materials, containers, fuel, and purchased electric energy. See sec. 20, p. 11.

<sup>4</sup> No data.

<sup>5</sup> Withheld to avoid disclosing compensation of individual employees; included in figure for "Other States."

<sup>6</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Arkansas, 1, 1; Connecticut, 4, 5; District of Columbia, 2, 3; Florida, 0, 1; Indiana, 7, 8; Iowa, 2, 2; Louisiana, 1, 2; Maine, 1, 1; Montana, 0, 1; Nebraska, 2, 3; Nevada, 1, 1; New Mexico, 1, 1; North Carolina, 0, 1; North Dakota, 0, 1; Oklahoma, 2, 2; Oregon, 1, 2; South Dakota, 0, 1; Virginia, 0, 1.

<sup>7</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Illinois, 1, 1; New Jersey, 4, 4; Pennsylvania, 0, 1.

<sup>8</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: California, 0, 6; Indiana, 2, 2; Maine, 0, 1; Michigan, 1, 1; North Carolina, 0, 1; Ohio, 2, 2; Pennsylvania, 2, 1; Rhode Island, 3, 4; Virginia, 1, 1.

TABLE 2.—JEWELRY AND JEWELERS' FINDINGS AND MATERIALS—PRODUCTION, BY KIND AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929

	1933	1931	1929
1. "Jewelry and jewelers' findings and materials" industries, all products, total value.....	\$51,901,530	\$87,098,235	\$177,386,932
2. Jewelry and jewelers' findings and materials.....	48,602,355	80,046,887	163,136,305
3. Other products (not normally belonging to the industries).....	1,001,591	1,862,297	5,178,252
4. Receipts for custom, contract, and repair work.....	2,297,584	5,089,051	9,072,365
5. Jewelry made as a secondary product in other industries.....	660,398	819,113	1,003,799
Jewelry and jewelers' findings and materials, aggregate value (2 and 5).....	49,262,753	80,866,000	164,140,104
Jewelry, total.....	40,302,405	68,175,466	142,433,383
Platinum.....	5,208,150	13,015,950	41,372,454
Gold.....	13,025,590	19,245,142	43,037,733
Gold-filled and rolled-gold-plated.....	2,253,530	3,437,832	10,560,158
Silver.....	2,400,993	5,591,915	10,609,618
Electroplated on base metals:			
Silver-plated.....	957,422	2,135,643	5,542,163
Gold-plated.....	2,389,862	3,067,862	(1)
Platinum- and other metal-plated.....	3,503,011	4,102,939	(1)
Jewelry not reported by kind.....	211,939	1,283,450	(1)
Emblematic and novelty jewelry.....	10,351,908	16,229,733	29,991,257
Jewelers' findings—unassembled parts, except gems, stones, and stock shop products.....	2,711,248	5,391,236	21,706,721
Jewelers' materials other than findings, total.....	6,249,100	7,299,298	(1)
Platinum stock.....	28,203	85,769	(1)
Stock shop products (sheet, wire, and tubing) other than platinum.....	6,220,897	7,213,529	(1)

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

TABLE 3.—JEWELRY—WAGE EARNERS, BY QUARTERS, FOR SELECTED STATES: 1933 AND 1931

[The average for the year (table 1) differs from the average of the quarterly figures below. (See fourth sentence sec. 13, p. 3.) See sec. 26, p. 13]

	1933 <sup>1</sup>				1931			
	March	June	Sep-tember	De-cember	March	June	Sep-tember	De-cember
United States.....	11,238	11,965	15,795	13,846	17,005	16,052	17,384	16,527
<i>States</i>								
California.....	272	306	349	353	439	421	423	405
Colorado.....	29	34	33	38	52	52	51	51
Connecticut.....	71	69	150	147	71	83	124	120
Georgia.....	21	21	22	25	30	29	29	30
Illinois.....	249	279	320	343	690	672	670	758
Indiana.....	132	141	188	201	155	140	163	168
Kentucky.....	16	18	20	19	31	30	30	30
Maryland.....	43	41	39	42	54	54	54	58
Massachusetts.....	2,250	2,388	3,276	2,843	3,239	3,286	3,434	3,197
Michigan.....	89	90	102	100	150	138	108	123
Minnesota.....	158	153	183	210	212	194	197	208
Missouri.....	212	207	222	253	311	300	328	348
New Jersey.....	1,023	1,208	1,571	993	1,708	1,634	1,698	1,627
New York.....	1,790	2,020	2,566	2,469	3,284	2,941	3,033	3,190
Ohio.....	172	158	161	192	364	329	310	357
Pennsylvania.....	263	260	254	296	336	328	309	345
Rhode Island.....	4,220	4,343	6,099	5,077	5,509	5,074	6,021	5,168
Texas.....	13	14	15	14	46	48	44	33
Utah.....	15	17	16	18	21	21	21	21
Washington.....	57	55	56	59	94	92	91	93
Wisconsin.....	40	38	39	41	37	36	35	40

<sup>1</sup> See secs. 5, p. 4, and 13, p. 8. The 623 establishments canvassed with the standard schedule reported wage earners, by months, as follows:

January.....	11,584	May.....	10,873	September.....	15,346
February.....	11,675	June.....	11,545	October.....	16,209
March.....	10,847	July.....	11,507	November.....	14,587
April.....	10,648	August.....	13,471	December.....	13,394

TABLE 4.—SILVERWARE AND PLATED WARE—WAGE EARNERS, BY MONTHS, FOR SELECTED STATES: 1933 AND 1931

[For average for the year, see table 1. The month of maximum employment is indicated by bold-faced figures and that of minimum employment by *italic* figures. See sec. 26, p. 13]

	NUMBER REPORTED FOR—											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<i>United States</i>												
1933	8,018	8,297	8,184	8,255	8,503	8,622	8,776	9,213	9,891	10,841	11,005	10,518
1931	11,485	11,828	11,824	11,468	11,217	10,810	10,300	10,563	10,325	11,003	10,836	10,800
<i>States</i>												
<b>Connecticut:</b>												
1933	3,078	3,180	3,100	3,202	3,228	3,225	3,289	3,513	3,797	4,112	4,145	4,028
1931	4,752	4,767	4,765	4,631	4,553	4,476	4,304	4,328	4,320	4,209	4,151	4,122
<b>Illinois:</b>												
1933	58	61	62	59	29	39	46	43	55	45	47	39
1931	96	110	95	95	90	91	89	94	97	106	97	103
<b>Maryland:</b>												
1933	211	206	210	206	205	204	210	208	211	217	220	224
1931	232	229	227	225	228	225	230	234	233	236	238	241
<b>Massachusetts:</b>												
1933	1,236	1,334	1,361	1,332	1,346	1,370	1,376	1,420	1,551	1,708	1,674	1,544
1931	1,895	2,090	2,083	1,952	2,001	1,856	1,887	1,886	1,974	1,081	2,005	2,005
<b>New Jersey:</b>												
1933	361	378	388	413	434	441	436	452	478	503	480	452
1931	569	576	597	584	585	603	581	556	541	550	543	517
<b>New York:</b>												
1933	1,905	1,975	1,923	1,864	2,019	2,030	2,046	2,186	2,372	2,775	2,908	2,732
1931	2,306	2,396	2,422	2,348	2,267	2,148	2,053	2,120	2,255	2,458	2,395	2,405
<b>Rhode Island:</b>												
1933	660	665	676	685	727	739	738	730	736	773	808	797
1931	921	952	921	859	808	755	606	726	732	771	746	750

## LIGHTING EQUIPMENT; STAMPED WARE, ENAMELED WARE, AND METAL STAMPINGS, ENAMELING, JAPANING, AND LACQUERING; SHEET-METAL WORK, NOT SPECIFICALLY CLASSIFIED

[Preliminary reports for these industries were issued on Aug. 22, 1934, and subsequent dates]

**Description of the industries.**—The "Lighting equipment" industry classification relates to establishments engaged primarily in the manufacture of electric-lighting equipment (not including incandescent-filament lamps) for residential, commercial, and industrial use, and for motor vehicles; gas-, kerosene-, and gasoline-lighting equipment; reflectors and shades; and parts. Establishments which manufacture incandescent-filament lamps (bulbs) as their primary products are classified in the "Electrical machinery, apparatus, and supplies" industry.

The establishments classified in the "Stamped ware, enameled ware, and metal stampings; enameling, japaning, and lacquering" industry are engaged primarily in the manufacture, from sheet metal other than aluminum, of automotive and other industrial stampings, license plates, bottle and jar seals and caps, and kitchen utensils and other household ware, and in the enameling, japaning, and lacquering of some of these articles. The classification also covers establishments engaged in custom stamping, enameling, japaning, and lacquering materials owned by others. (Stamped aluminum ware is a product of the "Aluminum manufactures" industry, and enameled-iron sanitary ware is a product of the "Plumbers' supplies, not including pipe or vitreous-china sanitary ware" industry.)

The establishments classified in the "Sheet-metal work, not specifically classified" industry are engaged in general coppersmithing and sheet-iron work, and in the production, *in the shop*, of cornices, gutters, spoutings, etc., for the exterior of buildings; and of radiator shields, stove and furnace pipe, ventilators and skylights, tanks and bins, and culverts. The materials used are copper, bronze, tin plate, sheet steel, and galvanized iron. The statistics *do not* include data for the outside work, such as the laying of sheet-metal roofs and the installation of cornices, gutters, spouts, etc., done by some of the establishments in the industry.

**Extent of coverage.**—The 1933 coverage of the establishments reporting in the first two of these industries for 1931 was nearly complete. Although 39 such establishments in the "Lighting equipment" industry and 21 in the "Stamped ware, enameled ware," etc., industry failed to supply any information in regard to their status (active, idle, etc.) or their activities in 1933, these establishments accounted for only about 1 percent of the 1931 employment and production totals for the first industry, and less than 1 percent of those for the second. In the "Sheet-metal work, not specifically classified" industry, however, the coverage was less nearly complete. In this industry 83 establishments, which had reported approximately 3 percent of the employment total and more than 2 and one-half percent of the production total for 1931, failed to supply information pertaining to their status or activities in 1933.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employes 1 2	Number of wage earners (average for the year)	Salaries 1	Wages	Cost of materials, containers, fuel, and purchased electric energy	Value of products	Value added by manufacture 3
<b>LIGHTING EQUIPMENT</b>								
<i>United States</i>								
1933.....	357	1,921	10,538	3,119	9,506	19,241	46,173	26,933
1931.....	523	(4)	14,790	(4)	18,150	30,312	75,050	44,738
1929.....	614	4,760	23,580	13,711	33,269	57,918	144,966	87,047
1927.....	481	4,791	21,030	12,637	29,261	55,609	127,802	72,194
<i>States</i>								
<i>California:</i>								
1933.....	41	78	266	85	244	443	1,074	631
1931.....	67	(4)	664	(4)	793	1,247	3,105	1,858
<i>Connecticut:</i>								
1933.....	12	108	1,027	223	974	1,201	2,907	1,706
1931.....	18	(4)	1,128	(4)	1,205	1,102	3,168	2,066
<i>Illinois:</i>								
1933.....	50	407	1,795	700	1,420	2,921	6,860	3,939
1931.....	64	(4)	2,409	(4)	3,021	4,778	13,390	8,612
<i>Massachusetts:</i>								
1933.....	9	35	202	60	182	291	801	510
1931.....	15	(4)	309	(4)	367	471	1,495	1,024
<i>Missouri:</i>								
1933.....	12	59	240	95	234	363	992	629
1931.....	12	(4)	292	(4)	446	482	1,558	1,075
<i>New Jersey:</i>								
1933.....	13	117	553	200	466	698	1,705	1,006
1931.....	20	(4)	498	(4)	596	1,386	2,980	1,594
<i>New York:</i>								
1933.....	137	488	2,625	747	2,577	5,514	11,801	6,287
1931.....	187	(4)	3,737	(4)	5,256	9,444	22,043	12,599
<i>Ohio:</i>								
1933.....	24	192	1,339	291	1,217	2,524	4,934	2,409
1931.....	34	(4)	1,777	(4)	2,000	3,153	7,839	4,687
<i>Pennsylvania:</i>								
1933.....	27	103	450	171	412	775	1,774	999
1931.....	39	(4)	652	(4)	840	1,265	3,068	1,804
<i>Wisconsin:</i>								
1933.....	8	39	101	68	92	205	497	292
1931.....	13	(4)	233	(4)	288	308	1,077	769
<i>Other States: 4</i>								
1933.....	24	295	1,939	480	1,688	4,306	12,830	8,523
1931.....	54	(4)	3,091	(4)	3,339	6,676	15,325	8,649
<b>STAMPED WARE, ENAMELED WARE, AND METAL STAMPINGS; ENAMELING, JAPANING, AND LACQUERING</b>								
<i>United States</i>								
1933.....	552	4,185	32,302	6,178	26,634	54,682	117,372	62,690
1931.....	566	(4)	28,378	(4)	30,662	53,618	122,696	69,078
1929.....	532	5,888	40,000	17,628	50,092	87,639	204,306	116,667
1927.....	476	4,562	30,853	12,094	38,172	68,880	150,936	82,056
<i>States</i>								
<i>California:</i>								
1933.....	28	85	516	112	442	1,020	2,199	1,179
1931.....	21	(4)	443	(4)	520	873	2,146	1,273
<i>Connecticut:</i>								
1933.....	23	110	1,857	205	1,553	1,987	5,544	3,557
1931.....	20	(4)	1,266	(4)	1,225	1,348	3,726	2,378
<i>Illinois:</i>								
1933.....	73	471	2,805	926	2,567	6,499	12,935	6,436
1931.....	76	(4)	2,798	(4)	3,299	6,815	15,196	8,381
<i>Indiana:</i>								
1933.....	20	164	1,521	228	1,105	2,276	4,791	2,514
1931.....	21	(4)	1,556	(4)	1,330	2,350	5,819	3,468

For footnotes, see end of table.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931—Continued

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employ-ees <sup>1</sup>	Number of wage earners (average for the year)	Sal-aries <sup>2</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of prod-ucts	Value added by manu-fac-ture <sup>3</sup>
STAMPED WARE, ENAMELED WARE, AND METAL STAMPINGS; ENAMELING, JAPANING, AND LACQUERING—CONTINUED								
<i>States—Continued</i>								
Maryland:								
1933	13	190	1,667	352	1,405	4,319	10,109	5,790
1931	14	( <sup>4</sup> )	1,671	( <sup>4</sup> )	1,580	5,005	9,976	4,972
Massachusetts:								
1933	38	139	1,069	235	992	1,887	4,155	2,268
1931	41	( <sup>4</sup> )	1,056	( <sup>4</sup> )	1,268	1,807	4,584	2,776
Michigan:								
1933	49	296	2,409	478	1,958	3,248	7,621	4,373
1931	55	( <sup>4</sup> )	2,102	( <sup>4</sup> )	2,609	3,499	8,171	4,672
Minnesota:								
1933	4	6	40	8	42	42	123	81
1931	4	( <sup>4</sup> )	53	( <sup>4</sup> )	58	102	267	155
Missouri:								
1933	12	102	864	136	667	1,433	3,534	2,101
1931	19	( <sup>4</sup> )	980	( <sup>4</sup> )	1,005	2,171	4,001	1,830
New Jersey:								
1933	25	147	1,303	230	1,197	1,180	3,635	2,455
1931	33	( <sup>4</sup> )	1,483	( <sup>4</sup> )	1,861	1,538	4,404	2,866
New York:								
1933	99	623	4,055	986	3,738	7,816	15,940	8,124
1931	98	( <sup>4</sup> )	3,987	( <sup>4</sup> )	4,615	7,668	19,476	11,809
Ohio:								
1933	76	1,073	7,088	1,097	5,784	11,761	23,236	11,475
1931	72	( <sup>4</sup> )	4,895	( <sup>4</sup> )	5,386	9,380	21,266	11,886
Pennsylvania:								
1933	35	269	2,085	414	1,589	3,473	7,329	3,856
1931	35	( <sup>4</sup> )	1,527	( <sup>4</sup> )	1,687	2,730	6,230	3,501
Rhode Island:								
1933	9	18	266	55	200	169	559	390
1931	13	( <sup>4</sup> )	400	( <sup>4</sup> )	349	226	932	706
Tennessee:								
1933	4	38	682	81	337	779	1,655	875
1931	3	( <sup>4</sup> )	508	( <sup>4</sup> )	372	700	1,519	819
West Virginia:								
1933	5	79	1,322	118	1,040	2,483	4,816	2,333
1931	5	( <sup>4</sup> )	1,124	( <sup>4</sup> )	1,108	3,354	5,934	2,580
Wisconsin:								
1933	21	325	2,304	439	1,649	3,519	7,284	3,765
1931	19	( <sup>4</sup> )	2,216	( <sup>4</sup> )	2,077	3,435	7,686	4,251
Other States: <sup>4</sup>								
1933	18	50	460	79	370	790	1,910	1,120
1931	17	( <sup>4</sup> )	313	( <sup>4</sup> )	314	618	1,373	755
SHEET-METAL WORK, NOT SPECIFICALLY CLASSIFIED								
<i>United States</i>								
1933	1,229	3,045	13,050	4,280	12,658	35,463	68,807	33,344
1931	1,762	( <sup>4</sup> )	19,365	( <sup>4</sup> )	25,158	56,342	116,443	60,101
1929	2,161	6,954	28,593	18,414	43,255	112,648	222,485	109,837
1927	1,981	5,915	24,527	14,586	38,668	98,386	191,120	92,743
<i>States</i>								
Alabama:								
1933	6	14	103	19	59	345	536	191
1931	6	( <sup>4</sup> )	180	( <sup>4</sup> )	128	300	510	210
Arizona:								
1933	3	3	12	4	11	24	46	22
1931	3	( <sup>4</sup> )	22	( <sup>4</sup> )	19	43	79	36
California:								
1933	139	231	912	327	981	2,243	4,620	2,377
1931	202	( <sup>4</sup> )	1,287	( <sup>4</sup> )	1,827	3,480	7,521	4,041
Colorado:								
1933	8	36	92	59	84	466	833	367
1931	16	( <sup>4</sup> )	146	( <sup>4</sup> )	186	651	1,225	574

For footnotes, see end of table.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931—Continued

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1 2</sup>	Number of wage earners (average for the year)	Salaries <sup>3</sup>	Wages	Cost of materials, containers, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>4</sup>
<i>Thousands of dollars. (See sec. 25, p. 13)</i>								
<b>SHEET-METAL WORK, NOT SPECIFICALLY CLASSIFIED—contd.</b>								
<i>States—Continued.</i>								
<b>Connecticut:</b>								
1933.....	13	16	88	28	85	142	329	187
1931.....	20	(*)	176	(*)	236	431	955	524
<b>Florida:</b>								
1933.....	10	11	64	15	42	98	235	138
1931.....	9	(*)	65	(*)	78	151	340	189
<b>Georgia:</b>								
1933.....	13	58	183	51	108	889	1,416	527
1931.....	16	(*)	126	(*)	117	606	1,223	617
<b>Illinois:</b>								
1933.....	117	285	1,402	407	1,512	2,749	6,576	3,827
1931.....	177	(*)	1,910	(*)	2,728	4,504	11,094	6,590
<b>Indiana:</b>								
1933.....	29	77	403	101	314	775	1,708	933
1931.....	44	(*)	553	(*)	590	1,432	2,940	1,508
<b>Iowa:</b>								
1933.....	25	66	279	82	193	797	1,403	606
1931.....	33	(*)	389	(*)	438	1,381	2,547	1,166
<b>Kansas:</b>								
1933.....	8	30	68	36	49	303	594	291
1931.....	14	(*)	100	(*)	155	484	983	499
<b>Kentucky:</b>								
1933.....	15	31	179	47	137	566	954	388
1931.....	20	(*)	214	(*)	197	1,505	2,050	544
<b>Louisiana:</b>								
1933.....	11	27	113	33	77	152	327	176
1931.....	15	(*)	172	(*)	146	391	686	295
<b>Maine:</b>								
1933.....	4	7	23	11	25	88	189	101
1931.....	6	(*)	46	(*)	71	201	472	271
<b>Maryland:</b>								
1933.....	24	62	253	85	256	797	1,409	612
1931.....	25	(*)	350	(*)	400	666	1,596	930
<b>Massachusetts:</b>								
1933.....	63	99	496	146	603	1,115	2,693	1,579
1931.....	86	(*)	816	(*)	1,236	1,842	4,739	2,398
<b>Michigan:</b>								
1933.....	39	71	311	97	308	677	1,520	843
1931.....	54	(*)	523	(*)	686	1,245	3,191	1,947
<b>Minnesota:</b>								
1933.....	35	92	320	133	277	893	1,684	791
1931.....	49	(*)	529	(*)	647	1,564	3,419	1,856
<b>Missouri:</b>								
1933.....	40	84	391	104	387	970	1,906	936
1931.....	63	(*)	576	(*)	819	1,442	3,475	2,034
<b>Montana:</b>								
1933.....	4	3	13	6	12	62	116	54
1931.....	5	(*)	20	(*)	24	61	123	62
<b>Nebraska:</b>								
1933.....	10	26	70	39	53	193	349	156
1931.....	15	(*)	98	(*)	129	365	710	344
<b>New Jersey:</b>								
1933.....	51	94	468	119	575	1,107	2,301	1,194
1931.....	67	(*)	597	(*)	932	1,515	3,815	2,300
<b>New York:</b>								
1933.....	170	379	1,504	537	1,657	2,938	7,189	4,251
1931.....	259	(*)	2,664	(*)	4,409	6,798	16,990	10,191
<b>North Carolina:</b>								
1933.....	5	9	19	11	17	91	144	53
1931.....	6	(*)	39	(*)	27	100	181	81
<b>Ohio:</b>								
1933.....	88	382	2,010	545	1,841	8,293	12,623	4,329
1931.....	126	(*)	2,734	(*)	3,208	11,465	18,376	6,911
<b>Oklahoma:</b>								
1933.....	10	10	30	10	24	55	138	83
1931.....	13	(*)	53	(*)	56	75	194	119

For footnotes, see end of table.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 to 1933, AND FOR STATES, 1933 AND 1931—Continued

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1</sup>	Number of wage earners (average for the year)	Salaries <sup>2</sup>	Wages	Cost of materials, containers, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>3</sup>
SHEET-METAL WORK, NOT SPECIFICALLY CLASSIFIED—contd.								
States—Continued								
Oregon:								
1933.....	19	38	161	55	142	488	900	412
1931.....	31	( <sup>4</sup> )	240	( <sup>4</sup> )	281	636	1,344	708
Pennsylvania:								
1933.....	90	317	1,327	512	1,341	2,707	5,814	3,107
1931.....	118	( <sup>4</sup> )	1,828	( <sup>4</sup> )	2,152	4,039	8,664	4,625
Rhode Island:								
1933.....	11	20	90	33	107	162	388	226
1931.....	15	( <sup>4</sup> )	135	( <sup>4</sup> )	243	265	697	432
South Carolina:								
1933.....	3	2	15	( <sup>6</sup> )	16	34	60	26
Tennessee:								
1933.....	10	22	50	29	37	380	523	142
1931.....	15	( <sup>4</sup> )	77	( <sup>4</sup> )	86	572	790	218
Texas:								
1933.....	39	55	239	63	189	1,021	1,758	737
1931.....	54	( <sup>4</sup> )	338	( <sup>4</sup> )	389	1,137	2,141	1,004
Utah:								
1933.....	12	14	57	22	58	216	412	195
1931.....	14	( <sup>4</sup> )	66	( <sup>4</sup> )	81	250	475	225
Vermont:								
1933.....	4	8	29	17	24	46	130	84
1931.....	5	( <sup>4</sup> )	35	( <sup>4</sup> )	51	155	259	104
Virginia:								
1933.....	6	16	59	23	43	183	325	142
1931.....	7	( <sup>4</sup> )	91	( <sup>4</sup> )	74	300	528	229
Washington:								
1933.....	36	40	205	42	201	364	804	440
1931.....	65	( <sup>4</sup> )	375	( <sup>4</sup> )	488	730	1,736	1,005
West Virginia:								
1933.....	5	40	272	79	206	438	874	436
1931.....	8	( <sup>4</sup> )	779	( <sup>4</sup> )	791	2,010	3,321	1,312
Wisconsin:								
1933.....	36	229	605	295	497	1,987	3,951	1,964
1931.....	53	( <sup>4</sup> )	822	( <sup>4</sup> )	748	2,742	5,538	2,706
Other States: <sup>5</sup>								
1933.....	18	41	135	56	112	610	1,030	420
1931.....	28	( <sup>4</sup> )	194	( <sup>4</sup> )	233	810	1,515	705

<sup>1</sup> Not including proprietors and firm members, as follows: Lighting equipment—1933, 101; 1931, no data; 1929, 270; 1927, 261. Stamped ware, enameled ware, etc.—1933, 177; 1931, no data; 1929, 164; 1927, 200. Sheet-metal work, not specifically classified—1933, 652; 1931, no data; 1929, 1,516; 1927, 1,623.

<sup>2</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations, and therefore are not strictly comparable with the corresponding figures for 1929 and 1927, in which such data are included. No data for employees of central administrative offices are included in the figures for any year.

<sup>3</sup> Value of products less cost of materials, containers, fuel, and purchased electric energy. See sec. 20, p. 11.

<sup>4</sup> No data.

<sup>5</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Colo., 2; Fla., 0; Ind., 3; Iowa, 1; Kans., 1; Ky., 1; Md., 2; Mich., 5; Minn., 3; Okla., 1; 1; Oreg., 1; 2; R. I., 0; Tex., 1; Wash., 3; 10.

<sup>6</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Colo., 1; Del., 1; 0; Iowa, 4; 4; Kans., 1; 2; Ky., 2; 2; Maine, 1; 1; Nebr., 1; 1; N. H., 1; 1; Oreg., 1; 1; Tex., 1; 0; Utah, 1; 1; Va., 1; 1; Wash., 2; 2.

<sup>7</sup> Figures for 1931 withheld to avoid disclosing data for individual establishments; included in items for "Other States."

<sup>8</sup> Withheld to avoid disclosing compensation of individual employees; included in figure for "Other States."

<sup>9</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Ark., 4; 5; Del., 2; 2; D. C., 2; 4; Idaho, 1; 1; Miss., 2; 4; Nev., 1; 2; N. H., 1; 1; N. Mex., 0; 1; N. Dak., 2; 2; S. C. (1931), 2; S. Dak., 3; 4.

**TABLE 2.—LIGHTING EQUIPMENT—PRODUCTION, BY KIND AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929**

	1933	1931	1929
1. "Lighting equipment" industry, all products, total.....	\$46,173,480	\$75,050,429	\$144,965,706
2. Lighting equipment.....	40,767,098	67,869,305	138,894,751
3. Other products (not normally belonging to the industry).....	5,351,075	7,098,153	6,070,955
4. Receipts for contract work.....	55,307	82,971	
5. Lighting equipment made as secondary products in other industries.....	2,920,562	8,275,553	16,880,144
Lighting equipment, aggregate (2 and 5).....	43,687,660	76,144,858	155,783,895
Electric lighting equipment, total <sup>1</sup> .....	36,527,488	65,583,063	129,325,883
Residence:			
Portable lamps.....	8,855,480	13,241,038	19,787,570
Other residential.....	6,574,439	14,738,911	31,409,210
Commercial and industrial.....	3,831,525	9,736,561	18,151,078
Motor-vehicle.....	12,362,845	13,002,470	36,384,191
Other electric.....	4,903,199	14,869,083	23,533,834
Kerosene and gasoline lighting equipment.....	2,287,857	2,264,546	5,676,259
Reflectors and shades:			
Metal, all types.....	915,300	1,875,869	3,683,071
All-glass and all-porcelain.....	276,446	552,307	1,277,742
Incandescent mantles.....	686,334	1,135,359	1,595,978
Other lighting equipment.....	696,652	1,704,041	4,537,034
Parts.....	1,839,446	3,024,673	4,767,217
Lighting equipment not reported in detail.....	458,137	-----	4,920,711

<sup>1</sup> Not including incandescent-filament electric lamps (bulbs).

**TABLE 3.—STAMPED WARE, ENAMELED WARE, ETC.—PRODUCTION, BY KIND AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929**

	1933	1931	1929
1. "Stamped ware, enameled ware," etc., industry, all products, total.....	\$117,372,026	\$122,696,407	\$204,306,134
2. Stamped and enameled ware, etc.....	98,980,132	106,611,076	171,046,794
3. Other products (not normally belonging to the industry).....	13,562,262	10,871,877	21,584,296
4. Receipts for custom stamping and enameling.....	4,829,632	5,213,454	11,675,044
5. Value of stamped and enameled ware, etc., and receipts for custom stamping and enameling, reported by establishments in other industries.....	31,779,088	23,625,765	44,896,002
Stamped and enameled ware, etc., aggregate (2, 4, and 5).....	135,588,852	135,450,295	227,617,840
Stamped household ware other than vitreous-enameled and aluminum ware, total.....	17,974,758	18,453,871	33,213,148
Galvanized-iron ware.....	5,789,926	6,583,628	8,585,481
Tinware.....	6,331,909	7,716,436	11,743,969
Japanned, lacquered, and paint-enameled ware.....	2,321,129	2,162,703	4,421,370
Other household ware.....	3,531,794	1,991,104	8,462,328
Motor-vehicle stampings.....	38,516,158	25,887,880	56,985,027
Other stampings.....	28,450,252	35,230,988	55,838,399
Vitreous-enameled ware, total <sup>1</sup> .....	18,770,149	23,082,816	35,017,903
Household ware.....	12,818,672	16,075,467	23,500,948
Other vitreous-enameled ware.....	5,951,477	7,007,349	11,516,955
Perforated metals.....	1,492,957	1,887,563	4,300,194
Bottle caps.....	23,432,123	25,393,925	30,588,125
Receipts for custom work on materials owned by others, total.....	5,314,772	5,513,252	11,675,044
Custom stamping.....	2,105,717	1,127,181	4,558,800
Vitreous-enameling.....	2,495,664	3,209,234	4,698,861
Japanning, lacquering, and paint-enameling.....	713,391	1,176,837	2,417,263
Stamped and enameled ware, not reported in detail.....	1,537,683	-----	-----

<sup>1</sup> Not including enameled-iron sanitary ware.

TABLE 4.—WAGE EARNERS, BY QUARTERS, FOR SELECTED STATES: 1933 AND 1931

{The average for the year (table 1) differs from the average of the quarterly figures below. (See fourth sentence, sec. 13, p. 8.) See sec. 26, p. 13}

	1933 <sup>1</sup>				1931			
	March	June	Sept.	Dec.	March	June	Sept.	Dec.
<b>LIGHTING EQUIPMENT</b>								
United States.....	8,733	9,717	12,602	11,056	15,826	14,555	14,961	13,638
<i>States</i>								
California.....	214	227	318	309	633	651	656	602
Connecticut.....	874	973	1,156	1,214	1,145	1,047	1,122	1,101
Illinois.....	1,423	1,556	2,372	1,786	2,427	2,175	2,547	2,302
Indiana.....	903	1,042	1,162	1,177	1,576	1,613	1,410	1,391
Massachusetts.....	149	189	260	227	317	303	304	289
Michigan.....	463	505	548	431	1,399	1,182	1,065	632
Minnesota.....	7	5	4	4	20	19	22	31
Missouri.....	193	221	276	284	316	282	272	267
New Jersey.....	470	600	609	596	557	461	486	466
New York.....	2,065	2,260	3,271	2,993	3,871	3,608	3,923	3,680
Ohio.....	1,138	1,274	1,440	1,551	2,030	1,869	1,764	1,499
Pennsylvania.....	399	392	574	486	702	642	618	625
Washington.....	52	41	70	71	114	90	117	94
Wisconsin.....	97	94	105	117	235	200	264	229
<b>STAMPED WARE, ENAMELED WARE, AND METAL STAMPINGS; ENAMEL- ING, JAPANING, AND LACQUER- ING</b>								
United States.....	24,713	32,146	38,796	36,109	29,687	29,023	28,487	25,736
<i>States</i>								
California.....	301	486	567	603	432	415	484	431
Connecticut.....	1,527	1,759	2,193	2,047	1,289	1,270	1,273	1,135
Illinois.....	2,266	2,852	3,376	3,002	2,807	2,964	2,912	2,476
Indiana.....	1,132	1,678	1,794	1,750	1,672	1,671	1,420	1,372
Iowa.....	73	83	155	86	95	95	97	66
Maryland.....	1,447	1,745	1,847	1,530	1,651	1,664	1,759	1,538
Massachusetts.....	715	820	1,407	1,255	1,122	1,100	1,013	931
Michigan.....	1,648	2,675	2,787	3,027	2,391	2,294	1,848	1,832
Minnesota.....	32	34	66	34	44	43	65	45
Missouri.....	763	878	959	908	986	1,067	981	870
New Jersey.....	1,050	1,205	1,531	1,289	1,539	1,398	1,543	1,345
New York.....	3,395	4,109	4,858	4,185	4,042	4,007	4,064	3,807
Ohio.....	4,859	7,210	8,512	8,475	5,292	5,190	4,691	4,547
Pennsylvania.....	1,621	1,942	2,447	2,375	1,548	1,488	1,557	1,448
Rhode Island.....	144	239	447	102	389	296	600	331
Tennessee.....	506	655	918	688	531	468	624	275
West Virginia.....	1,043	1,182	1,619	1,573	1,178	1,160	1,175	962
Wisconsin.....	1,826	2,066	2,926	2,746	2,398	2,239	2,087	2,095
<b>SHEET-METAL WORK, NOT SPECIFI- CALLY CLASSIFIED</b>								
United States.....	10,423	13,093	15,190	14,349	20,056	19,704	19,516	16,843
<i>States</i>								
Alabama.....	78	78	135	148	114	217	225	197
Arizona.....	11	14	11	12	21	21	24	20
Arkansas.....	45	54	77	84	44	49	45	45
California.....	789	949	1,024	954	1,329	1,278	1,282	1,170
Colorado.....	73	82	105	103	157	131	146	126
Connecticut.....	68	90	99	89	155	186	184	162
Florida.....	61	63	63	71	68	64	64	57
Georgia.....	149	157	201	272	123	136	120	127
Illinois.....	1,206	1,425	1,611	1,466	2,057	1,811	1,861	1,754
Indiana.....	329	396	468	386	568	580	515	483
Iowa.....	229	309	307	305	421	407	373	315
Kansas.....	53	68	83	73	103	103	103	90
Kentucky.....	142	174	209	216	270	238	198	164
Louisiana.....	98	97	114	108	173	168	181	150
Maine.....	18	18	23	28	46	39	69	36

For footnotes, see end of table.

TABLE 4.—WAGE EARNERS, BY QUARTERS, FOR SELECTED STATES: 1933 AND 1931—Continued

[See note at head of table]

	1933 <sup>1</sup>				1931			
	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.
<b>SHEET-METAL WORK, NOT SPECIFICALLY CLASSIFIED—continued</b>								
<i>States—Continued</i>								
Maryland.....	205	243	297	306	337	345	365	352
Massachusetts.....	386	506	584	524	815	838	853	806
Michigan.....	172	311	288	715	575	529	475	410
Minnesota.....	294	353	392	322	529	537	538	511
Missouri.....	290	405	576	339	537	569	688	539
Montana.....	11	12	17	15	17	22	23	12
Nebraska.....	67	66	77	79	91	104	100	87
New Jersey.....	346	488	529	537	612	607	601	553
New York.....	1,269	1,574	1,567	1,507	2,692	2,715	2,733	2,202
North Carolina.....	13	18	22	26	38	39	40	40
Ohio.....	1,474	1,960	2,535	2,114	2,955	2,820	2,743	2,139
Oklahoma.....	25	26	35	33	62	55	49	48
Oregon.....	128	149	208	176	237	244	255	209
Pennsylvania.....	1,110	1,304	1,514	1,536	1,955	1,812	1,783	1,639
Rhode Island.....	62	84	115	109	129	132	141	121
South Carolina.....	13	15	15	15	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
South Dakota.....	8	13	15	15	33	38	31	23
Tennessee.....	42	41	60	70	72	74	82	75
Texas.....	196	220	310	253	345	321	374	276
Utah.....	42	70	65	65	67	74	70	52
Vermont.....	32	27	28	29	37	28	38	36
Virginia.....	50	55	68	64	89	106	95	76
Washington.....	140	211	256	223	361	404	427	309
West Virginia.....	216	268	309	302	864	852	715	657
Wisconsin.....	491	634	697	605	854	884	777	676

<sup>1</sup> See secs. 5, p. 4, and 13, p. 8. The establishments canvassed with the standard schedule reported wage earners, by months, as follows:

*Lighting equipment.*—Establishments reported on standard schedule, 268.

January.....	8,794	May.....	8,856	September.....	12,204
February.....	9,177	June.....	9,371	October.....	12,343
March.....	8,389	July.....	10,178	November.....	11,756
April.....	8,561	August.....	11,110	December.....	11,259

*Stamped ware, enameled ware, etc.*—Establishments reported on standard schedule, 411.

January.....	24,810	May.....	28,425	September.....	37,779
February.....	25,443	June.....	31,222	October.....	37,616
March.....	23,968	July.....	33,645	November.....	35,963
April.....	26,281	August.....	36,331	December.....	35,137

*Sheet-metal work.*—Establishments reported on standard schedule, 928.

January.....	9,796	May.....	11,273	September.....	14,054
February.....	9,822	June.....	12,021	October.....	14,561
March.....	9,635	July.....	12,540	November.....	13,740
April.....	10,353	August.....	13,321	December.....	13,373

<sup>2</sup> Withheld to avoid disclosing data for individual establishments.

## NONFERROUS-METAL ALLOYS; NONFERROUS-METAL PRODUCTS, EXCEPT ALUMINUM, NOT ELSEWHERE CLASSIFIED

### SMELTING AND REFINING, NONFERROUS METALS OTHER THAN GOLD, SILVER, AND PLATINUM, NOT FROM THE ORE

[Preliminary reports for these industries were issued Nov. 26, 1934, and Oct. 29, 1934, respectively]

**Description of the industries.**—The “Nonferrous-metal alloys; nonferrous-metal products, except aluminum, not elsewhere classified” industry, as defined for census purposes, embraces establishments engaged primarily in the production of (a) nonferrous alloys, (b) products made of nonferrous alloys, except those specifically assigned to other industries and (c) products made of nonferrous metals other than aluminum, except those specifically assigned to other industries. The chief classes of nonferrous products assigned to other industries are wire and wire products, plumbers’ supplies, electrical apparatus, lighting equipment, structural and ornamental metal work, hardware, and screw-machine products. These products are not covered by this report except to the extent to which they are manufactured as secondary products by the establishments classified in this industry. The value of such secondary production is given as the next to the last item in table 3. The smelting and refining of scrap is an important secondary activity of this industry.

The “Smelting and refining, nonferrous metals other than gold, silver, and platinum, not from the ore” industry embraces establishments engaged primarily in the recovery of copper, lead, zinc, nickel, aluminum, and alloys thereof from scrap and dross.

**Extent of coverage.**—The 1933 coverage of the establishments reporting in these industries for 1931 was substantially complete. Although 63 establishments in the “Nonferrous-metal alloys; nonferrous-metal products, except aluminum, not elsewhere classified” industry and 1 in the “Smelting and refining, nonferrous metals other than gold, silver, and platinum, not from the ore” industry failed to supply any information in regard to their status (active, idle, etc.) or their activities in 1933, these establishments accounted for less than 1 percent of the total number of wage earners and of the total value of products reported for the respective industries for 1931.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 to 1933, AND FOR STATES, 1933 AND 1931

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1</sup>	Number of wage earners (average for the year)	Salaries <sup>2</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>3</sup>
<i>Thousands of dollars.</i> (See sec. 25, p. 13)								
<b>NONFERROUS-METAL ALLOYS; NONFERROUS-METAL PRODUCTS, EXCEPT ALUMINUM, NOT ELSEWHERE CLASSIFIED</b>								
<i>United States</i>								
1933.....	875	6,717	47,784	12,953	43,729	128,356	239,156	110,800
1931.....	1,056	( <sup>4</sup> )	48,913	( <sup>4</sup> )	55,109	195,338	331,439	136,101
1929.....	1,225	12,218	79,183	34,513	116,944	600,411	909,804	309,393
1927.....	1,197	10,195	65,923	28,406	95,351	378,190	581,569	203,379
<i>States</i>								
<b>Alabama:</b>								
1933.....	4	10	39	12	19	43	81	39
1931.....	3	( <sup>4</sup> )	31	( <sup>4</sup> )	33	55	114	59
<b>California:</b>								
1933.....	49	105	482	175	514	1,020	2,275	1,256
1931.....	57	( <sup>4</sup> )	660	( <sup>4</sup> )	946	2,231	4,011	1,779
<b>Colorado:</b>								
1933.....	7	13	85	22	87	173	551	378
1931.....	8	( <sup>4</sup> )	80	( <sup>4</sup> )	100	682	960	279
<b>Connecticut:</b>								
1933.....	51	1,622	15,416	3,922	14,055	33,572	62,289	28,717
1931.....	54	( <sup>4</sup> )	14,443	( <sup>4</sup> )	14,811	43,794	80,771	36,977
<b>Georgia:</b>								
1933 <sup>5</sup> .....	3	8	25	21	19	130	198	68
<b>Illinois:</b>								
1933.....	84	567	3,382	935	3,338	11,488	20,882	9,394
1931.....	92	( <sup>4</sup> )	3,245	( <sup>4</sup> )	4,194	14,148	25,564	11,417
<b>Indiana:</b>								
1933.....	25	121	835	235	756	2,156	5,735	3,579
1931.....	33	( <sup>4</sup> )	860	( <sup>4</sup> )	867	4,008	6,848	2,840
<b>Iowa:</b>								
1933.....	4	7	34	11	27	78	132	54
1931.....	5	( <sup>4</sup> )	46	( <sup>4</sup> )	51	169	201	32
<b>Kentucky:</b>								
1933.....	6	14	51	21	36	128	193	64
1931.....	5	( <sup>4</sup> )	36	( <sup>4</sup> )	41	129	190	61
<b>Maryland:</b>								
1933.....	14	178	844	246	680	3,168	5,287	2,118
1931.....	14	( <sup>4</sup> )	1,010	( <sup>4</sup> )	1,007	8,814	13,261	4,447
<b>Massachusetts:</b>								
1933.....	62	192	1,090	341	1,069	2,470	5,214	2,743
1931.....	75	( <sup>4</sup> )	1,489	( <sup>4</sup> )	1,800	4,359	8,761	4,402
<b>Michigan:</b>								
1933.....	59	732	5,101	1,377	4,511	11,069	22,051	10,983
1931.....	73	( <sup>4</sup> )	5,248	( <sup>4</sup> )	5,818	15,398	29,066	13,669
<b>Minnesota:</b>								
1933.....	13	32	132	62	132	576	1,058	482
1931.....	14	( <sup>4</sup> )	133	( <sup>4</sup> )	165	520	1,053	533
<b>Missouri:</b>								
1933.....	19	93	543	182	488	2,037	3,776	1,740
1931.....	23	( <sup>4</sup> )	635	( <sup>4</sup> )	707	4,175	5,829	1,654
<b>New Jersey:</b>								
1933.....	50	385	2,692	747	2,565	13,811	20,568	6,758
1931.....	61	( <sup>4</sup> )	2,829	( <sup>4</sup> )	3,575	24,069	31,505	7,436
<b>New York:</b>								
1933.....	144	1,040	6,082	1,686	5,581	17,677	32,740	15,063
1931.....	201	( <sup>4</sup> )	7,555	( <sup>4</sup> )	8,767	32,689	53,897	21,208
<b>Ohio:</b>								
1933.....	87	606	4,368	1,127	4,140	8,012	18,111	10,099
1931.....	103	( <sup>4</sup> )	3,493	( <sup>4</sup> )	4,199	8,213	16,939	8,727
<b>Oregon:</b>								
1933.....	8	19	47	28	43	69	220	151
1931.....	9	( <sup>4</sup> )	54	( <sup>4</sup> )	68	124	307	183
<b>Pennsylvania:</b>								
1933.....	90	411	2,877	654	2,475	6,967	12,315	5,348
1931.....	112	( <sup>4</sup> )	3,112	( <sup>4</sup> )	3,569	8,716	15,729	7,013
<b>Rhode Island:</b>								
1933.....	12	95	430	184	359	1,847	3,048	1,201
1931.....	15	( <sup>4</sup> )	649	( <sup>4</sup> )	702	4,690	6,052	1,362
<b>Texas:</b>								
1933.....	14	34	131	54	113	277	855	578
1931.....	13	( <sup>4</sup> )	128	( <sup>4</sup> )	165	661	1,043	383

For footnotes, see end of table.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931—Continued

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1</sup>	Number of wage earners (average for the year)	Salaries <sup>2</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>3</sup>
Thousands of dollars. (See sec. 25, p. 13)								
<b>NONFERROUS-METAL ALLOYS; NONFERROUS-METAL PRODUCTS, EXCEPT ALUMINUM, NOT ELSEWHERE CLASSIFIED—continued</b>								
<i>States—Continued</i>								
Washington:								
1933.....	8	15	90	24	103	206	473	267
1931.....	14	(4)	126	(4)	181	352	812	459
Wisconsin:								
1933.....	31	226	1,493	454	1,268	3,616	6,895	3,279
1931.....	35	(4)	1,321	(4)	1,432	4,793	8,607	3,814
Other States: <sup>4</sup>								
1933.....	31	192	1,516	432	1,364	7,765	14,203	6,443
1931.....	37	(4)	1,730	(4)	1,909	12,548	19,919	7,370
<b>SMELTING AND REFINING, NONFERROUS METALS OTHER THAN GOLD, SILVER, AND PLATINUM, NOT FROM THE ORE</b>								
<i>United States</i>								
1933.....	94	617	2,924	1,153	2,494	31,407	41,123	9,716
1931.....	98	(4)	2,626	(4)	3,162	28,546	34,695	6,160
1929.....	106	321	4,134	3,224	5,574	83,445	105,883	22,438
1927.....	102	694	2,776	2,244	4,280	68,894	80,771	11,876
<i>States</i>								
California:								
1933.....	7	52	210	112	215	1,895	2,715	820
1931.....	6	(4)	183	(4)	247	2,089	2,795	706
Illinois:								
1933.....	21	168	816	307	674	10,749	13,602	2,854
1931.....	22	(4)	738	(4)	813	9,584	10,762	1,170
Indiana:								
1933.....	3	52	174	93	142	2,194	2,975	782
Massachusetts:								
1933.....	5	17	35	31	36	398	577	179
1931.....	5	(4)	50	(4)	55	642	818	176
Michigan:								
1933.....	7	36	229	66	179	2,041	2,689	648
New Jersey:								
1933.....	7	19	111	35	107	946	1,302	356
1931.....	8	(4)	134	(4)	217	1,123	1,966	843
Ohio:								
1933.....	10	32	153	58	125	2,141	2,580	439
1931.....	9	(4)	105	(4)	117	1,367	1,880	514
Pennsylvania:								
1933.....	13	117	671	242	535	5,627	6,855	1,229
1931.....	14	(4)	501	(4)	506	5,553	6,391	838
Other States: <sup>7</sup>								
1933.....	21	124	526	210	481	5,416	7,827	2,411
1931.....	34	(4)	915	(4)	1,148	8,188	10,083	1,866

<sup>1</sup> Not including proprietors and firm members, as follows: "Nonferrous-metal alloys; nonferrous-metal products," etc.—1933, 358; 1931, no data; 1929, 604; 1927, 672. "Smelting and refining; nonferrous metals other than gold," etc.—1933, 24; 1931, no data; 1929, 36; 1927, 47.

<sup>2</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations, and therefore are not strictly comparable with the corresponding figures for 1929 and 1927, in which such data are included. No data for employees of central administrative offices are included in the figures for any year.

<sup>3</sup> Value of products less cost of materials, fuel, and purchased electric energy. See sec. 20, p. 11.

<sup>4</sup> No data.

<sup>5</sup> Figures for 1931 withheld to avoid disclosing approximations of data for individual establishments; included in items for "Other States."

<sup>6</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Ark., 0, 1; Del., 2, 2; Ga. (1931), 4; Kans., 3, 2; La., 2, 2; Maine, 2, 2; Mont., 1, 1; Nebr., 2, 3; N. H., 2, 2; Okla., 2, 2; Tenn., 4, 4; Utah, 0, 2; Vt., 2, 2; Va., 3, 2; W. Va., 6, 6.

<sup>7</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Colo., 1, 1; Conn., 0, 1; Del., 0, 1; Ind. (1931), 2; Md., 1, 2; Mich. (1931), 7; Minn., 1, 1; Mo., 1, 1; Nebr., 1, 1; N. H., 1, 1; N. Y., 7, 9; Okla., 1, 1; Tex., 1, 1; Va., 1, 1; Wash., 1, 1; W. Va., 1, 1; Wis., 3, 2.

TABLE 2.—INGOTS AND PIGS—PRODUCTION, BY KIND, QUANTITY, AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929

[This table does not include data for the production of copper, lead, zinc, and other nonferrous metals from the ore, nor for the production of secondary metals by establishments engaged in the primary smelting and refining of nonferrous metals. For statistics showing the total output of secondary metals, see reports of the Bureau of Mines]

[Ton, 2,000 pounds]

	1933	1931	1929
INGOTS AND PIGS			
Made in the "Smelting and refining * * * not from the ore" industry, value.....	\$39,065,500	\$32,979,016	\$95,369,796
Made in the "Nonferrous-metal alloys; nonferrous-metal products," etc., industry, value.....	\$18,687,073	\$25,043,482	\$67,840,365
Made as secondary products in other industries, <sup>1</sup> value.....	\$1,034,669	\$2,436,725	\$3,237,506
Aggregate production, value.....	\$58,787,242	\$60,459,223	\$169,447,667
Copper (secondary):			
Tons, total.....	29,277	26,279	50,122
"Smelting and refining * * * not from the ore" industry.....	29,164	25,820	44,215
"Nonferrous-metal alloys; nonferrous-metal products," etc., industry.....	113	459	5,907
Value.....	\$4,179,767	\$3,756,378	\$16,512,500
Lead (secondary):			
Tons, total.....	119,095	138,696	153,042
"Smelting and refining * * * not from the ore" industry:			
Common.....	23,902	29,887	29,634
Antimonial.....	81,306	57,182	78,286
"Nonferrous-metal alloys; nonferrous-metal products," etc., industry:			
Common.....	5,955	36,942	27,425
Antimonial.....	7,932	14,685	17,697
Value.....	\$9,912,851	\$11,472,829	\$21,538,673
Zinc (secondary):			
Tons, total.....	23,337	19,144	39,843
"Smelting and refining * * * not from the ore" industry.....	22,917	18,908	38,184
"Nonferrous-metal alloys; nonferrous-metal products," etc., industry.....	420	236	1,659
Value.....	\$2,086,921	\$1,441,187	\$5,519,127
Tin (secondary):			
Tons, total.....	2,459	3,344	3,156
"Smelting and refining * * * not from the ore" industry.....	1,385	1,274	1,361
"Nonferrous-metal alloys; nonferrous-metal products," etc., industry.....	1,074	2,070	1,795
Value.....	\$1,636,704	\$1,288,095	\$2,664,760
Brass and bronze:			
Tons, total.....	58,641	80,884	145,490
"Smelting and refining * * * not from the ore" industry.....	48,483	54,156	112,259
"Nonferrous-metal alloys; nonferrous-metal products," etc., industry.....	10,158	26,728	33,231
Value.....	\$8,018,270	\$14,252,294	\$43,568,172
Antifriction-bearing metal:			
Tons, total.....	12,814	14,556	54,369
"Smelting and refining * * * not from the ore" industry.....	4,975	5,989	11,611
"Nonferrous-metal alloys; nonferrous-metal products," etc., industry.....	7,839	8,567	42,758
Value.....	\$4,324,017	\$3,782,847	\$20,301,315
Solder:			
Tons, total.....	26,740	35,077	56,423
"Smelting and refining * * * not from the ore" industry.....	13,928	10,859	15,935
"Nonferrous-metal alloys; nonferrous-metal products," etc., industry.....	12,812	24,218	40,488
Value.....	\$11,241,400	\$10,165,807	\$28,595,000

For footnotes, see end of table.

TABLE 2.—INGOTS AND PIGS—PRODUCTION, BY KIND, QUANTITY, AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929—Continued

[See note at head of table]

[Ton, 2,000 pounds]

	1933	1931	1929
INGOTS AND PIGS—continued			
Type metal:			
Tons, total.....	22, 428	29, 254	42, 280
"Smelting and refining * * * not from the ore" in-			
dustry.....	7, 979	9, 627	11, 845
"Nonferrous-metal alloys; nonferrous-metal products,"			
etc., industry.....	14, 449	19, 627	30, 445
Value.....	\$2, 761, 930	\$3, 537, 531	\$7, 388, 354
Other nonferrous metals and alloys: <sup>1</sup>			
Tons, total.....	87, 943	53, 487	( <sup>3</sup> )
"Smelting and refining * * * not from the ore" in-			
dustry.....	58, 975	34, 725	( <sup>3</sup> )
"Nonferrous-metal alloys; nonferrous-metal products,"			
etc., industry.....	28, 968	18, 762	( <sup>3</sup> )
Value.....	\$13, 894, 824	\$10, 812, 255	\$22, 862, 678
Ingots, unclassified: "Nonferrous-metal alloys; nonferrous-metal			
products," etc., industry, value.....	\$730, 558	( <sup>3</sup> )	( <sup>3</sup> )

<sup>1</sup> The quantities of ingots and pigs made as secondary products in other industries are included in the respective "Nonferrous-metal alloys; nonferrous-metal products," etc., items.

<sup>2</sup> Includes aluminum ingots made in these 2 industries only. For total production of aluminum ingots (from pig and from scrap), see table 2 of the "Aluminum products" report.

<sup>3</sup> No comparable data.

TABLE 3.—ROLLED FORMS, TUBING, CASTINGS, AND FINISHED PRODUCTS—PRODUCTION, BY KIND, QUANTITY, AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929

[This table presents statistics for the total output of the specified classes of commodities made as primary products in the "Nonferrous-metal alloys, nonferrous-metal products," etc., industry and as secondary products in other industries. The values of this secondary production in other industries were as follows: 1933, \$7,219,493; 1931, \$14,212,213; 1929, \$20,607,263]

[Ton, 2,000 pounds]

	1933	1931	1929
ROLLED FORMS, TUBING, AND CASTINGS			
Plates and sheets, total value.....	<sup>1</sup> \$58, 524, 377	<sup>1</sup> \$76, 473, 096	\$193, 945, 176
Brass and bronze, total tons.....	126, 194	125, 976	265, 265
For sale:			
Tons.....	106, 827	106, 506	215, 575
Value.....	\$26, 186, 009	\$31, 572, 766	\$91, 024, 037
Transferred to other plants of same company:			
Tons.....	10, 732	6, 349	18, 646
Assigned value.....	\$2, 567, 909	\$1, 722, 125	\$7, 521, 019
Produced and consumed in same works, tons.....	8, 635	13, 121	21, 034
Copper, total tons.....	70, 514	73, 555	129, 223
For sale and interplant transfer:			
Tons.....	69, 287	72, 003	127, 789
Value.....	\$17, 236, 594	\$23, 250, 967	\$59, 539, 923
Produced and consumed in same works, tons.....	1, 227	1, 552	1, 434
Lead, for sale and interplant transfer:			
Tons.....	12, 284	16, 588	35, 802
Value.....	\$1, 536, 732	\$2, 227, 488	\$6, 490, 493
Zinc, for sale and interplant transfer:			
Tons.....	24, 957	56, 562	54, 135
Value.....	\$4, 305, 618	\$8, 099, 396	\$9, 543, 739
Nickel alloys, total tons.....	10, 823	14, 682	27, 648
For sale and interplant transfer:			
Tons.....	10, 641	13, 594	27, 162
Value.....	\$5, 710, 474	\$8, 201, 927	\$18, 337, 961
Produced and consumed in same works, tons.....	182	1, 088	486
Other metals, for sale and interplant transfer:			
Tons.....	1, 497	2, 527	2, 419
Value.....	\$980, 981	\$1, 398, 427	\$1, 487, 999

For footnotes, see end of table.

TABLE 3.—ROLLED FORMS, TUBING, CASTINGS, AND FINISHED PRODUCTS—  
PRODUCTION, BY KIND, QUANTITY, AND VALUE, FOR THE UNITED STATES: 1933,  
1931, AND 1929—Continued

[See note at head of table]

[Ton, 2,000 pounds]

	1933	1931	1929
ROLLED FORMS, TUBING, AND CASTINGS—continued			
Rods, total value.....	\$31,095,824	\$44,480,083	\$135,852,141
Brass and bronze, total tons.....	86,536	143,053	170,228
For sale and interplant transfer:			
Tons.....	68,821	100,543	125,243
Value.....	\$14,278,742	\$22,576,193	\$45,869,051
Produced and consumed in same works, tons.....	17,715	42,510	44,985
Copper, total tons.....	142,946	201,084	569,540
For sale and interplant transfer:			
Tons.....	80,470	90,354	227,308
Value.....	\$12,587,786	\$18,552,519	\$81,057,185
Produced and consumed in same works, tons.....	62,476	110,730	342,232
Nickel alloys, total tons.....	3,051	3,911	8,064
For sale and interplant transfer:			
Tons.....	2,560	2,814	7,282
Value.....	\$2,228,231	\$2,284,715	\$5,875,561
Produced and consumed in same works, tons.....	491	1,097	832
Other nonferrous metals and alloys, for sale:			
Tons.....	2,437	1,323	3,628
Value.....	\$2,001,065	\$1,066,656	\$3,050,364
Tubing (seamless) and pipe, total value.....	\$23,901,960	\$34,576,210	\$78,888,613
Brass and bronze, total tons.....	39,178	49,312	71,599
For sale and interplant transfer:			
Tons.....	38,730	48,952	71,286
Value.....	\$10,760,131	\$16,772,719	\$36,229,721
Produced and consumed in same works, tons.....	448	360	313
Copper, total tons.....	29,575	32,252	49,062
For sale:			
Tons.....	29,227	32,078	
Value.....	\$8,976,510	\$12,005,473	49,062
Transferred to other plants of same company:			\$25,774,350
Tons.....	348	174	
Assigned value.....	\$78,249	\$48,073	
Lead, for sale and interplant transfer:			
Tons.....	13,485	22,194	37,026
Value.....	\$1,952,966	\$2,906,308	\$7,000,576
Nickel alloy, for sale and interplant transfer:			
Tons.....	792	1,226	1,789
Value.....	\$599,971	\$1,289,301	\$2,541,819
Other metal, for sale and interplant transfer:			
Tons.....	1,587	2,829	3,686
Value.....	\$1,534,133	\$1,554,336	\$2,342,147
Other tubing:			
Tons.....	1,026	1,241	( <sup>2</sup> )
Value.....	\$519,953	\$572,732	\$4,013,360
Castings, rough, total value.....	\$27,048,694	\$40,988,576	\$115,586,925
Brass and bronze:			
Quantity reported:			
Pounds.....	73,086,627	209,266,147	413,512,944
Value.....	\$11,916,972	\$33,468,353	\$98,903,131
Quantity not reported, value.....	\$4,658,369		
Copper:			
Pounds.....	2,734,382	3,289,545	9,798,512
Value.....	\$663,536	\$950,518	\$2,690,725
Heat-corrosion-resistant alloys (not including ferro-alloys):			
Pounds.....	5,366,956	2,928,616	
Value.....	\$2,317,878	\$1,694,356	5,227,046
Nickel alloys, other than heat-corrosion-resistant:			\$2,942,165
Pounds.....	1,259,784	1,139,102	
Value.....	\$520,457	\$532,432	
Other metals: <sup>3</sup>			
Pounds.....	4,408,937	15,703,617	28,006,556
Value.....	\$1,194,192	\$4,342,917	\$11,050,904
Nonferrous castings not reported by kind or quantity, value.....	\$5,777,280	( <sup>2</sup> )	( <sup>2</sup> )

For footnotes, see end of table.

TABLE 3.—ROLLED FORMS, TUBING, CASTINGS, AND FINISHED PRODUCTS—  
PRODUCTION, BY KIND, QUANTITY, AND VALUE, FOR THE UNITED STATES: 1933,  
1931, AND 1929—Continued

[See note at head of table]

[Tons, 2,000 pounds]

	1933	1931	1929
<b>FINISHED PRODUCTS</b>			
Total value.....	\$33,526,994	\$115,453,787	\$330,892,658
Extruded shapes.....	1,437,951	2,281,167	6,665,268
Bearings and bushings (including antifriction linings).....	9,533,483	10,303,641	27,680,058
Bells.....	180,933	478,905	809,245
Die castings.....	7,962,240	8,036,806	22,076,623
Finished castings.....	3,529,579	5,213,539	15,550,907
Forgings and hot-pressed parts.....	1,781,400	2,854,750	7,768,582
Other nonferrous products.....	16,419,351	19,280,235	42,020,428
Nonferrous products specifically classified in other industries, made in the "Nonferrous-metal alloys; nonferrous-metal products", etc., industry <sup>1</sup> .....	39,320,017	67,024,744	208,321,547
Nonferrous metal products, unclassified.....	3,382,040	( <sup>2</sup> )	( <sup>2</sup> )

<sup>1</sup> Does not include values of quantities reported as produced and consumed in same works.<sup>2</sup> No comparable data.<sup>3</sup> Includes aluminum castings made in "Nonferrous-metal alloys; nonferrous-metal products", etc., industry only. For total production of aluminum castings, see "Aluminum products" report, table 2.<sup>4</sup> This item represents the production, in this industry only, of nonferrous-metal products, such as wire, wire products, valves, fittings, etc., classified as primary products of other industries. The total output of these products is shown in the reports for the industries in which they are classified.

TABLE 4.—NONFERROUS-METAL ALLOYS; NONFERROUS-METAL PRODUCTS, ETC.,  
INDUSTRY—WAGE EARNERS, BY QUARTERS, FOR SELECTED STATES: 1933 AND  
1931

The average for the year (table 1) differs from the average of the quarterly figures below. (See fourth sentence, sec. 13, p. 8.) See sec. 26, p. 13]

	1933 <sup>1</sup>				1931			
	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.
United States.....	37,359	46,759	57,303	53,526	51,781	49,678	46,710	45,180
<i>States</i>								
Alabama.....	32	48	46	36	30	30	34	30
California.....	416	484	524	520	714	689	611	561
Colorado.....	59	80	106	103	90	93	58	62
Connecticut.....	12,520	14,708	18,196	17,739	15,228	14,523	13,769	13,287
Georgia.....	22	24	28	28	31	31	24	23
Illinois.....	2,445	3,308	4,508	3,825	3,413	3,393	3,072	3,041
Indiana.....	638	796	1,086	899	918	883	855	769
Iowa.....	23	30	45	42	57	47	36	35
Kansas.....	49	47	53	49	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Kentucky.....	34	43	88	51	39	38	34	33
Maryland.....	616	862	984	920	1,086	1,045	954	928
Massachusetts.....	820	1,065	1,303	1,324	1,562	1,491	1,480	1,347
Michigan.....	3,842	5,205	6,060	5,384	5,485	5,459	5,052	4,829
Minnesota.....	94	144	149	136	138	140	126	122
Missouri.....	458	532	630	540	608	644	640	572
New Jersey.....	2,179	2,427	3,227	3,097	3,023	2,760	2,721	2,670
New York.....	4,405	6,033	7,425	6,790	6,066	7,633	7,311	7,004
Ohio.....	3,214	4,466	5,365	5,162	3,603	3,628	3,296	3,463
Oregon.....	38	45	51	53	44	59	53	67
Pennsylvania.....	2,343	2,785	3,401	3,140	3,405	3,104	2,896	2,810
Rhode Island.....	362	392	524	440	688	634	615	576
Tennessee.....	53	56	53	59	72	65	60	67
Texas.....	107	125	148	152	128	130	129	122
Virginia.....	51	57	60	89	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Washington.....	72	95	98	97	133	145	124	107
West Virginia.....	1,114	1,134	1,135	1,088	1,285	1,262	1,220	1,214
Wisconsin.....	1,147	1,550	1,844	1,525	1,388	1,366	1,258	1,203

<sup>1</sup> See secs. 5, p. 4, and 13, p. 8. The 435 establishments canvassed with the standard schedule reported wage earners, by months, as follows:

January.....	35,674	May.....	39,229	September.....	57,303
February.....	35,639	June.....	46,759	October.....	54,227
March.....	37,359	July.....	48,016	November.....	52,101
April.....	35,846	August.....	53,264	December.....	53,526

<sup>2</sup> Withheld to avoid disclosing data for individual establishments.

## GROUP 13.—MACHINERY, NOT INCLUDING TRANSPORTATION EQUIPMENT

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### THE GROUP AS A WHOLE

[See p. 39]

This group comprises those industries whose primary products are machinery (not including transportation equipment) and special castings or parts for use in the manufacture of machinery.

**Changes in classification.**—Establishments engaged primarily in the manufacture of elevators and elevator equipment, formerly assigned to the "Foundry and machine-shop products not elsewhere classified" industry, are now classified separately under the industry title "Elevators and elevator equipment." Another new industry classification, "Refrigerators and refrigerating and ice-making apparatus," was formed in this group by combining the former "Refrigerators and refrigerator cabinets, exclusive of mechanical refrigerating equipment" industry in Group 3 with the former "Refrigerators, mechanical" industry in Group 13, and transferring manufacturers of industrial ice-making and refrigerating machinery from the "Foundry and machine-shop products not elsewhere classified" industry to the new classification. The group totals for 1931 and earlier years, as given in the table below, have accordingly been revised by adding the figures for the former "Refrigerators and refrigerator cabinets, exclusive of mechanical refrigerating equipment" industry.

## SUMMARY FOR GROUP 13.—MACHINERY, NOT INCLUDING TRANSPORTATION EQUIPMENT: 1927 to 1933

[See "Changes in classification," p. 521]

INDUSTRY	Census year	Number of establishments	Wage earners (average for the year)	Wages	Cost of materials, containers, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>1</sup>
Total for the group.	1933	9,710	538,593	\$501,770,426	\$789,239,157	\$2,069,418,923	\$1,280,179,766
	1931	11,339	693,834	795,460,987	1,215,246,221	3,405,688,654	2,190,442,433
	1929	13,143	1,101,053	1,647,347,385	2,720,830,777	7,103,803,704	4,383,032,927
	1927	12,147	893,059	1,296,749,655	2,079,036,642	5,406,886,782	3,327,850,140
Agricultural implements.....	1933	170	11,140	9,830,220	11,977,819	30,538,633	18,560,814
	1931	219	17,529	19,106,105	32,243,922	84,287,508	52,043,586
	1929	293	41,663	58,941,939	113,969,484	277,854,462	163,884,978
	1927	277	33,346	46,415,459	85,666,186	202,732,126	117,065,940
Cash registers and adding, calculating, and card-tabulating machines.	1933	40	10,908	13,025,630	5,869,391	42,023,288	36,153,897
	1931	41	12,176	14,982,432	5,268,587	56,474,209	51,205,442
	1929	46	16,840	29,745,865	10,766,013	110,000,986	99,234,973
	1927	41	14,372	21,756,094	11,132,191	106,844,969	95,712,778
Electrical machinery, apparatus, and supplies. <sup>2</sup>	1933	1,209	130,857	115,749,609	212,513,709	553,431,450	340,917,741
	1931	1,379	180,106	204,488,041	337,124,534	995,010,213	657,885,679
	1929	1,567	214,734	237,763,467	423,510,892	1,179,407,754	755,896,862
	1927	1,802	328,722	456,377,629	971,017,623	2,300,915,572	1,329,897,949
	1927	1,777	241,566	336,238,750	645,761,699	1,637,307,035	991,545,336
Elevators and elevator equipment. <sup>4</sup>	1933	90	3,078	3,043,833	5,609,319	11,379,903	5,710,584
	1931	94	4,516	4,179,852	13,119,015	26,316,894	13,197,879
Engines, turbines, tractors, water wheels, and windmills.	1933	177	23,535	23,584,005	40,464,932	91,030,819	50,566,787
	1931	204	34,130	39,233,854	82,514,937	193,962,805	111,447,893
	1929	214	62,702	100,849,662	206,471,969	465,857,934	259,385,965
	1927	231	55,696	86,672,291	168,436,394	375,392,737	206,956,343
Foundry and machine-shop products not elsewhere classified. <sup>5</sup>	1933	6,081	216,439	201,940,417	287,607,806	788,194,771	500,586,965
	1931	7,091	277,029	320,600,310	432,620,780	1,225,851,416	793,236,656
	1929	7,221	284,909	328,459,306	452,551,064	1,265,619,273	814,068,209
	1927	8,605	454,441	697,508,589	1,038,066,092	2,791,461,969	1,753,395,572
	1927	8,095	398,672	590,924,020	878,771,144	2,268,653,217	1,389,882,073
Machine-tool accessories and machinists' precision tools and instruments. <sup>3</sup>	1933	587	12,757	14,159,179	10,882,467	44,383,246	33,500,779
	1931	718	17,533	26,558,780	16,319,780	69,033,154	52,713,374
	1929	722	26,682	51,084,540	26,992,631	144,410,890	117,418,259
Machine tools.....	1933	232	12,714	12,596,212	10,844,323	41,433,523	30,589,200
	1931	279	21,262	25,149,816	21,900,879	81,280,508	59,385,639
	1929	280	47,391	76,410,237	64,234,022	244,578,088	180,294,005
	1927	288	32,383	47,403,335	43,151,422	145,854,921	102,703,499
Meters (gas, water, etc.) and gas generators.	1933	63	3,156	2,948,046	4,011,825	12,848,273	8,836,448
	1931	70	4,964	5,755,621	7,217,085	23,049,723	15,832,638
	1929	72	6,101	8,931,625	15,187,488	40,623,344	25,435,855
	1927	58	5,915	8,792,364	15,590,977	30,715,190	21,124,213
Pumps (hand and power) and pumping equipment.	1933	257	11,110	10,379,492	20,257,029	49,002,021	28,744,992
	1931	303	15,156	17,106,556	33,734,050	84,353,391	50,618,741
	1929	322	23,106	34,920,261	66,802,372	164,009,397	97,207,025
	1927	278	18,671	27,118,924	52,765,023	130,591,191	77,826,103
Radio apparatus and phonographs. <sup>6</sup>	1933	156	32,879	29,654,376	58,520,587	121,801,611	63,281,024
	1931	217	36,490	35,145,577	88,402,858	193,142,845	104,739,987
Refrigerators and refrigerating and ice-making apparatus. <sup>7</sup>	1933	204	26,398	24,335,228	69,601,374	140,762,115	71,160,741
	1931	227	26,116	32,350,213	88,561,761	199,426,753	110,864,992
Refrigerators, mechanical and ice, and refrigerator cabinets. <sup>8</sup>	1929	222	26,667	39,377,732	98,864,195	222,048,990	123,184,795
	1927	187	20,836	30,329,127	67,745,980	154,676,703	89,930,723
Scales and balances.....	1933	45	2,187	1,825,009	2,161,677	8,332,906	6,171,299
	1931	54	2,814	3,232,752	3,644,457	14,561,273	10,916,816
	1929	59	4,118	5,995,475	7,438,190	30,381,424	22,943,294
	1927	60	3,906	5,460,742	7,453,927	24,655,442	17,201,515
	1927						

For footnotes, see end of table.

SUMMARY FOR GROUP 13.—MACHINERY, NOT INCLUDING TRANSPORTATION EQUIPMENT: 1927 to 1933—Continued

[See "Changes in classification," p. 521]

INDUSTRY	Census year	Number of establishments	Wage earners (average for the year)	Wages	Cost of materials, containers, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>1</sup>
Sewing machines and attachments.	1933	30	6,313	\$6,034,211	\$2,862,117	\$12,926,146	\$10,064,029
	1931	34	8,090	8,791,969	6,090,980	20,148,125	14,057,145
	1929	39	10,467	14,976,182	16,458,425	45,094,600	28,636,175
	1927	35	9,997	13,748,151	14,072,579	39,723,822	25,651,243
Textile machinery and parts.	1933	314	18,576	18,737,266	18,377,850	60,323,267	41,945,387
	1931	330	18,808	21,238,231	18,175,346	65,798,225	47,622,879
	1929	376	27,019	37,836,406	36,556,299	122,438,514	85,882,215
	1927	367	26,154	36,481,196	36,180,689	116,921,130	80,740,441
Typewriters and parts* ----	1933	14	9,591	7,565,082	3,256,464	16,464,617	13,208,153
	1931	20	10,924	10,328,036	3,785,432	22,056,898	18,271,466
	1929	26	16,945	22,319,327	7,248,601	61,857,615	54,609,014
	1927	26	15,608	19,397,911	9,936,079	55,318,864	45,382,785
Washing machines, wringers, driers, and ironing machines, for household use.	1933	41	6,956	6,362,617	24,361,333	44,542,334	20,180,996
	1931	59	6,201	7,212,342	24,520,948	50,928,564	26,407,616
	1929	65	8,189	12,071,916	40,707,373	82,329,924	41,622,551
	1927	75	7,789	10,950,046	34,528,335	70,244,407	35,716,072

<sup>1</sup> Value of products less cost of materials, containers, fuel, and purchased electric energy. See sec. 20, p. 11.

<sup>2</sup> Revised; see "Changes in classification," p. 521.

<sup>3</sup> At the census for 1931 the manufacture of radio apparatus and tubes, formerly a part of the "Electrical machinery, apparatus, and supplies" industry, was combined with the manufacture of phonographs, formerly a separate industry in Group 16, under the title "Radio apparatus and phonographs." The 1929 and 1927 figures for "Electrical machinery, apparatus, and supplies" are not, therefore, strictly comparable with those for 1931 and 1933. The figures in italics for 1931 were adjusted for comparison with earlier years.

<sup>4</sup> New classification; formerly included in "Foundry and machine-shop products not elsewhere classified." Figures for 1931 compiled for comparison with 1933.

<sup>5</sup> Manufacturers of elevators and elevator equipment and of industrial ice-making and refrigerating machinery, formerly classified in this industry, are now assigned to "Elevators and elevator equipment" and "Refrigerators and refrigerating and ice-making apparatus," respectively. The italic figures for 1931 have been adjusted for comparison with 1933.

<sup>6</sup> No comparable figures available for 1927.

<sup>7</sup> New classification (see "Changes in classification," p. 521). Comparable figures have been compiled for 1931 but not for earlier years.

<sup>8</sup> This designation covers two industries, "Refrigerators and refrigerator cabinets exclusive of mechanical refrigerating equipment" and "Refrigerators, mechanical," which were classified separately at censuses prior to that for 1933. (See "Changes in classification," p. 521). As the combined figures for these industries do not cover manufacturers of industrial ice-making and refrigerating machinery, they are not comparable with the 1931 and 1933 figures for "Refrigerators and refrigerating and ice-making apparatus."

<sup>9</sup> Revised; revision not carried into total for group.

\* Figures for 1927 and 1929 not strictly comparable with those for 1931 and 1933. (See third paragraph of text, p. 535.)

## MACHINERY

[A preliminary report under this title was issued on Dec. 17, 1934]

**Scope of report.**—This is not an industry report but is merely a special presentation of statistics for the broad group of products covered by the general designation "Machinery." These products are manufactured principally in the following-named industries:

Agricultural implements.

Aircraft and parts.

Cash registers and adding, calculating, and card-tabulating machines.

Electrical machinery, apparatus, and supplies.

Elevators and elevator equipment.

Engines, turbines, tractors, water wheels, and windmills.

Foundry and machine-shop products not elsewhere classified.

Locomotives (other than electric), not made in railroad repair shops.

Machine tools.

Meters (gas, water, etc.) and gas generators.

Motorcycles, bicycles, and parts.

Motor vehicles, not including motorcycles.

Pumps and pumping equipment.

Refrigerators and refrigerating and ice-making apparatus.

Scales and balances.

Sewing machines and attachments.

Textile machinery and parts.

Typewriters and parts.

Washing machines, wringers, driers, and ironing machines, for household use.

**Definition of "Machinery."**—The term "machinery" is here used in its popular rather than in its exact sense. Strictly speaking, the term applies to certain very simple mechanical contrivances, such as a pair of pliers, a rope and pulley, or a windlass. It applies also to various more complicated devices, such as timepieces and scientific instruments, which are not customarily referred to as machines and which are not included in the machinery covered by the table herewith. Locomotives, motor-propelled steerable vehicles, and bicycles are included, but railway cars and horse-drawn vehicles are excluded. The item "Engines (steam and internal-combustion), tractors, and water wheels" does not cover steam boilers made for sale as separate units.

MACHINERY—PRODUCTION OF PRINCIPAL CLASSES, BY NUMBER AND VALUE,  
FOR THE UNITED STATES: 1933 AND 1931

KIND	NUMBER OF ESTABLISHMENTS REPORTING <sup>1</sup>		NUMBER		VALUE	
	1933	1931	1933	1931	1933	1931
Aggregate value.....	(1)	(1)	-----	-----	\$1,761,449,284 <sup>2</sup>	\$2,837,938,219
Adding machines.....	8	9	39,842	51,516	3,298,621	5,459,730
Listing-adding-bookkeeping and type-writer-bookkeeping-billing machines.....	7	9	6,862	10,012	3,836,718	6,833,092
Typewriters:						
New:						
Portable.....	4	6	144,151	214,119	2,914,690	5,842,384
Standard, including long-carriage.....	9	9	264,652	304,897	10,376,700	12,111,759
Rebuilt.....	7	8	( <sup>3</sup> )	( <sup>3</sup> )	767,484	1,218,108
Addressing and mailing machines.....	21	17	( <sup>3</sup> )	( <sup>3</sup> )	2,293,164	6,156,363
Agricultural machinery, total.....	(1)	(1)	-----	-----	17,108,840	49,954,270
Planting and cultivating machinery.....	38	101	-----	-----	2,404,294	10,862,052
Harvesting and haying machinery.....	40	88	-----	-----	9,675,410	27,043,952
Machinery for preparing crops for market or for use.....	51	155	-----	-----	5,029,136	12,048,266
Aircraft (airplanes, seaplanes, and amphibians).....	32	67	1,151	2,468	15,670,218	21,789,997
Auto lifts.....	17	16	( <sup>3</sup> )	( <sup>3</sup> )	1,868,732	2,246,314
Bakers, machinery and equipment, total.....	(1)	(1)	-----	-----	7,332,299	10,875,830
Bake ovens, total.....	22	30	-----	-----	1,785,388	3,224,040
Number reported.....	-----	-----	349	1,912	571,983	2,931,540
Number not reported.....	-----	-----	-----	-----	1,213,405	292,500
Other bakers' machinery and equipment.....	40	60	-----	-----	5,546,911	7,651,790
Baling presses (other than hay presses), total.....	11	19	-----	-----	395,850	821,150
Number reported.....	-----	-----	1,055	849	181,238	524,922
Number not reported.....	-----	-----	-----	-----	214,112	296,228
Blowers and exhaust and ventilating fans.....	47	86	( <sup>3</sup> )	( <sup>3</sup> )	6,955,402	15,322,692
Bookbinding machinery.....	13	24	-----	-----	1,030,932	2,840,358
Bottlers' machinery (except for dairies).....	25	37	-----	-----	9,156,586	5,653,012
Calculating machines.....	4	4	9,269	12,575	2,143,004	3,484,647
Canning machinery.....	33	69	-----	-----	3,139,013	4,064,515
Cars and trucks, industrial, motorized.....	18	17	( <sup>3</sup> )	2,191	2,119,836	2,816,591
Cash registers; card punching, sorting, and tabulating machines; change-making machines and coin-counters; fare registers and fare boxes; taxicab meters; ticket-counting machines.....	36	33	-----	-----	24,007,726	28,547,350
Cement and concrete machinery, total.....	(1)	(1)	-----	-----	1,732,129	7,393,936
Cement-making machinery.....	12	16	-----	-----	544,659	1,579,346
Concrete mixers, total.....	25	38	-----	-----	963,348	4,357,157
Number reported.....	-----	-----	812	4,197	672,721	4,168,780
Number not reported.....	-----	-----	-----	-----	290,627	188,377
Other cement and concrete machinery.....	13	39	-----	-----	224,122	1,457,433
Check-writing machines, total.....	6	9	-----	-----	731,182	1,316,032
Number reported.....	-----	-----	11,274	31,961	325,650	1,074,514
Number not reported.....	-----	-----	-----	-----	405,532	241,518
Clay-working machinery (brick, pottery, etc.).....	15	46	-----	-----	591,124	1,670,504
Clothing-pressing machines.....	10	15	( <sup>3</sup> )	( <sup>3</sup> )	2,013,065	3,601,144
Coffee roasting and grinding machines, food choppers and grinders, and slicing machines, total.....	(1)	(1)	-----	-----	7,048,082	9,196,670
Coffee roasting and grinding machines, total.....	12	17	-----	-----	1,185,571	1,440,896
Number reported.....	-----	-----	3,918	8,169	434,852	635,968
Number not reported.....	-----	-----	-----	-----	700,719	804,928
Combination coffee grinders and meat choppers.....	3	3	4,150	5,420	346,879	609,948
Food choppers and grinders, total.....	24	26	-----	-----	1,604,802	2,146,285
Number reported.....	-----	-----	54,114	111,213	614,616	1,438,687
Number not reported.....	-----	-----	-----	-----	990,186	707,598
Slicing machines, total.....	20	25	-----	-----	3,961,340	4,999,541
Number reported.....	-----	-----	14,575	18,402	2,892,357	4,589,325
Number not reported.....	-----	-----	-----	-----	1,068,983	410,216

For footnotes, see end of table.

MACHINERY—PRODUCTION OF PRINCIPAL CLASSES, BY NUMBER AND VALUE,  
FOR THE UNITED STATES: 1933 AND 1931—Continued

KIND	NUMBER OF ESTABLISHMENTS REPORTING <sup>1</sup>		NUMBER		VALUE	
	1933	1931	1933	1931	1933	1931
Condensers.....	15	24	(*)	(*)	\$990,373	\$2,580,296
Confectionery and ice-cream machinery	29	49			2,666,745	3,809,334
Conveying and elevating machinery, total.....	(1)	(1)			11,413,457	22,108,704
Belt type.....	73	90			3,462,628	7,152,502
Bucket type.....	43	69			2,106,911	2,695,489
Gravity.....	25	29			1,563,392	1,769,083
Pneumatic.....	16	10			401,422	1,106,049
Other types.....	56	78			3,653,805	7,921,674
Not reported as to type.....	8	7			225,299	1,473,907
Cotton-ginning machinery.....	14	20			2,164,745	2,630,353
Cranes, hoists, and derricks (not including oil-well derricks), total.....	(1)	(1)			5,606,847	18,447,532
Cranes:						
Crawler, total.....	7	14			427,666	1,059,026
Number reported.....			8	220	49,915	1,812,026
Number not reported.....					377,751	147,000
Locomotive, total.....	14	12			575,988	1,832,856
Number reported.....			51	133	325,805	1,832,856
Number not reported.....					250,183	
Overhead-traveling, total.....	20	38			1,239,545	8,254,839
Number reported.....			1,107	3,324	1,084,205	7,378,623
Number not reported.....					155,340	876,216
Stationary.....	16	51	(*)	(*)	342,080	2,760,316
Hoists and derricks (including those made for replacement as parts of cranes).....	36	56	(*)	(*)	3,021,568	3,640,495
Dairy machinery, total.....	(1)	(1)			8,326,867	11,388,326
Cream separators.....	9	10	(*)	64,426	2,358,113	2,372,359
Milking-machine units.....	5	14	1,296	14,896	111,202	1,354,562
Bottling machinery for dairies.....	11	14			1,281,657	1,371,278
Butter-making machines.....	9	9	(*)	(*)	627,732	853,598
Pasteurizers.....	14	21	(*)	(*)	997,458	2,253,330
Other dairy machinery.....	20	44			2,950,706	3,183,199
Dish-washing machines, total.....	6	15			360,543	1,983,528
Number reported.....			858	5,675	247,688	1,147,358
Number not reported.....					112,855	836,168
Dredging, excavating, and road-building machinery, total.....	(1)	(1)			18,619,347	57,192,780
Dredging machinery, other than mining.....	21	26			874,746	3,520,498
Excavating machinery, total.....	(1)	(1)			6,618,902	26,666,542
Power shovels, total.....	22	43			4,518,538	18,608,791
Number reported.....			253	1,559	3,912,231	18,165,685
Number not reported.....					606,307	443,106
Draglines and power scrapers, total.....	25	31			1,638,681	4,401,263
Number reported.....			1,342	4,775	687,235	4,401,263
Number not reported.....					951,446	
Trench excavators, total.....	7	9			41,087	1,022,680
Number reported.....			9	316	21,453	1,022,680
Number not reported.....					19,634	
Other excavating machinery.....	15	20			420,596	2,633,808
Road-building machinery, total.....	(1)	(1)			11,125,699	27,006,740
Road graders, total.....	23	36			4,500,160	9,640,744
Number reported.....			5,006	8,005	4,352,952	9,524,305
Number not reported.....					147,208	119,439
Road rollers, total.....	17	16			608,019	2,913,971
Number reported.....			179	787	481,571	2,542,892
Number not reported.....					126,448	376,079
Stone crushers.....	5	32	(*)	(*)	1,558,936	4,556,308
Other road-building machinery.....	73	90			4,458,584	9,889,717

For footnotes, see end of table.

MACHINERY—PRODUCTION OF PRINCIPAL CLASSES, BY NUMBER AND VALUE,  
FOR THE UNITED STATES: 1933 AND 1931—Continued

KIND	NUMBER OF ESTABLISHMENTS REPORTING <sup>1</sup>		NUMBER		VALUE	
	1933	1931	1933	1931	1933	1931
Electrical machinery (generators, motors, and fans), total.....	(1)	(1)			\$74,933,322	\$138,424,786
Generators, generator parts and supplies, self-contained power and lighting outfits, and synchronous condensers and frequency changers.....	40	56			14,210,926	28,430,735
Motor-generators sets and dynamotors.....	27	31			2,201,086	6,007,142
Motors and parts and supplies.....	92	106			56,083,963	95,002,893
Electric fans (ceiling, column, and desk types).....	24	25	(2)	(2)	2,437,347	8,984,016
Elevators and elevator equipment, total.....	90	94			8,322,350	20,034,847
Engines (steam and internal-combustion), tractors, and water wheels.....	224	274			56,744,171	147,588,686
Flour-mill and grain-mill machinery.....	41	69			2,353,862	4,341,829
Foundry machinery, total.....	(1)	(1)			1,987,185	3,337,834
Molding machines, total.....	15	14			1,051,188	948,074
Number reported.....			344	802	179,206	770,366
Number not reported.....					871,982	177,708
Sand-blast machines.....	6	11	(2)	(2)	257,727	643,085
Tumbling barrels.....	8	11	(2)	(2)	85,084	109,096
Other foundry machinery and that not reported as to kind.....	19	24			563,186	1,637,579
Gas regulators and governors.....	15	15	(2)	328,258	1,051,787	2,234,461
Glass-making machinery.....	12	19			1,894,783	2,544,812
Hat-making machinery.....	10	17			482,607	449,900
Hydraulic machinery (other than for dredging), total.....	(1)	(1)			1,548,611	4,539,543
Presses.....	30	33	(2)	(2)	1,081,165	1,193,653
Other than presses.....	12	32			467,446	3,345,890
Incandescent-lamp-making machinery.....	7	10			1,658,554	2,627,354
Laundry machinery (for commercial laundries only).....	38	82			5,980,185	14,637,033
Lawn mowers, total.....	(1)	(1)			3,467,266	6,140,897
Hand.....	20	23	814,009	724,423	2,982,043	4,198,865
Power and other.....	11	12	(2)	13,223	485,223	1,942,032
Leather-working machinery (other than shoe machinery).....	14	22			746,645	815,717
Locomotives, other than electric <sup>4</sup> .....	13	23	(2)	(2)	786,674	13,072,943
Machine tools.....		419			23,827,945	58,712,279
Manifolding machines (mimeographs, multigraphs, etc.).....	12	16			2,344,596	2,998,427
Metal-working machinery other than machine tools, total.....	(1)	(1)			13,529,573	36,294,221
Rolling-mill machinery.....	25	33			4,454,881	17,567,791
Sheet-metal-working machinery, total.....	(1)	(1)			7,133,467	13,680,271
Can-making machinery.....	13	16			5,201,490	9,854,113
Other sheet-metal-working machinery.....	15	23			1,841,977	3,726,158
Wire-drawing machines.....	8	10	(2)	(2)	390,515	411,062
Rod-working and wire-working machinery.....	23	41			296,872	1,887,847
Other metal-working machinery.....	27	33			1,253,838	2,847,250
Meters (gas, water, and other liquid).....	37	42	(2)	(2)	7,980,019	14,393,138
Mining machinery (not including oil-well machinery).....	92	114			8,775,564	12,870,454
Motorcycles, bicycles, and parts.....	15	19			<sup>5</sup> 12,055,357	<sup>5</sup> 13,696,758
Motor vehicles, except motorcycles, total.....	(1)	(1)			928,649,967	<sup>2</sup> 1,387,173,498
Complete motor vehicles.....	123	176	1,757,270	2,167,850	882,986,870	1,316,011,965
Chassis.....	50	91	90,743	127,213	45,663,097	71,161,533
Oil-mill machinery.....	20	15			2,109,510	1,286,044

For footnotes, see end of table.

MACHINERY—PRODUCTION OF PRINCIPAL CLASSES, BY NUMBER AND VALUE,  
 FOR THE UNITED STATES: 1933 AND 1931—Continued

KIND	NUMBER OF ESTABLISHMENTS REPORTING <sup>1</sup>		NUMBER		VALUE	
	1933	1931	1933	1931	1933	1931
Oil-refinery machinery.....	34	34	-----	-----	\$4,807,179	\$7,911,908
Oil-well machinery.....	140	192	-----	-----	20,706,347	23,105,181
Packaging machines.....	35	38	(?)	(?)	3,096,914	6,953,076
Packing-house machinery, total.....	(1)	(1)	-----	-----	2,765,760	4,621,927
Meat-packing.....	16	16	-----	-----	1,453,885	1,914,317
Other packing-house machinery.....	22	32	-----	-----	1,301,875	2,707,610
Paint-making machinery.....	10	15	-----	-----	353,330	481,434
Paper-box machines, total.....	26	35	-----	-----	2,116,395	2,905,900
Number reported.....	-----	-----	392	608	637,488	1,610,426
Number not reported.....	-----	-----	-----	-----	1,478,907	1,295,474
Paper-mill and pulp-mill machinery.....	85	108	-----	-----	8,695,868	15,793,422
Pharmaceutical machinery.....	6	9	-----	-----	702,929	1,222,929
Photo-engraving machinery.....	8	11	-----	-----	473,147	776,847
Pneumatic machinery (not including pneumatic tools), total.....	(1)	(1)	-----	-----	7,610,966	10,866,729
Air compressors, total.....	47	87	-----	-----	7,214,331	15,210,065
Number reported.....	-----	-----	27,693	41,481	5,704,715	12,771,457
Number not reported.....	-----	-----	-----	-----	1,509,616	2,438,608
Other pneumatic machinery.....	6	17	-----	-----	396,625	1,056,664
Printers' machinery and equipment, total.....	(1)	(1)	-----	-----	13,598,202	32,323,845
Presses, total.....	(1)	(1)	-----	-----	6,654,570	15,548,049
Cylinder (flat-bed).....	9	11	(?)	995	1,348,743	3,789,933
Rotary, total.....	13	22	-----	-----	2,251,923	4,087,043
Number reported.....	-----	-----	69	221	1,117,761	3,891,692
Number not reported.....	-----	-----	-----	-----	1,134,162	195,351
Web.....	7	10	(?)	307	1,818,799	5,531,507
Other presses.....	28	31	(?)	(?)	1,235,144	2,140,166
Typesetting machines.....	5	8	(?)	(?)	4,043,788	12,443,835
Other printers' machinery and equipment.....	47	60	-----	-----	2,899,835	4,331,361
Pumps and pumping equipment.....	329	481	-----	-----	36,845,926	* 71,554,983
Refrigerators, mechanical:						
Domestic:						
Systems complete with cabinets.....	24	33	956,356	* 708,894	75,459,555	* 90,447,442
Systems complete without cabinets.....	10	16	37,748	* 117,166	1,658,519	* 9,240,854
Commercial refrigerating machines (water coolers, ice-cream cabinets, etc.).....	24	49	(?)	(?)	7,986,407	* 15,520,179
Evaporators and compressors made for sale separately.....	17	13	(?)	(?)	4,850,869	12,824,169
High sides and low sides made for sale separately.....	9	-----	(?)	(?)	739,022	
Refrigerating and ice-making machinery, other than mechanical refrigerators.....	20	52	-----	-----	4,115,261	16,641,591
Rubber-working machinery.....	43	47	-----	-----	3,347,472	4,424,993
Scales and balances.....	44	49	618,837	695,874	6,804,917	12,072,174
Sewing machines, total.....	(1)	(1)	170,927	298,610	10,273,739	15,262,407
Household types.....	9	9	128,008	231,569	4,385,653	7,621,755
Industrial types.....	16	18	42,919	67,041	5,888,086	7,630,652
Shoe machinery.....	33	42	-----	-----	8,129,749	9,755,436
Stokers, mechanical, total.....	(1)	(1)	-----	-----	5,629,110	8,309,843
Industrial, total.....	37	55	-----	-----	4,268,003	7,293,844
Number reported.....	-----	-----	3,259	5,133	2,671,856	6,446,734
Number not reported.....	-----	-----	-----	-----	1,590,147	847,110
Domestic and commercial.....	33	27	7,635	4,997	1,361,107	1,015,699
Stone-working machinery.....	17	28	-----	-----	484,324	1,327,298
Sugar-mill machinery.....	13	32	-----	-----	794,158	1,840,163
Textile machinery and parts.....	289	353	-----	-----	57,891,952	61,222,936
Tobacco, cigar, and cigarette machinery.....	10	10	-----	-----	1,106,288	3,476,033
Transmission machinery.....	62	83	-----	-----	9,693,272	15,326,370

For footnotes see end of table.

MACHINERY—PRODUCTION OF PRINCIPAL CLASSES, BY NUMBER AND VALUE,  
FOR THE UNITED STATES: 1933 AND 1931—Continued

KIND	NUMBER OF ESTABLISHMENTS REPORTING <sup>1</sup>		NUMBER		VALUE	
	1933	1931	1933	1931	1933	1931
Vacuum cleaners (electric)-----	14	25	( <sup>3</sup> )	( <sup>3</sup> )	\$14,410,594	\$24,847,203
Vending machines-----	32	54	( <sup>3</sup> )	( <sup>3</sup> )	5,471,576	5,860,568
Washing machines, clothes wringers, driers, and ironing machines, for household use-----	41	60	( <sup>3</sup> )	( <sup>3</sup> )	42,421,589	48,281,404
Welding machines and apparatus-----	41	48	-----	-----	5,720,302	7,912,997
Well-drilling machinery (other than oil-well machinery)-----	11	18	-----	-----	776,608	1,529,972
Windmills-----	18	20	( <sup>3</sup> )	35,947	1,399,889	1,213,904
Wood-working machinery-----	119	233	-----	-----	6,099,865	11,056,696
Other machinery, not reported by kind..	936	734	-----	-----	45,881,030	57,752,487

<sup>1</sup> The differences between the numbers of establishments engaged in manufacturing certain kinds of machines, as given in this column, and the numbers of establishments classified in the industries which manufacture these machines as primary products, as given in the reports for those industries are due to the inclusion in this column of data for establishments which manufacture the specified kinds of machines as secondary products. The total numbers of establishments engaged in the manufacture of certain classes or groups of products (such as agricultural implements) are not given, for the reason that, as many establishments manufacture more than one of the kinds of products entering into the total for the class or group, the net total is smaller than the sum of the numbers reporting the several kinds of products.

<sup>2</sup> Revised.

<sup>3</sup> Data incomplete.

<sup>4</sup> Figures for electric locomotives withheld to avoid disclosing approximations of data for individual establishments.

<sup>5</sup> Total value of all products made by establishments engaged primarily in the manufacture of motorcycles and bicycles.

## AGRICULTURAL IMPLEMENTS

[A preliminary report for this industry was issued on July 10, 1934]

**Description of the industry.**—This industry embraces establishments engaged primarily in the manufacture of machines, usually operated by horse or other power, for plowing, harrowing, planting, cultivating, harvesting, threshing, and other operations and processes pertaining to agriculture. Detailed data on production and sales of agricultural implements of these classes were collected annually for the years 1920 to 1931, inclusive, together with data on other tools and equipment used on farms, for the Census of Farm Equipment. As that inquiry has been discontinued, no detailed statistics on the production of farm equipment other than the agricultural implements specified above are given in this report.

**Extent of coverage.**—The 1933 coverage of the establishments reporting in this industry for 1931 was practically complete. Of the 219 such establishments, 7 failed to supply any information in regard to their status (active, idle, etc.) or their activities in 1933, but these establishments accounted for less than one-half of 1 percent of the total number of wage earners and of the total value of products reported for the industry for 1931.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employes <sup>1,2</sup>	Number of wage earners (average for the year)	Salaries <sup>3</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>3</sup>
<i>Thousands of dollars. (See sec. 25, p. 13)</i>								
<i>United States</i>								
1933.....	170	2,067	11,140	3,106	9,830	11,978	30,539	18,561
1931.....	219	(4)	17,529	(4)	10,106	32,244	84,288	52,044
1929.....	293	5,853	41,663	13,399	58,042	113,969	277,854	163,885
1927.....	277	5,224	33,346	11,218	46,415	85,666	202,732	117,066
<i>States</i>								
<i>California:</i>								
1933.....	10	35	90	62	93	236	414	179
1931.....	13	(4)	154	(4)	204	395	1,129	734
<i>Georgia:</i>								
1933 <sup>4</sup> .....	4	24	241	44	117	267	642	376
<i>Illinois:</i>								
1933.....	31	873	6,312	1,281	6,120	6,778	15,976	9,197
1931.....	38	(4)	9,841	(4)	11,332	10,833	44,732	27,898
<i>Indiana:</i>								
1933.....	12	215	1,271	368	1,057	1,272	3,771	2,499
1931.....	14	(4)	1,259	(4)	1,367	1,629	4,707	3,078
<i>Iowa:</i>								
1933.....	11	46	121	69	94	180	418	238
1931.....	18	(4)	253	(4)	281	723	1,692	969
<i>Michigan:</i>								
1933 <sup>4</sup> .....	6	34	128	67	111	176	446	270
<i>Minnesota:</i>								
1933 <sup>4</sup> .....	6	43	91	46	99	133	486	335
<i>Missouri:</i>								
1933 <sup>4</sup> .....	3	3	13	2	12	40	69	23

For footnotes, see end of table.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931—Continued

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employes <sup>1,2</sup>	Number of wage earners (average for the year)	Salaries <sup>3</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>3</sup>
<i>States—Continued</i>								
Nebraska:								
1933.....	3	11	31	15	23	27	93	66
1931.....	4	( <sup>4</sup> )	73	( <sup>4</sup> )	78	133	388	255
New York:								
1933.....	16	148	685	231	558	633	1,800	1,167
1931.....	18	( <sup>4</sup> )	1,321	( <sup>4</sup> )	1,330	2,145	6,215	4,070
North Carolina:								
1933.....	5	15	105	26	74	86	305	219
1931.....	8	( <sup>4</sup> )	132	( <sup>4</sup> )	129	135	392	257
Ohio:								
1933.....	10	146	359	196	263	595	1,543	948
1931.....	12	( <sup>4</sup> )	658	( <sup>4</sup> )	745	1,476	4,163	2,687
Pennsylvania:								
1933.....	9	123	449	181	395	396	1,645	1,249
1931.....	9	( <sup>4</sup> )	463	( <sup>4</sup> )	465	890	2,253	1,363
Tennessee:								
1933 <sup>5</sup> .....	4	33	251	52	160	282	431	143
Virginia:								
1933.....	7	22	120	36	65	78	227	149
1931.....	9	( <sup>4</sup> )	112	( <sup>4</sup> )	104	115	383	269
Wisconsin:								
1933.....	14	215	574	319	411	444	1,216	772
1931.....	15	( <sup>4</sup> )	854	( <sup>4</sup> )	919	1,299	3,780	2,481
Other States: <sup>6</sup>								
1933.....	19	81	300	110	177	350	1,058	708
1931.....	61	( <sup>4</sup> )	2,399	( <sup>4</sup> )	2,152	6,471	14,454	7,983

<sup>1</sup> Not including proprietors and firm members, as follows: 1933, 51; 1931, no data; 1929, 107; 1927, 91.

<sup>2</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations, and therefore are not strictly comparable with the corresponding figures for 1929 and 1927, in which such data are included. No data for employees of central administrative offices are included in the figures for any year.

<sup>3</sup> Value of products less cost of materials, fuel, and purchased electric energy. See sec. 20, p. 11.

<sup>4</sup> No data.

<sup>5</sup> Figures for 1931 withheld to avoid disclosing approximations of data for individual establishments; included in items for "Other States."

<sup>6</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Colorado, 1, 3; Connecticut, 2, 2; Florida, 1, 2; Georgia, 1931, 5; Idaho, 0, 1; Kansas 3, 5; Kentucky, 3, 2; Louisiana, 0, 1; Maine, 1, 3; Massachusetts 2, 2; Michigan, 1931, 10; Minnesota, 1931, 10; Missouri, 1931, 2; New Jersey, 1, 3; South Carolina, 1, 1; Tennessee, 1931, 3; Texas, 1, 2; Vermont, 1, 1; Washington, 2, 3.

TABLE 2.—PRODUCTS, BY KIND, QUANTITY, AND VALUE, 1933 AND 1931, AND BY KIND AND QUANTITY, 1929, FOR THE UNITED STATES

	1931	
	1933	Adjusted for comparison with 1933 <sup>1</sup>
1. Agricultural-implements industry, all products, total value.....	\$30,538,633	\$71,305,770
2. Agricultural implements.....	25,419,623	67,736,158
3. Other products (not normally belonging to the industry).....	2,005,648	3,205,061
4. Receipts for custom and repair work.....	248,520	364,551
5. Agricultural implements and other products not reported separately (on abbreviated schedule) <sup>2</sup> .....	2,864,842	-----
6. Agricultural implements made as secondary products in other industries.....	2,014,955	3,222,051
7. Agricultural implements, total value (2 and 6).....	27,434,578	70,958,209

For footnotes, see end of table.

TABLE 2.—PRODUCTS, BY KIND, QUANTITY, AND VALUE, 1933 AND 1931, AND BY KIND AND QUANTITY, 1929, FOR THE UNITED STATES—Continued

	QUANTITY				VALUE IN THOU- SANDS OF DOLLARS <sup>1</sup>	
	1933	1931	1931	1929	1933	1931
	Reported on stand-ard sched-ule <sup>2</sup>	Adjusted for com-parison with 1933 <sup>1</sup>	As pub-lished; com-para-ble with 1929		Reported on stand-ard sched-ule <sup>2</sup>	Adjusted for com-parison with 1933 <sup>1</sup>
Agricultural implements, aggre-gate value.....					27,435	70,958
Planting and fertilizing machinery, total.....					2,404	9,844
Corn planters:	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>		
1-row.....	5,067	8,187	8,213	19,385	63	193
2-row.....	4,267	25,461	27,713	55,393	211	1,445
Combination corn and cotton planters:						
1-row.....	5,968	10,800	10,952	80,993	91	200
2-row.....	497	4,431	4,431	12,966	28	305
Combined listers and drills.....	1,378	1,835	2,031	7,004	86	120
Grain drills:						
Horse-drawn.....	3,445	8,171	8,893	51,113	159	890
Tractor-drawn.....	415	2,387	2,487	19,295	60	420
Fertilizer distributors, horse or tractor drawn.....	6,845	16,326	21,096	92,741	48	110
Lime spreaders.....	423	2,606	3,226	12,265	13	110
Manure spreaders.....	6,358	19,525	19,707	61,000	581	2,084
Broadcast seeders.....	( <sup>4</sup> )	44,231	51,323		40	265
Other planting and fertilizing ma-chinery <sup>3</sup> .....	10,848	29,259	54,242	167,974	223	1,153
Attachments and parts.....					802	2,550
Plows and listers, total.....					6,212	10,924
Moldboard plows:						
Horse-drawn:						
Walking, 1-horse.....	54,140	64,927	75,561	242,186	232	294
Walking, 2-horse and larger.....	50,185	50,448	54,784	204,545	561	607
Sulky:						
1-bottom.....	2,197	3,525	3,805	22,817	101	164
2-bottom and larger.....	1,817	1,280	1,529	33,649	126	107
Tractor-drawn:						
1- and 2-bottom.....	4,746	19,612	19,948	66,813	272	1,231
3-bottom and larger.....	1,196	6,852	6,879	56,084	105	824
Disk plows, tractor-drawn.....	958	1,865	2,040	16,397	182	302
One-way disk tillers.....	430	7,021	7,085	22,992	56	1,223
Listers (middle-busters):						
Tractor-drawn.....	784	4,680	4,680	2,966	47	439
Horse-drawn.....	1,401	24,862	27,112	45,610	23	589
Other plows and listers <sup>6</sup> .....	4,420			56,502	94	
Plows and listers not distributed by kind or by quantity, and parts.....					487	405
Steel plow shapes or shares:						
Quantity reported.....	<i>M lbs.</i>	<i>M lbs.</i>	<i>M lbs.</i>	<i>M lbs.</i>		
Quantity not reported.....	14,064	11,844		20,161	1,381	844
Attachments and parts, including plow stocks.....					425	
Harrows, rollers, pulverizers, and stalk cutters, total.....					2,119	3,895
					1,250	5,009
Harrows:	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>		
1-horse (spike-tooth and spring-tooth).....	10,784	16,603	16,878	30,885	38	68
Spike-tooth harrow sections.....	37,180	95,522	102,838	339,192	216	657
Spring-tooth harrow sections.....	27,910	39,174	44,018	129,306	205	400
Disk harrows:						
Horse-drawn.....	8,094	18,168	20,094	81,402	210	711
Tractor-drawn.....	3,299	25,390	26,759	57,447	217	2,094
Harrows not reported by kind or by number.....					19	
Stalk cutters.....	379	1,949	2,297	11,696	13	78
Other harrows, rollers, etc. <sup>7</sup> .....	945	3,510	9,496	23,255	21	133
Attachments and parts.....					311	823
Cultivators and weeders, total.....					2,299	7,374

For footnotes, see end of table.

TABLE 2.—PRODUCTS, BY KIND, QUANTITY, AND VALUE, 1933 AND 1931, AND BY KIND AND QUANTITY, 1929, FOR THE UNITED STATES—Continued

	QUANTITY				VALUE IN THOUSANDS OF DOLLARS <sup>1</sup>	
	1933	1931	1931	1929	1933	1931
	Reported on standard schedule <sup>2</sup>	Adjusted for comparison with 1933 <sup>1</sup>	As published, comparable with 1929		Reported on standard schedule <sup>2</sup>	Adjusted for comparison with 1933 <sup>1</sup>
<b>Cultivators and weeders—Contd.</b>						
<b>Cultivators:</b>						
Horse-drawn, except disk:						
1-horse.....	Number	Number	Number	Number		
1-row, walking.....	48,566	49,613	57,999	202,755	210	250
1-row, riding.....	5,505	8,112	8,822	51,694	152	234
2-row.....	15,172	37,645	40,502	115,254	488	1,339
Tractor-drawn.....	1,914	9,014	10,405	54,505	138	774
Hand cultivators (wheeled hoes).....	3,307	13,478	15,631	34,634	284	1,544
Weeders.....	(4)	119,689	160,360	153,434	259	302
Other cultivators and weeders <sup>3</sup> .....	3,692	13,175	14,669	25,221	50	164
Attachments and parts.....	2,009	19,777	24,808	60,621	95	857
Harvesting machinery, total.....					622	1,910
					5,150	19,517
Combines (harvester-thresher).....	349	5,831	5,907	36,957	323	9,179
Potato-digging machines (elevator type).....	1,401	3,329	3,906	9,400	70	258
Other harvesting machinery <sup>4</sup> .....	13,317	28,598	29,863	116,116	1,918	5,224
Attachments and parts.....					2,839	4,856
Haying machinery, total.....					4,525	6,800
Mowers.....	36,720	42,423	43,312	126,360	1,766	2,311
Rakes, sulky (dump).....	5,068	17,454	17,786	58,134	155	512
Rakes (side-delivery).....	1,132	2,555	2,555	80	80	237
Loaders.....	953	10,040	10,042	24,920	75	828
Other haying machinery <sup>10</sup> .....		14,153	16,551	51,849		690
Attachments and parts.....					2,449	2,222
Machines for preparing crops for market or for use, total.....					5,029	10,751
Grain threshers.....	369	3,793	3,954	13,813	302	3,016
Ensilage cutters (silo fillers):						
Number reported.....	1,240				250	
Number not reported.....		3,068	3,156	8,065	51	581
Corn shellers:						
Hand.....	7,850	11,618	14,759	34,928	50	112
Power.....	426	1,820	2,094	5,450	124	377
Hay presses.....	(4)	1,422	1,627	3,460	243	498
Feed grinders and crushers:						
Hammer mills:						
Number reported.....	5,157				440	
Number not reported.....		9,042	11,041	101,592	135	1,897
Other types.....	5,141	28,757	33,497		166	702
Grain cleaners and graders, for small grain only.....	(4)	2,162	3,642	11,635	197	82
Other machines for preparing crops for market or for use <sup>11</sup> .....	(4)	6,865	32,855	102,198	832	1,192
Attachments and parts.....					2,238	2,294
Miscellaneous and undistributed agricultural implements.....					565	738

<sup>1</sup> See sec. 5c, p. 4. The figures given in this column represent the production, in 1931, of those classes of establishments (not in all cases the same individual establishments) which reported on the standard schedule for 1933.

<sup>2</sup> See sec. 5c, p. 4.

<sup>3</sup> See sec. 25, p. 13.

<sup>4</sup> Data incomplete.

<sup>5</sup> Beet drills, hand drills, 4-row and other corn and cotton planters, seeding attachments, potato planters, transplanters, etc.

<sup>6</sup> Subsoil, contractors', breaking, lister-cultivators, 2-way horse-drawn disk plows, etc.

<sup>7</sup> Garden-tractor harrows, shovel plows, potato hoes, soil pulverizers and packers, etc.

<sup>8</sup> Alfalfa, beet, disk, field, and 4-row tractor cultivators, cotton scrapers, rotary hoes, etc.

<sup>9</sup> Bean, beet, and cotton harvesters, grain headers, pick-up attachments, potato diggers (plain or plow type), grain and corn binders, corn picker-huskers, etc.

<sup>10</sup> Slide rakes and tedders, hay-unloading tools, sweep rakes, and stackers.

<sup>11</sup> Cane mills (farm size), cider mills, fruit presses, cranberry separators, potato and onion graders; seed grain, and bean-cleaning machines; pea and bean threshers, peanut threshers (pickers), corn huskers and shredders, etc.

TABLE 3.—WAGE EARNERS, BY QUARTERS, FOR SELECTED STATES: 1933 AND 1931

(The average for the year (table 1) differs from the average of the quarterly figures below. (See fourth sentence, sec. 13, p. 8.) See sec. 26, p. 13)

	1933 <sup>1</sup>				1931			
	March	June	Sep- tem- ber	Decem- ber	March	June	Sep- tem- ber	Decem- ber
United States.....	10, 134	9, 777	12, 112	14, 769	22, 888	14, 072	11, 623	19, 207
<i>States</i>								
California.....	81	100	107	83	191	169	126	110
Georgia.....	202	181	280	297	356	145	253	314
Illinois.....	5, 862	5, 703	6, 674	8, 241	12, 746	7, 286	5, 900	11, 802
Indiana.....	957	1, 067	1, 560	1, 866	1, 765	799	985	1, 542
Iowa.....	86	137	96	177	337	357	114	270
Kansas.....	12	14	15	22	32	31	32	33
Kentucky.....	74	101	192	279	(?)	(?)	(?)	(?)
Michigan.....	89	133	258	92	604	338	155	146
Minnesota.....	39	89	143	102	1, 043	839	579	409
Missouri.....	7	29	12	12	(?)	(?)	(?)	(?)
Nebraska.....	18	45	32	27	96	67	57	40
New York.....	820	448	565	1, 107	1, 832	1, 170	707	1, 557
North Carolina.....	89	69	120	121	121	153	139	138
Ohio.....	337	338	366	554	882	674	582	465
Pennsylvania.....	369	371	519	539	474	478	470	412
Tennessee.....	256	294	219	266	374	262	111	368
Virginia.....	108	126	108	186	123	80	121	124
Wisconsin.....	609	463	708	643	1, 174	821	591	781

<sup>1</sup> See secs. 5, p. 4, and 13, p. 8. The 76 establishments canvassed with the standard schedule reported wage earners, by months, as follows:

January.....	9, 032	May.....	8, 106	September.....	10, 956
February.....	9, 465	June.....	8, 755	October.....	11, 374
March.....	9, 335	July.....	9, 460	November.....	12, 621
April.....	8, 424	August.....	10, 089	December.....	13, 581

<sup>2</sup> Withheld to avoid disclosing data for individual establishments.

## CASH REGISTERS AND ADDING, CALCULATING, AND CARD-TABULATING MACHINES; TYPEWRITERS AND PARTS; SCALES AND BALANCES

[Preliminary reports for these industries were issued on June 19, 1934, and subsequent dates]

**Description of the industries.**—The “Cash registers and adding, calculating, and card-tabulating machines” industry embraces establishments engaged primarily in the manufacture of cash registers; adding and calculating machines; fare registers and fare boxes; taxicab meters; slide rules; change-making machines; coin-counting, ticket-counting, and other counting machines; voting machines; and card-punching, card-sorting, and card-tabulating machines.

The “Typewriters and parts” industry embraces establishments engaged primarily in the manufacture and rebuilding of typewriters and the manufacture of typewriter parts and attachments.

Certain establishments which manufacture typewriter-bookkeeping-billing machines were classified in the “Cash registers,” etc., industry for 1931 and 1933 and in the “Typewriters and parts” industry for years prior to 1931. For this reason the figures for the separate industries as published for 1929 and 1927 are not strictly comparable with the corresponding ones for 1931 and 1933.

The “Scales and balances” industry embraces establishments engaged primarily in the manufacture of scales and balances of all descriptions—stationary and portable, light and heavy, spring and beam, counter and platform—and weighing machinery. Many of the scales and weighing machines have automatic computing devices. Coin-operated mechanisms for weighing, laboratory scales and weights, and scale parts are also made by establishments covered by this classification.

**Business machines.**—The products of these industries belong in a group of mechanical devices designated by the term “business machines.” Other machines in this group were reported by establishments in the “Foundry and machine-shop products not elsewhere classified” industry, as follows: Addressing and mailing machines—1933, \$2,293,164; 1931, \$6,156,363; 1929, \$10,537,012. Check-writing machines—1933, \$731,182; 1931, \$1,316,032; 1929, \$2,346,239. Manifold machines (mimeographs, multigraphs, etc.)—1933, \$2,344,596; 1931, \$2,998,427; 1929, \$3,488,745.

**Extent of coverage.**—All the establishments in the “Typewriters and parts” industry that reported at the census for 1931 were accounted for in the canvass for 1933. The census coverage of the “Cash registers and adding, calculating, and card-tabulating machines” and “Scales and balances” industries was practically complete. Of the 41 establishments in the former industry and the 54 in the latter that reported for 1931, one in each case failed to supply any information in regard to its status (active, idle, etc.) or activities in 1933, but the values of products made by these establishments in 1931 were insignificant in comparison with the respective industry totals.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1, 2</sup>	Number of wage earners (average for the year)	Salaries <sup>3</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>4</sup>
Thousands of dollars. (See sec. 26, p. 13)								
<b>CASH REGISTERS AND ADDING, CALCULATING, AND CARD-TABULATING MACHINES AND TYPEWRITERS AND PARTS INDUSTRIES</b>								
<i>United States</i>								
1933.....	54	2,814	20,499	4,542	20,591	9,126	58,488	49,362
1931.....	61	( <sup>4</sup> )	23,100	( <sup>4</sup> )	25,310	9,054	78,531	69,477
1929.....	72	4,803	33,785	12,617	52,065	18,015	171,859	153,844
1927.....	67	5,034	20,975	11,652	41,154	21,068	182,164	141,096
<b>CASH REGISTERS AND ADDING, CALCULATING, AND CARD-TABULATING MACHINES</b>								
<i>United States</i>								
1933.....	40	2,044	10,908	3,579	13,026	5,869	42,023	36,154
1931.....	41	( <sup>4</sup> )	12,176	( <sup>4</sup> )	14,982	5,269	56,474	51,205
<i>States</i>								
Illinois:								
1933.....	6	121	517	203	483	242	1,706	1,464
1931.....	5	( <sup>4</sup> )	602	( <sup>4</sup> )	660	267	1,775	1,508
New York:								
1933.....	13	175	1,112	246	2,216	2,858	8,472	5,615
1931.....	14	( <sup>4</sup> )	1,393	( <sup>4</sup> )	2,037	1,746	7,465	5,719
Other States: <sup>5</sup>								
1933.....	21	1,748	9,279	3,131	10,327	2,769	31,845	29,075
1931.....	22	( <sup>4</sup> )	10,181	( <sup>4</sup> )	12,285	3,256	47,235	43,979
<b>TYPEWRITERS AND PARTS</b>								
<i>United States</i> <sup>6</sup>								
1933.....	14	770	9,591	963	7,565	3,256	16,465	13,208
1931.....	20	( <sup>4</sup> )	10,924	( <sup>4</sup> )	10,328	3,785	22,057	18,271
<b>SCALES AND BALANCES</b>								
<i>United States</i>								
1933.....	45	709	2,187	1,058	1,825	2,162	8,333	6,171
1931.....	54	( <sup>4</sup> )	2,814	( <sup>4</sup> )	3,233	3,644	14,561	10,917
1929.....	59	1,065	4,118	2,849	5,095	7,438	30,381	22,943
1927.....	60	1,082	3,906	2,431	5,461	7,454	24,655	17,202
<i>States</i>								
Illinois:								
1933.....	11	88	396	151	326	507	1,550	984
1931.....	12	( <sup>4</sup> )	467	( <sup>4</sup> )	579	813	2,592	1,779
New Jersey:								
1933.....	7	19	131	65	133	131	411	280
1931.....	6	( <sup>4</sup> )	212	( <sup>4</sup> )	275	214	851	637
New York:								
1933.....	6	107	285	160	247	267	971	704
1931.....	9	( <sup>4</sup> )	372	( <sup>4</sup> )	515	551	1,685	1,134
Pennsylvania:								
1933.....	5	19	71	26	66	49	180	131
1931.....	6	( <sup>4</sup> )	111	( <sup>4</sup> )	115	114	395	281
Other States: <sup>7</sup>								
1933.....	16	476	1,304	655	1,053	1,148	5,221	4,073
1931.....	21	( <sup>4</sup> )	1,652	( <sup>4</sup> )	1,749	1,953	9,038	7,086

<sup>1</sup> Not including proprietors and firm members, as follows: Cash registers and adding, calculating, and card-tabulating machines, 1933, 1; 1931, no data; 1929, 9; 1927, 5. Typewriters and parts, 1933, none; 1931, no data; 1929, 1; 1927, 2. Scales and balances, 1933, 3; 1931, no data; 1929, 31; 1927, 32.

<sup>2</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations, and therefore are not strictly comparable with the corresponding figures for 1929 and 1927, in which such data are included. No data for employees of central administrative offices are included in the figures for any year.

<sup>3</sup> Value of products less cost of materials, fuel, and purchased electric energy. See sec. 20, p. 11.

<sup>4</sup> No data.

<sup>5</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Calif., 2, 2; Conn., 3, 2; Fla., 1, 1; Ind., 1, 1; Mich., 1, 2; Mo., 1, 1; N. J., 1, 2; Ohio, 8, 7; Pa., 1, 1; and Wis., 2, 3. Ohio is more important in this industry than New York.

<sup>6</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Conn., 3, 4; Ill., 2, 3; N. J., 1, 2; N. Y., 8, 9; Tenn., 0, 1; Wash., 0, 1. Because of the fact that the publication of statistics for the leading States would disclose, exactly or approximately, the data reported by individual establishments, no State figures for this industry are given.

<sup>7</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Calif., 0, 1; Colo., 0, 1; Conn., 1, 0; Ind., 1, 1; Ky., 1, 1; Mass., 0, 2; Mich., 2, 2; Minn., 1, 1; Mo., 1, 2; Ohio, 6, 6; Utah, 0, 1; Vt., 2, 2; Wis., 1, 1.

TABLE 2.—PRODUCTS, BY KIND, NUMBER, AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929

	1933	1931	1929
<b>CASH REGISTERS AND ADDING, CALCULATING, AND CARD-TABULATING MACHINES AND TYPEWRITERS AND PARTS</b>			
1. "Cash registers and adding, calculating, and card-tabulating machines" and "Typewriters and parts" industries, all products, total value.....	\$58,487,905	\$78,531,197	\$171,858,601
2. Cash registers, adding machines, calculating machines, etc., typewriters, and parts and attachments.....	55,270,737	73,964,002	167,049,878
3. Other products (not normally belonging to the industries).....	3,090,309	3,945,383	4,005,604
4. Receipts for contract and repair work.....	120,559	621,812	803,119
5. Cash registers, adding machines, typewriters, etc., made as secondary products in other industries.....	224,143	454,280	699,392
Cash registers, adding machines, typewriters, etc., aggregate value (2 and 5).....	\$55,494,880	\$74,418,282	\$167,749,270
Adding machines: <sup>1</sup>			
Number.....	39,842	51,516	
Value.....	\$3,298,621	\$5,459,730	
Listing-adding-bookkeeping machines, and typewriter-bookkeeping-billing machines: <sup>1</sup>			
Number.....	6,862	10,012	529,858.
Value.....	\$3,836,718	\$6,833,092	\$47,392,705
Typewriters:			
Portable: <sup>1</sup>			
Number.....	144,151	214,119	
Value.....	\$2,914,690	\$5,842,384	
Standard, including long-carriage:			
Number.....	264,652	304,897	587,509
Value.....	\$10,376,700	\$12,111,769	\$31,300,830
Calculating machines:			
Number.....	9,269	12,575	57,201
Value.....	\$2,143,004	\$3,484,647	\$11,616,947
Cash registers; card-punching, sorting, and tabulating machines; change-making machines and coin counters; fare registers and fare boxes; taxicab meters; and ticket-counting machines.	\$24,007,726	\$28,547,350	\$61,272,174
Other adding, calculating, and computing devices.....	(?)	\$420,684	\$771,248
Parts and attachments for adding machines, etc.....	\$2,988,439	\$4,162,681	\$6,646,686
Parts and attachments for typewriters.....	\$1,809,364	\$2,483,401	\$6,475,563
Rebuilt typewriters.....	\$767,484	\$1,218,108	\$2,273,057
Rebuilt machines other than typewriters, experimental work, postage meters, and credit systems.....	\$3,352,134	\$3,854,446	(?)
<b>SCALES AND BALANCES</b>			
1. "Scales and balances" industry, all products, total value.....	\$8,332,906	\$14,561,273	\$30,381,424
2. Scales and balances, parts, and attachments.....	6,778,260	12,046,002	24,700,522
3. Other products (not normally belonging to the industry).....	1,136,911	1,768,826	4,628,358
4. Receipts for contract and repair work.....	417,735	756,445	1,052,544
5. Scales and balances made as secondary products in other industries.....	354,828	473,634	1,384,325
Scales and balances, parts, and attachments, aggregate value (2 and 5).....	\$7,133,088	\$12,510,636	\$26,084,847
Scales:			
Automatic industrial:			
Number.....	4,261	6,609	21,161
Value.....	\$1,179,870	\$1,832,535	\$4,589,733
Calculating and computing:			
Number.....	20,984	32,125	58,006
Value.....	\$2,129,286	\$4,016,640	\$9,070,021
Beam, including steelyards:			
Number.....	42,850	101,707	155,241
Value.....	\$1,382,006	\$2,372,156	\$5,084,861
Spring, other than computing:			
Number.....	517,512	495,621	620,061
Value.....	\$1,099,050	\$1,471,692	\$2,184,099
Coin-operated:			
Number.....	2,863	19,986	8,637
Value.....	\$188,679	\$1,412,061	\$1,447,419
Balances:			
Number.....	30,387	39,826	41,788
Value.....	\$525,681	\$553,880	\$1,277,115
Other weighing devices, and scales and balances not reported as to type.....	\$300,345	\$413,220	\$1,731,938
Parts and attachments.....	\$328,171	\$447,462	\$699,661

<sup>1</sup> Data for listing-adding-bookkeeping machines were included with those for adding machines; and data for typewriter-bookkeeping-billing machines were included with those for portable typewriters for years prior to 1929, to avoid disclosing, exactly or approximately, the output of individual establishments.

<sup>2</sup> No data.

TABLE 3.—WAGE EARNERS, BY MONTHS, FOR THE CASH REGISTERS, ETC., AND TYPEWRITERS INDUSTRIES, FOR SELECTED STATES: 1933 AND 1931

[The month of maximum employment is indicated by bold-faced figures and that of minimum employment by *italic* figures. See sec. 26, p. 13]

	NUMBER REPORTED FOR—											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<b>CASH REGISTERS AND ADDING, CALCULATING, AND CARD - TABULATING MACHINES</b>												
<i>United States</i>												
1933.....	9, 074	9, 103	<b>8, 849</b>	9, 070	9, 702	10, 487	11, 264	12, 239	12, 440	12, 530	12, 905	<b>13, 129</b>
1931.....	13, 381	13, 072	12, 867	12, 712	12, 379	12, 237	12, 254	12, 040	11, 481	<i>11, 778</i>	11, 243	11, 272
<i>States</i>												
<b>Illinois:</b>												
1933.....	533	554	577	573	579	575	578	553	383	420	521	550
1931.....	<i>694</i>	678	663	662	566	608	000	557	573	578	547	493
<b>New York:</b>												
1933.....	<b>923</b>	944	950	933	942	946	965	1, 171	1, 247	1, 394	1, 478	1, 448
1931.....	1, 725	1, 672	1, 715	1, 578	1, 533	1, 506	1, 546	1, 486	1, 211	887	903	956
<b>Ohio:</b>												
1933.....	3, 085	3, 943	<b>3, 827</b>	3, 934	4, 503	<b>5, 197</b>	5, 729	6, 248	6, 162	6, 133	6, 039	6, 058
1931.....	6, 439	6, 276	6, 151	6, 139	6, 101	6, 092	6, 112	6, 115	6, 054	<i>6, 003</i>	6, 035	6, 055
<b>TYPEWRITERS AND PARTS</b>												
<i>United States</i>												
1933.....	8, 320	8, 288	8, 259	7, 875	7, 789	<b>7, 681</b>	8, 496	9, 028	11, 172	11, 836	12, 547	<b>12, 892</b>
1931.....	11, 351	11, 294	11, 498	11, 264	11, 334	11, 328	10, 792	10, 731	10, 586	<i>10, 250</i>	10, 348	10, 309

# ELECTRICAL MACHINERY, APPARATUS, AND SUPPLIES

[A preliminary report for this industry was issued on Nov. 15, 1934]

**Description of the industry.**—This industry embraces establishments engaged primarily in the manufacture of machinery, apparatus, and supplies for employment directly in the generation, storage, transmission, or utilization of electric energy. It does not cover establishments whose principal products are electric-lighting fixtures, electric signs, or motor-driven tools, mechanical refrigerators, washing machines, and other machines and appliances constructed with built-in motors or other electrical equipment (such machines and appliances being classified for census purposes in other industries), unless the electrical equipment is made by the same manufacturers and contributes at least one-half of the total value of the machines or appliances. (See table 9, p. 547.) The number of establishments shown in this report is therefore considerably smaller than the total number of manufacturers of electrical equipment.

Manufacturers of radio sets and radio apparatus, including tubes, formerly classified in the "Electrical machinery, apparatus, and supplies" industry, have been assigned to the "Radio apparatus and phonographs" industry in the censuses for 1931 and 1933; and for this reason the statistics for the first-named industry as published for 1929 and earlier years are not comparable with those for the industry as now constituted. An additional set of figures for 1931, comparable with those for preceding years, is therefore given in table 1; and the aggregate value of electrical machinery, apparatus, and supplies made in all industries in 1929, as given in table 2, has been revised by deducting the value of radio apparatus and tubes manufactured in that year.

**Detailed statistics of products (tables 2 to 8).**—In order to facilitate the collection of the data and the preparation of the statistics for publication, the amount of information called for on the schedules was reduced. This was done, in the cases of the more important industries, by condensing the product inquiries and combining many of the minor items. For this reason the product statistics in the present report (tables 2 to 8) are not given in as great detail as formerly, and the earlier figures for certain groups of related items have been combined in order to make them comparable with those for 1933.

For those classes of products that are manufactured principally in the "Electrical machinery, apparatus, and supplies" industry, the detailed statistics in tables 2 to 8 cover, in addition to the output of establishments assigned to this industry, electrical equipment made as secondary products (so far as separately reported) by establishments engaged primarily in other lines of manufacture. (See sec. 10, p. 7.) The most important example of such secondary production is insulated wire and cable, reported, for 1933, to the value of \$26,-052,855, chiefly by manufacturers of plain wire.

**Extent of coverage.**—The 1933 coverage of the establishments reporting in this industry for 1931 was nearly complete. Of the 1,379 such establishments, 51 failed to supply any information in regard to their status (active, idle, etc.) or their activities in 1933, but these establishments accounted for only about three-tenths of 1 percent of the total number of wage earners and of the total value of products reported for the industry for 1931.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1, 2</sup>	Number of wage earners (average for the year)	Salaries <sup>2</sup>	Wages	Cost of materials, containers, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>1</sup>
Thousands of dollars. (See sec. 25, p. 13)								
<i>United States</i>								
1933.....	1, 209	33, 048	130, 857	58, 124	115, 750	212, 514	553, 431	340, 918
1931.....	1, 379	( <sup>4</sup> )	180, 106	( <sup>4</sup> )	204, 458	337, 125	995, 010	667, 886
	1, 667	( <sup>4</sup> )	214, 754	( <sup>4</sup> )	237, 763	423, 611	1, 179, 403	766, 897
1929.....	1, 802	75, 867	328, 722	170, 847	456, 378	971, 018	2, 300, 916	1, 320, 898
1927.....	1, 777	64, 487	241, 566	148, 249	336, 239	645, 762	1, 637, 307	591, 546
<i>States</i>								
Alabama:								
1933.....	4	15	83	26	44	113	215	101
California:								
1933.....	90	489	1, 703	802	1, 571	4, 737	10, 267	5, 530
1931.....	90	( <sup>4</sup> )	2, 188	( <sup>4</sup> )	2, 619	8, 142	19, 984	11, 342
Colorado:								
1933.....	4	14	34	19	28	81	193	112
1931.....	5	( <sup>4</sup> )	45	( <sup>4</sup> )	50	111	207	96
Connecticut:								
1933.....	49	1, 549	9, 244	2, 501	7, 115	13, 071	30, 123	17, 022
1931.....	53	( <sup>4</sup> )	10, 358	( <sup>4</sup> )	10, 396	18, 165	43, 522	26, 337
District of Columbia:								
1933.....	3	6	14	8	14	21	58	37
Florida:								
1933.....	6	5	16	5	14	49	84	35
1931.....	3	( <sup>4</sup> )	18	( <sup>4</sup> )	18	32	71	39
Illinois:								
1933.....	152	5, 017	14, 145	10, 679	14, 381	18, 180	55, 977	37, 796
1931.....	177	( <sup>4</sup> )	28, 864	( <sup>4</sup> )	37, 191	42, 951	169, 582	126, 631
Indiana:								
1933.....	33	1, 522	12, 072	2, 576	11, 090	19, 697	50, 380	30, 683
1931.....	39	( <sup>4</sup> )	12, 390	( <sup>4</sup> )	13, 288	22, 409	50, 506	37, 097
Iowa:								
1933.....	9	59	220	112	192	420	1, 242	822
1931.....	8	( <sup>4</sup> )	176	( <sup>4</sup> )	191	493	1, 418	925
Kentucky:								
1933.....	11	141	289	148	255	584	1, 566	932
1931.....	14	( <sup>4</sup> )	436	( <sup>4</sup> )	426	840	2, 331	1, 491
Massachusetts:								
1933.....	73	2, 939	12, 416	4, 666	11, 667	17, 777	47, 959	30, 182
1931.....	86	( <sup>4</sup> )	17, 101	( <sup>4</sup> )	20, 165	27, 601	93, 098	65, 597
Michigan:								
1933.....	48	433	1, 857	693	1, 369	2, 983	10, 460	7, 466
1931.....	56	( <sup>4</sup> )	3, 292	( <sup>4</sup> )	3, 454	8, 162	20, 786	12, 624
Minnesota:								
1933.....	21	218	977	347	899	2, 394	5, 045	2, 651
1931.....	25	( <sup>4</sup> )	911	( <sup>4</sup> )	1, 011	2, 809	7, 159	4, 350
Missouri:								
1933.....	41	1, 007	3, 952	1, 414	3, 006	6, 789	18, 943	12, 164
1931.....	52	( <sup>4</sup> )	5, 157	( <sup>4</sup> )	5, 028	10, 900	33, 937	23, 397
New Hampshire:								
1933.....	5	18	141	34	98	145	344	199
1931.....	7	( <sup>4</sup> )	268	( <sup>4</sup> )	177	176	516	341
New Jersey:								
1933.....	87	3, 495	12, 314	6, 893	11, 423	20, 376	61, 299	40, 923
1931.....	112	( <sup>4</sup> )	18, 511	( <sup>4</sup> )	22, 052	35, 098	108, 591	73, 494
New York:								
1933.....	176	4, 763	16, 968	8, 618	14, 951	26, 973	63, 735	36, 762
1931.....	222	( <sup>4</sup> )	23, 845	( <sup>4</sup> )	27, 126	43, 259	104, 934	61, 676
Ohio:								
1933.....	152	4, 260	19, 692	7, 254	17, 300	35, 439	99, 308	63, 868
1931.....	157	( <sup>4</sup> )	20, 128	( <sup>4</sup> )	22, 278	44, 318	128, 815	83, 987
Oregon:								
1933.....	6	13	33	19	32	87	150	63
1931.....	5	( <sup>4</sup> )	39	( <sup>4</sup> )	47	91	210	119
Pennsylvania:								
1933.....	113	5, 073	17, 491	8, 407	14, 336	26, 917	62, 634	35, 717
1931.....	122	( <sup>4</sup> )	27, 138	( <sup>4</sup> )	29, 868	46, 111	142, 315	96, 204
Rhode Island:								
1933.....	10	110	915	170	789	2, 430	4, 932	2, 503
1931.....	9	( <sup>4</sup> )	1, 127	( <sup>4</sup> )	1, 024	4, 526	7, 943	3, 418
Texas:								
1933.....	19	31	151	35	110	351	667	316
1931.....	14	( <sup>4</sup> )	138	( <sup>4</sup> )	145	419	876	457

For footnotes, see end of table.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931—Continued

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employes <sup>1</sup>	Number of wage earners (average for the year)	Salaries <sup>2</sup>	Wages	Cost of materials, containers, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>3</sup>
<i>States—Continued</i>								
Washington:								
1933.....	7	31	87	48	78	243	478	236
1931.....	12	(4)	150	(4)	207	514	1,092	573
West Virginia:								
1933.....	10	30	300	50	230	880	1,301	420
1931.....	12	(4)	409	(4)	456	1,407	2,670	1,263
Wisconsin:								
1933.....	45	1,390	4,587	1,661	3,708	7,765	17,923	10,158
1931.....	53	(4)	5,102	(4)	4,886	9,585	27,894	18,309
Other States: <sup>7</sup>								
1933.....	35	411	1,159	930	1,048	4,010	8,158	4,148
1931.....	46	(4)	2,315	(4)	2,387	8,607	17,555	8,948

<sup>1</sup> Not including proprietors and firm members, as follows: 1933, 321; 1931, no data; 1929, 464; 1927, 915.<sup>2</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations, and therefore are not strictly comparable with the corresponding figures for 1929 and 1927, in which such data are included. No data for employees of central administrative offices are included in the figures for any year.<sup>3</sup> Value of products less cost of materials, containers, fuel, and purchased electric energy. See sec. 20, p. 11.<sup>4</sup> No data.<sup>5</sup> Figures in roman type refer to industry as now constituted; figures in italics are comparable with those for 1929 and 1927. See "Description of the industry," second paragraph, p. 539.<sup>6</sup> Figures for 1931 withheld to avoid disclosing data for individual establishments; included in items for "Other States."<sup>7</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Ala. (1931), 3; Ark., 0, 1; D. C. (1931), 2; Ga., 4, 4; Kans., 2, 2; La., 2, 2; Md., 10, 9; Miss., 1, 1; Nebr., 2, 4; N. C., 3, 5; N. Dak., 0, 1; Okla., 4, 4; Tenn., 4, 1; Utah, 0, 1; Vt., 1, 1; Va., 2, 5.

TABLE 2.—PRODUCTS, BY CLASS AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929

	1933	1931	1929
1. "Electrical machinery, apparatus, and supplies" industry, all products, total value.....	\$553,431,450	\$995,010,213	(1)
2. Electrical machinery, apparatus, and supplies.....	491,804,682	916,911,122	
Other products (not normally belonging to the industry).....	55,738,232	69,237,015	
Receipts for contract and repair work.....	5,838,536	8,862,076	
3. Electrical machinery, apparatus, and supplies made as secondary products in other industries.....	41,266,914	70,731,773	
Electrical machinery, apparatus, and supplies, aggregate value (2 and 3).....	533,071,596	987,642,895	\$1,918,733,253
Batteries and battery parts and supplies (table 3).....	67,444,181	85,936,160	149,934,676
Conduits and fittings (table 5).....	19,102,366	<sup>2</sup> 33,426,801	58,157,565
Control apparatus (table 6).....	15,164,691	22,186,031	44,288,544
Fans, electric (table 6).....	2,437,347	8,984,016	10,196,353
Fuses and fuse blocks (table 5).....	4,825,478	7,761,248	14,036,325
Generators and motor-generator sets (table 3).....	16,412,012	34,437,877	80,932,360
Household apparatus and appliances (table 7).....	36,707,481	55,578,467	84,485,468
Industrial and commercial apparatus and appliances (table 7).....	12,598,179	17,660,020	28,636,977
Insulated wire and cable (table 5).....	61,226,485	<sup>3</sup> 120,197,302	312,592,093
Lamps, incandescent-flament (not including sockets and other fittings), X-ray tubes, and other completely sealed glass lighting units (table 7).....	49,849,300	70,502,054	85,319,515
Measuring instruments, meters, relays, and instrument and meter transformers (table 4).....	9,328,374	23,714,914	38,523,171
Motors (including automotive starter-motors but not including motor-control apparatus) and motor parts and supplies (table 6).....	56,083,963	65,002,893	194,845,523
Switchboards, circuit breakers, and switches (table 4).....	16,243,280	44,832,249	81,201,122

<sup>1</sup> No comparable data. See "Description of the industry," second paragraph, p. 539. <sup>2</sup> Revised.

TABLE 2.—PRODUCTS, BY CLASS AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929—Continued

	1933	1931	1929
Electrical machinery, etc.—Continued.			
Transformers, induction voltage regulators, and current-limiting reactors (table 3).....	\$13, 093, 690	\$42, 742, 258	\$84, 032, 353
Wiring devices (table 5).....	17, 796, 209	21, 778, 359	38, 395, 283
Miscellaneous electrical machinery, apparatus, and supplies, total (table 8).....	134, 758, 560	303, 902, 246	613, 155, 925
Electrotherapeutic and electromedical apparatus.....	4, 388, 544	9, 164, 138	23, 555, 082
Ignition apparatus for internal-combustion engines.....	23, 432, 291	27, 894, 110	58, 627, 039
Telephone and telegraph apparatus.....	21, 180, 030	113, 170, 244	166, 203, 047
Other.....	85, 757, 695	153, 673, 754	364, 680, 757

TABLE 3.—GENERATORS, MOTOR-GENERATOR SETS, TRANSFORMERS, AND BATTERIES—PRODUCTION, BY KIND, NUMBER, AND VALUE: 1933, 1931, AND 1929

	NUMBER			VALUE IN THOUSANDS OF DOLLARS <sup>1</sup>		
	1933	1931	1929	1933	1931	1929
Aggregate value.....				96, 950	163, 116	314, 899
Generators, generator parts and supplies, motor-generator sets, self-contained power and lighting outfits, and synchronous condensers and frequency changers, total.....				10, 412	34, 438	80, 932
Generators, not including motor-generator sets, automotive generators, nor self-contained power and lighting outfits:						
Alternating current:						
Under 2,000 kv. a.....	Units 748	Units 1, 053	Units 2, 360	{ 1, 111 1, 939	8, 825	19, 326
2,000 kv. a. and over.....	39					
Direct current:						
5 kw and over but under 500 kw.....	1, 264	2, 409	2, 957	{ 684 85	1, 255	2, 500
500 kw and over.....	10					
Not reported by kind or by number.....					111	
Generators for railway-car lighting (axle-driven), for locomotive headlights (steam-turbine-driven), and for electroplating.....	(*)	1, 059	(*)	56	326	(*)
Automotive generators for battery charging.....	Thous. 1, 655	Thous. 2, 365	Thous. 4, 772	7, 779	10, 584	28, 210
Railway and vehicle power generators <sup>2</sup> (for gas-line-electric and oil-electric cars and busses) and parts and supplies for all types of generators. Self-contained power and lighting outfits (such as farm lighting outfits) not exceeding 5 kw, comprising engine, generator, and control, excluding storage battery:				1, 417	3, 144	6, 419
Number reported.....	Units 5, 772	Units 7, 004	Units 30, 634	945	1, 548	6, 840
Number not reported.....					91	
Synchronous condensers and frequency changers.....	37	85	203	195	2, 547	4, 241
Motor-generator sets and dynamotors (not including arc welding sets).....	5, 736	16, 062	21, 402	2, 201	6, 007	13, 397
Transformers, induction voltage regulators, and current-limiting reactors (except measuring-instrument transformers and radio transformers), total.....				13, 094	42, 742	84, 032
Distribution transformers, 1½ to 500 kv. a.....	51, 561	138, 786	273, 628	7, 388	19, 893	42, 499
Power transformers, 501 kv. a. and over.....	441	1, 448	3, 389	2, 627	15, 680	28, 985
Other transformers, current-limiting reactors, and induction voltage regulators.....				3, 078	7, 169	12, 549
Batteries, total.....				67, 444	85, 936	149, 955
Storage batteries—complete units:						
Motor vehicle, 9 to 21 plates per cell:						
Number reported.....	Thous. 9, 936	Thous. 11, 542	Thous. 15, 056	39, 519	54, 533	86, 482
Number not reported.....				5, 431		
Other, including radio.....				6, 267	9, 895	19, 238
Parts and supplies.....				912	1, 308	3, 881
Dry batteries and parts and supplies.....				12, 929	16, 718	34, 398
Wet primary batteries and parts and supplies.....				2, 386	3, 482	5, 936

<sup>1</sup> See sec. 25, p. 13.<sup>2</sup> Not strictly comparable with figures for 1931 and 1933. See note 4.<sup>3</sup> Data incomplete.<sup>4</sup> Not reported separately; included in figure for "Direct-current" generators.<sup>5</sup> Combined to avoid disclosing data reported by individual manufacturers of railway and vehicle power generators.<sup>6</sup> Not strictly comparable with 1933; values of parts and supplies for both wet and dry batteries included with values of wet batteries for 1931 and 1929.

TABLE 4.—SWITCHBOARD APPARATUS, MEASURING INSTRUMENTS, AND METERS—  
PRODUCTION, BY KIND, NUMBER, AND VALUE: 1933, 1931, AND 1929

	NUMBER			VALUE IN THOUSANDS OF DOLLARS <sup>1</sup>		
	1933	1931	1929	1933	1931	1929
Aggregate value.....				25, 572	67, 547	119, 724
Switchboard apparatus, total.....				16, 243	44, 832	81, 201
Circuit breakers (not included in switchboards or in metal-enclosed switch gear):						
Air:						
Number reported.....	31, 352	( <sup>2</sup> )	( <sup>2</sup> )	1, 226 105)	4, 597	5, 509
Number not reported.....						
Oil:						
Number reported.....	3, 055	( <sup>2</sup> )	( <sup>2</sup> )	2, 190 341)	8, 576	24, 485
Number not reported.....						
Air switches (not included in switchboards or in metal-enclosed switch gear):						
Disconnecting (above 600 volts), indoor and outdoor types:						
Number reported.....	37, 759	( <sup>2</sup> )	( <sup>2</sup> )	405 187)	3, 094	7, 00 8
Number not reported.....						
Knifs type (600 volts and under), open and inclosed.....	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	2, 180	3, 720	9, 13 6
Fuses, high-voltage (7,500 volts and over).....	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	752	( <sup>2</sup> )	( <sup>2</sup> )
Bus supports, indoor and outdoor types:						
Number reported.....	19, 679	( <sup>2</sup> )	( <sup>2</sup> )	97 34)	838	1, 347
Number not reported.....						
Panel boards, including main-service-feeder, power-feeder, and lighting-branch-circuit types, with their inclosing cabinets.....	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	1, 316	4, 832	6, 971
Switchboards for light and power, manually or electrically operated, except theater and automatic:						
Number reported.....	2, 433	( <sup>2</sup> )	( <sup>2</sup> )	1, 268 333)	6, 004	15, 877
Number not reported.....				138	446	969
Theater switchboards, including dimmers.....	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )			
Automatic switchboards, including those for unattended stations, supervisory-control, and those of the semiautomatic nonself-starting type (excluding contactor-controlled industrial-control types).....	1, 000	( <sup>2</sup> )	( <sup>2</sup> )	386	1, 997	3, 823
Metal-enclosed switchgear, both indoor and outdoor, including vertical-lift, draw-out, and truck and cutbale types; switch-houses; and inclosed structures:						
Number reported.....	575	( <sup>2</sup> )	( <sup>2</sup> )	1, 189 270)	4, 617	11, 514
Number not reported.....						
Miscellaneous switches and switchboard accessories not included above, and those not reported separately.....				4, 824	4, 712	4, 562
Measuring instruments, meters, relays, and instrument and meter transformers, total.....				9, 328	22, 715	38, 523
Measuring instruments and meters, total.....				8, 271	19, 183	31, 737
Demand meters.....	33, 296	72, 982		882	2, 225	1, 677
Watt-hour meters, direct current, and ampere-hour meters.....	2, 215	7, 327	( <sup>2</sup> )	71	188	
Watt-hour meters, alternating current.....	316, 254	823, 825	1, 571, 466	3, 540	9, 233	14, 113
Switchboard meters.....	15, 274	43, 604	126, 506	412	984	2, 729
Graphic recording meters.....	1, 101	4, 253	7, 518	152	606	1, 067
Portable meters and laboratory testing and scientific instruments <sup>3</sup> .....				1, 725	3, 726	8, 955
Miniature meters, 3½ inches and under:						
Number reported.....	712, 699	810, 737	936, 112	1, 033	1, 313	2, 284
Number not reported.....					40	
Miscellaneous meters, not separately reported.....				457	868	911
Relays (except industrial motor-control and telephone).....	6, 659	30, 479	108, 661	166	986	1, 710
Instrument and meter transformers.....	34, 791	65, 157	140, 406	891	2, 546	5, 076

<sup>1</sup> See sec. 25, p. 13.<sup>2</sup> Data incomplete.<sup>3</sup> Not reported separately.<sup>4</sup> Includes value of time switches.<sup>5</sup> Combined to avoid disclosing data for individual manufacturers of portable meters.

TABLE 5.—INSULATED WIRE AND CABLE; WIRING DEVICES; CONDUITS, FITTINGS, AND ARMORED CABLE; FUSES AND FUSE BLOCKS—PRODUCTION, BY KIND, NUMBER, AND VALUE: 1933, 1931, AND 1929

	NUMBER IN THOU- SANDS <sup>1</sup>			VALUE IN THOUSANDS OF DOLLARS <sup>1</sup>		
	1933	1931	1929	1933	1931	1929
Aggregate value.....				102,051	183,164	423,181
Insulated wire and cable, total.....				61,226	<sup>2</sup> 120,197	312,592
Rubber-insulated:						
Lighting and power circuit:						
Braided.....	(3)	(3)	(3)	12,788	22,675	51,131
Landed.....	(3)	(3)	(3)	3,089	8,859	23,037
Telephone.....	(3)	(3)	(3)	3,262	6,649	11,742
Flexible cords (rubber-insulated, cotton, silk, and rayon covered).....	(3)	(3)	(3)	6,650	7,717	20,189
Paper-insulated: Lighting and power circuit and telephone and telegraph cable (including submarine).....	(3)	(3)	(3)	6,032	37,021	96,228
Varnished-cambric-insulated.....	(3)	(3)	(3)	1,979	3,389	7,210
Magnet:						
Cotton, silk, and rayon covered.....	(2)	(2)	(2)	5,156	4,878	18,777
Enameled.....	(3)	(3)	(3)	4,935	6,158	30,641
Cotton-insulated:						
Weatherproof.....	(3)	(3)	(3)	5,614	13,056	42,012
Slow-burning and asbestos-insulated.....	(3)	(3)	(3)	1,634	2,530	11,625
Other insulated wire and cable and that not reported by kind of insulation.....				10,039	<sup>2</sup> 7,265	
Wiring devices, total.....				17,796	21,778	38,395
Lamp sockets and receptacles:						
Standard-base:						
Number reported.....	57,013	53,756	35,797	4,878	4,724	5,054
Number not reported.....					839	6,081
Miniature and candelabra sockets and receptacles.....	1,214	5,180	4,720	107	300	684
Snap switches (flush, surface, pendent, all types).....	23,860	27,600	(4)	4,293	6,399	11,290
Attachment-plug caps.....	(4)	60,111	(4)	1,536	1,584	2,002
Convenience outlets.....	8,856	12,172	(4)	850	1,312	2,451
Miscellaneous wiring devices not elsewhere specified, and those not reported by kind.....				6,083	6,620	10,834
Conduit, fittings, and armored cable, total.....				19,102	<sup>2</sup> 33,427	58,158
Armored conductor.....	(2)	(2)	(2)	4,411	<sup>2</sup> 5,963	<sup>4</sup> 11,390
Flexible steel conduit; fittings for armored conductor and flexible steel conduit.....	(2)	(2)	(2)	853	742	565
Rigid steel conduit, elbows, and couplings.....	(2)	(2)	(2)	7,953	15,051	26,155
Other rigid conduit fittings.....	(2)	(2)	(2)	769	2,244	2,829
Outlet and switch boxes.....	(2)	(2)	(2)	2,941	5,250	10,667
Other interior conduit and fittings and underground conduit.....				2,175	4,177	6,552
Fuses and fuse blocks, total.....				4,825	7,761	14,036
Fuses (except high-voltage and power types, 7,500 volts and over), <sup>6</sup> total.....				4,556	6,280	11,350
Enclosed fuses for voltages under 125.....	23,516	19,965	48,016	208	260	752
Nonrenewable plug fuses, 125 volts.....	65,852	53,093	75,203	1,357	1,322	1,814
Enclosed renewable fuses, 250 and 600 volts, and renewals therefor.....				1,322	1,734	4,421
Enclosed nonrenewable fuses, 250 and 600 volts.....	8,469	(4)	(4)	513	610	1,243
Enclosed fuses for voltages higher than 600 volts (except high-voltage type) <sup>6</sup> .....	(4)	203	471	23	706	1,153
Other fuses and those not distributed by kind, and open-fuse material.....				1,133	1,648	1,968
Fuse blocks, total.....				270	1,481	2,687
Fuse blocks, clips, and bases for ferrule- contact and knife-blade fuses, 250 and 600 volts.....	7,803	(4)	(4)	149		
All other fuse blocks, clips, and bases, and fuse blocks, clips, and bases not reported separately.....				120	1,481	2,687

<sup>1</sup> See sec. 25, p. 13.<sup>2</sup> Revised.<sup>3</sup> No data.<sup>4</sup> Data incomplete.<sup>5</sup> Includes value of a small quantity of fittings for armored conductor.<sup>6</sup> For high-voltage fuses, see table 4.

TABLE 6.—MOTORS, CONTROL APPARATUS, AND ELECTRIC FANS—PRODUCTION, BY KIND, NUMBER, AND VALUE: 1933, 1931, AND 1929

	NUMBER IN THOUSANDS <sup>1</sup>			VALUE IN THOUSANDS OF DOLLARS <sup>1</sup>		
	1933	1931	1929	1933	1931	1929
Aggregate value.....				73,686	126,173	249,330
Motors and parts and supplies, total.....				56,084	95,003	194,846
Stationary motors, total.....				41,173	68,430	136,035
Fractional-h. p., excluding "health" motors and vibrators:						
Under ½ h. p.—toy motors and other fractional-h. p. motors not having definite commercial rating in accordance with A. I. E. E. standards.....	1,009	859	779	1,793	2,083	3,196
½ h. p. and over, but under 1 h. p.—motors built on frames smaller than those of open-type motors having a continuous rating of 1 h. p. at 1,700-1,750 r. p. m.:						
Split-phase.....	1,579	1,274	1,867	9,063	10,220	18,341
Repulsion-induction.....	774	920	1,114	8,383	12,915	17,608
Other types of fractional-h. p. motors (including motors built on frames as large as or larger than those for 1-h. p. open-type motors)—universal, direct-current, and single-phase condenser.....	456	793	1,073	4,508	8,426	12,108
1 h. p. and over:						
Direct current.....	17	30	88	3,622	9,060	22,619
Alternating current:						
Number reported.....	172	270	625	13,574	25,360	60,711
Number not reported.....				230	362	1,453
Motors not reported by kind or rating.....				230		
Automotive starter-motors.....	1,554	2,352	5,003	9,032	13,044	32,849
Railway and vehicle motors (for gasoline-electric, oil-electric, and electric cars and busses) and parts and supplies for all types of motors <sup>2</sup> .....				5,879	13,529	25,961
Control apparatus, total.....				16,165	22,186	44,289
Industrial magnetic control for a. c. motors.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	4,584	6,569	14,199
Industrial magnetic control for d. c. motors.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	2,163	3,258	6,947
Industrial manual control for a. c. and d. c. motors.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	2,345	2,077	10,032
Other control apparatus and controls not reported, by kind.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	6,072	10,282	13,111
Electric fans (direct motor driven), total.....				2,437	8,984	10,196
Ceiling and column fans.....	15	41	81	302	1,074	2,228
Desk fans.....	810	1,084	660	2,135	7,910	7,771
Not reported by kind or number.....						198

<sup>1</sup> See sec. 25, p. 13.<sup>2</sup> Figures for railway and vehicle motors combined with those for parts and supplies for all motors to avoid disclosing approximations of output of individual manufacturers of railway and vehicle motors.<sup>3</sup> Data incomplete.

TABLE 7.—INCANDESCENT-FILAMENT LAMPS, X-RAY TUBES, AND OTHER SEALED GLASS LIGHTING UNITS; INDUSTRIAL, COMMERCIAL, AND HOUSEHOLD APPARATUS AND APPLIANCES—PRODUCTION, BY KIND, NUMBER, AND VALUE: 1933, 1931, AND 1929

	NUMBER			VALUE IN THOUSANDS OF DOLLARS <sup>1</sup>		
	1933	1931	1929	1933	1931	1929
Aggregate value.....				99,155	143,741	193,442
Incandescent-filament lamps (not including sockets and other fittings), X-ray tubes, and other completely sealed glass lighting units, except neon signs, <sup>2</sup> total.....				49,849	70,502	85,320
Large tungsten: Vacuum and gas-filled.....	<i>Thous.</i> 305,820	<i>Thous.</i> 319,820	<i>Thous.</i> 352,255	41,811	57,043	65,437
Miniature tungsten:						
Motor-vehicle (headlight and other).....	65,048	95,263	139,163	4,005	7,944	11,116
Other—Christmas-tree, flashlight, and miscellaneous.....	( <sup>3</sup> )	70,459	132,870	2,539	2,913	7,351
X-ray tubes, carbon lamps, and photo-flash lamps.....				1,494	2,602	4,145
Industrial and commercial apparatus and appliances (not including motor-driven machine tools), total.....				12,598	17,660	28,637
Cooking apparatus, commercial—hotel ranges, broilers, bread-baking ovens, toasters, urns, etc.....				625	1,439	2,250
Furnaces, electric:	<i>Units</i>	<i>Units</i>	<i>Units</i>			
Number reported.....	305	1,313	2,319	560	2,018	4,843
Number not reported.....				109	144	347
Heating units and devices, including space heaters.....				1,411	2,479	4,776
Motor-driven devices not listed separately, such as hair clippers, hair and hand driers, blowers, etc.....				2,032	3,060	2,277
Permanent-wave machines.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	1,966	1,840	3,416
Welding apparatus and electrodes:						
Alternating-current-transformer arc welders, welding wire, and resistance and carbon-arc electrodes.....				37	203	1,283
Direct-current welding apparatus.....	2,648	( <sup>3</sup> )	( <sup>3</sup> )	2,059	1,902	5,794
Resistance welding apparatus, butt, spot, and line.....	377	( <sup>3</sup> )	( <sup>3</sup> )	972	1,897	2,357
Arc-welding electrodes.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	2,288	2,588	1,291
Welding apparatus not reported by kind.....				538		
Household apparatus and appliances, total.....				36,707	55,578	84,485
Cooking utensils:	<i>Thous.</i>	<i>Thous.</i>	<i>Thous.</i>			
Grills.....	265	263	263	384	332	541
Waffle-irons.....	496	660	840	1,290	2,515	4,370
Percolators:						
Number reported.....	270	399	709	1,000	1,987	3,986
Number not reported.....					527	
Toasters.....	1,444	1,282	1,613	2,637	2,889	4,480
Flatirons (electric).....	2,636	2,155	3,133	4,639	5,070	8,018
Heaters:						
Air:						
Number reported.....	187	325	503	362	859	1,833
Number not reported.....					153	
Water.....				432	1,453	1,738
Air and water, not separately reported.....				235		
Ranges, disk stoves, and hot plates, under 2½ kw.....	265	276	694	291	635	1,419
Ranges (not including hotel), 2½ kw. and over.....	51	110	225	3,898	9,008	15,514
Vacuum cleaners:						
Number reported.....	547	887	1,407	14,220	23,840	35,108
Number not reported.....				190	1,007	
Miscellaneous household devices not specified above.....				7,129	5,304	7,515

<sup>1</sup> See sec. 25, p. 13.<sup>2</sup> For neon signs, see table 9.<sup>3</sup> Data incomplete.<sup>4</sup> Value of carbon lamps only.<sup>5</sup> Value of alternating-current transformer arc welders only.<sup>6</sup> No data.<sup>7</sup> Includes value of welding wire.

TABLE 8.—MISCELLANEOUS ELECTRICAL MACHINERY AND APPARATUS (INCLUDING IGNITION, TELEPHONE AND TELEGRAPH, AND ELECTROTHERAPEUTIC AND ELECTROMEDICAL APPARATUS)—PRODUCTION, BY KIND, NUMBER, AND VALUE: 1933, 1931, AND 1929

	1933	1931	1929
Aggregate value.....	\$184, 758, 560	\$308, 902, 246	\$613, 155, 925
Carbons:			
Brushes for electrical apparatus.....	\$2, 282, 347	\$2, 993, 895	\$4, 100, 846
Carbon specialties, carbons or electrodes for electric lighting (motion-picture projection and other), and electrodes for electric furnaces.....	\$6, 714, 940	\$6, 518, 176	\$12, 948, 209
Electrotherapeutic and electromedical apparatus, total value.....	\$4, 388, 544	\$9, 164, 138	\$23, 555, 082
“Health” lamps, professional and household.....	\$959, 932	\$2, 785, 804	\$5, 671, 451
Motor-driven devices.....	\$190, 871	\$1, 331, 198	\$6, 664, 293
Other, including X-ray apparatus except tubes.....	\$3, 237, 741	\$5, 047, 136	\$11, 219, 338
Flashlight cases (including candle type).....	\$1, 876, 039	\$2, 171, 325	\$7, 050, 437
Ignition apparatus for internal-combustion engines, total value.....	\$23, 432, 291	\$27, 894, 110	\$58, 627, 039
Spark plugs:			
Number.....	60, 534, 605	61, 389, 628	93, 872, 403
Value.....	\$12, 895, 608	\$15, 800, 353	\$20, 244, 418
All other ignition apparatus.....	10, 536, 683	12, 093, 757	38, 882, 621
Lightning arresters and choke coils, except radio and telephone.....	1, 592, 196	3, 257, 167	6, 516, 115
Locomotives and parts—electric, gas-electric, and oil-electric.....	1, 991, 645	(3)	(3)
Rectifying apparatus.....	1, 728, 392	2, 870, 760	4, 259, 493
Signaling apparatus, electric:			
Bells, buzzers, signal gongs, annunciators, burglar alarms, push buttons, door openers, and battery switches.....	1, 072, 948	2, 348, 239	3, 893, 257
Street traffic signals and accessories.....	202, 598	1, 141, 677	1, 842, 183
Fire-alarm apparatus, railway signals and attachments, and other signaling apparatus not specified above.....	5, 156, 224	13, 974, 716	29, 084, 250
Telephone and telegraph apparatus.....	21, 180, 030	113, 170, 244	166, 293, 047
Wiring supplies:			
Overhead trolley-line materials, including brackets, for electric and industrial railways, mines, etc.....	1, 213, 041	1, 718, 077	3, 260, 724
Pole-line hardware.....	3, 438, 790	8, 620, 593	19, 035, 733
Other miscellaneous electrical machinery and apparatus, and such machinery and apparatus not specifically reported as belonging to any of the classes covered by the preceding tables.....	58, 473, 535	108, 060, 159	272, 690, 400

<sup>1</sup> Includes value of X-ray tubes.

<sup>2</sup> Figures for standard-gauge and for mining and industrial (narrow-gauge) locomotives combined to avoid disclosing data for individual establishments.

<sup>3</sup> No comparable data.

<sup>4</sup> Figures include data for small but indeterminate quantities of products belonging to the classes covered by the preceding tables, but reported in combinations or without any specific indication of their character and therefore not assignable to any of the other groups.

TABLE 9.—ELECTRICAL EQUIPMENT MADE BY ESTABLISHMENTS CLASSIFIED IN OTHER INDUSTRIES—PRODUCTION, BY KIND, NUMBER, AND VALUE: 1933, 1931, AND 1929

[This table presents statistics for the production, so far as separately reported, of certain classes of electrically driven equipment made principally by establishments classified in the following industries: “Machine tools”; “Washing machines, wringers, driers, and ironing machines, for household use”; “Signs and advertising novelties”; “Lighting equipment”; and “Refrigerators and refrigerating and ice-making apparatus”]

	1933	1931	1929
Portable electric tools:			
Grinders, value.....	\$260, 566	\$606, 224	\$2, 395, 279
Drills, value.....	\$869, 526	\$2, 809, 728	\$4, 586, 469
Hammers, value.....	\$60, 821	\$119, 442	\$648, 671
Washing machines:			
Number reported:			
Number.....	1, 003, 322	<sup>1</sup> 810, 338	956, 062
Value.....	\$37, 044, 353	<sup>1</sup> \$39, 385, 147	\$59, 930, 902
Number not reported, value.....	\$495, 670		
Electric signs:			
Neon, value.....	\$12, 198, 756	{ \$16, 783, 098	\$11, 373, 028
Other, value.....			
Electric-lighting equipment, value.....	\$36, 527, 488	\$65, 588, 063	\$120, 325, 883
Domestic electric refrigerators:			
Units complete with cabinets:			
Number reported:			
Number.....	956, 356	708, 894	597, 520
Value.....	\$75, 469, 555	\$90, 447, 442	\$102, 255, 594
Number not reported, value.....			\$829, 448
Units complete without cabinets:			
Number.....	37, 748	117, 166	67, 908
Value.....	\$1, 658, 519	\$9, 240, 854	\$8, 589, 478

<sup>1</sup> Includes data for a small but indeterminate number of apartment-size washing machines powered by water motors.

TABLE 10.—WAGE EARNERS, BY QUARTERS, FOR SELECTED STATES: 1933 AND 1931

[The average for the year (table 1) differs from the average of the quarterly figures below. (See fourth sentence, sec. 13, p. 8.) See sec. 26, p. 13]

	1933 <sup>1</sup>				1931			
	March	June	September	December	March	June	September	December
United States.....	105, 184	120, 825	156, 373	153, 227	191, 079	179, 894	174, 619	165, 017
<i>States</i>								
Alabama.....	65	70	138	75	32	37	60	37
California.....	1, 403	1, 480	2, 052	2, 002	2, 227	2, 103	2, 167	1, 992
Colorado.....	29	29	43	37	39	43	57	49
Connecticut.....	7, 865	8, 004	10, 918	10, 864	10, 942	10, 229	9, 967	9, 709
District of Columbia.....	15	14	13	14	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Florida.....	15	15	16	17	18	18	18	17
Georgia.....	35	35	40	44	51	47	47	47
Illinois.....	11, 698	13, 010	16, 664	15, 809	31, 569	28, 907	27, 085	24, 853
Indiana.....	8, 859	11, 299	15, 117	14, 939	12, 340	12, 284	12, 874	11, 912
Iowa.....	163	199	303	221	140	196	185	187
Kentucky.....	183	291	343	316	424	435	460	420
Maryland.....	658	683	763	804	1, 780	1, 593	1, 592	1, 536
Massachusetts.....	9, 774	11, 405	15, 162	15, 451	18, 369	17, 307	16, 822	15, 994
Michigan.....	1, 436	1, 842	2, 221	2, 256	3, 722	3, 366	2, 903	3, 178
Minnesota.....	657	712	1, 299	1, 535	879	799	1, 039	971
Missouri.....	3, 193	3, 752	4, 718	4, 441	5, 155	5, 356	5, 030	4, 802
New Hampshire.....	103	136	154	170	279	271	259	255
New Jersey.....	10, 015	10, 898	14, 476	15, 174	20, 513	18, 690	17, 092	16, 345
New York.....	13, 500	15, 788	20, 700	18, 997	25, 399	23, 948	23, 155	21, 519
North Carolina.....	24	27	29	28	32	32	41	39
Ohio.....	14, 932	18, 848	23, 407	23, 335	21, 085	20, 453	19, 170	18, 685
Oklahoma.....	67	76	93	104	75	57	71	77
Oregon.....	26	30	43	34	43	43	36	32
Pennsylvania.....	15, 599	16, 307	19, 493	19, 253	28, 450	26, 447	26, 788	25, 859
Rhode Island.....	713	807	1, 142	1, 060	1, 195	1, 054	1, 140	1, 082
Tennessee.....	76	102	124	110	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Texas.....	99	136	189	183	116	116	162	173
Washington.....	83	73	93	96	150	149	157	134
West Virginia.....	266	256	380	331	438	453	395	325
Wisconsin.....	3, 516	3, 864	6, 042	5, 237	5, 185	4, 935	5, 344	4, 805

<sup>1</sup> See secs. 5, p. 4, and 13, p. 8. The 630 establishments canvassed with the standard schedule reported wage earners, by months, as follows:

January.....	104, 008	May.....	106, 389	September.....	148, 068
February.....	102, 309	June.....	113, 756	October.....	154, 107
March.....	99, 688	July.....	122, 520	November.....	151, 527
April.....	101, 646	August.....	136, 163	December.....	145, 314

<sup>2</sup> Withheld to avoid disclosing data for individual establishments.

## ELEVATORS AND ELEVATOR EQUIPMENT

### FOUNDRY AND MACHINE-SHOP PRODUCTS NOT ELSEWHERE CLASSIFIED

[Preliminary reports for these industries were issued on May 18, 1934, and Nov. 24, 1934, respectively]

**Description of the industries.**—The establishments classified in the "Elevators and elevator equipment" industry are engaged primarily in the manufacture of passenger elevators, freight elevators, sidewalk lifts, dumb-waiters, escalators, and parts and accessories. At censuses prior to that for 1933, the manufacture of elevators and elevator equipment was included in the "Foundry and machine-shop products not elsewhere classified" industry. Comparative figures for 1931, for the United States as a whole, have, however, been assembled for presentation in this report.

The "Foundry and machine-shop products not elsewhere classified" industry, as constituted for census purposes, embraces boiler shops, foundries, plants properly designated as "machine shops," and establishments engaged in the manufacture of those classes of machinery and other metal products that have not been assigned to specific industry classifications. It does not include the operation of steel foundries nor of boiler-shop, foundry, and machine-shop departments of establishments engaged primarily in the manufacture of specific classes of products assigned to other industries. (The foundry and machine-shop departments of establishments manufacturing nonferrous-metal commodities are assigned to the "Aluminum products" industry or the "Nonferrous-metal alloys; nonferrous-metal products, except aluminum, not elsewhere classified" industry, as the case may be.)

The statement below lists the classes of establishments assigned to this industry and gives the numbers reporting for the last 4 census years. Group (A) comprises shops engaged primarily in the manufacture of such products as industrial boilers, tanks, and smokestacks, from boiler plate. The foundries assigned to group (B) make malleable and gray-iron castings for sale and on a custom basis, but do not machine them. The establishments in the other three groups usually operate their own foundries. Those in group (C)—"machine shops," in the strict sense of the term—are equipped for doing a general line of metal working, consisting mainly of custom and repair work. Group (D) comprises plants manufacturing general machine-shop products, such as ball and roller bearings, parts and attachments for machinery, and other metal products not specifically assigned to separate industry classifications. The last group (E) embraces establishments manufacturing various classes of machinery not belonging to specific industry classifications. Several of these lines of manufacture are of considerable magnitude and constitute fairly well defined groups.

Class	1933	1931	1929	1927
Total number of establishments.....	6,081	7,221	8,605	8,380
(A) Boiler shops.....	292	256	521	306
(B) Foundries not operated in connection with machine shops or factories.....	1,078	1,053	1,296	1,252
(C) Machine shops—establishments engaged primarily in custom and repair work.....	936	1,021	6,788	6,822
(D) Establishments engaged primarily in the manufacture of general machine-shop products (not including machinery).....	1,927	1,893		
(E) Establishments engaged primarily in the manufacture of machinery.....	1,848	2,998		

**Comparison with earlier years.**—Manufacturers of elevators and elevator equipment and of refrigerating and ice-making machinery (other than mechanical refrigerators) were classified in the "Foundry and machine-shop products" industry in former censuses. In the current census, however, the manufacture of elevators and elevator equipment is given a separate industry classification, and that of refrigerating and ice-making machinery has been included in the "Refrigerators and refrigerating and ice-making apparatus" industry. Two sets of figures for 1931—one comparable with earlier years and the other (in italics) adjusted for comparison with 1933—are therefore given in table 1 for "Foundry and machine-shop products."

The apparent decrease in group (E) between 1931 and 1933, as shown in the above statement, is accounted for in part by the transfer of certain establishments from this group to group (D). These establishments made machinery as their principal class of products in 1931, but in 1933 were engaged primarily in the manufacture of general machine-shop products.)

**Detailed statistics of products.**—Table 3, page 554, shows the values of the major classes of products made in 1929, 1931, and 1933, so far as they were separately reported by the manufacturers. The total output of the principal classes of machinery, by all industries in which manufactured, is given in the table beginning on page 525. No data for machinery made for installation in the plants in which manufactured are included in either table.

**Valves, faucets, and fittings.**—Data for the commodities belonging to this group were called for on the schedules for the five industries which produce the bulk of them; namely, (1) "Plumbers' supplies, not including pipe or vitreous-china sanitary ware"; (2) "Nonferrous-metal alloys; nonferrous-metal products, except aluminum, not elsewhere classified"; (3) "Cast-iron pipe and fittings"; (4) "Foundry and machine-shop products not elsewhere classified"; and (5) "Steam and hot-water heating apparatus and steam fittings." The figures in table 4 include data for the production of valves, etc., specifically reported in certain cases by manufacturers in industries other than the five named, but they do not include data for the production by some manufacturers in the "Plumbers' supplies, not including pipe or vitreous-china sanitary ware" industry who failed to distribute their figures according to the classification on the schedule but reported their entire output as "Other plumbers' brass goods." Furthermore, the figures for fittings may include data for some valves and faucets that were not reported separately.

**Custom and repair work.**—The value of products and of work done reported by the establishments that failed to supply detailed data on production and receipts is included in the "Amount received for custom work, processing iron and steel, and machine-shop repair work" (the final item in table 3). The custom work covers boiler-shop products, castings, machinery, and miscellaneous machine-shop products made for the individual customer.

**Extent of coverage.**—The 1933 coverage of the establishments reporting in the "Foundry and machine-shop products" industry for 1931 was nearly complete. Of the 7,221 such establishments, 270 failed to supply any information in regard to their status (active, idle, etc.) or their activities in 1933, but these establishments accounted for less than 1 percent of the total number of wage earners and of the total value of products reported for the industry for 1931.

TABLE 1.—SUMMARY BY STATES: 1933 AND 1931

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1</sup>	Number of wage earners (average for the year)	Salaries <sup>1</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>2</sup>
Thousands of dollars. (See sec. 25, p. 13)								
<b>ELEVATORS AND ELEVATOR EQUIPMENT</b>								
<i>United States</i>								
1933.....	90	3 1,013	3,078	1,507	3,044	5,669	11,380	5,711
1931.....	94	( <sup>4</sup> )	4,516	( <sup>4</sup> )	4,180	13,119	26,317	13,193
<i>States, 1933</i>								
California.....	7	9	45	8	56	61	185	124
Massachusetts.....	8	39	75	70	96	158	384	226
New Jersey.....	7	205	598	277	551	1,298	2,467	1,169
Ohio.....	9	81	131	122	172	589	1,150	561
Pennsylvania.....	13	63	114	82	110	139	393	254
Wisconsin.....	3	15	34	24	40	113	211	98
Other States <sup>5</sup> .....	43	611	2,081	924	2,020	3,311	6,500	3,278
<b>FOUNDRY AND MACHINE-SHOP PRODUCTS NOT ELSEWHERE CLASSIFIED</b>								
<i>United States</i>								
1933.....	6,061	43,739	216,439	73,027	201,940	287,608	788,195	500,587
A. Boiler shops <sup>7</sup> .....	292	2,333	9,895	3,678	9,094	23,481	45,896	22,386
B. Foundries <sup>7</sup> .....	1,078	4,708	59,321	7,728	49,414	43,543	142,722	99,179
C. Machine shops—establishments doing custom and repair work <sup>7</sup> .....	936	1,352	6,845	2,070	7,395	7,682	22,443	14,762
D. Establishments making products other than machinery for sale <sup>7</sup> .....	1,927	13,312	63,629	23,035	58,521	96,353	249,904	153,551
E. Establishments making machinery for sale <sup>7</sup> .....	1,848	22,034	76,839	36,516	77,517	116,550	327,259	210,709
1931 <sup>8</sup> .....	7,091	( <sup>4</sup> )	277,029	( <sup>4</sup> )	320,601	432,621	1,225,551	799,331
1931 <sup>9</sup> .....	7,221	( <sup>4</sup> )	284,909	( <sup>4</sup> )	328,459	452,551	1,266,619	814,068
1929.....	8,605	87,249	454,441	247,857	697,509	1,038,066	2,791,462	1,753,396
1927.....	8,095	81,228	398,672	213,249	590,924	878,771	2,268,653	1,389,882
<i>States</i>								
Alabama:								
1933.....	47	158	1,452	230	1,021	1,774	4,440	2,666
1931.....	53	( <sup>4</sup> )	1,780	( <sup>4</sup> )	1,698	3,042	6,714	3,673
Arizona:								
1933.....	7	4	44	2	48	53	156	103
1931.....	8	( <sup>4</sup> )	94	( <sup>4</sup> )	123	105	378	273
Arkansas:								
1933.....	22	49	279	87	191	290	788	498
1931.....	22	( <sup>4</sup> )	271	( <sup>4</sup> )	267	355	1,064	709

For footnotes, see end of table.

TABLE 1.—SUMMARY BY STATES: 1933 AND 1931—Continued

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1</sup>	Number of wage earners (average for the year)	Salaries <sup>1</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>1</sup>
<i>States—Continued</i>								
California:								
1933.....	457	1,644	6,360	2,708	7,040	10,610	28,805	18,189
1931.....	520	( <sup>1</sup> )	7,884	( <sup>1</sup> )	11,647	16,493	43,753	27,231
Colorado:								
1933.....	56	175	847	238	600	1,111	3,476	2,364
1931.....	63	( <sup>1</sup> )	1,082	( <sup>1</sup> )	1,163	1,894	5,181	3,237
Connecticut:								
1933.....	140	1,622	9,940	3,282	9,118	10,455	34,272	23,817
1931.....	159	( <sup>1</sup> )	11,904	( <sup>1</sup> )	13,185	13,222	46,727	33,506
Delaware:								
1933.....	17	114	894	223	818	1,096	2,568	1,472
1931.....	18	( <sup>1</sup> )	1,037	( <sup>1</sup> )	1,202	1,861	3,044	1,783
District of Columbia:								
1933.....	3	8	43	16	67	67	172	115
1931.....	6	( <sup>1</sup> )	74	( <sup>1</sup> )	133	112	338	226
Florida:								
1933.....	31	76	277	116	224	340	875	536
1931.....	29	( <sup>1</sup> )	307	( <sup>1</sup> )	311	488	1,175	687
Georgia:								
1933.....	56	234	1,383	334	956	1,449	3,640	2,191
1931.....	63	( <sup>1</sup> )	1,880	( <sup>1</sup> )	1,454	2,232	5,279	3,047
Idaho:								
1933.....	9	15	81	22	93	116	298	183
1931.....	9	( <sup>1</sup> )	73	( <sup>1</sup> )	113	103	288	185
Illinois:								
1933.....	561	4,438	19,936	7,211	19,541	30,694	79,267	48,573
1931.....	683	( <sup>1</sup> )	26,250	( <sup>1</sup> )	31,625	46,834	132,718	85,884
Indiana:								
1933.....	224	2,015	11,833	3,392	9,595	15,923	42,288	26,365
1931.....	267	( <sup>1</sup> )	14,494	( <sup>1</sup> )	15,267	21,936	63,768	41,832
Iowa:								
1933.....	91	560	2,244	745	1,787	3,632	8,331	5,199
1931.....	105	( <sup>1</sup> )	2,886	( <sup>1</sup> )	3,350	5,778	14,255	8,476
Kansas:								
1933.....	50	194	1,132	302	940	1,641	4,360	2,719
1931.....	52	( <sup>1</sup> )	1,466	( <sup>1</sup> )	1,524	2,204	5,610	3,406
Kentucky:								
1933.....	48	281	1,361	360	1,195	2,134	5,983	2,949
1931.....	61	( <sup>1</sup> )	1,989	( <sup>1</sup> )	2,028	3,166	7,871	4,706
Louisiana:								
1933.....	51	157	757	273	699	978	2,519	1,541
1931.....	48	( <sup>1</sup> )	863	( <sup>1</sup> )	984	1,186	3,481	2,295
Maine:								
1933.....	30	82	541	137	515	322	1,112	790
1931.....	29	( <sup>1</sup> )	857	( <sup>1</sup> )	913	758	2,316	1,558
Maryland:								
1933.....	75	543	2,152	941	1,883	3,147	7,897	4,750
1931.....	90	( <sup>1</sup> )	3,759	( <sup>1</sup> )	3,678	7,725	16,643	9,917
Massachusetts:								
1933.....	335	2,217	11,022	3,694	12,085	11,044	38,524	27,481
1931.....	414	( <sup>1</sup> )	14,748	( <sup>1</sup> )	18,842	17,806	60,143	42,337
Michigan:								
1933.....	344	2,871	25,970	4,818	24,860	26,210	90,189	63,979
1931.....	401	( <sup>1</sup> )	29,934	( <sup>1</sup> )	34,046	33,023	114,186	81,163
Minnesota:								
1933.....	115	562	2,267	894	2,075	3,267	8,572	5,305
1931.....	150	( <sup>1</sup> )	3,706	( <sup>1</sup> )	4,544	7,159	20,572	13,413
Mississippi:								
1933.....	16	27	142	46	113	119	365	245
1931.....	20	( <sup>1</sup> )	175	( <sup>1</sup> )	219	117	498	381
Missouri:								
1933.....	173	1,121	4,238	1,795	3,921	5,711	16,383	10,672
1931.....	219	( <sup>1</sup> )	5,060	( <sup>1</sup> )	6,134	9,415	26,144	16,729
Montana:								
1933.....	11	36	143	67	154	140	430	291
1931.....	10	( <sup>1</sup> )	181	( <sup>1</sup> )	265	280	687	406
Nebraska:								
1933.....	21	77	326	124	323	484	1,343	859
1931.....	30	( <sup>1</sup> )	429	( <sup>1</sup> )	603	1,124	3,128	2,004
New Hampshire:								
1933.....	28	136	955	223	839	740	2,839	2,099
1931.....	31	( <sup>1</sup> )	1,316	( <sup>1</sup> )	1,367	984	3,561	2,577

For footnotes, see end of table.

TABLE 1.—SUMMARY BY STATES: 1933 AND 1931—Continued

[See sec. 26, p. 13]

States—Continued	Number of establishments	Number of salaried employees <sup>1</sup>	Number of wage earners (average for the year)	Salaries <sup>1</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>2</sup>
New Jersey:								
1933.....	243	2,421	9,810	4,280	10,573	12,789	38,170	25,382
1931.....	206	( <sup>4</sup> )	14,296	( <sup>4</sup> )	18,613	22,392	66,618	44,226
New York:								
1933.....	627	4,438	20,222	7,472	20,658	25,459	77,643	52,184
1931.....	778	( <sup>4</sup> )	30,362	( <sup>4</sup> )	35,878	43,399	136,021	92,622
North Carolina:								
1933.....	46	74	501	104	405	440	1,255	816
1931.....	48	( <sup>4</sup> )	555	( <sup>4</sup> )	535	437	1,387	949
North Dakota:								
1933.....	4	11	51	25	62	107	297	190
1931.....	5	( <sup>4</sup> )	63	( <sup>4</sup> )	87	208	386	178
Ohio:								
1933.....	615	5,859	27,931	9,427	25,764	43,607	106,782	63,175
1931.....	725	( <sup>4</sup> )	36,704	( <sup>4</sup> )	42,594	67,516	179,014	111,498
Oklahoma:								
1933.....	61	207	822	355	775	1,621	3,909	2,288
1931.....	63	( <sup>4</sup> )	869	( <sup>4</sup> )	994	1,681	4,053	2,372
Oregon:								
1933.....	64	195	863	306	1,016	1,276	3,222	1,946
1931.....	80	( <sup>4</sup> )	1,185	( <sup>4</sup> )	1,689	2,052	5,604	3,562
Pennsylvania:								
1933.....	662	6,252	26,997	10,490	22,583	38,041	91,539	53,498
1931.....	811	( <sup>4</sup> )	37,855	( <sup>4</sup> )	41,294	63,017	155,662	92,645
Rhode Island:								
1933.....	30	142	1,181	252	1,143	1,359	3,816	2,457
1931.....	36	( <sup>4</sup> )	1,428	( <sup>4</sup> )	1,212	2,368	5,616	3,243
South Carolina:								
1933.....	9	27	124	38	98	101	292	191
1931.....	12	( <sup>4</sup> )	160	( <sup>4</sup> )	160	80	289	208
Tennessee:								
1933.....	54	273	1,904	475	1,286	2,496	5,815	3,819
1931.....	56	( <sup>4</sup> )	2,091	( <sup>4</sup> )	1,861	3,300	7,989	4,688
Texas:								
1933.....	180	765	4,175	1,333	4,026	5,401	15,893	10,492
1931.....	166	( <sup>4</sup> )	4,187	( <sup>4</sup> )	4,400	5,648	16,213	10,565
Utah:								
1933.....	10	41	233	67	229	407	938	531
1931.....	17	( <sup>4</sup> )	261	( <sup>4</sup> )	284	557	1,279	722
Vermont:								
1933.....	18	46	244	78	181	202	634	432
1931.....	22	( <sup>4</sup> )	483	( <sup>4</sup> )	537	440	1,562	1,123
Virginia:								
1933.....	66	134	800	205	699	937	2,505	1,568
1931.....	52	( <sup>4</sup> )	792	( <sup>4</sup> )	892	1,198	3,121	1,923
Washington:								
1933.....	107	329	1,265	496	1,362	1,684	4,537	2,853
1931.....	154	( <sup>4</sup> )	1,685	( <sup>4</sup> )	2,248	2,358	6,611	4,253
West Virginia:								
1933.....	43	174	986	353	903	1,877	3,731	1,855
1931.....	55	( <sup>4</sup> )	1,084	( <sup>4</sup> )	1,247	2,047	4,429	2,382
Wisconsin:								
1933.....	221	2,890	11,491	4,943	9,268	15,920	37,086	21,167
1931.....	265	( <sup>4</sup> )	16,258	( <sup>4</sup> )	17,122	34,249	80,248	45,999
Other States: <sup>10</sup>								
1933.....	10	25	222	40	218	345	637	293
1931.....	13	( <sup>4</sup> )	92	( <sup>4</sup> )	139	202	448	246

<sup>1</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations, and therefore the figures for the "Foundry and machine-shop" industry are not strictly comparable with the corresponding ones for 1929 and 1927 in which no such data are included. No data for employees of central administrative offices are included for any year.

<sup>2</sup> Value of products less cost of materials, fuel, and purchased electric energy. See sec. 20, p. 11.

<sup>3</sup> Not including 41 proprietors and firm members.

<sup>4</sup> No data.

<sup>5</sup> Colo., 1 establishment; Conn., 1; D. C., 1; Ill., 6; Ind., 2; Iowa, 1; Ky., 2; Md., 4; Mich., 2; Minn., 2; Mo., 3; N. Y., 12; N. C., 1; Oreg., 1; Tenn., 1; Va., 3.

<sup>6</sup> Not including proprietors and firm members, as follows: 1933, 3,352; 1931, no data; 1929, 3,687; 1927, 4,164.

<sup>7</sup> See third paragraph of text, p. 549.

<sup>8</sup> Adjusted for comparison with 1933. (See "Comparison with earlier years," p. 550.)

<sup>9</sup> Comparable with 1929 and 1927. (See "Comparison with earlier years," p. 550.)

<sup>10</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Nev., 1, 4; N. Mex., 2, 3; S. Dak., 4, 5; Wyo., 3, 1.

**TABLE 2.—ELEVATORS AND ELEVATOR EQUIPMENT—PRODUCTION, BY KIND, NUMBER, AND VALUE, FOR THE UNITED STATES: 1933 AND 1931**

	1933	1931
1. "Elevators and elevator equipment" industry, all products, total.....	\$11,379,903	\$26,316,894
2. Elevators and elevator equipment and parts.....	10,282,994	24,477,586
3. Other products (not normally belonging to the industry).....	86,454	1,839,308
4. Receipts for contract and repair work.....	1,010,455	
5. Elevators and elevator equipment and parts, made as secondary products in other industries.....	152,752	435,357
Elevators and elevator equipment and parts, aggregate value (2 and 5).....	\$10,435,746	\$24,912,943
Elevators:		
Freight, total value.....	\$3,254,846	\$5,905,845
Number reported:		
Number.....	1,424	2,251
Value.....	\$2,403,026	\$5,043,723
Number not reported, value.....	\$851,820	\$862,122
Passenger, total value.....	\$5,067,504	\$14,129,002
Number reported:		
Number.....	1,279	3,314
Value.....	\$4,756,137	\$13,961,256
Number not reported, value.....	\$311,367	\$167,746
Parts and accessories.....	\$2,113,396	\$4,878,096

**TABLE 3.—FOUNDRY AND MACHINE-SHOP PRODUCTS—PRODUCTION, BY KIND, QUANTITY, AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929**

	QUANTITY			VALUE IN THOUSANDS OF DOLLARS (See sec. 25, p. 13)		
	1933	1931	1929	1933	1931	1929
1. "Foundry and machine-shop products not elsewhere classified" industry, all products, total.....				788,195	1,266,619	2,791,492
2. Boiler-shop, foundry, and machine-shop products not elsewhere classified.....				761,712	1,208,822	2,653,571
3. Other products (not normally belonging to the industry).....				36,483	57,797	137,891
4. Boiler-shop, foundry, and machine-shop products classified in this industry, made as secondary products in other industries.....				103,386	153,597	316,270
Boiler-shop, foundry, and machine-shop products (boilers, smokestacks, tanks, castings, machinery, ball and roller bearings, etc.), aggregate (2 and 4).....				855,098	1,362,418	2,969,841
Boiler-shop products, total.....				41,221	72,062	157,143
Made in the industry.....				38,138	64,916	147,658
Made in other industries <sup>1</sup> .....				3,083	7,146	9,485
Boilers (industrial), total.....				7,378	16,478	34,722
Number reported.....	5,724	14,449	29,477	5,829	16,032	34,003
Number not reported.....				1,550	446	719
Smokestacks, total.....				1,446	1,771	3,323
Number reported.....	3,358	4,570	12,341	552	1,116	3,794
Number not reported.....				893	656	29
Tanks (iron and steel), total.....				23,514	36,843	70,785
	<i>Thou-</i>	<i>Thou-</i>	<i>Thou-</i>			
	<i>sands</i>	<i>sands</i>	<i>sands</i>			
Number reported.....	109	278	444	12,701	28,203	63,501
Number not reported.....				10,813	8,640	7,284
Other boiler-shop products and those not distributed as to kind.....				8,883	16,969	47,812
Foundry products (castings made for sale as such), <sup>2</sup> total.....				163,137	222,840	498,003
Made in the industry.....				143,319	202,602	439,163
Made in other industries <sup>1</sup> .....				19,818	20,238	58,839

For footnotes, see end of table.

TABLE 3.—FOUNDRY AND MACHINE-SHOP PRODUCTS—PRODUCTION, BY KIND, QUANTITY, AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929—Con.

	QUANTITY			VALUE IN THOUSANDS OF DOLLARS (See sec. 25, p. 13)		
	1933	1931	1929	1933	1931	1929
Boiler-shop, foundry, etc., products—Contd.	<i>M short tons</i>	<i>M short tons</i>	<i>M short tons</i>			
Foundry products—Continued.						
Gray-iron, including semi-steel.....	1,904	2,390	5,080	120,636	174,197	375,508
Malleable-iron.....	263	299	735	26,603	35,294	101,109
Rolls for rolling mills:						
Gray-iron.....	75	66	126	8,603	7,935	14,533
Steel.....	<i>M long tons</i> 27	<i>M long tons</i> 32	<i>M long tons</i> 46			
Castings not reported by kind.....	( <sup>3</sup> )			4,481	5,413	6,853
Machinery, total.....				2,814		
				297,580	563,251	1,184,769
Made in the industry.....				275,614	506,755	1,093,171
Made in other industries <sup>1</sup> .....				21,966	56,496	91,698
Reported by specified classes <sup>4</sup> .....				251,699	505,498	1,026,068
Machinery other than specified classes.....				45,881	87,752	158,701
Machine parts and attachments, total.....				48,445	52,193	69,580
Made in the industry.....				45,943	49,324	66,215
Made in other industries <sup>1</sup> .....				2,502	2,869	3,365
Other machine-shop products for which data were called for separately, total.....				150,058	174,159	394,611
Made in the industry.....				101,639	127,081	277,106
Made in other industries <sup>1</sup> .....				48,419	47,079	117,505
Ball bearings and parts.....				21,154	28,310	66,881
Roller bearings and parts.....				19,377	22,219	53,153
Cars and trucks, industrial, <sup>5</sup> hand, total.....				1,749	4,002	17,919
Number reported.....	<i>Thous.</i> 57	<i>Thous.</i> 82	<i>Thous.</i> 173	1,084	2,261	9,682
Number not reported.....				665	1,742	8,236
Cars and trucks, mining, total.....				2,181	3,369	8,967
Number reported.....	<i>Number</i> 5,214	<i>Number</i> 11,959	<i>Number</i> 26,614	643	1,961	5,004
Number not reported.....				1,538	1,409	3,963
Flexible metallic tubing and hose.....				1,210	1,618	4,165
Gears, except motor-vehicle, total.....				9,056	14,143	30,326
Quantity reported.....	<i>Short tons</i> 5,099	<i>Short tons</i> 14,287	<i>Short tons</i> 39,609	2,923	3,937	16,170
Quantity not reported.....				6,133	10,206	14,155
Industrial furnaces.....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	1,380	3,267	5,502
Industrial oil burners, total.....				1,109	2,235	4,306
Number reported.....	<i>Number</i> 9,648	<i>Number</i> 12,088	<i>Number</i>	763	1,290	
Number not reported.....				346	945	4,306
Piston rings made for sale.....	<i>Thous.</i> 160,318	<i>Thous.</i> 173,896	<i>Thous.</i> 281,540	11,419	13,115	20,138
Water softeners, total.....			( <sup>3</sup> )	989	2,284	( <sup>3</sup> )
Number reported.....	<i>Number</i> 1,885	<i>Number</i> 7,689	<i>Number</i> ( <sup>3</sup> )	347	1,814	( <sup>3</sup> )
Number not reported.....				642	470	
Flat-bright cold-rolled strip steel, total.....	<i>M long tons</i> 405	<i>M long tons</i> 341	<i>M long tons</i> 953	35,410	34,017	83,647
Widths 6 inches and narrower.....	213	166	348	21,446	19,155	39,537
Widths over 6 inches but under 12 inches.....	87	76	221	6,844	7,250	18,335
Widths 12 inches and wider but under 24 inches (not including motor-vehicle fender steel).....	68	50	282	4,846	4,182	18,808
Fender steel (for motor-vehicle fenders).....	38	50	101	2,274	3,430	6,967
Cold-finished steel bars, total.....				26,027	24,833	71,756
Rounds, 2 inches in diameter and smaller, total.....				12,482	10,008	35,914
Quantity reported.....	190	140	372	12,482	10,008	31,171
Quantity not reported.....						4,743

For footnotes, see end of table.

TABLE 3.—FOUNDRY AND MACHINE-SHOP PRODUCTS—PRODUCTION, BY KIND, QUANTITY, AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929—CON.

	QUANTITY			VALUE IN THOUSANDS OF DOLLARS (See sec. 25, p. 13)		
	1933	1931	1929	1933	1931	1929
Boiler-shop, foundry, etc., products—Contd.						
Other machine-shop products—Continued.						
Cold-finished steel bars—Contd.						
Rounds, larger than 2 inches in diameter	<i>M long tons</i>	<i>M long tons</i>	<i>M long tons</i>	5,737	5,873	10,974
Quantity reported	86	82	120	5,737	5,873	8,001
Quantity not reported						2,374
Rounds, not reported as to size, total				1,620	3,380	5,072
Quantity reported	12	35		785	2,683	
Quantity not reported				885	698	5,072
Shapes (square, hexagonal, and flat), total				6,188	5,572	19,795
Quantity reported	85	73	237	6,188	5,572	18,515
Quantity not reported						1,281
Valves, faucets, and fittings <sup>1</sup>				18,998	20,747	27,852
Miscellaneous machine-shop products for which data were not called for separately, <sup>2</sup> total				113,551	213,246	480,769
Made in the industry				105,952	103,478	445,291
Made in other industries				7,599	19,769	35,478
Products reported by kind (barn equipment, brewery equipment, carburetors, jacks, pulleys, railroad appliances, sprinkler systems, etc.)				90,034	184,019	436,950
Items reported as—						
Machine-shop work				14,259	14,501	24,644
General jobbing work				3,314	5,917	10,610
Fabrication of pipe, etc.				3,622	5,477	6,100
Rebuilt and reconditioned machinery				1,812	2,696	2,281
Experimental work				510	637	175
Amount received for custom work, processing iron and steel, and machine-shop repair work				41,107	64,666	184,967

<sup>1</sup> Value of specified class of products separately reported from other industries. Does not represent total value of this class of products made in other industries, since such products were not always separately reported.

<sup>2</sup> For steel castings, see report for "Steel-works and rolling-mill products"; for nonferrous castings, see report for "Nonferrous-metal alloys; nonferrous-metal products, except aluminum, not elsewhere classified."

<sup>3</sup> Data incomplete.

<sup>4</sup> Includes dredging, excavating, road-building, and metal-working machinery, etc., and other industrial machinery except farm implements, business machines, transportation equipment, textile machinery, machine tools, engines, turbines, tractors, pumps, etc., and electrical machinery. For total production of all machinery, by classes, so far as separately reported, see table, "Machinery," p. 525.

<sup>5</sup> For production of motorized industrial cars and trucks, see table, "Machinery," p. 525.

<sup>6</sup> Production in "Foundry and machine-shop products" industry only. For total production, see table 4.

<sup>7</sup> The figures for this group of items are the sums of the data for items entered on the schedule under "All other products (specify kind)." These products were specified in many but not in all cases.

TABLE 4.—VALVES, FAUCETS, AND FITTINGS, NOT INCLUDING CAST-IRON SOIL AND PLUMBERS' PIPE FITTINGS—PRODUCTION, BY KIND AND VALUE, FOR THE UNITED STATES: 1933 AND 1931

[This table covers the production of valves, faucets, and fittings in all industries, so far as separately reported to the Bureau of the Census. See "Valves, faucets, and fittings," p. 550]

	1933	1931
Valves, faucets, and fittings, not including cast-iron soil and plumbers' pipe fittings, total	\$53,231,995	\$88,933,311
Valves reported by kind of metal:		
Brass, bronze, and other nonferrous metals	16,388,113	24,452,340
Iron and steel	6,381,112	8,440,254
Valves not reported by kind of metal	932,404	14,489,304
Faucets reported separately	3,196,715	8,311,942
Fittings reported by kind of metal:		
Brass and bronze	4,283,218	6,980,345
Cast iron, not including soil and plumbers' pipe fittings	5,947,677	11,224,717
Malleable iron	8,795,783	9,281,572
Steel	2,733,029	3,043,958
Fittings not reported by kind of metal	4,573,944	2,708,879

TABLE 5.—FOUNDRY AND MACHINE-SHOP PRODUCTS—WAGE EARNERS, BY QUARTERS, BY STATES: 1933 AND 1931

[The average for the year (table 1) differs from the average of the quarterly figures below. (See fourth sentence, sec. 13, p. 8.) See sec. 26, p. 13]

	1933 <sup>1</sup>				1931 <sup>2</sup>			
	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.
United States.....	174,955	209,513	254,096	245,469	305,219	284,187	268,737	240,208
<i>States</i>								
Alabama.....	1,160	1,882	1,638	1,774	1,968	1,872	1,671	1,595
Arizona.....	39	39	47	50	117	100	70	80
Arkansas.....	242	254	362	300	270	292	270	245
California.....	5,428	5,876	7,399	7,190	8,379	7,924	7,161	6,275
Colorado.....	771	843	919	976	1,210	1,110	1,011	900
Connecticut.....	7,540	9,055	12,052	11,772	12,769	12,138	11,156	11,046
Delaware.....	700	771	1,019	1,154	1,087	1,158	966	939
District of Columbia.....	36	49	47	43	72	81	79	67
Florida.....	250	268	293	322	299	330	274	284
Georgia.....	1,083	1,421	1,595	1,564	1,929	1,971	1,865	1,617
Idaho.....	77	76	84	85	68	74	77	74
Illinois.....	16,202	18,724	24,065	22,855	28,396	26,652	24,932	23,145
Indiana.....	8,988	11,608	14,681	13,558	15,462	14,803	13,741	12,719
Iowa.....	1,502	2,136	2,610	2,521	3,342	2,888	2,719	2,370
Kansas.....	1,033	1,026	1,330	1,280	1,678	1,586	1,409	1,263
Kentucky.....	937	1,241	1,695	1,572	2,042	1,866	2,040	1,914
Louisiana.....	550	800	956	789	888	871	907	741
Maine.....	443	491	631	658	925	857	796	741
Maryland.....	1,821	2,205	2,448	2,273	3,953	3,916	3,651	3,047
Massachusetts.....	9,595	10,521	12,401	12,222	15,865	14,987	13,951	13,195
Michigan.....	20,304	26,731	32,208	27,129	35,384	31,543	27,081	25,253
Minnesota.....	1,953	2,230	2,443	2,559	4,039	3,804	3,432	3,306
Mississippi.....	117	129	167	151	189	179	178	160
Missouri.....	3,556	4,273	4,753	4,625	5,241	5,429	4,839	4,463
Montana.....	108	119	180	182	280	178	193	186
Nebraska.....	280	325	366	321	453	458	423	377
New Hampshire.....	829	853	1,015	1,173	1,545	1,368	1,156	1,055
New Jersey.....	8,202	9,398	11,180	11,557	15,732	14,653	12,943	12,503
New York.....	16,877	19,965	22,483	22,990	33,356	30,764	28,353	26,987
North Carolina.....	423	476	548	541	541	549	572	540
North Dakota.....	45	51	59	53	55	58	75	56
Ohio.....	21,326	27,029	33,023	32,617	40,808	38,094	34,596	30,759
Oklahoma.....	704	689	1,008	953	1,051	923	704	709
Oregon.....	674	853	1,059	921	1,283	1,320	1,039	891
Pennsylvania.....	22,758	25,827	30,534	30,023	41,282	37,926	35,422	33,822
Rhode Island.....	977	1,103	1,355	1,340	1,528	1,437	1,368	1,322
South Carolina.....	110	112	198	138	164	166	164	152
South Dakota.....	16	16	16	16	31	30	29	27
Tennessee.....	1,486	1,866	2,117	2,106	2,139	2,198	2,039	1,706
Texas.....	3,250	3,727	5,073	5,289	4,982	4,219	3,550	3,302
Utah.....	183	231	318	222	290	254	228	232
Vermont.....	232	256	260	254	526	470	485	415
Virginia.....	674	739	922	870	885	820	773	685
Washington.....	1,041	1,220	1,531	1,356	1,840	1,823	1,611	1,268
West Virginia.....	779	877	1,249	1,141	1,174	1,153	985	877
Wisconsin.....	9,110	11,405	13,611	13,179	17,816	16,671	15,019	14,447
Nevada.....								
New Mexico.....	184	197	208	240	63	72	60	58
Wyoming.....								

<sup>1</sup> See secs. 5, p. 4, and 13, p. 8. The 3,846 establishments canvassed with the standard schedule reported wage earners, by months, as follows:

January.....	172,221	May.....	181,603	September.....	239,703
February.....	172,800	June.....	196,796	October.....	237,207
March.....	163,851	July.....	212,454	November.....	231,074
April.....	170,658	August.....	231,077	December.....	231,613

<sup>2</sup> The United States totals, but not the State figures, have been adjusted for comparison with 1933. (See "Comparison with earlier years," p. 550.)

## ENGINES, TURBINES, TRACTORS, WATER WHEELS, AND WINDMILLS

[A preliminary report for this industry was issued on Sept. 7, 1934]

**Description of the industry.**—This industry embraces establishments whose products of chief value fall in any one of the following five classes: (1) Steam engines (other than locomotives) and turbines; (2) internal-combustion engines of all kinds; (3) tractors and traction engines; (4) water turbines and water wheels; (5) windmills. This report does not cover the production of engines built for installation in motor vehicles or in aircraft manufactured by the same establishments, nor the production of steam turbines which are made and installed as parts of turbine-driven blowers, pumps, locomotive headlights, etc., manufactured in the same plants. The values of traction and portable steam engines include the values of the boilers on which such engines are mounted. The value of steam boilers made for sale as separate units by establishments manufacturing engines or turbines as their products of chief value is included in that of "Other products (not normally belonging to the industry) and receipts for repair and experimental work" (table 2), but the value of steam boilers made in establishments classified in other industries is not included.

The term "carburetor engines," as used in this report, covers all internal-combustion engines in which the fuel vapor is mixed with air by means of either a carburetor of the ordinary type or a "mixing valve."

**Extent of coverage.**—The 1933 coverage of the establishments reporting in this industry for 1931 was practically complete. Of the 204 such establishments, 9 failed to supply any information as to their status (active, idle, etc.) or their activities in 1933, but these establishments accounted for only a fraction of 1 percent of the total number of wage earners and of the total value of products reported for this industry for 1933.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1</sup>	Number of wage earners (average for the year)	Salaries <sup>2</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>3</sup>
<i>Thousands of dollars.</i> (See sec. 25, p. 13)								
<i>United States</i>								
1933.....	177	6,133	23,535	10,362	23,584	40,464	91,081	50,567
1931.....	204	( <sup>4</sup> )	34,130	( <sup>4</sup> )	39,234	82,515	193,963	111,448
1929.....	214	11,320	62,702	29,091	100,850	206,472	465,858	259,386
1927.....	231	9,340	55,696	23,157	86,672	168,436	375,393	206,956
<i>States</i>								
California:								
1933.....	12	237	561	438	717	1,042	2,646	1,604
1931.....	14	( <sup>4</sup> )	867	( <sup>4</sup> )	1,314	1,865	4,918	3,053
Illinois:								
1933.....	20	1,404	6,439	2,415	6,751	13,547	27,448	13,900
1931.....	20	( <sup>4</sup> )	7,653	( <sup>4</sup> )	9,243	21,728	44,027	22,298
Indiana:								
1933.....	5	57	181	113	149	365	611	245
Iowa:								
1933.....	6	230	628	274	557	1,461	3,495	2,034
Maryland:								
1933.....	3	4	15	6	14	16	44	29
1931.....	3	( <sup>4</sup> )	8	( <sup>4</sup> )	12	9	41	32
Massachusetts:								
1933.....	4	21	49	36	60	65	181	115
1931.....	7	( <sup>4</sup> )	175	( <sup>4</sup> )	236	141	505	365
Michigan:								
1933.....	17	411	1,472	730	1,205	1,972	4,535	2,562
1931.....	19	( <sup>4</sup> )	3,721	( <sup>4</sup> )	4,114	6,718	14,421	7,703
Minnesota:								
1933.....	7	135	426	242	364	914	1,969	1,055
1931.....	7	( <sup>4</sup> )	352	( <sup>4</sup> )	432	362	1,922	1,061
Missouri:								
1933.....	5	94	284	193	215	176	667	481
1931.....	7	( <sup>4</sup> )	499	( <sup>4</sup> )	606	669	1,856	1,187
New York:								
1933.....	10	482	921	672	981	658	2,790	2,132
1931.....	11	( <sup>4</sup> )	1,040	( <sup>4</sup> )	1,412	1,606	5,656	4,050
Ohio:								
1933.....	23	597	1,760	1,150	1,810	4,806	8,878	4,072
1931.....	26	( <sup>4</sup> )	2,346	( <sup>4</sup> )	3,156	8,085	16,387	8,302
Pennsylvania:								
1933.....	15	661	3,008	1,123	2,577	3,663	8,040	4,877
1931.....	18	( <sup>4</sup> )	4,598	( <sup>4</sup> )	5,514	8,368	18,468	10,100
Wisconsin:								
1933.....	20	804	4,316	1,272	3,759	4,967	11,731	6,764
1931.....	22	( <sup>4</sup> )	7,109	( <sup>4</sup> )	5,205	16,305	39,967	23,652
Other States: <sup>5</sup>								
1933.....	30	996	3,475	1,698	4,425	6,812	18,008	11,196
1931.....	50	( <sup>4</sup> )	5,762	( <sup>4</sup> )	7,990	16,159	45,804	29,645

<sup>1</sup> Not including proprietors and firm members, as follows: 1933, 20; 1931, no data; 1929, 30; 1927, 38.

<sup>2</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations, and therefore are not strictly comparable with the corresponding figures for 1929 and 1927, in which such data are included. No data for employees of central administrative offices are included in the figures for any year.

<sup>3</sup> Value of products less cost of materials, fuel, and purchased electric energy. See sec. 20, p. 11.

<sup>4</sup> No data.

<sup>5</sup> Figures for 1931 included in those for "Other States" to avoid disclosing data for individual establishments.

<sup>6</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Connecticut, 8, 9; Indiana (1931), 6; Iowa (1931), 6; Kansas, 2, 2; Kentucky, 1, 1; Maine, 0, 1; Nebraska, 4, 4; New Hampshire, 0, 1; New Jersey, 6, 9; Oklahoma, 1, 2; Oregon, 0, 1; Rhode Island, 1, 0; Tennessee, 1, 1; Texas, 3, 2; Washington, 2, 4; West Virginia, 1, 1.

TABLE 2.—PRODUCTS, BY CLASS, TYPE, NUMBER, HORSEPOWER, AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929

CLASS AND TYPE	1933	1931	1929
1. "Engines, turbines, tractors, water wheels, and windmills" industry, all products, total value.....	\$91,030,819	\$193,962,805	\$405,857,934
2. Engines, turbines, tractors, water wheels, and windmills.....	49,356,275	129,413,468	351,105,935
3. Parts for sale as such.....	26,488,482	43,263,953	58,777,407
4. Other products (not normally belonging to the industry) and receipts for repair and experimental work.....	15,186,062	21,285,384	55,974,592
5. Engines, turbines, tractors, water wheels, and windmills made as secondary products in other industries.....	8,787,785	19,389,122	54,705,900
Engines, turbines, tractors, water wheels, and windmills, aggregate value (2 and 5).....	\$58,144,060	\$148,802,690	\$405,811,835
Steam engines and turbines, total value.....	\$8,442,807	\$14,893,425	\$32,458,833
Steam engines (reciprocating), total value.....	\$596,237	\$2,127,526	\$5,180,554
Reported by number and by horsepower:			
Number.....	79	534	1,528
Horsepower.....	11,546	79,723	179,577
Value.....	\$300,432	\$1,775,134	\$3,511,271
Not reported by number or by horsepower.....	\$295,805	\$352,392	\$1,669,283
Marine:			
Number.....	9	22	
Horsepower.....	5,775	17,050	
Value.....	\$160,855	\$493,495	
Other reciprocating steam engines (including traction), total value.....	\$435,382	\$1,634,031	(1)
Reported by number and by horsepower:			
Number.....	70	512	
Horsepower.....	5,771	62,673	
Value.....	\$139,577	\$1,281,639	
Not reported by number or by horsepower.....	\$295,805	\$352,392	
Steam turbines, total value.....	\$7,174,881	\$12,765,899	\$27,278,279
Reported by number and by horsepower:			
Number.....	942	1,653	3,320
Horsepower.....	855,829	1,586,893	3,218,206
Value.....	\$6,988,882	\$12,676,206	\$25,934,420
Not reported by number or by horsepower.....	\$235,999	\$89,693	\$1,343,859
Marine:			
Number.....	40	100	
Horsepower.....	186,329	657,488	
Value.....	\$1,504,784	\$4,339,091	(1)
Other than marine, <sup>2</sup> total value.....	\$5,670,097	\$8,426,808	
Reported by number and by horsepower:			
Number.....	902	1,553	
Horsepower.....	669,500	929,405	
Value.....	\$5,434,098	\$8,337,115	
Not reported by number or by horsepower.....	\$235,999	\$89,693	
Steam engines and steam turbines not reported according to type, value.....	\$671,689		
Internal-combustion engines (except tractors), total value.....	\$29,623,768	\$68,278,962	\$166,633,777
Injection engines—Compression-ignition (Diesel) and surface-ignition, total value.....	\$5,153,734	\$11,853,920	\$26,798,914
Reported by number and by horsepower:			
Number.....	1,144	1,473	3,588
Horsepower.....	139,331	264,037	485,327
Value.....	\$4,662,062	\$11,811,975	\$26,596,390
Not reported by number or by horsepower.....	\$491,672	\$41,945	\$202,524
Compression-ignition (Diesel):			
Marine:			
For direct connection to propeller shaft:			
Number.....	147	569	
Horsepower.....	27,515	104,813	(2)
Value.....	\$1,225,327	\$4,875,771	

For footnotes, see end of table.

TABLE 2.—PRODUCTS, BY CLASS, TYPE, NUMBER, HORSEPOWER, AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929—Continued

CLASS AND TYPE	1933	1931	1929
Engines, turbines, tractors, water wheels, and windmills—Continued.			
Internal-combustion engines (except tractors)—Contd.			
Injection engines—Compression-ignition (Diesel) and surface-ignition—Continued.			
Compression-ignition (Diesel)—Continued.			
Marine—Continued.			
For electric-drive and auxiliary use:			
Number.....	61	(3)	
Horsepower.....	13, 580		
Value.....	\$602, 437		
Other Diesel, <sup>1</sup> total value.....	\$2, 591, 073	\$6, 447, 547	
Reported by number and by horsepower:			
Number.....	628	718	
Horsepower.....	81, 633	143, 565	
Value.....	\$2, 514, 345	\$6, 405, 602	
Not reported by number or by horsepower.....	\$77, 328	\$41, 945	
Stationary, total value.....	\$2, 304, 965		
Reported by number and by horsepower:			(3)
Number.....	567	(3)	
Horsepower.....	66, 505		
Value.....	\$2, 227, 637		
Not reported by number or by horsepower.....	\$77, 328		
Tractor; <sup>4</sup> aircraft; railway Diesel-electric:			
Number.....	61		
Horsepower.....	15, 128		
Value.....	\$286, 708		
Surface-ignition (hot-spot, hot-bulb, etc.), all types: <sup>5</sup>			
Number.....	308	186	
Horsepower.....	16, 603	15, 659	
Value.....	\$319, 953	\$580, 602	
Injection engines not reported in detail, value.....	\$414, 344		
Carburetor engines (except tractors), <sup>7</sup> total value.....	\$24, 470, 034	\$56, 425, 042	\$139, 834, 863
Aircraft, radial and other, <sup>8</sup> total value.....	\$8, 719, 122	\$13, 779, 791	\$24, 966, 083
Reported by number and by horsepower:			
Number.....	1, 822	3, 794	6, 276
Horsepower.....	928, 625	1, 342, 535	(9)
Value.....	\$8, 651, 247	\$13, 779, 791	\$24, 966, 083
Not reported by number or by horsepower.....	\$67, 875		
Marine:			
Inboard, total value.....	\$948, 965	\$5, 527, 827	\$7, 111, 135
Reported by number and by horsepower:			
Number.....	2, 602	8, 485	10, 493
Horsepower.....	131, 441	535, 794	605, 104
Value.....	\$948, 965	\$5, 524, 395	\$6, 863, 530
Not reported by number or by horsepower.....		\$3, 432	\$247, 605
Outboard, total value.....	\$1, 249, 064	\$2, 351, 992	\$7, 852, 298
Reported by number and by horsepower:			
Number.....	17, 941	22, 161	58, 456
Horsepower.....	102, 756	203, 051	802, 791
Value.....	\$1, 249, 064	\$2, 152, 430	\$7, 852, 298
Not reported by number or by horsepower.....		\$199, 562	
Motor vehicle, total value.....	\$4, 147, 368	<sup>10</sup> \$15, 424, 164	\$50, 654, 294
Reported by number and by horsepower:			
Number.....	25, 302	115, 512	279, 611
Horsepower.....	1, 324, 845	6, 081, 793	10, 020, 629
Value.....	\$3, 208, 618	\$15, 424, 164	\$50, 654, 294
Not reported by number or by horsepower.....	\$938, 750		

<sup>1</sup>For footnotes, see end of table.

TABLE 2.—PRODUCTS, BY CLASS, TYPE, NUMBER, HORSEPOWER, AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929—Continued

CLASS AND TYPE	1933	1931	1929
Engines, turbines, tractors, water wheels, and windmills—Continued.			
Internal-combustion engines (except tractors)—Contd.			
Carburetor engines (except tractors)—Continued.			
Motor vehicle—Continued.			
Automobile (including taxicab and light truck and bus), <sup>6</sup> total value.....	\$3, 211, 445	\$12, 705, 857	
Reported by number and by horsepower:			
Number.....	21, 923	105, 027	
Horsepower.....	1, 056, 046	5, 331, 491	
Value.....	\$2, 272, 695	\$12, 705, 857	( <sup>3</sup> )
Not reported by number or by horsepower:			
Heavy truck and bus: <sup>8</sup>			
Number.....	3, 379	10, 485	
Horsepower.....	268, 799	750, 302	
Value.....	\$935, 923	\$2, 718, 307	
Carburetor engines other than aircraft, marine, and motor-vehicle, <sup>7</sup> total value.....	\$9, 405, 515	\$19, 341, 298	\$49, 251, 053
Reported by number and by horsepower:			
Number.....	78, 594	124, 050	312, 069
Horsepower.....	1, 531, 658	1, 725, 856	3, 913, 385
Value.....	\$7, 763, 877	\$19, 007, 387	\$47, 783, 962
Not reported by number or by horsepower:			
Tractor engines made for sale separately:			
Number.....	6, 613		
Horsepower.....	198, 528	( <sup>3</sup> )	( <sup>3</sup> )
Value.....	\$896, 357		
Railway-car:			
Number.....	329	1, 221	
Horsepower.....	8, 866	23, 704	
Value.....	\$129, 740	\$832, 257	
Industrial and farm, total value.....	\$4, 029, 922	\$12, 288, 982	
Portable:			
Number.....	47, 370	56, 743	
Horsepower.....	162, 835	412, 645	
Value.....	\$2, 033, 020	\$4, 613, 305	
Stationary:			
Number.....	6, 670	18, 420	
Horsepower.....	111, 819	240, 177	
Value.....	\$1, 996, 902	\$5, 730, 754	
Portable and stationary, not reported separately, total value.....		\$1, 944, 923	( <sup>3</sup> )
Reported by number and by horsepower:			
Number.....		17, 026	
Horsepower.....		110, 765	
Value.....		\$1, 611, 042	
Not reported by number or by horsepower:			
Other and not-specified types of carburetor engines, total value.....	\$4, 349, 496	\$6, 220, 029	
Reported by number and by horsepower:			
Number.....	17, 612	30, 649	
Horsepower.....	1, 049, 610	938, 575	
Value.....	\$2, 707, 858	\$6, 220, 029	
Not reported by number or by horsepower:			
Tractors (Diesel, Hesselman, and carburetor-type engines), total value.....	\$1, 641, 638		
Tractors (Diesel, Hesselman, and carburetor-type engines), total value.....	\$18, 004, 064	\$57, 526, 948	\$196, 952, 922
Wheel-type (farm, road, and other), total value.....	\$5, 018, 491	\$43, 600, 650	\$142, 305, 603
Reported by number and by horsepower:			
Number.....	8, 922	62, 976	196, 185
Horsepower.....	210, 937	1, 667, 282	4, 832, 277
Value.....	\$5, 018, 491	\$43, 004, 502	\$142, 305, 603
Not reported by number or by horsepower:		\$596, 058	

For footnotes, see end of table.

TABLE 2.—PRODUCTS, BY CLASS, TYPE, NUMBER, HORSEPOWER, AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929—Continued

CLASS AND TYPE	1933	1931	1929	
Engines, turbines, tractors, water wheels and windmills—Continued.				
Tractors (Diesel, Hesselman, and carburetor-type engines)—Continued.				
Wheel-type (farm, road, and other)—Continued.				
Wheel-type (farm, road, and other), except "all purpose," total value.....	\$2,190,181	\$28,037,607	(3)	
Reported by number and by horsepower:				
Number.....	2,390	37,396		
Horsepower <sup>12</sup> .....	85,987	1,149,831		
Value.....	\$2,190,181	\$27,605,647		
Not reported by number or by horsepower.....		\$431,960		
Wheel-type, "all purpose," total value.....	\$2,828,310	\$15,563,043		
Reported by number and by horsepower:				
Number.....	6,532	25,580		
Horsepower <sup>12</sup> .....	124,950	517,451		
Value.....	\$2,828,310	\$15,398,945		
Not reported by number or by horsepower.....		\$164,098		
Track-laying type (farm, road, and other), total value.....	\$12,460,496	\$13,305,886		\$53,676,569
Reported by number and by horsepower:				
Number.....	6,013	7,264		27,111
Horsepower <sup>12</sup> .....	237,852	294,218	857,975	
Value.....	\$12,460,496	\$13,244,202	\$53,676,569	
Not reported by number or by horsepower.....		\$61,684		
Tractors not specified as to kind, value.....	\$257,966			
Garden tractors, total value.....	\$267,111	\$620,412	\$970,750	
Reported by number and by horsepower:				
Number.....	1,095	2,933	6,277	
Horsepower <sup>12</sup> .....	3,464	7,353	16,723	
Value.....	\$191,109	\$620,412	\$970,750	
Not reported by number or by horsepower.....				
Water wheels and water turbines, total value.....	\$433,018	\$6,889,351	\$5,027,907	
Reported by number and by horsepower:				
Number.....	92	222	323	
Horsepower.....	37,898	952,312	802,534	
Value.....	\$397,933	\$6,889,351	\$3,860,469	
Not reported by number or by horsepower.....			\$1,167,438	
Engines and turbines not reported by class or type, value.....	\$190,514		\$674,985	
Windmills, total value.....	\$1,399,889	\$1,213,904	\$4,063,411	
Reported by number and by horsepower:				
Number.....	5,769	35,947	96,474	
Value.....	\$215,114	\$1,213,904	\$4,063,411	
Not reported by number or by horsepower.....				

<sup>1</sup> Withheld to avoid disclosing approximations of data for individual establishments.

<sup>2</sup> Not including small steam turbines made for installation in machines built by same establishments.

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

<sup>4</sup> Not including Diesel engines made for installation in tractors or other machines built by same establishments.

<sup>5</sup> Made for sale separately. Diesel tractor engines made and installed by same establishments were not reported separately.

<sup>6</sup> The figures for the several types of surface-ignition engines have been combined to avoid disclosing approximations of the output of individual establishments.

<sup>7</sup> See second paragraph of text, p. 558.

<sup>8</sup> See "Description of the industry," p. 558.

<sup>9</sup> Data incomplete.

<sup>10</sup> Revised.

<sup>11</sup> Includes a small amount of duplication, representing value of engines made in 1 plant and installed in tractors made in another plant under same ownership.

<sup>12</sup> Belt horsepower.

TABLE 3.—PRODUCTS, BY CLASS, TYPE, NUMBER, RATED CAPACITY IN DETAIL, AND VALUE, FOR THE UNITED STATES: 1933  
 [This table covers all engines, turbines, tractors, and water wheels for which rated capacity was reported in detail. For value of engines, etc., for which number and horsepower were not reported, see table 2.]

CLASS AND TYPE	TOTAL		NUMBER, BY HORSEPOWER CAPACITY, RATED OR NORMAL, NOT OVERLOAD										
	Num-ber	Rated horse-power capacity	Value	Less than 5	5 or more but under 10	10 or more but under 20	20 or more but under 50	50 or more but under 100	100 or more but under 200	200 or more but under 400	400 or more but under 1,000	1,000 or more but under 5,000	5,000 or over
Steam engines and turbines:													
Marine, reciprocating.....	9	5,775	\$160,885	8	9	10	19	5	9	7	6	2	
Other reciprocating steam engines.....	70	3,771	190,577					2	1	4	3		
Marine turbines (including auxiliary).....	40	183,330	1,504,784		48	113	197	125	97	112	69	7	16
Turbines other than marine <sup>1</sup> .....	902	669,800	5,484,088	77								61	13
Internal-combustion engines:													
Injection engines:													
Compression-ignition (Diesel):													
Marine, for direct connection to propeller shaft.....	147	27,515	1,225,327										
Marine, for electric-drive and auxiliary use.....	61	13,580	602,437										
Stationary.....	567	66,805	2,227,637		11	4	82	256	140	16	12	3	
Other Diesel (tractor, aircraft, railway Diesel-electric)	61	15,128	288,708										
Surface-ignition, all types.....	308	16,603	319,953			19	95	154	43	7	11		
Carburetor engines: <sup>2</sup>													
Aircraft, radial and other <sup>3</sup> .....	1,822	928,625	8,651,247										
Marine, inboard.....	2,602	131,441	948,965	43		1	15	15	18	329	1,445		
Marine, outboard.....	17,941	102,756	1,249,064	11,658	3,966	1,385	1,012	950	172	39	1		
Automobile (including taxicab and light truck and bus) <sup>3</sup> .....	21,923	1,056,046	2,272,695			4,845	10,360	6,274	444				
Heavy truck and bus <sup>3</sup> .....	3,379	283,799	935,923				560	2,493	827				
Tractor engines made for sale separately.....	6,613	193,523	896,357				5,910	683	9				
Railway-car.....	323	8,869	129,740	29	164	8	95	31		1	1		
Industrial and farm:													
Portable.....	47,370	162,835	2,083,020	44,477	233	144	1,044	1,231	246	4	2		
Stationary.....	6,670	111,819	1,966,902	3,550	695	505	1,566	177	167	7	2	1	
Other and not-specified types of carburetor engines.....	17,612	1,049,610	2,707,858	2,461	401	793	1,592	11,047	1,308	6		4	
Tractors (Diesel, Hesselman, and carburetor-type engines): <sup>4</sup>													
Wheel-type (farm, road, and other), except "all-purpose".....	2,390	85,987	2,190,181			14	2,193	183					
Wheel-type, "all-purpose".....	6,532	124,950	2,828,310		13	4,354	2,165						
Track-laying type (farm, road, and other).....	6,013	237,852	12,400,486			100	4,136	1,777					
Garden tractors.....	1,095	3,464	181,109	913	182								
Water wheels and water turbines.....	92	37,898	397,933	6	4		18	17	14	9	10	14	

<sup>1</sup>Not including small steam turbines made for installation in machines built by same establishments.

<sup>2</sup> See second paragraph of text, p. 558.

<sup>3</sup> See "Description of the Industry," p. 583.

<sup>4</sup> Ratings in belt horsepower.

TABLE 4.—WAGE EARNERS, BY QUARTERS, FOR SELECTED STATES: 1933 AND 1931

[The average for the year (table 1) differs from the average of the quarterly figures below. (See fourth sentence, sec. 26, p. 13.) See sec. 25, p. 13]

	1933 <sup>1</sup>				1931			
	March	June	September	December	March	June	September	December
United States.....	20,303	21,940	25,786	29,665	39,118	33,345	28,752	31,136
<i>States</i>								
California.....	458	514	623	691	1,087	885	623	767
Connecticut.....	1,274	1,424	1,651	1,971	1,265	1,205	1,176	1,191
Illinois.....	5,983	5,688	6,619	8,652	8,063	7,257	6,929	7,791
Indiana.....	140	182	184	185	682	437	226	344
Iowa.....	284	577	907	1,207	2,841	1,115	519	895
Maryland.....	13	16	17	15	8	8	8	6
Massachusetts.....	57	51	52	51	197	166	158	152
Michigan.....	1,342	1,540	1,601	1,448	4,440	4,013	3,156	2,575
Minnesota.....	317	411	434	510	390	380	266	385
Missouri.....	287	283	284	272	542	581	460	401
Nebraska.....	227	240	270	250	279	269	262	251
New Jersey.....	1,552	1,577	1,638	1,665	2,045	2,216	2,023	1,792
New York.....	832	840	972	1,129	1,214	933	899	940
Ohio.....	1,082	1,745	2,209	2,321	3,037	2,100	2,021	1,762
Pennsylvania.....	2,503	2,618	3,399	3,771	5,263	4,771	4,495	3,839
Texas.....	52	61	79	71	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Wisconsin.....	3,853	4,110	4,739	5,397	7,385	6,652	5,264	7,859

<sup>1</sup> See sec. 5, p. 4, and sec. 13, p. 8. The 75 establishments canvassed with the standard schedule reported wage earners, by months, as follows:

January.....	18,886	May.....	18,564	September.....	23,525
February.....	19,274	June.....	19,926	October.....	24,137
March.....	18,545	July.....	20,891	November.....	26,065
April.....	18,280	August.....	22,352	December.....	27,490

<sup>2</sup> Withheld to avoid disclosing data for individual establishments.

## MACHINE TOOLS

### MACHINE-TOOL ACCESSORIES AND MACHINISTS' PRECISION TOOLS AND INSTRUMENTS

#### METERS (GAS, WATER, ETC.) AND GAS GENERATORS

[Preliminary reports for these industries were issued on July 21, 1934, and subsequent dates]

**Description of the industries.**—The "Machine tools" industry classification embraces establishments engaged primarily in the manufacture of power-driven machines generally covered by the designation "machine tools." It conforms closely to the definition given in the Tariff Act approved September 21, 1922, paragraph 372, page 32, namely, "any machine operating other than by hand power which employs a tool for work on metal," but covers bending machines also. Certain types of machines designed for working metal—especially sheet-metal-working machines, welding machines, wire-drawing machines, and wireworking machines—do not come within the terms of this definition and consequently are classified elsewhere.

The "Machine-tool accessories and machinists' precision tools and instruments" industry, as defined for census purposes, embraces establishments whose principal products are twist drills, reamers, milling cutters, taps, dies, etc., and those specializing in the building of dies, jigs, fixtures, and special tools. Some of the establishments engaged in the manufacture of these classes of products were assigned, in censuses prior to that for 1929, to the "Tools, not including edge tools, machine tools, files, or saws" industry, others to the "Machine tools" industry, and still others to the "Foundry and machine-shop products not elsewhere classified" industry. Because of these changes in classification, no comparable data for years prior to 1929 are available.

The "Meters (gas, water, etc.) and gas generators" industry embraces establishments engaged primarily in the manufacture of gas meters, regulators, and governors; gas-making machines; acetylene and gasoline-gas generators; meters for the measurement of water and other liquids; and parts and appliances, such as valves, stop-cocks, seals, swivels and caps, meter fittings, and indexes.

**Extent of coverage.**—The 1933 coverage of the establishments reporting in the "Machine tools" and "Machine-tool accessories and machinists' precision tools and instruments" industries for 1931 was nearly complete. Although 10 such establishments in the "Machine tools" industry failed to supply any information in regard to their status (active, idle, etc.) or their activities in 1933, these establishments accounted for only 1.3 percent of the total number of wage earners and only 1.6 percent of the total value of products reported for this industry for 1931. Similarly, the corresponding establishments—24 in number—in the "Machine-tool accessories and machinists' precision tools and instruments" industry accounted for less than 1 percent of the total employment and of the total production for 1931. All the establishments in the "Meters (gas, water, etc.) and gas generators" industry that reported at the census for 1931 were accounted for in the canvass for 1933.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931

	Number of establishments	Number of salaried employees <sup>1, 2</sup>	Number of wage earners (average for the year)	Salaries <sup>3</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>4</sup>
<i>Thousands of dollars.</i> (See sec. 25, p. 13)								
<b>MACHINE TOOLS</b>								
<i>United States</i>								
1933.....	232	3, 886	12, 714	6, 140	12, 596	10, 844	41, 434	30, 589
1931.....	279	( <sup>4</sup> )	21, 262	( <sup>4</sup> )	25, 150	21, 901	81, 287	59, 386
1929.....	280	8, 865	47, 391	24, 493	76, 410	64, 284	244, 578	180, 294
1927.....	288	6, 086	32, 383	13, 275	47, 403	43, 151	145, 855	102, 703
<i>States<sup>5</sup></i>								
Connecticut:								
1933.....	17	433	1, 379	638	1, 413	893	3, 918	3, 025
1931.....	20	( <sup>4</sup> )	2, 782	( <sup>4</sup> )	3, 655	3, 007	10, 184	7, 177
Illinois:								
1933.....	32	376	1, 855	563	1, 229	1, 238	4, 100	2, 862
1931.....	32	( <sup>4</sup> )	2, 016	( <sup>4</sup> )	2, 425	2, 268	8, 599	6, 322
Indiana:								
1933.....	7	115	361	150	354	372	1, 174	802
1931.....	12	( <sup>4</sup> )	540	( <sup>4</sup> )	628	934	3, 083	2, 148
Massachusetts:								
1933.....	20	351	920	528	1, 103	826	3, 594	2, 768
1931.....	23	( <sup>4</sup> )	1, 393	( <sup>4</sup> )	1, 958	1, 538	6, 404	4, 365
Michigan:								
1933.....	19	233	923	432	1, 018	860	3, 550	2, 689
1931.....	23	( <sup>4</sup> )	653	( <sup>4</sup> )	925	845	3, 783	2, 937
Missouri:								
1933.....	3	13	28	22	32	17	98	81
1931.....	3	( <sup>4</sup> )	53	( <sup>4</sup> )	68	32	208	176
New Jersey:								
1933.....	4	38	73	82	94	54	175	121
1931.....	7	( <sup>4</sup> )	310	( <sup>4</sup> )	386	308	1, 144	836
New York:								
1933.....	16	187	523	368	637	487	2, 157	1, 671
1931.....	22	( <sup>4</sup> )	1, 294	( <sup>4</sup> )	1, 999	1, 215	5, 525	4, 310
Ohio:								
1933.....	60	1, 147	3, 371	1, 832	3, 509	3, 051	10, 421	7, 370
1931.....	68	( <sup>4</sup> )	5, 053	( <sup>4</sup> )	6, 362	5, 674	19, 143	13, 469
Pennsylvania:								
1933.....	18	293	1, 043	424	819	753	3, 561	2, 808
1931.....	24	( <sup>4</sup> )	1, 950	( <sup>4</sup> )	1, 629	1, 297	5, 998	4, 701
Vermont:								
1933.....	4	146	412	270	428	258	1, 777	1, 519
1931.....	5	( <sup>4</sup> )	945	( <sup>4</sup> )	1, 213	796	3, 828	3, 032
Wisconsin:								
1933.....	14	182	471	272	389	525	1, 540	1, 015
1931.....	17	( <sup>4</sup> )	993	( <sup>4</sup> )	1, 245	717	3, 670	2, 954
Other States: <sup>6</sup>								
1933.....	18	372	1, 851	558	1, 570	1, 510	5, 369	3, 859
1931.....	23	( <sup>4</sup> )	3, 270	( <sup>4</sup> )	2, 657	3, 269	9, 727	6, 469
<b>MACHINE-TOOL ACCESSORIES AND MACHINISTS' PRECISION TOOLS AND INSTRUMENTS</b>								
<i>United States</i>								
1933.....	587	2, 250	12, 757	3, 454	14, 159	10, 882	44, 383	33, 501
1931.....	718	( <sup>4</sup> )	17, 633	( <sup>4</sup> )	26, 559	16, 320	69, 033	52, 713
1929.....	722	3, 885	26, 682	12, 826	51, 085	26, 993	144, 411	117, 418
<i>States<sup>5</sup></i>								
California:								
1933.....	21	16	118	17	145	108	434	326
1931.....	23	( <sup>4</sup> )	185	( <sup>4</sup> )	291	273	940	666
Connecticut:								
1933.....	28	166	808	253	689	385	2, 066	1, 681
1931.....	37	( <sup>4</sup> )	1, 153	( <sup>4</sup> )	1, 206	545	3, 229	2, 684
Illinois:								
1933.....	71	199	1, 024	331	1, 130	1, 060	3, 645	2, 585
1931.....	87	( <sup>4</sup> )	1, 186	( <sup>4</sup> )	1, 851	1, 480	5, 070	3, 590

For footnotes, see end of table.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931—Continued

	Number of establishments	Number of salaried employees <sup>1</sup>	Number of wage earners (average for the year)	Salaries <sup>2</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>3</sup>
<b>MACHINE-TOOL ACCESSORIES AND MACHINISTS' PRECISION TOOLS AND INSTRUMENTS—contd.</b>								
<i>States<sup>4</sup>—Continued</i>								
Indiana:								
1933.....	25	42	291	56	335	226	792	566
1931.....	35	( <sup>5</sup> )	357	( <sup>6</sup> )	573	234	1,301	1,067
Iowa:								
1933.....	3	6	18	7	11	10	42	32
Massachusetts:								
1933.....	36	420	1,933	539	1,698	1,089	5,022	3,933
1931.....	49	( <sup>5</sup> )	2,603	( <sup>6</sup> )	2,704	1,182	7,832	6,650
Michigan:								
1933.....	123	609	4,144	1,078	5,576	4,791	18,939	14,148
1931.....	144	( <sup>5</sup> )	6,278	( <sup>6</sup> )	12,387	8,380	31,034	22,654
Minnesota:								
1933.....	9	0	44	13	50	32	178	146
1931.....	9	( <sup>5</sup> )	140	( <sup>6</sup> )	178	71	399	328
Missouri:								
1933.....	6	11	63	13	68	45	181	135
1931.....	8	( <sup>5</sup> )	104	( <sup>6</sup> )	137	79	408	329
New Jersey:								
1933.....	24	37	303	54	386	170	901	731
1931.....	37	( <sup>5</sup> )	525	( <sup>6</sup> )	954	409	1,746	1,337
New York:								
1933.....	67	92	511	110	615	348	1,635	1,287
1931.....	78	( <sup>5</sup> )	728	( <sup>6</sup> )	1,187	469	2,571	2,102
Ohio:								
1933.....	95	418	2,352	663	2,515	1,895	7,518	5,623
1931.....	116	( <sup>5</sup> )	2,826	( <sup>6</sup> )	3,520	2,212	10,230	8,018
Pennsylvania:								
1933.....	39	105	627	136	528	413	1,627	1,214
1931.....	43	( <sup>5</sup> )	767	( <sup>6</sup> )	738	440	1,976	1,535
Rhode Island:								
1933.....	6	69	252	107	263	130	691	561
1931.....	10	( <sup>5</sup> )	309	( <sup>6</sup> )	364	299	1,055	757
Wisconsin:								
1933.....	20	22	147	30	146	96	381	285
1931.....	24	( <sup>5</sup> )	194	( <sup>6</sup> )	270	146	708	562
Other States: <sup>7</sup>								
1933.....	14	30	126	40	104	84	332	248
1931.....	18	( <sup>5</sup> )	173	( <sup>6</sup> )	193	100	536	435
<b>METERS (GAS, WATER, ETC.) AND GAS GENERATORS</b>								
<i>United States</i>								
1933.....	10 63	828	3,156	1,465	2,948	4,012	12,848	8,836
1931.....	70	( <sup>8</sup> )	4,654	( <sup>9</sup> )	5,756	7,217	23,050	15,833
1929.....	72	1,367	6,101	3,855	8,932	15,187	40,623	25,436
1927.....	58	1,206	5,915	3,220	8,792	15,591	36,715	21,124

<sup>1</sup> Not including proprietors and firm members, as follows: Machine tools—1933, 18; 1931, no data; 1929, 42; 1927, 55. Machine-tool accessories, etc.—1933, 211; 1931, no data; 1929, 406. Meters and gas generators—1933, 4; 1931, no data; 1929, 7; 1927, 4.

<sup>2</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations, and therefore are not strictly comparable with the corresponding figures for 1929 and 1927, in which such data are included. No data for employees of central administrative offices are included in the figures for any year.

<sup>3</sup> Value of products less cost of materials, fuel, and purchased electric energy. See sec. 20, p. 11.

<sup>4</sup> No data.

<sup>5</sup> See sec. 26, p. 13.

<sup>6</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Calif., 2; Iowa, 2; Ky., 2; Md., 1; Minn., 3; N. H., 2; R. I., 5; Wash., 1; 2.

<sup>7</sup> No comparable figures can be given for prior years. See second paragraph of text, p. 566.

<sup>8</sup> Withheld to avoid disclosing data for individual establishments; included in figures for "Other States."

<sup>9</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Colo., 1; 1; Ga., 1; 0; Iowa (1931), 2; Ky., 1; 1; La., 0; 1; Md., 1; 1; N. H., 1; 1; Oreg., 2; 2; Tex., 2; 2; Vt., 3; 3; Wash., 2; 4; Pa., 9; R. I., 1; Wis., 1.

TABLE 2.—MACHINE TOOLS—PRODUCTION, BY KIND, NUMBER, AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929

	NUMBER			VALUE IN THOUSANDS OF DOLLARS <sup>1</sup>		
	1933	1931	1929	1933	1931	1929
1. "Machine tools" industry, all products, total value.....				41, 434	81, 287	244, 578
2. Machine tools.....				23, 266	55, 110	176, 426
3. Replacement and repair parts.....				5, 694	7, 504	17, 150
4. Other products (not normally belonging to the industry).....				11, 210	16, 724	45, 588
5. Receipts for contract and repair work.....				1, 263	1, 948	5, 414
6. Machine tools made as secondary products in other industries.....				562	3, 602	9, 948
Machine tools, aggregate value (2 and 6).....				23, 828	58, 712	180, 374
Bending machines.....	343	1, 005	2, 680	226	491	1, 584
Boring machines:.....						
Horizontal.....	98	68	159	440	571	932
Vertical.....	20	16	257	79	224	1, 364
Other.....	(?)	(?)	(?)	374	1, 124	3, 917
Drilling machines:.....						
Horizontal.....	(?)	343	274	304	746	756
Vertical:.....						
Multiple-spindle other than sensitive.....	45	238	1, 003	154	943	4, 150
Standard.....	233	662	3, 315	105	639	2, 023
Sensitive:.....						
Single-spindle.....	218	744	2, 977	37	170	920
Multiple-spindle.....	56	185	2, 404	62	211	2, 453
Radial.....	(?)	204	1, 317	304	631	4, 643
Other special, including combined vertical and horizontal, automatic, bench, and universal-head.....	(?)	(?)	(?)	669	2, 065	2, 350
Honing machines.....	55	80	176	125	218	588
Forging machines:.....						
Drop-hammer (impression-die).....	22	(?)	(?)	771	1, 869	4, 662
Other.....	(?)	(?)	(?)	400		
Keyseaters (broaching and other).....	100	(?)	(?)	228	553	492
Gear-cutting machines.....	(?)	(?)	(?)	1, 030	3, 569	8, 980
Grinding machines:.....						
External-cylindrical.....	319	493	1, 965	1, 045	2, 378	7, 381
Surface.....	167	546	1, 790	330	883	3, 568
Cutter and tool.....	172	(?)	2, 187	204	357	
Other, including disk, drill, internal-cylindrical, and snagging grinders.....	(?)	(?)	(?)	2, 048	5, 044	11, 154
Lathes:.....						
Bench.....	104	(?)	(?)	190	126	381
Engine.....	2, 054	2, 807	8, 693	1, 137	2, 768	11, 759
Automatic.....	242	(?)	5, 128	1, 185	4, 698	21, 456
Turret (horizontal).....	201	376	3, 132	516	1, 328	9, 778
Other, including vertical-turret and polishing and buffing.....	(?)	(?)	6, 190	851	1, 197	6, 079
Milling machines:.....						
Plain.....	135	354	1, 112	360	709	2, 759
Universal.....	120	261	2, 270	295	667	5, 840
Vertical.....	69	173	469	191	622	1, 429
Other.....	(?)	(?)	(?)	496	1, 847	6, 829
Pipe cutting and threading machines:.....						
Number reported.....	334	953	2, 933	185	468	1, 757
Number not reported.....				14	62	
Portable tools (metal-working):.....						
Drills:.....						
Electric:.....						
Number reported.....	19, 001	54, 735	114, 306	775	2, 492	4, 586
Number not reported.....				94	318	
Pneumatic.....	5, 024	6, 664	19, 063	633	1, 191	2, 447
Grinders:.....						
Electric:.....						
Number reported.....	5, 968	11, 180	46, 360	201	606	2, 395
Number not reported.....				60		
Pneumatic.....	2, 344	3, 806	10, 484	206	425	1, 151
Hammers (chipping, riveting, calking, etc.):.....						
Electric.....	428	1, 074	3, 739	61	119	649
Pneumatic.....	10, 824	12, 011	51, 891	568	1, 112	2, 900
Other (including portable motor-driven garage equipment and flexible-shaft machines) and those not reported by kind.....	(?)		(?)	2, 303	5, 779	5, 639

For footnotes, see end of table.

TABLE 2.—MACHINE TOOLS—PRODUCTION, BY KIND, NUMBER, AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929—Continued

	NUMBER			VALUE IN THOUSANDS OF DOLLARS <sup>1</sup>		
	1933	1931	1929	1933	1931	1929
<b>Machine tools—Continued.</b>						
Presses (except forging presses):						
Forming and stamping:						
Number reported.....	755	896	4,061	1,106	1,741	8,368
Number not reported.....				326	75	
Punch.....	(?)	351	1,658	100	295	1,004
Other.....	(?)	(?)	(?)	154	349	420
Shears (power-operated).....	105	(?)	(?)	124		2,119
Threading machines (except for pipe).....	134	595	(?)	132	1,010	2,792
Shapers.....	35			58		
All other machine tools, and machine tools not distributed by kind.....	(?)	(?)	(?)	3,266	5,410	21,822

<sup>1</sup> See sec. 25, p. 13.<sup>2</sup> Data incomplete.

TABLE 3.—MACHINE-TOOL ACCESSORIES AND MACHINISTS' PRECISION TOOLS AND INSTRUMENTS—PRODUCTION, BY KIND AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929

	1933	1931	1929
1. "Machine-tool accessories and machinists' precision tools and instruments" industry, all products, total value.....	\$44,383,246	\$69,033,154	\$144,410,800
2. Machine-tool accessories and machinists' precision tools and instruments.....	38,740,878	59,958,923	134,273,247
3. Other products (not normally belonging to the industry).....	4,929,567	7,641,659	7,832,392
4. Receipts for contract and repair work.....	712,801	1,432,572	2,305,251
5. Machine-tool accessories, etc., made as secondary products in other industries, value.....	8,137,478	14,592,331	48,865,701
Machine-tool accessories and machinists' precision tools and instruments, aggregate value (2 and 5).....	46,878,356	74,551,254	183,138,948
Attachments and fixtures, total value.....	25,894,336	47,863,095	98,143,962
General equipment:			
Chucks.....	714,031	999,588	4,397,770
Vises (machine).....	81,099	30,372	182,232
Attachments for machine tools:			
Lathe.....	103,721	200,168	
Boring, drilling, and milling machine.....	804,637	1,430,153	6,357,683
Other machine-tool attachments.....	98,563		
Other attachments and fixtures.....	1,591,600	2,094,777	
Special equipment.....	22,500,685	43,108,037	87,206,277
Small tools and tool holders, total value.....	17,509,255	23,404,072	( <sup>1</sup> )
Arbors, collars, and collets (lathe, milling-machine, and drill).....	164,477	192,051	710,239
Counterbores.....	56,093	323,358	1,116,719
Countersinks and combination countersinks and drills.....	104,399	193,336	65,222
Drills.....	4,508,073	4,897,421	14,007,463
Hobbing cutters.....	483,784	1,106,139	2,078,916
Milling cutters (all types), end mills, slotting cutters, etc.:			
Solid.....	2,446,673	3,325,522	
Inserted-teeth.....	1,211,514	804,833	10,704,526
Reamers.....	1,220,359	2,145,377	8,156,912
Threading tools:			
Taps and dies (not pipe-threading):			
Taps.....	1,847,588	2,382,554	6,595,966
Dies.....	651,634	856,010	2,699,795
Chasers.....	1,017,760	1,345,633	3,251,469
Pipe-threading:			
Taps.....	405,490	261,046	300,435
Dies.....	456,339	532,425	1,346,867
Pipe stocks complete with dies.....	649,800	1,083,800	2,338,523
All other small tools and tool holders, mandrels, etc., and those not reported by kind.....	2,285,282	3,954,477	
Precision measuring tools (micrometer and vernier).....	185,868		
Gauges (plug, ring, snap, thread, etc.).....	761,060	2,074,922	31,621,929
Other measuring tools.....	617,760	1,209,165	
Machine-tool accessories, etc., not reported by kind.....	1,910,077		

<sup>1</sup> Total cannot be given because value of "All other small tools and tool holders", etc., cannot be segregated.<sup>2</sup> Countersinks only; not comparable with figures for later years.

TABLE 4.—WAGE EARNERS, BY QUARTERS, FOR SELECTED STATES: 1933 AND 1931

[The average for the year (table 1) differs from the average of the quarterly figures below. (See fourth sentence, sec. 13, p. 8.) See sec. 26, p. 13.]

	1933 <sup>1</sup>				1931			
	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.
<b>MACHINE TOOLS</b>								
United States.....	9,466	10,399	14,892	18,255	25,150	22,005	19,084	15,841
<i>States</i>								
Connecticut.....	988	1,230	1,720	1,588	3,195	2,955	2,467	1,997
Illinois.....	1,129	1,071	1,464	1,916	2,391	1,957	1,850	1,643
Indiana.....	212	322	336	617	562	626	514	423
Massachusetts.....	575	674	1,130	1,657	1,568	1,416	1,355	1,108
Michigan.....	654	695	993	1,337	752	593	612	587
Minnesota.....	88	77	86	75	71	70	62	47
Missouri.....	19	20	39	37	63	48	41	48
New Jersey.....	52	48	94	115	320	332	310	211
New York.....	374	413	615	803	1,520	1,405	1,202	941
Ohio.....	2,364	2,527	4,158	5,031	6,056	5,467	4,321	3,725
Pennsylvania.....	785	907	1,194	1,263	2,164	2,033	1,861	1,523
Rhode Island.....	1,217	1,297	1,423	1,726	3,196	2,465	2,157	1,540
Vermont.....	362	381	445	533	1,099	933	779	761
Wisconsin.....	378	354	575	760	1,354	890	865	633
<b>MACHINE-TOOL ACCESSORIES AND MACHINISTS' PRECISION TOOLS AND INSTRUMENTS</b>								
United States.....	8,792	10,330	15,630	19,793	17,139	17,035	18,534	17,075
<i>States</i>								
California.....	107	124	126	132	214	203	172	151
Connecticut.....	592	709	1,035	973	1,267	1,129	1,070	995
Illinois.....	790	850	1,093	1,347	1,234	1,212	1,105	1,047
Indiana.....	175	262	269	530	355	396	342	337
Iowa.....	7	11	20	18	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Massachusetts.....	1,610	1,777	2,153	2,404	2,816	2,649	2,471	2,394
Michigan.....	2,283	2,914	6,052	8,124	5,222	5,730	7,818	6,595
Minnesota.....	43	58	40	48	160	144	137	108
Missouri.....	57	50	61	70	150	103	72	78
New Jersey.....	241	277	344	386	519	574	555	476
New York.....	381	482	577	645	702	768	763	659
Ohio.....	1,585	1,796	2,567	3,649	2,925	2,696	2,720	2,811
Pennsylvania.....	517	576	692	759	784	781	726	726
Rhode Island.....	185	185	307	379	335	305	274	267
Vermont.....	81	82	92	96	102	98	91	96
Wisconsin.....	102	139	160	194	222	169	149	224

<sup>1</sup> See secs. 5, p. 4, and 13, p. 8. The establishments canvassed with the standard schedule reported wage earners, by months, as follows:

*Machine tools.*—Number of establishments reporting, 150.

January.....	10,283	May.....	8,964	September.....	14,231
February.....	10,523	June.....	9,904	October.....	15,405
March.....	9,063	July.....	11,251	November.....	16,780
April.....	8,418	August.....	13,134	December.....	17,416

*Machine-tool accessories, etc.*—Number of establishments reporting, 444.

January.....	10,060	May.....	8,782	September.....	14,911
February.....	9,285	June.....	9,782	October.....	14,861
March.....	8,393	July.....	11,085	November.....	17,713
April.....	8,205	August.....	13,133	December.....	18,749

<sup>2</sup> Withheld to avoid disclosing data for individual establishments.

# PUMPS (HAND AND POWER) AND PUMPING EQUIPMENT

[A preliminary report for this industry was issued on Aug. 22, 1934]

**Description of the industry.**—This industry embraces establishments engaged primarily in the manufacture of hand and power pumps of all kinds, such as water pumps, gasoline pumps, air pumps (except compressors), oil pumps, hydraulic rams, spraying outfits (complete units) and spray pumps, domestic water systems, and pump jacks, pump cylinders, and other pumping equipment.

**Extent of coverage.**—The 1933 coverage of the establishments reporting in this industry for 1931 was practically complete. Of the 303 such establishments, 17 failed to supply any information in regard to their status (active, idle, etc.) or their activities in 1933, but these establishments accounted for only a fraction of 1 percent of the total number of wage earners and of the total value of products reported for the industry for 1931.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1 2</sup>	Number of wage earners (average for the year)	Salaries <sup>2</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>3</sup>
<i>Thousands of dollars.</i> (See sec. 25, p. 13)								
<i>United States</i>								
1933.....	257	3,997	11,110	6,333	10,379	20,257	49,002	28,745
1931.....	303	(*)	15,156	(*)	17,107	33,735	84,353	50,619
1929.....	322	6,921	23,106	16,666	34,920	66,802	164,009	97,207
1927.....	278	5,809	18,671	14,223	27,119	52,765	130,591	77,826
<i>States</i>								
<i>California:</i>								
1933.....	44	388	875	639	997	2,081	5,305	3,223
1931.....	51	(*)	1,204	(*)	1,865	3,608	9,034	5,426
<i>Illinois:</i>								
1933.....	26	344	692	485	586	945	3,402	2,457
1931.....	29	(*)	745	(*)	834	2,084	5,047	2,962
<i>Indiana:</i>								
1933.....	16	375	1,413	628	1,091	2,900	6,301	3,402
1931.....	19	(*)	2,064	(*)	1,920	5,040	11,531	6,492
<i>Iowa:</i>								
1933.....	6	107	409	132	368	715	1,528	813
1931.....	7	(*)	358	(*)	430	668	1,891	1,223
<i>Massachusetts:</i>								
1933.....	12	343	664	744	821	1,805	3,969	2,165
1931.....	16	(*)	1,563	(*)	1,795	2,632	7,374	4,742
<i>Michigan:</i>								
1933.....	22	183	795	266	619	1,123	2,905	1,783
1931.....	25	(*)	1,608	(*)	1,162	3,672	8,108	4,436
<i>Minnesota:</i>								
1933.....	5	47	209	71	178	464	1,004	540
1931.....	7	(*)	235	(*)	257	581	1,750	1,170

For footnotes, see end of table.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931—Continued

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1,2</sup>	Number of wage earners (average for the year)	Salaries <sup>3</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>4</sup>
<i>Thousands of dollars. (See sec. 25, p. 13)</i>								
<i>States—Continued</i>								
Missouri:								
1933.....	3	15	34	22	33	58	151	93
1931.....	5	( <sup>5</sup> )	52	( <sup>5</sup> )	72	178	393	215
New Jersey:								
1933.....	11	627	1,389	961	1,630	1,899	5,223	3,324
1931.....	12	( <sup>5</sup> )	1,553	( <sup>5</sup> )	2,282	2,034	7,950	5,916
New York:								
1933.....	27	383	1,059	586	1,022	1,779	4,513	2,734
1931.....	32	( <sup>5</sup> )	1,413	( <sup>5</sup> )	1,505	2,766	7,127	4,361
Ohio:								
1933.....	34	521	1,743	687	1,479	2,805	7,130	4,325
1931.....	37	( <sup>5</sup> )	2,031	( <sup>5</sup> )	2,369	5,026	11,139	6,113
Oklahoma:								
1933 <sup>6</sup> .....	5	13	58	23	62	162	369	207
Pennsylvania:								
1933.....	15	346	955	604	821	2,111	3,822	1,711
1931.....	21	( <sup>5</sup> )	1,301	( <sup>5</sup> )	1,493	2,991	6,298	3,307
Wisconsin:								
1933.....	8	110	409	156	297	403	1,003	600
1931.....	6	( <sup>5</sup> )	349	( <sup>5</sup> )	259	608	1,741	1,133
Other States: <sup>6</sup>								
1933.....	23	195	406	330	376	1,008	2,377	1,369
1931.....	36	( <sup>5</sup> )	680	( <sup>5</sup> )	863	1,847	4,972	3,124

<sup>1</sup> Not including proprietors and firm members, as follows: 1933, 52; 1931, no data; 1929, 101; 1927, 129.

<sup>2</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations, and therefore are not strictly comparable with the corresponding figures for 1929 and 1927, in which such data are included. No data for employees of central administrative offices are included in the figures for any year.

<sup>3</sup> Value of products less cost of materials, fuel, and purchased electric energy. See sec. 20, p. 11.

<sup>4</sup> No data.

<sup>5</sup> Figures for 1931 included in those for "Other States" to avoid disclosing data for an individual establishment.

<sup>6</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Arkansas, 1, 2; Colorado, 1, 1; Connecticut, 3, 3; Florida, 1, 1; Idaho, 1, 1; Kansas, 3, 4; Kentucky, 0, 1; Louisiana, 0, 1; Nebraska, 2, 2; North Carolina, 1, 2; North Dakota, 1, 0; Oklahoma, 1931, 4; Oregon, 1, 1; South Carolina, 0, 1; Tennessee, 2, 3; Texas, 2, 2; Vermont, 1, 1; Virginia, 0, 1; Washington, 3, 5.

TABLE 2.—PRODUCTS, BY KIND, NUMBER, AND VALUE, FOR THE UNITED STATES: 1933 AND 1931

	NUMBER		VALUE	
	1933	1931	1933	1931
1. "Pumps (hand and power) and pumping equipment" industry, all products, total value.....			\$49,002,021	\$84,353,391
2. Pumps and pumping equipment.....			32,577,564	<sup>1</sup> 59,933,045
3. Spare parts and attachments.....			4,924,774	<sup>1</sup> 6,866,212
4. Other products (not normally belonging to the industry).....			7,288,360	11,266,252
5. Amount received for repair work.....			4,211,323	6,287,882
6. Pumps and pumping equipment made as secondary products in other industries, value.....			4,268,362	11,621,998
Pumps and pumping equipment, aggregate value (2, 3, and 6).....			41,770,700	<sup>1</sup> 78,421,195
Hand pumps, except gasoline-filling-station, grease, oil, and spray:				
Air pumps (tire and other), total.....			537,099	769,357
Number reported.....	338,341	1,034,081	147,899	362,925
Number not reported.....			389,200	406,432
Water pumps, total.....			469,986	1,009,421
Number reported.....	201,617	315,957	385,309	1,009,421
Number not reported.....			84,677	
Other hand pumps, except gasoline-filling-station, grease, oil, and spray.....	( <sup>2</sup> )	28,817	210,365	343,485
Windmill pumps.....	21,391	54,518	159,597	445,584
Gasoline-filling-station pumps (hand and power), with and without tanks.....	( <sup>2</sup> )	( <sup>2</sup> )	7,420,260	14,961,152
Grease pumps and guns, hand and power (filling-station only).....	( <sup>2</sup> )	245,284	1,394,341	1,758,556
Oil pumps, hand and power (filling-station only).....	( <sup>2</sup> )	( <sup>2</sup> )	991,226	4,078,417
Domestic water systems, complete:				
Deep-well systems (for lift exceeding 25 feet), total value.....			616,252	1,374,943
Number reported.....	8,153	17,231	479,941	1,374,943
Number not reported.....			136,311	
Shallow-well systems (for lift not exceeding 25 feet), total value.....			1,703,157	3,773,411
Number reported.....	38,981	73,655	1,605,413	3,773,411
Number not reported.....			97,744	
Water-well pumps (except hand and windmill), made for sale as such:				
Deep-well pumps, total.....			2,533,525	5,724,547
Number reported.....	6,223	11,377	2,196,204	5,724,547
Number not reported.....			337,321	
Shallow-well pumps, total.....			646,061	838,533
Number reported.....	9,648	12,443	619,061	838,533
Number not reported.....			27,000	
Oil-well pumps, total <sup>3</sup> .....			1,004,200	997,913
Number reported.....	4,456	10,709	496,850	997,913
Number not reported.....			507,350	
Vacuum pumps, total <sup>4</sup> .....			1,156,450	2,686,393
Number reported.....	2,010	5,878	865,070	2,686,393
Number not reported.....			291,380	
Spraying outfits, complete:				
Paint.....	( <sup>2</sup> )	( <sup>2</sup> )	2,065,315	2,068,005
Chemical sprayers (for liquids).....	( <sup>2</sup> )	( <sup>2</sup> )	1,061,306	2,147,947
Chemical dusters.....	( <sup>2</sup> )	( <sup>2</sup> )	94,752	500,526
Spray pumps made for sale as such (not included above).....	( <sup>2</sup> )	( <sup>2</sup> )	256,771	404,261
Sprayers, hand (household and other small types).....	( <sup>2</sup> )	( <sup>2</sup> )	885,818	793,412
Washers, automobile.....	461	4,331	75,227	424,159
Hydraulic rams.....	1,048	1,604	17,813	28,993

For footnotes, see end of table.

TABLE 2.—PRODUCTS, BY KIND, NUMBER, AND VALUE, FOR THE UNITED STATES:  
 1933 AND 1931—Continued

	NUMBER		VALUE	
	1933	1931	1933	1931
Pumps and pumping equipment—Continued				
Power-driven and power pumps not elsewhere specified:				
Centrifugal pumps (horizontal and vertical), except sewage, sump, and bilge pumps, total <sup>1</sup> .....			\$5,343,116	\$9,950,116
Number reported.....	25,039	40,945	4,181,616	9,372,607
Number not reported.....			1,161,500	577,509
Sewage, sump, and bilge pumps, centrifugal and screw types.....	( <sup>2</sup> )	( <sup>2</sup> )	529,339	1,403,200
Reciprocating pumps:				
Direct-acting steam, total.....			1,493,705	3,045,479
Number reported.....	2,969	8,624	951,485	3,045,479
Number not reported.....			542,220	
Other reciprocating, except oil-well and water-well pumps.....			902,980	4,254,659
Rotary pumps:				
Gear type, total.....			1,282,536	1,941,665
Number reported.....	74,889	82,186	1,074,364	1,941,665
Number not reported.....			208,172	
Other types, total <sup>3</sup> .....	( <sup>2</sup> )	( <sup>2</sup> )	832,743	1,292,477
Number reported.....	6,743	15,106	378,037	1,084,672
Number not reported.....			454,706	207,805
Other power-driven and power pumps (not listed above) <sup>4</sup> .....	( <sup>2</sup> )	( <sup>2</sup> )	771,012	462,209
Pump jacks and pumping powers, total.....			93,417	327,736
Number reported.....	3,407	49,633	38,180	327,736
Number not reported.....			55,237	
Cylinders made for sale separately.....	( <sup>2</sup> )	( <sup>2</sup> )	336,713	680,362
Other spare parts and attachments.....	( <sup>2</sup> )	( <sup>2</sup> )	4,924,774	16,866,212
Miscellaneous pumps and pumps not reported by kind <sup>5</sup> .....	( <sup>2</sup> )	( <sup>2</sup> )	1,960,844	3,068,065

<sup>1</sup> Revised.

<sup>2</sup> Data incomplete.

<sup>3</sup> Well pumps only; does not include oil-line, refinery, and "cracking" pumps, etc., which are classified under "Power-driven and power pumps not elsewhere specified."

<sup>4</sup> Includes steam-heating and condensation pumps.

<sup>5</sup> Figures include values of diffusor (turbine) and volute types but not that of deep-well centrifugal-turbine pumps. The value of the latter, together with that of deep-well turbine pumps, is included in the figure for "Water-well pumps (except hand and windmill), made for sale as such."

<sup>6</sup> Includes screw-type rotary pumps.

<sup>7</sup> Includes diaphragm and machine-tool pumps, and pulsometers.

<sup>8</sup> Includes pumps used in connection with domestic oil burners and internal-combustion-engine water and oil circulation and carburetor feed pumps.

TABLE 3.—WAGE EARNERS, BY QUARTERS, FOR SELECTED STATES: 1933 AND 1931

[The average for the year (table 1) differs from the average of the quarterly figures below. (See fourth sentence, sec. 13, p. 4.) See sec. 26, p. 13]

	1933 <sup>1</sup>				1931			
	March	June	Sep- tember	De- cember	March	June	Sep- tember	De- cember
United States.....	9,823	11,293	12,366	11,463	16,095	15,758	14,310	13,398
<i>States</i>								
California.....	735	819	1,100	940	1,267	1,349	1,091	1,052
Connecticut.....	199	206	222	224	369	346	333	317
Illinois.....	582	697	789	768	759	788	735	671
Indiana.....	1,526	1,555	1,500	1,003	2,370	2,127	1,744	1,797
Iowa.....	344	423	501	416	390	340	373	276
Kansas.....	16	18	13	19	26	43	49	40
Massachusetts.....	477	754	815	652	1,509	1,669	1,589	1,493
Michigan.....	653	782	884	884	1,904	1,582	1,366	1,235
Minnesota.....	191	288	154	210	254	246	204	234
Missouri.....	31	36	35	38	61	39	58	48
New Jersey.....	1,196	1,243	1,519	1,763	1,634	1,612	1,446	1,431
New York.....	1,006	1,102	1,079	1,058	1,456	1,514	1,415	1,222
Ohio.....	1,389	1,692	2,005	1,754	2,068	2,098	2,031	1,840
Oklahoma.....	28	115	58	51	51	30	29	31
Pennsylvania.....	977	944	1,039	1,052	1,339	1,358	1,269	1,196
Washington.....	7	6	6	8	25	25	25	18
Wisconsin.....	328	426	466	439	337	362	350	309

<sup>1</sup> See sec. 5, p. 4, and sec. 13, p. 8. The 180 establishments canvassed with the standard schedule reported wage earners by months, as follows:

January.....	9,464	May.....	10,314	September.....	11,786
February.....	9,647	June.....	10,737	October.....	11,376
March.....	9,397	July.....	11,023	November.....	11,179
April.....	9,821	August.....	11,272	December.....	10,884

## RADIO APPARATUS AND PHONOGRAPHS

[A preliminary report for this industry was issued on Aug. 20, 1934]

**Description of the industry.**—This industry classification embraces the products of establishments engaged wholly or principally in the manufacture of radio apparatus, phonographs, and parts and accessories. At censuses taken prior to 1931 the manufacture of phonographs was treated as a separate industry, but the increasing production of radio apparatus by manufacturers of phonographs and the introduction of the combination radio-phonograph unit made it desirable to establish the present classification. Manufacturers of radio apparatus were formerly classified in the "Electrical machinery, apparatus, and supplies" industry. The schedule for this industry did not call for detailed data on the production of radio apparatus, and therefore no comparative statistics are given for years prior to 1931.

**Extent of coverage.**—As the result of a variety of causes beyond the Bureau's control, including the industrial changes that were taking place during the period, the Census coverage of this industry was somewhat, but not seriously, incomplete. Of the 217 establishments that had reported for 1931, 29 failed to supply any information in regard to their status (active, idle, etc.) or their activities in 1933, but these establishments accounted for only 1.5 percent of the total number of wage earners and 1 percent of the total value of products reported for this industry for 1931.

TABLE 1.—SUMMARY, BY STATES: 1933 AND 1931

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1, 2</sup>	Number of wage earners (average for the year)	Salaries <sup>3</sup>	Wages	Cost of materials, containers, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>3</sup>
<i>Thousands of dollars. (See sec. 25, p. 13)</i>								
<i>United States</i>								
1933.....	156	5,345	32,879	8,249	29,654	58,521	121,802	63,281
1931.....	217	(*)	36,490	(*)	35,146	88,408	193,143	104,740
<i>States</i>								
<i>California:</i>								
1933.....	27	125	374	212	430	875	1,959	1,084
1931.....	26	(*)	449	(*)	766	2,483	4,455	1,972
<i>Connecticut:</i>								
1933.....	4	112	383	203	312	280	1,330	1,050
1931.....	5	(*)	569	(*)	567	445	3,056	2,611
<i>Illinois:</i>								
1933.....	29	752	5,029	1,280	4,423	12,248	22,818	10,570
1931.....	44	(*)	5,783	(*)	4,590	16,749	35,061	18,312
<i>Massachusetts:</i>								
1933.....	11	195	1,869	335	1,597	1,810	4,669	2,859
1931.....	16	(*)	2,954	(*)	2,587	4,277	11,228	6,951

For footnotes, see end of table.

TABLE 1.—SUMMARY, BY STATES: 1933 AND 1931—Continued

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1</sup>	Number of wage earners (average for the year)	Salaries <sup>2</sup>	Wages	Cost of materials, containers, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>3</sup>
<i>States—Continued</i>								
Michigan:								
1933.....	6	87	636	119	336	1,533	3,719	2,186
1931.....	10	(*)	1,338	(*)	1,076	2,800	4,656	1,856
Minnesota:								
1933.....	4	13	54	17	35	165	256	91
1931.....	9	(*)	88	(*)	77	352	605	254
New York:								
1933.....	37	509	2,304	766	2,043	5,248	10,394	5,145
1931.....	46	(*)	3,996	(*)	4,029	7,930	19,148	11,218
Ohio:								
1933.....	8	438	1,551	331	1,255	5,184	7,843	2,660
1931.....	11	(*)	2,844	(*)	2,286	7,082	15,377	8,295
Pennsylvania:								
1933.....	5	655	7,321	980	6,696	14,980	28,461	13,481
1931.....	8	(*)	5,676	(*)	6,342	17,128	42,374	25,246
Other States: <sup>4</sup>								
1933.....	25	2,459	13,360	4,006	12,528	16,198	40,352	24,155
1931.....	42	(*)	12,793	(*)	12,825	29,157	57,183	28,026

<sup>1</sup> Not including proprietors and firm members, as follows: 1933, 22; 1931, no data.<sup>2</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations. No data for employees of central administrative offices are included in the figures for either year.<sup>3</sup> Value of products less cost of materials, containers, fuel, and purchased electric energy. See sec. 20, p. 11.<sup>4</sup> No data.<sup>5</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: D. C., 1, 1; Ind., 4, 5; Iowa, 1, 4; Kans., 0, 1; Ky., 1, 1; Mo., 0, 1; Nebr., 2, 2; N. J., 12, 18; R. I., 1, 3; Utah, 0, 1; Wash., 2, 2; Wis., 1, 3.

TABLE 2.—PRODUCTS, BY KIND, NUMBER, AND VALUE, FOR THE UNITED STATES: 1933 AND 1931

	NUMBER		VALUE	
	1933	1931	1933	1931
1. "Radio apparatus and phonographs" industry, all products, total value.....			<sup>1</sup> \$121,801,611	<sup>1</sup> \$193,142,845
2. Radios, phonographs, and apparatus.....			<sup>1</sup> 115,642,422	<sup>1</sup> 187,717,880
3. Other products (not normally belonging to the industry).....			4,855,799	4,479,966
4. Receipts for custom, contract, and repair work.....			1,303,390	944,999
5. Radios, phonographs, and apparatus made as secondary products in other industries.....			3,884,819	7,664,276
Radios, phonographs, and apparatus, aggregate value (2 and 5).....			<sup>1</sup> 119,527,241	<sup>1</sup> 195,382,156
Receiving sets, complete (cabinets, chassis, speakers, and tubes), total.....			70,553,334	<sup>2</sup> 117,372,217
Number reported.....	3,599,522	3,745,682	69,309,450	116,705,708
Number not reported.....			1,243,884	656,509
For the home, total.....			56,240,070	113,395,803
Number reported.....	2,896,964	3,648,383	55,166,673	113,395,803
Number not reported.....			1,073,397	
Covering standard broadcast band:				
Socket-power-operated:				
Factory price not over \$11.....	415,198	55,931	3,438,544	576,631
Over \$11 but not over \$30.....	1,961,759	1,981,154	32,256,429	44,291,192
Over \$30.....	311,870	1,437,450	12,468,671	62,867,654
Battery-operated (excluding batteries).....	92,618	49,198	1,931,969	1,790,431

For footnotes, see end of table.

TABLE 2.—PRODUCTS, BY KIND, NUMBER, AND VALUE, FOR THE UNITED STATES: 1933 AND 1931—Continued

	NUMBER		VALUE	
	1933	1931	1933	1931
Radios, etc.—Continued.				
Receiving sets, etc.—Continued.				
For the home—Continued.				
Extending beyond standard broadcast band—all-wave receiving sets, both socket-power and battery operated (excluding batteries).....	115,519	11,078	\$5,071,060	\$603,162
Home receiving sets not reported by kind or by price.....	( <sup>3</sup> )	113,572	1,073,397	3,266,733
Automobile sets, total.....	700,018	96,145	13,597,863	3,076,191
Power-operated, except police sets:				
Factory price not over \$22.....	468,584	3,325	7,846,903 5,704,453	111,982
Over \$22.....	230,158			
Police sets, both battery-operated and power-operated.....	1,276		46,507	
Battery-operated, except police sets.....		92,820		2,964,209
Aircraft and television sets or kits, receiving sets for commercial use, and other sets not specified above, total.....			715,401	900,223
Number reported.....	2,540	1,154	544,914	233,714
Number not reported.....			170,487	666,509
Tubes:				
Receiving tubes, total.....	59,859,259	49,262,848	25,215,080	26,977,572
For replacement, total.....	36,442,340	24,318,052	15,869,731	13,714,052
Rectifiers (intended primarily for use with receiving sets).....	5,088,670	1,299,854	2,046,651	680,722
Other, including television (neon and other converter).....	31,353,670	23,018,198	13,823,180	13,033,330
For initial equipment, total <sup>4</sup> .....	23,416,919	24,944,796	9,345,349	13,263,520
Rectifiers (intended primarily for use with receiving sets).....	5,936,239	1,393,274	2,217,310	551,701
Other tubes.....	17,480,680	23,551,522	7,128,039	12,711,819
Transmitting tubes.....	( <sup>3</sup> )	62,562	1,382,002	1,410,188
Light-sensitive tubes (all sizes, all purposes); other, primarily for industrial control apparatus; rectifier tubes other than for use with receiving sets; tubes not reported as to kind.....	( <sup>3</sup> )	( <sup>3</sup> )	722,495	947,419
Transmitters (including all associated equipment):				
Broadcast.....	( <sup>3</sup> )	182	456,938	630,513
Aircraft.....	( <sup>3</sup> )	270	59,245	130,437
Ship.....	( <sup>3</sup> )	274	516,420	979,736
Other transmitters, for use at fixed locations.....	( <sup>3</sup> )	374	330,881	607,771
Phonographs and accessories:				
Phonographs for mechanical reproduction, including cabinets.....	( <sup>3</sup> )	37,152	123,211	530,388
Phonographs for electrical reproduction, including cabinets.....	( <sup>3</sup> )	11,152	1,782,070	1,148,987
Phonographs, number and class not reported.....				820,506
Records.....	( <sup>3</sup> )	30,851,282	2,500,477	7,697,787
Needles.....	( <sup>3</sup> )	( <sup>3</sup> )	344,784	434,301
Combination radio and phonograph units.....	30,092	73,603	1,407,650	6,310,442
Public-address and theater (not including motion-picture theater) sound-reproducing equipment and home talking-moving-picture combinations.....	( <sup>3</sup> )	( <sup>3</sup> )	2,298,090	4,511,542
Miscellaneous:				
Receiving-set chassis for sale separately as such <sup>4</sup> .....	129,434	405,942	1,996,951	7,863,340
Loud speakers for sale separately as such <sup>4</sup> .....	( <sup>3</sup> )	( <sup>3</sup> )	3,001,601	4,647,854
Microphones (all types), value.....	( <sup>3</sup> )	10,225	343,852	187,035
Other apparatus and products (including dictating machines, <sup>5</sup> dictating-machine record blanks, and combined portable receivers and transmitters) associated with radio and phonograph equipment, and products not reported by kind.....			6,487,160	<sup>1</sup> 12,124,121

<sup>1</sup> Includes some duplication. See footnote 4.<sup>2</sup> Revised.<sup>3</sup> Data incomplete.<sup>4</sup> The items to which this footnote is indexed are duplicated in the totals and the aggregate at the head of the table, to the extent to which the products were sold to manufacturers of complete radio receiving sets for installation in such sets made within the year covered by the report.<sup>5</sup> Figures for dictating machines withheld to avoid disclosing data for individual establishments.

TABLE 3.—WAGE EARNERS, BY QUARTERS, FOR SELECTED STATES:  
1933 AND 1931

[The average for the year (table 1) differs from the average of the quarterly figures below (See fourth sentence, sec. 13, p. 8.) See sec. 26, p. 13]

	1933 <sup>1</sup>				1931			
	March	June	September	December	March	June	September	December
United States.....	20,325	28,161	43,064	43,158	34,210	30,976	47,010	29,579
<i>States</i>								
California.....	343	362	402	446	515	405	419	447
Connecticut.....	373	359	384	410	646	526	534	533
Illinois.....	2,047	4,321	7,080	4,546	8,094	2,835	8,106	3,511
Indiana.....	1,025	1,082	2,134	1,830	1,547	1,353	1,601	1,460
Massachusetts.....	874	1,804	2,814	2,278	2,877	3,093	3,145	1,865
Michigan.....	460	475	753	1,033	680	1,381	2,567	695
Minnesota.....	42	51	74	68	105	87	71	87
New Jersey.....	7,512	10,423	10,482	15,502	8,690	8,065	12,075	8,342
New York.....	1,340	1,779	3,232	3,342	4,118	3,741	4,449	3,518
Ohio.....	1,692	729	2,228	1,971	2,250	2,836	3,744	2,351
Pennsylvania.....	3,780	5,340	11,482	9,650	3,900	5,329	8,464	5,565

<sup>1</sup> See secs. 5, p. 4, and 13, p. 8. The 105 establishments canvassed with the standard schedule reported wage earners, by months, as follows:

January.....	21,118	May.....	24,364	September.....	41,837
February.....	20,370	June.....	27,448	October.....	52,313
March.....	19,656	July.....	29,646	November.....	49,952
April.....	20,305	August.....	33,936	December.....	41,846

## REFRIGERATORS AND REFRIGERATING AND ICE-MAKING APPARATUS

[A preliminary report for this industry was issued on Oct. 18, 1934]

**Description of the industry.**—The "Refrigerators and refrigerating and ice-making apparatus" industry, as defined for census purposes, embraces establishments whose principal products are mechanical refrigerators (both the motor-driven or compression type and the absorption or heat-actuated type) and refrigerating systems<sup>1</sup> (both domestic and commercial), cabinets for sale as such (whether for use with mechanical refrigerating systems or for use with ice), and industrial ice-making and refrigerating machines. This classification does not cover the construction, by builders, of built-in cooling rooms, cabinets, etc. At former censuses, manufacturers of mechanical refrigerators and refrigerating systems for domestic and commercial use were classified in the "Refrigerators, mechanical" industry; manufacturers of ice refrigerators and cabinets for mechanical refrigerators, in the "Refrigerators and refrigerator cabinets, exclusive of mechanical refrigerating equipment" industry; and manufacturers of industrial ice-making and refrigerating machines, in the "Foundry and machine-shop products not elsewhere classified" industry. Statistics for 1931, comparable with those for 1933, have been assembled and are presented in this report; but, because of the changes in the constitution of the industry, it is impracticable to compile comparable figures for years prior to 1931.

**Complete mechanical refrigerators.**—It is impossible to calculate, from the census records, the total number of complete mechanical refrigerators (cabinets with the refrigerating systems installed) manufactured, for the reason that certain manufacturers of refrigerating systems purchase their cabinets, or manufacture them in plants other than those in which the systems are made, and have them shipped to warehouses for assembly. In these cases both the manufacturers of the systems and the manufacturers of the cabinets report separately to the Bureau of the Census, but no reports are made for the assembling done in their warehouses. Moreover, certain dealers purchase refrigerating mechanisms and cabinets from the manufacturers and have them shipped to warehouses for assembly. These dealers do not, of course, report to the Bureau of the Census as manufacturers. Thus the census figures show the entire output of refrigerating systems for sale as such by manufacturers, of cabinets for sale as such by manufacturers, and of complete refrigerators for sale as such by manufacturers, but do not show the total number of complete refrigerators produced, including those assembled in warehouses.

**Extent of coverage.**—The 1933 coverage of the establishments reporting the manufacture of these classes of products for 1931 was

<sup>1</sup> The term "system," as used here, refers to a complete assembly, consisting of "high side" and "low side," with motor, control, and expansion valve or its equivalent. The cabinet is not a part of the system.

CENSUS OF MANUFACTURES: 1933

nearly complete. Of the 227 such establishments, 21 failed to supply any information as to their status (active, idle, etc.) or their activities in 1933, but these establishments accounted for only about three-tenths of 1 percent of the total number of wage earners and of the total value of products reported for 1931 by all the establishments in the industry as now constituted.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1933 AND 1931, AND FOR STATES, 1933

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1</sup>	Number of wage earners (average for the year)	Salaries <sup>1</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>2</sup>
Thousands of dollars. (See sec. 25, p. 13)								
<i>United States</i>								
1933.....	204	3 4,403	26,398	7,573	24,335	69,601	140,762	71,161
1931.....	227	( <sup>3</sup> )	26,116	( <sup>4</sup> )	32,350	88,562	199,427	110,865
<i>States, 1933</i>								
California.....	20	92	362	157	389	1,050	1,912	861
Illinois.....	21	191	1,302	259	1,294	5,299	8,903	3,605
Indiana.....	7	448	3,503	718	2,691	8,248	17,123	8,876
Iowa.....	4	16	49	22	39	82	197	115
Maryland.....	4	61	111	75	113	214	585	371
Massachusetts.....	9	7	48	11	48	79	188	109
Michigan.....	18	763	4,793	1,575	4,059	19,401	31,884	12,483
Minnesota.....	9	90	691	176	586	1,508	3,300	1,793
Missouri.....	11	125	249	208	278	776	1,961	1,185
New York.....	32	229	1,409	419	1,554	8,153	11,649	3,496
Pennsylvania.....	15	553	3,248	873	2,831	6,134	11,903	5,769
Wisconsin.....	8	99	682	169	538	1,208	2,510	1,302
Other States <sup>5</sup> .....	46	1,729	9,953	2,911	9,916	17,450	48,647	31,198

<sup>1</sup> No data included for salaried officers of corporations nor for employees of central administrative offices.

<sup>2</sup> Value of products less cost of materials, fuel, and purchased electric energy. See sec. 20, p. 11.

<sup>3</sup> Not including 50 proprietors and firm members.

<sup>4</sup> No data.

<sup>5</sup> Colo., 1 establishment; Conn., 2; Del., 2; Ga., 4; Ky., 2; Me., 1; Nebr., 3; N. H., 1; N. J., 4; N. C., 1; Ohio, 15; Okla., 1; Oreg., 2; Tenn., 2; Tex., 1; Va., 2; Wash., 2.

TABLE 2.—PRODUCTS, BY KIND, QUANTITY, AND VALUE, FOR THE UNITED STATES: 1933 AND 1931

	NUMBER		VALUE	
	1933	1931	1933	1931
1. "Refrigerators and refrigerating and ice-making apparatus" industry, all products, total value.....			<sup>1</sup> \$140,762,115	<sup>1</sup> \$199,426,753
2. Refrigerating and ice-making apparatus.....			<sup>1</sup> 126,964,660	<sup>1</sup> 185,291,438
3. Other products (not normally belonging to the industry).....			10,159,782	12,608,997
4. Receipts for custom, contract, and repair work.....			2,876,526	1,526,318
5. Refrigerating and ice-making apparatus and other products, not reported separately (on abbreviated schedule <sup>2</sup> ).....			761,147	
6. Refrigerating and ice-making apparatus made as secondary products in other industries.....			9,158,923	14,085,427

For footnotes, see end of table.

TABLE 2.—PRODUCTS, BY KIND, QUANTITY, AND VALUE, FOR THE UNITED STATES: 1933 AND 1931—Continued

	NUMBER		VALUE	
	1933	1931	1933	1931
Refrigerating and ice-making apparatus, aggregate value (2 and 6).....			\$136,123,583	\$199,376,865
Mechanical refrigerators and refrigerating systems, compression-type (electric):				
Domestic (household):				
Self-contained, total.....	956,356	708,894	75,459,555	90,447,442
Capacity under 6 cubic feet.....	433,434	431,934	27,347,092	48,060,818
6 cubic feet or more but under 10 cubic feet.....	416,310	260,896	39,104,540	38,348,758
10 cubic feet and over.....	10,062	16,064	1,935,362	4,037,866
Not reported by size.....	96,550		7,072,561	
Systems <sup>3</sup> complete without cabinets, all sizes.....	37,748	117,166	1,658,519	9,240,854
Commercial, total.....			7,986,407	15,520,179
Water coolers, self-contained.....	(4)	20,341	975,743	2,230,690
Ice-cream cabinets, self-contained:				
Number reported.....	3,499	52,500	613,522	10,695,843
Number not reported.....			1,102,177	
Other commercial refrigerators and display cases, self-contained.....	(4)	34,465	4,777,807	2,593,646
Compressors and miscellaneous commercial equipment, not reported separately.....			517,158	
Compressors made for sale separately.....	29,961		3,434,275	
Evaporators made for sale separately:				
Number reported.....	16,953	(4)	621,763	12,824,169
Number not reported.....			744,831	
High sides and low sides made for sale separately.....	22,292		739,022	
Cabinets, <sup>3</sup> display cases, etc., for mechanical refrigerators, made for sale separately:				
Domestic (household), all sizes.....	441,278	318,835	12,321,279	10,616,494
Commercial:				
Refrigerator cabinets:				
Number reported.....	17,667		1,128,612	
Number not reported.....			339,186	
Display, storage, etc., cases:				
Number reported.....	8,425	(4)	3,575,995	8,871,103
Number not reported.....			1,629,615	
Remote fountain or water coolers, with low sides.....			280,747	
Ice refrigerators and ice boxes:				
Domestic (household):				
Number reported.....	223,252	373,855	3,305,663	6,398,539
Number not reported.....			744,223	2,228,840
Commercial ice refrigerators, water coolers, milk coolers, food display cases, etc.:				
Number reported.....	37,446	73,757	1,558,045	5,405,428
Number not reported.....			1,835,206	2,148,361
Custom-built refrigerators, cabinets cooled by replaceable chemical refrigerant ("Kold-Kans", etc.), and cooling equipment therefor, and cabinets and display cases not reported by method of cooling.....			268,463	3,060,975
Ice-making and refrigerating machines, industrial (rated ice-making capacity in tons per 24 hours), total.....			4,115,261	16,641,591
Less than 10 tons:				
Number reported.....	2,274		921,123	
Number not reported.....			299,134	
10 tons or more but under 100 tons:				
Number reported.....	1,257	(5)	921,348	(5)
Number not reported.....			178,905	
100 tons and over.....	(4)		736,607	
Not reported separately by size.....			1,058,144	
Absorption-type refrigerators and parts for all types <sup>6</sup> .....			14,326,916	15,972,890

<sup>1</sup> The values of "Systems complete without cabinets" (see footnote 3) and "Cabinets, display cases, etc.," are duplicated in the totals to which this footnote is indexed and in the "Value of products" as given in table 1, to the extent to which these products were sold to manufacturers in the industry, or were transferred from one plant to another under the same ownership for assembly and sale as complete refrigerators.

<sup>2</sup> See sec. 5c, p. 4.

<sup>3</sup> The term "system," as used here, refers to a complete assembly, consisting of "high side" and "low-side," with motor, control, and expansion valve or its equivalent. The cabinet is not a part of the system.

<sup>4</sup> Data incomplete.

<sup>5</sup> No data.

<sup>6</sup> Figures combined to avoid disclosing output of an individual manufacturer of absorption-type refrigerators.

TABLE 3.—WAGE EARNERS, BY QUARTERS, FOR THE UNITED STATES, 1933 AND 1931, AND FOR SELECTED STATES: 1933

[The average for the year (table 1) differs from the average of the quarterly figures below. (See fourth sentence, sec. 13, p. 8.) See sec. 26, p. 13]

	Mar.	June	Sept.	Dec.		Mar.	June	Sept.	Dec.
<i>United States</i>					Maryland.....	86	121	117	95
1933 <sup>1</sup> .....	21, 835	35, 169	26, 762	25, 545	Massachusetts....	47	52	43	45
1931.....	23, 676	30, 972	22, 341	23, 505	Michigan.....	3, 722	6, 427	4, 503	5, 594
					Minnesota.....	708	802	695	709
<i>States, 1933</i>					Missouri.....	223	302	299	214
California.....	283	433	407	349	Nebraska.....	85	103	102	85
Georgia.....	100	112	114	104	New Jersey.....	450	486	537	443
Illinois.....	1, 533	1, 868	986	1, 045	New York.....	1, 222	1, 828	1, 432	1, 302
Indiana.....	2, 686	4, 575	4, 261	3, 317	Ohio.....	6, 775	12, 982	8, 330	7, 751
Iowa.....	43	65	46	31	Pennsylvania.....	2, 479	3, 458	3, 841	3, 306
					Wisconsin.....	727	720	654	655

<sup>1</sup> See secs. 5, p. 4, and 13, p. 8. The 170 establishments canvassed with the standard schedule reported wage earners, by months, as follows:

January.....	19, 349	May.....	30, 766	September.....	26, 590
February.....	21, 286	June.....	34, 979	October.....	24, 967
March.....	21, 704	July.....	33, 711	November.....	23, 077
April.....	24, 643	August.....	28, 443	December.....	25, 424

## SEWING MACHINES AND ATTACHMENTS

(A preliminary report for this industry was issued on Nov. 30, 1934)

**Description of the industry.**—This industry embraces establishments engaged primarily in the manufacture of sewing machines (hand, foot, and power) for home and for factory use.

**Extent of coverage.**—All the establishments in this industry that reported at the census for 1931 were accounted for in the canvass for 1933.

**TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931**

[See sec. 26, p. 13].

	Number of establishments	Number of salaried employees <sup>1</sup>	Number of wage earners (average for the year)	Salaries <sup>2</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>3</sup>
<i>Thousands of dollars. (See sec. 25, p. 13)</i>								
<i>United States</i>								
1933.....	30	823	6,313	1,556	6,034	2,862	12,926	10,064
1931.....	34	( <sup>4</sup> )	8,090	( <sup>4</sup> )	8,792	6,091	20,148	14,057
1929.....	39	1,703	10,467	3,611	14,976	16,458	45,095	28,636
1927.....	35	1,767	9,997	3,693	13,748	14,073	39,724	25,651
<i>States</i>								
<b>Connecticut:</b>								
1933.....	3	208	1,228	402	1,034	262	2,065	1,803
1931.....	3	( <sup>4</sup> )	1,539	( <sup>4</sup> )	1,515	346	2,547	2,201
<b>Illinois:</b>								
1933.....	4	163	1,097	304	938	856	3,250	2,395
1931.....	4	( <sup>4</sup> )	984	( <sup>4</sup> )	922	1,361	3,896	2,536
<b>Massachusetts:</b>								
1933.....	5	63	161	149	333	110	767	657
1931.....	6	( <sup>4</sup> )	182	( <sup>4</sup> )	233	95	596	501
<b>New York:</b>								
1933.....	10	32	106	51	135	78	475	396
1931.....	13	( <sup>4</sup> )	109	( <sup>4</sup> )	126	139	617	478
<b>Other States:<sup>4</sup></b>								
1933.....	8	357	3,721	650	3,594	1,556	6,369	4,813
1931.....	8	( <sup>4</sup> )	5,276	( <sup>4</sup> )	5,997	4,151	12,493	8,342

<sup>1</sup> Not including proprietors and firm members, as follows: 1933, 6; 1931, no data; 1929, 19; 1927, 12.

<sup>2</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations, and therefore are not strictly comparable with the corresponding figures for 1929 and 1927, in which such data are included. No data for employees of central administrative offices are included in the figures for any year.

<sup>3</sup> Value of products less cost of materials, fuel, and purchased electric energy. See sec. 20, p. 11.

<sup>4</sup> No data.

<sup>5</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Md., 1, 1; Mo., 2, 2; N. J., 1, 1; Ohio, 2, 2; Pa., 2, 2. New Jersey is more important in the industry than any of the States shown separately.

TABLE 2.—PRODUCTS, BY KIND, NUMBER, AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929

	1933	1931	1929
1. "Sewing machines and attachments" industry, all products, total value.....	\$12,926,146	\$20,148,125	\$45,094,600
2. Sewing machines, parts, and attachments.....	12,188,444	17,248,379	40,465,659
3. Other products (not normally belonging to the industry).....	709,862	2,777,574	4,223,893
4. Receipts for contract and repair work.....	27,840	122,172	405,048
5. Sewing machines made as secondary products in other industries.....	261,829	178,500	494,443
Sewing machines, parts, and attachments, aggregate (2 and 5).....	\$12,450,273	\$17,426,879	\$40,960,102
Sewing machines:			
Household types:			
Number.....	128,008	231,569	689,027
Value.....	\$4,386,653	\$7,621,755	\$25,095,008
Industrial types:			
Number.....	42,919	67,041	122,641
Value.....	\$5,888,086	\$7,630,652	\$12,001,736
Sewing machines not reported as to type:			
Number.....			2,080
Value.....			\$281,466
Parts and attachments, value.....	\$2,176,534	\$2,174,472	\$3,581,892

## TEXTILE MACHINERY AND PARTS

[A preliminary report for this industry was issued on Aug. 3, 1934]

**Description of the industry.**—This industry, as constituted in 1933, embraced 314 establishments, of which 107 were engaged primarily in the manufacture of machinery of the following classes: (1) Fiber-to-fabric machinery—that is, machinery for working raw stock, and all textile-mill machinery used in subsequent processes in the preparation of yarn for weaving, knitting, etc.; (2) fabric machinery—looms, knitting machines, etc.; (3) machinery for bleaching, dyeing, printing, mercerizing, finishing, etc.; (4) miscellaneous textile machinery not included in any of the foregoing classes. Of the remainder, 151 manufactured extra parts, attachments, and accessories for textile machinery, 20 made and covered rolls, and 36 rebuilt and repaired machinery. (Establishments engaged solely in repairing are not included.)

**Extra parts, attachments, and accessories for textile machinery.**—The relatively large value of "Extra parts, attachments, and accessories for textile machinery," as shown in table 2—approximately half of the total value of textile machinery and parts—is accounted for by the fact that some manufacturers of textile machinery ship a considerable proportion of their output, especially that destined for export, in the form of "knocked-down" or partly assembled machines. The records of these manufacturers do not in all cases show the numbers of complete machines represented by such shipments, and accordingly they are necessarily reported as parts.

**Extent of coverage.**—The 1933 coverage of the establishments reporting in the "Textile machinery and parts" industry for 1931 was practically complete. Of the 330 such establishments, only 5 failed to supply any information in regard to their status (active, idle, etc.) or their activities in 1933, and these accounted for less than two-tenths of 1 percent of the total number of wage earners and of the total value of products reported for this industry for 1931.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1</sup>	Number of wage earners (average for the year)	Salaries <sup>2</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>3</sup>
<i>United States</i>								
1933.....	314	2,705	18,576	5,118	18,737	18,378	60,323	41,945
1931.....	330	( <sup>4</sup> )	18,808	( <sup>4</sup> )	21,238	18,175	65,798	47,623
1929.....	376	4,244	27,019	12,661	37,836	36,556	122,439	85,882
1927.....	367	4,066	26,154	10,917	36,481	36,181	116,921	80,740
<i>States</i>								
<i>Connecticut:</i>								
1933.....	13	47	365	119	444	456	1,481	1,025
1931.....	13	( <sup>4</sup> )	350	( <sup>4</sup> )	407	406	1,471	1,065
<i>Georgia:</i>								
1933.....	13	40	269	64	204	307	825	518
1931.....	11	( <sup>4</sup> )	213	( <sup>4</sup> )	160	244	645	401
<i>Massachusetts:</i>								
1933.....	99	810	7,972	1,671	7,988	7,478	25,143	17,665
1931.....	102	( <sup>4</sup> )	7,527	( <sup>4</sup> )	8,865	6,792	24,090	17,209
<i>New Hampshire:</i>								
1933.....	8	128	840	262	840	742	2,951	2,210
1931.....	8	( <sup>4</sup> )	836	( <sup>4</sup> )	1,018	800	3,833	3,033
<i>New Jersey:</i>								
1933.....	32	123	603	222	623	1,091	2,574	1,483
1931.....	35	( <sup>4</sup> )	734	( <sup>4</sup> )	1,032	1,292	3,486	2,194
<i>New York:</i>								
1933.....	15	39	179	80	196	313	822	510
1931.....	16	( <sup>4</sup> )	254	( <sup>4</sup> )	287	353	1,035	682
<i>North Carolina:</i>								
1933.....	21	51	266	93	223	340	950	610
1931.....	23	( <sup>4</sup> )	274	( <sup>4</sup> )	291	362	1,085	723
<i>Pennsylvania:</i>								
1933.....	46	708	3,823	1,397	4,136	3,746	12,108	8,362
1931.....	52	( <sup>4</sup> )	4,514	( <sup>4</sup> )	5,299	4,078	15,856	11,778
<i>Rhode Island:</i>								
1933.....	38	361	1,697	639	1,815	2,108	6,594	4,486
1931.....	40	( <sup>4</sup> )	2,390	( <sup>4</sup> )	2,108	2,386	8,896	6,510
<i>South Carolina:</i>								
1933.....	10	14	216	29	184	281	760	478
1931.....	10	( <sup>4</sup> )	165	( <sup>4</sup> )	177	255	640	386
<i>Tennessee:</i>								
1933.....	5	8	32	9	26	38	97	59
1931.....	3	( <sup>4</sup> )	20	( <sup>4</sup> )	22	17	50	34
<i>Other States:<sup>5</sup></i>								
1933.....	14	376	2,314	534	2,058	1,478	6,017	4,539
1931.....	17	( <sup>4</sup> )	1,531	( <sup>4</sup> )	1,573	1,191	4,710	3,519

<sup>1</sup> Not including proprietors and firm members, as follows: 1933, 175; 1931, no data; 1929, 231; 1927, 218.<sup>2</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations, and therefore are not strictly comparable with the corresponding figures for 1929 and 1927, in which such data are included. No data for employees of central administrative offices are included in the figures for any year.<sup>3</sup> Value of products less cost of materials, fuel, and purchased electric energy. See sec. 20, p. 11.<sup>4</sup> No data.<sup>5</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Ala., 1, 1; Del., 1, 1; Ill., 3, 4; Iowa, 0, 1; Ky., 1, 1; Me., 3, 3; Md., 1, 1; Mich., 1, 1; Ohio, 1, 1; Tex., 0, 1; and Vt., 2, 2.

TABLE 2.—PRODUCTS, BY KIND, NUMBER, AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929

	NUMBER			VALUE IN THOUSANDS OF DOLLARS <sup>1</sup>		
	1933	1931	1929	1933	1931	1929
1. "Textile machinery and parts" industry, all products, total.....				60,323	65,798	122,439
2. Textile machinery and parts.....				57,284	60,483	112,851
3. Other products (not normally belonging to the industry).....				713	1,190	2,609
4. Receipts for contract and repair work.....				2,326	4,125	6,978
5. Textile machinery and parts made as secondary products in other industries.....				608	740	2,674
Textile machinery and parts, aggregate (2 and 5).....				57,892	61,223	115,525
Fiber-to-fabric machinery, total.....				10,442	9,724	23,106
Picker machines.....	120	358	1,741	380	490	1,903
Carding machines.....	572	371	3,290	818	520	2,848
Combing machines and drawing frames.....	1,819	1,682	3,572	380	461	828
Roving frames.....	123	167	656	159	233	995
Spinning machines.....	3,648	2,984	5,419	4,082	3,124	4,859
Doubling and twisting frames.....	891	782	2,350	1,227	1,325	4,150
Winders—skein, spool, bobbin, quill, cone, etc.....			111,333	2,857	2,483	4,825
Beaming, warping, and slashing machines.....	439	643	944	540	1,087	2,698
Fabric machinery, total.....				11,248	15,650	29,942
Looms for weaving.....	10,713	10,733	19,413	5,979	5,677	9,645
Knitting machines (other than hand).....	3,452	9,136	12,970	4,820	9,567	19,061
Braiding machines.....	1,215	1,898	6,988	235	197	1,044
Other fabric machines, including Jacquard, lace and net, embroidery, and cordage and rope machines.....				214	209	193
Machinery for bleaching, dyeing, printing, mercerizing, finishing, etc., stock, yarn, and cloth.....				3,990	5,296	9,332
Other textile machinery and that not reported separately by manufacturers.....				3,573	3,692	9,302
Extra parts, attachments, spindles, and accessories for textile machinery <sup>2</sup> .....				28,639	26,861	43,843

<sup>1</sup> See sec. 25, p. 13.

<sup>2</sup> See "Extra parts, attachments, etc.," p. 537.

TABLE 3.—WAGE EARNERS, BY QUARTERS, FOR SELECTED STATES: 1933 AND 1931

[The average for the year (table 1) differs from the average of the quarterly figures below. (See fourth sentence, sec. 13, p. 8.) See sec. 26, p. 13]

	1933 <sup>1</sup>				1931			
	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.
United States.....	14,112	16,206	23,486	22,801	19,285	18,989	18,723	18,036
<i>States</i>								
Connecticut.....	259	318	482	409	388	350	328	317
Georgia.....	243	268	307	267	222	208	201	212
Illinois.....	351	368	492	500	429	377	370	326
Maine.....	1,137	1,077	2,396	2,529	991	876	911	852
Massachusetts.....	5,746	6,858	10,389	10,074	7,501	7,587	7,737	7,484
New Hampshire.....	654	773	927	1,204	840	896	852	836
New Jersey.....	426	538	758	780	795	792	690	594
New York.....	152	165	218	169	278	257	240	241
North Carolina.....	216	255	306	299	274	281	277	263
Pennsylvania.....	3,133	3,631	4,534	4,204	4,645	4,522	4,386	4,307
Rhode Island.....	1,312	1,517	2,210	1,901	2,487	2,404	2,321	2,240
South Carolina.....	198	224	237	223	166	166	163	169
Tennessee.....	20	38	40	35	21	20	20	20

<sup>1</sup> See secs. 5, p. 4, and 13, p. 8. The 237 establishments canvassed with the standard schedule reported wage earners, by months, as follows:

January.....	14,353	May.....	13,907	September.....	22,962
February.....	14,259	June.....	15,774	October.....	22,864
March.....	13,729	July.....	18,709	November.....	22,880
April.....	13,368	August.....	22,245	December.....	22,279

## WASHING MACHINES, WRINGERS, DRIERS, AND IRONING MACHINES, FOR HOUSEHOLD USE

(A preliminary report for this industry was issued on Nov. 30, 1934)

**Description of the industry.**—This industry embraces establishments engaged primarily in the manufacture of washing machines, wringers, driers, and ironing machines, other than those used in commercial laundries, whether operated by hand or by mechanical power.

**Extent of coverage.**—The 1933 coverage of the establishments reporting in this industry for 1931 was practically complete. Of the 59 such establishments, only 1 failed to supply any information in regard to its status (active, idle, etc.) or its activities in 1933, and this establishment accounted for only a very small fraction of 1 percent of the total number of wage earners and of the total value of products reported for the industry for 1931.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employes <sup>1</sup>	Number of wage earners (average for the year)	Salaries <sup>2</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>3</sup>
<i>United States</i>								
1933.....	41	1,284	6,956	2,166	6,363	24,361	44,542	20,181
1931.....	59	( <sup>4</sup> )	6,201	( <sup>4</sup> )	7,212	24,521	50,929	26,408
1929.....	65	1,713	8,189	4,723	12,072	40,707	82,330	41,623
1927.....	75	1,635	7,789	3,757	10,950	34,528	70,244	35,716
<i>States</i>								
<i>Illinois:</i>								
1933.....	9	461	1,396	727	1,500	5,362	9,917	4,555
1931.....	12	( <sup>4</sup> )	1,149	( <sup>4</sup> )	1,528	4,884	9,998	5,113
<i>Iowa:</i>								
1933.....	8	217	1,854	354	1,840	5,976	12,462	6,485
1931.....	9	( <sup>4</sup> )	1,730	( <sup>4</sup> )	1,979	6,106	14,965	8,859
<i>Other States:<sup>5</sup></i>								
1933.....	24	606	3,706	1,085	3,023	13,023	22,164	9,141
1931.....	38	( <sup>4</sup> )	3,322	( <sup>4</sup> )	3,706	13,531	25,966	12,435

<sup>1</sup> Not including proprietors and firm members, as follows: 1933, 4; 1931, no data; 1929, 9; 1927, 29.

<sup>2</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations, and therefore are not strictly comparable with the corresponding figures for 1929 and 1927, in which such data are included. No data for employees of central administrative offices are included in the figures for any year.

<sup>3</sup> Value of products less cost of materials, fuel, and purchased electric energy. See sec. 20, p. 11.

<sup>4</sup> No data.

<sup>5</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Calif., 3, 5; Conn., 0, 1; Ind., 2, 2; Mich., 2, 3; Minn., 1, 1; Mo., 1, 3; N. Y., 4, 6; Ohio, 7, 10; Pa., 1, 3; W. Va., 1, 1; Wis., 2, 3.

TABLE 2.—PRODUCTS, BY KIND, NUMBER, AND VALUE, FOR THE UNITED STATES: 1933, 1931, 1929

	1933	1931	1929
1. "Washing machines, wringers, driers, and ironing machines, for household use" industry, all products, total value.....	\$44,542,334	\$50,928,564	\$82,329,924
2. Washing machines, etc., and parts and accessories.....	42,533,564	48,304,724	77,965,445
3. Other products (not normally belonging to the industry).....	1,321,749	1,838,041	3,070,393
4. Receipts for custom and repair work.....	687,021	785,799	1,294,086
5. Washing machines, etc., made as secondary products in other industries.....	1,163,179	1,976,639	3,047,439
Washing machines, driers, etc., and parts and accessories, aggregate (2 and 5).....	\$43,696,743	\$50,281,363	\$81,012,884
Washing machines for household use (including apartment size):			
Number reported:			
Number.....	1,017,088	883,350	1,133,860
Value.....	\$37,569,289	\$43,267,056	\$71,145,572
Number not reported, value.....	\$495,670	\$79,875	\$242,572
Electric:			
Number reported:			
Number.....	1,003,322	1,810,338	956,062
Value.....	\$37,044,353	\$39,385,147	\$59,930,902
Number not reported, value.....	\$495,670		
Other (hand, gasoline, and water power):			
Number reported:			
Number.....	13,766	73,012	177,798
Value.....	\$524,936	\$3,881,909	\$11,214,670
Number not reported, value.....		\$79,875	\$242,572
Ironing machines (electric and other types) and ironing-machine attachments for washing machines:			
Number.....	66,681	71,547	( <sup>2</sup> )
Value.....	\$2,150,143	\$2,794,338	\$4,015,222
Wringers, <sup>3</sup> driers, and extractors.....	\$2,206,487	\$2,140,135	\$3,607,457
Parts and accessories.....	\$1,275,154	\$1,999,959	\$2,002,061

<sup>1</sup> Includes data for a very small number of apartment-size washing machines reported as other than electric.

<sup>2</sup> No data.

<sup>3</sup> Includes wringers for sale to washing-machine manufacturers for attachment to washing machines.

<sup>4</sup> Includes value of 6,179 washing machines and ironing machines not reported separately.

## **Group 14.—TRANSPORTATION EQUIPMENT, AIR, LAND, AND WATER**

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### **THE GROUP AS A WHOLE**

[See p. 39]

This group embraces those industries which are engaged primarily in the manufactures of aircraft, vehicles for land transportation, locomotives, and watercraft. Railroad repair shops are classified in Group 15. (See p. 618.)

The combined value of products for Groups 14 and 15 for 1933 amounts to \$2,564,227,298, which represents the manufacture of all classes of transportation equipment and the repair of rolling stock and other railroad equipment. The corresponding figures for earlier years are: 1931, \$3,639,388,551; 1929, \$7,317,126,229; 1927, \$5,983,666,764.

## SUMMARY FOR GROUP 14.—TRANSPORTATION EQUIPMENT, AIR, LAND, AND WATER: 1927 TO 1933

INDUSTRY	Census year	Number of establishments	Wage earners (average for the year)	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>1</sup>
Total for the group----	1933	1,551	307,373	\$319,315,723	\$1,292,289,578	\$2,058,195,466	\$765,905,888
	1931	2,058	373,759	468,609,220	1,736,927,675	2,898,625,589	1,161,697,914
	1929	2,550	583,355	943,221,905	3,683,148,078	6,047,209,390	2,864,061,312
	1927	2,537	494,905	803,297,856	2,907,949,399	4,693,971,606	1,786,022,207
Aircraft and parts-----	1933	64	7,816	10,307,560	7,956,663	26,460,092	18,503,429
	1931	101	9,870	15,480,647	13,101,494	40,278,278	27,176,784
	1929	132	14,710	21,923,844	27,368,103	71,152,924	43,784,821
	1927	70	4,422	6,857,014	7,517,183	21,161,853	13,644,670
Carriage, wagon, sleigh, and sled materials. <sup>2</sup>	1929	45	681	564,635	1,481,988	2,792,228	1,310,240
	1927	44	764	664,515	1,554,554	3,040,948	1,486,394
Carriages and sleds, children's.	1933	46	3,971	2,877,486	5,670,700	10,984,991	5,314,291
	1931	59	4,159	4,479,403	7,090,608	16,769,379	9,678,771
	1929	79	7,102	8,313,356	13,514,787	28,817,860	15,303,073
	1927	89	7,030	7,813,648	13,895,086	28,668,145	14,773,059
Carriages, wagons, sleighs, and sleds.	1933	53	1,409	922,448	2,350,485	4,752,846	2,402,361
	<sup>3</sup> 1931	70	1,827	1,199,430	2,194,072	5,160,080	2,666,078
	1931	75	1,431	1,388,788	2,917,965	6,178,985	3,261,020
	1929	88	2,873	3,417,963	8,458,294	16,449,879	7,991,585
	1927	117	3,387	4,211,610	10,648,271	19,422,235	8,773,964
Cars, electric and steam railroad, not built in railroad repair shops.	1933	138	14,266	14,710,122	27,310,737	46,147,507	18,836,770
	1931	152	18,785	25,553,260	59,753,869	99,657,122	39,903,253
	1929	147	40,015	63,387,382	223,889,397	328,220,204	104,390,807
	1927	135	38,031	60,624,856	209,112,561	312,508,598	103,366,037
Locomotives (other than electric), not made in railroad repair shops.	1933	13	2,374	1,862,529	4,266,218	6,927,300	2,661,082
	1931	16	5,443	5,589,610	14,870,591	22,118,636	7,248,045
	1929	16	11,045	17,994,078	52,808,092	83,858,258	31,050,166
	1927	17	12,961	17,648,206	45,688,450	76,719,403	31,030,953
Motorcycles, bicycles, and parts.	1933	19	3,038	2,639,031	6,161,686	12,055,357	5,893,671
	1931	19	3,294	3,563,016	5,519,773	13,696,758	8,176,985
	1929	21	4,392	6,263,876	11,281,327	23,894,805	12,613,478
	1927	29	3,897	5,441,502	10,174,092	21,454,149	11,280,057
Motor-vehicle bodies and motor-vehicle parts.	1933	701	145,745	148,321,562	439,632,686	761,224,899	321,592,213
	1931	940	150,649	193,770,459	516,945,484	945,406,758	428,461,274
	<sup>4</sup> 1929	1,188	222,760	368,625,279	363,956,732	1,551,208,079	687,271,297
	1929	1,154	221,332	366,503,385	856,985,637	1,537,929,793	680,944,156
	1927	1,213	181,489	291,290,968	641,306,562	1,151,426,365	510,119,803
Motor vehicles, not including motorcycles.	1933	122	97,869	103,784,905	767,768,278	1,096,946,283	329,178,005
	1931	178	134,866	156,755,887	1,044,405,902	1,567,526,262	523,120,360
	<sup>5</sup> 1929	210	224,888	364,457,359	2,391,660,618	3,709,514,938	1,314,954,370
	1929	244	226,116	366,579,233	2,401,511,763	3,722,793,274	1,321,281,511
	1927	264	187,910	321,664,093	1,889,426,249	2,848,442,843	959,016,594
Ship and boat building, steel and wooden, including repair work.	1933	395	30,885	33,890,080	31,172,125	92,696,191	61,524,066
	1931	518	45,262	62,028,150	72,821,989	186,993,411	114,671,422
	1929	624	55,089	88,274,153	85,848,690	231,300,165	145,451,475
	1927	559	55,014	87,081,444	78,626,391	211,127,067	132,500,676

<sup>1</sup> Value of products less cost of materials, fuel, and purchased electric energy. See sec. 20, p. 11.

<sup>2</sup> Abandoned as a separate industry classification. For 1931 and 1933, manufacturers of such materials as felloes, hubs, and spokes have been classified in "Wood turned and shaped and other wooden goods, not elsewhere classified," in Group 3, and manufacturers of other materials for carriages, wagons, etc., have been assigned to "Carriages, wagons, sleighs, and sleds."

<sup>3</sup> Manufacturers of horse-drawn lunch wagons, formerly classified in this industry, are now assigned to the "Planing-mill products" industry in Group 3. The italic figures for 1931 have been adjusted for comparison with 1933.

<sup>4</sup> Revised to include data for manufacture of trailers; comparable with subsequent years.

<sup>5</sup> Revised to exclude data for manufacture of trailers; comparable with subsequent years.

# AIRCRAFT

[A preliminary report for this industry was issued on July 14, 1934]

**Description of the industry.**—The establishments in this industry are engaged primarily in the manufacture of complete aircraft or of aircraft parts other than engines and tires, or in the repair of aircraft. Establishments operated by the Federal Government are not canvassed. Establishments engaged primarily in the manufacture of aircraft engines for sale as such are classified in the "Engines, turbines, tractors, water wheels, and windmills" industry, and therefore no data for such establishments are included in this report. The values of engines are not included in those of aircraft or in the value of products of the industry as a whole, as reported to the Bureau of the Census for 1933 and for 1931. At the censuses for 1929 and 1927, manufacturers were not given specific instructions on this point, and therefore it is possible that the values of engines were included in some cases and were excluded in others.

**Extent of coverage.**—All the establishments in this industry that reported at the census for 1931 were accounted for in the canvass for 1933.

**TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES: 1933 AND 1931**

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employes <sup>1 2</sup>	Number of wage earners (average for the year)	Salaries <sup>2</sup>	Wages	Cost of contract work	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>3</sup>	
										<i>Thousands of dollars.</i> (See sec. 25, p. 13)
<i>United States</i>										
1933.....	64	1,810	7,816	3,516	10,308	550	7,957	26,460	18,503	
1931.....	101	( <sup>4</sup> )	9,870	( <sup>4</sup> )	15,481	291	13,101	40,278	27,177	
1929.....	132	3,910	14,710	9,524	21,924	( <sup>4</sup> )	27,368	71,153	43,785	
1927.....	70	1,064	4,422	2,289	6,857	( <sup>4</sup> )	7,517	21,162	13,645	
<i>States</i>										
<i>New York:</i>										
1933.....	15	392	2,038	1,052	2,358	332	1,902	6,775	4,873	
1931.....	19	( <sup>4</sup> )	2,161	( <sup>4</sup> )	3,409	16	2,845	7,978	5,183	
<i>Ohio:</i>										
1933.....	9	151	364	355	545	2	1,062	2,070	1,008	
1931.....	10	( <sup>4</sup> )	1,071	( <sup>4</sup> )	1,737	68	1,734	4,416	2,683	
<i>Pennsylvania:</i>										
1933 <sup>5</sup> .....	5	35	78	52	90	-----	78	209	131	
<i>Other States:<sup>6</sup></i>										
1933.....	35	1,232	5,336	2,057	7,315	216	4,914	17,407	12,492	
1931.....	72	( <sup>4</sup> )	6,638	( <sup>4</sup> )	10,335	207	8,523	27,884	19,361	

<sup>1</sup> Not including proprietors and firm members, as follows: 1933, 1; 1931, no data; 1929, 15; 1927, 13.

<sup>2</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations, and therefore are not strictly comparable with the corresponding figures for 1929 and 1927, in which such data are included. No data for employees of central administrative offices are included in the figures for any year.

<sup>3</sup> Value of products less cost of materials, fuel, and purchased electric energy. See sec. 20, p. 11.

<sup>4</sup> No data.

<sup>5</sup> Figures for 1931 withheld to avoid disclosing approximations of data for individual establishments; included in items for "Other States."

<sup>6</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Calif., 7, 10; Colo., 0, 1; Conn., 2, 5; Del., 1, 1; Fla., 0, 1; Ill., 2, 4; Ind., 2, 1; Iowa, 0, 2; Kans., 2, 8; La., 1, 1; Md., 4, 4; Mass., 1, 1; Mich., 4, 9; Mo., 3, 3; Nebr., 0, 1; N. J., 2, 5; Okla., 1, 2; Oreg., 0, 1; Pa. (1931), 8; Tex., 0, 1; Wash., 1, 1; W. Va., 0, 1; Wis., 1, 1.

TABLE 2.—PRODUCTS, BY KIND, NUMBER, AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929

	NUMBER			VALUE IN THOUSANDS OF DOLLARS <sup>1</sup>		
	1933	1931	1929	1933	1931	1929
1. Aircraft industry, all products, total value.....				26,460	40,278	71,153
2. Aircraft and parts.....				24,356	<sup>2</sup> 35,178	<sup>2</sup> 65,712
3. Other products (not normally belonging to the industry).....				373	<sup>2</sup> 503	<sup>2</sup> 1,753
4. Experimental work.....				1,211	<sup>2</sup> 3,035	3,070
5. Receipts for repair work.....				519	<sup>2</sup> 1,562	618
6. Aircraft parts made as secondary products in other industries.....				1,263	599	866
Aircraft and parts, aggregate (2 and 6).....				25,619	<sup>2</sup> 35,777	<sup>2</sup> 66,577
Aircraft heavier than air, completed within the year, total.....	1,151	2,468	6,631	15,670	21,790	51,508
Airplanes, total.....	1,083	<sup>2</sup> 2,357	6,522	13,449	<sup>2</sup> 17,623	46,848
Open-cockpit.....	594	<sup>2</sup> 1,744	4,483	7,185	<sup>2</sup> 10,350	24,644
Cabin, single-engine (one to three place).....	102	75	1,350	217	336	9,186
Cabin, single-engine (four-place and larger).....	267	384		1,584	5,213	
Cabin, multi-engine.....	93	84	251	4,373	1,534	12,240
Rebuilt and reassembled.....	27	70	438	90	190	778
Seaplanes and amphibians.....	<sup>3</sup> 68	<sup>2</sup> 111	<sup>3</sup> 109	<sup>2</sup> 2,221	<sup>2</sup> 4,167	<sup>2</sup> 4,660
Parachutes.....	1,274	3,235	6,188	147	516	1,438
Propellers, total.....		4,227	14,964	885	502	2,091
Metal.....	2,334	1,883	( <sup>5</sup> )	840	433	( <sup>5</sup> )
Wood.....	( <sup>4</sup> )	2,344	( <sup>5</sup> )	45	69	( <sup>5</sup> )
Pontoons.....	196	175	( <sup>5</sup> )	343	340	( <sup>5</sup> )
Aircraft under construction, work done during year.....				2,486	2,827	( <sup>4</sup> )
Parts.....				5,898	<sup>2</sup> 9,224	<sup>2</sup> 10,892
Other aircraft <sup>6</sup> .....				190	<sup>2</sup> 578	649

<sup>1</sup> See sec. 25, p. 13.<sup>2</sup> Revised.<sup>3</sup> For 1933, includes data for 1 rebuilt amphibian; for 1931, 2 rebuilt amphibians, and 1 rebuilt seaplane; for 1929, 4 rebuilt seaplanes.<sup>4</sup> Not reported.<sup>5</sup> No data.<sup>6</sup> Autogiros, lighter-than-air airships, and balloons; figures combined to avoid disclosing, exactly or approximately, output of individual establishments.

## **CARRIAGES AND SLEDS, CHILDREN'S**

Because of the close relation and the amount of overlapping between this industry and the "Toys (not including children's wheel goods or sleds), games, and playground equipment" industry, in Group 16, the reports for the two industries have been combined and are presented in the section for Group 16. (See pp. 659 to 663.)

# CARRIAGES, WAGONS, SLEIGHS, AND SLEDS

[A preliminary report for this industry was issued on June 20, 1934]

**Description of the industry.**—The establishments in this industry are engaged primarily in the manufacture of complete horse-drawn vehicles (including sleighs and sleds) of all classes, wheelbarrows, handcarts, push-carts, and parts and materials made for sale as such.

Horse-drawn lunch wagons, although not vehicles in the strict sense of the term, were formerly treated as products of this industry. These have evolved, however, into comparatively large structures resembling dining cars, usually without wheels and more or less permanently located. Such structures are factory products, but they do not belong in the "Carriages, wagons, sleighs, and sleds" industry and have therefore been transferred to the "Planing-mill products" industry, in which other ready-cut structures are classified. The 1931 figures in italics in table 1 have been revised by excluding the data for this type of structure, in order to make them comparable with the 1933 figures. The unrevised 1931 figures (in Roman numerals) are comparable with those for earlier years.

**Extent of coverage.**—The 1933 coverage of the establishments reporting in this industry for 1931 was practically complete. Of the 70 such establishments, only 1 failed to supply any information in regard to its status (active, idle, etc.) or its activities in 1933, and this establishment accounted for only a fraction of 1 percent of the total number of wage earners and of the total value of products reported for the industry for 1931.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1</sup>	Number of wage earners (average for the year)	Salaries <sup>2</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>3</sup>
<i>Thousands of dollars.</i> (See sec. 25, p. 13)								
<i>United States</i>								
1933.....	53	201	1,409	274	922	2,350	4,753	2,402
1931 <sup>4</sup> .....	70	( <sup>5</sup> )	<i>1,321</i>	( <sup>6</sup> )	<i>1,199</i>	<i>2,494</i>	<i>5,161</i>	<i>2,666</i>
1931 <sup>6</sup> .....	75	( <sup>5</sup> )	1,431	( <sup>6</sup> )	1,389	2,918	6,179	3,261
1929.....	88	570	2,873	1,418	3,418	8,458	16,450	7,992
1927.....	117	639	3,387	1,562	4,212	10,648	19,422	8,774
<i>States</i>								
<i>Illinois:</i>								
1933.....	6	78	486	120	347	784	1,589	805
1931.....	6	( <sup>5</sup> )	447	( <sup>6</sup> )	429	934	1,813	879
<i>Indiana:</i>								
1933.....	5	24	224	24	122	353	682	329
1931.....	6	( <sup>5</sup> )	119	( <sup>6</sup> )	121	194	411	217
<i>Minnesota:</i>								
1933.....	4	11	72	14	56	154	270	117
1931.....	4	( <sup>5</sup> )	88	( <sup>6</sup> )	87	154	371	217
<i>New York:</i>								
1933.....	5	3	12	4	9	22	57	35
1931 <sup>4</sup> .....	8	( <sup>5</sup> )	29	( <sup>6</sup> )	36	67	166	89

For footnotes, see end of table.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931—Continued

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employ-ees <sup>1, 2</sup>	Number of wage earners (average for the year)	Salaries <sup>3</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by man-ufacture <sup>4</sup>
<i>States—Continued</i>								
North Carolina:								
1933.....	3	10	119	15	65	193	344	151
1931.....	3	( <sup>5</sup> )	32	( <sup>5</sup> )	24	53	145	92
Ohio:								
1933.....	3	12	51	14	37	90	176	86
1931.....	3	( <sup>5</sup> )	45	( <sup>5</sup> )	54	99	206	107
Pennsylvania:								
1933.....	6	16	130	23	93	246	460	214
1931.....	8	( <sup>5</sup> )	179	( <sup>5</sup> )	124	293	567	274
Other States: <sup>7</sup>								
1933.....	21	47	315	60	193	508	1, 174	666
1931 <sup>4</sup> .....	32	( <sup>5</sup> )	382	( <sup>5</sup> )	326	700	1, 492	792

<sup>1</sup> Not including proprietors and firm members, as follows: 1933, 10; 1931, no data; 1929, 22; 1927, 48.<sup>2</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations, and therefore are not strictly comparable with the corresponding figures for 1929 and 1927, in which such data are included. No data for employees of central administrative offices are included in the figures for any year.<sup>3</sup> Value of products less cost of materials, fuel, and purchased electric energy. See sec. 20, p. 11.<sup>4</sup> Revised. See "Description of the industry," second par., p. 597.<sup>5</sup> No data.<sup>6</sup> As published; comparable with earlier years. See "Description of the industry," second par., p. 597.<sup>7</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Ala., 1, 1; Ark., 1, 3; Ga., 1, 2; Iowa, 2, 4; Ky., 2, 3; La., 2, 2; Md., 0, 1; Mass., 0, 1; Mich., 1, 1; Miss., 1, 1; Mo., 2, 4; Tenn., 3, 3; Va., 3, 3; Wis., 2, 3.

TABLE 2.—PRODUCTS, BY KIND, NUMBER, AND VALUE, FOR THE UNITED STATES: 1933 AND 1931

	NUMBER		VALUE	
	1933	1931	1933	1931
1. "Carriages, wagons, sleighs, and sleds" industry, all products, total value.....			\$4, 752, 846	1 \$5, 160, 090
2. Carriages, wagons, sleighs, sleds, and wheelbarrows.....			3, 341, 054	1 2, 065, 267
3. Parts.....			267, 499	1 508, 561
4. Receipts for repair work.....				1 188, 700
5. Other products (not normally belonging to the industry).....			1, 144, 293	1 1, 397, 562
6. Carriages, wagons, sleighs, sleds, wheelbarrows, and parts, made as secondary products in other industries.....			1, 249, 351	1 1, 030, 190
Carriages, wagons, sleighs, sleds, wheelbarrows, and parts, aggregate (2, 3, and 6).....			4, 857, 904	1 4, 604, 018
Horse-drawn vehicles, total.....		30, 262	2 2, 438, 948	1 1, 705, 117
Number reported.....	2 45, 638	30, 262	2 2, 066, 706	1 1, 705, 117
Number not reported.....			372, 242	
Farm wagons and farm trucks, total.....		26, 359	2 2, 353, 061	1 1, 378, 026
Number reported.....	44, 464	26, 359	1, 980, 819	1 1, 378, 026
Number not reported.....			372, 242	
Business vehicles, including mail carriers' wagons and public conveyances.....	2 100	1 823	2 24, 641	1 187, 187
Carriages, buggies, sulkeys, and two-wheeled carts.....	1, 074	2, 423	61, 246	121, 215
Sleighs and sleds (including bobsleds).....	( <sup>3</sup> )	657	( <sup>3</sup> )	18, 689
Wheelbarrows.....			1, 548, 075	1, 243, 460
Handcarts and pushcarts.....	( <sup>3</sup> )	5, 473	( <sup>3</sup> )	73, 102
Parts.....			435, 085	1, 582, 339
Wagons, trucks, carts, sleds, parts, etc., not reported separately.....			435, 796	

<sup>1</sup> Revised. See "Description of the industry," second par., p. 597.<sup>2</sup> Data incomplete; not reported separately by all manufacturers.<sup>3</sup> Data incomplete.

## CARS, ELECTRIC AND STEAM RAILROAD, NOT BUILT IN RAILROAD REPAIR SHOPS; LOCOMOTIVES (OTHER THAN ELECTRIC) NOT MADE IN RAILROAD REPAIR SHOPS

[Preliminary reports for these industries were issued on Dec. 5 and Dec. 12, 1934, respectively]

**Description of the industries.**—The "Cars, electric and steam railroad, not built in railroad repair shops" industry consists in the building, rebuilding, and repair of railroad cars by establishments engaged primarily in such work, not including railroad repair shops.

The establishments classified in the "Locomotives, other than electric" industry are those engaged exclusively or chiefly in the manufacture of steam and internal-combustion locomotives. (Steam locomotives were also made to some extent by steam-railroad repair shops in 1931 and earlier census years, but not in 1933.) This industry does not include the manufacture of electric locomotives, which are treated as products of the "Electrical machinery, apparatus, and supplies" industry.

**Detailed statistics of products.**—The schedules used for canvassing these industries called for detailed data on the production of the several classes and types of cars and locomotives, but it was necessary, in order to avoid disclosing, exactly or approximately, the production of individual car and locomotive builders, to combine the figures for many of the classes and types that were reported separately to the Bureau. (See tables 2 and 3.)

**Extent of coverage.**—All the establishments in these industries that reported at the census for 1931 were accounted for in the canvass for 1933.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1</sup>	Number of wage earners (average for the year)	Salaries <sup>2</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>3</sup>
<b>CARS, ELECTRIC AND STEAM RAILROAD, NOT BUILT IN RAILROAD REPAIR SHOPS</b>								
<i>United States</i>								
1933.....	138	2,466	14,266	4,395	14,710	27,311	46,148	18,837
1931.....	152	(*)	18,785	(*)	25,553	59,754	99,657	39,903
1929.....	147	6,098	40,015	13,366	63,387	223,889	328,220	104,331
1927.....	135	6,244	33,031	13,851	60,625	209,113	312,509	103,396
<i>States</i>								
<b>Illinois:</b>								
1933.....	23	517	3,348	911	3,572	5,342	9,310	3,968
1931.....	26	(*)	3,843	(*)	5,300	9,499	18,072	8,573
<b>Indiana:</b>								
1933.....	10	272	1,568	513	1,550	2,320	4,383	2,062
1931.....	9	(*)	2,183	(*)	2,904	10,657	16,715	6,058
<b>Iowa:</b>								
1933 <sup>5</sup> .....	3	3	33	6	33	51	91	40

For footnotes, see end of table.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931—Continued

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1,2</sup>	Number of wage earners (average for the year)	Salaries <sup>2</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>3</sup>
<i>Thousands of dollars. (See sec. 25, p. 13)</i>								
<b>CARS, ELECTRIC AND STEAM RAILROAD, NOT BUILT IN RAILROAD REPAIR SHOPS—continued.</b>								
<i>States—Continued</i>								
<b>Kansas:</b>								
1933.....	8	29	262	57	259	353	704	351
1931.....	8	(4)	308	(4)	420	809	1,295	485
<b>Louisiana:</b>								
1933.....	4	9	81	18	83	60	173	113
1931.....	4	(4)	116	(4)	133	137	285	148
<b>Minnesota:</b>								
1933.....	5	16	277	30	264	359	662	303
1931.....	6	(4)	350	(4)	443	1,070	1,857	788
<b>Missouri:</b>								
1933.....	11	193	1,113	277	1,115	1,738	3,286	1,548
1931.....	12	(4)	1,345	(4)	1,749	3,136	5,838	2,701
<b>Nebraska:</b>								
1933.....	3	14	215	25	191	322	546	223
1931.....	3	(4)	156	(4)	196	290	569	279
<b>New Jersey:</b>								
1933.....	3	39	94	66	107	166	506	340
1931.....	4	(4)	181	(4)	270	536	1,467	631
<b>New York:</b>								
1933.....	6	185	1,401	314	1,455	1,375	3,203	1,828
1931.....	8	(4)	2,270	(4)	3,327	6,444	10,278	3,834
<b>Ohio:</b>								
1933.....	6	41	281	86	243	742	1,151	409
1931.....	8	(4)	228	(4)	245	817	1,312	495
<b>Oklahoma:</b>								
1933 <sup>4</sup> .....	5	12	136	24	127	134	311	177
<b>Pennsylvania:</b>								
1933.....	13	590	1,879	1,121	1,481	5,248	7,830	2,583
1931.....	13	(4)	2,949	(4)	3,210	12,224	18,785	6,562
<b>Wisconsin:</b>								
1933.....	4	32	265	72	345	359	822	463
1931.....	4	(4)	248	(4)	379	316	704	388
<b>Other States:<sup>5</sup></b>								
1933.....	34	514	3,311	876	3,885	8,741	13,171	4,429
1931.....	47	(4)	4,608	(4)	6,975	13,518	22,479	8,961
<b>LOCOMOTIVES (OTHER THAN ELECTRIC), NOT MADE IN RAILROAD REPAIR SHOPS</b>								
<i>United States</i>								
1933.....	13	826	2,374	1,430	1,863	4,266	6,927	2,661
1931.....	16	(4)	5,443	(4)	5,590	14,871	22,119	7,248
1929.....	16	1,801	11,045	5,520	17,994	52,808	83,858	31,050
1927.....	17	1,650	12,961	4,984	17,648	45,688	76,719	31,031

<sup>1</sup> Not including proprietors and firm members, as follows: Cars—1933, none; 1931, no data; 1929, 3; 1927, none. Locomotives—1933, 3; 1931, no data; 1929, 5; 1927, none.

<sup>2</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations, and therefore are not strictly comparable with the corresponding figures for 1929 and 1927, in which such data are included. No data for employees of central administrative offices are included in the figures for any year.

<sup>3</sup> Value of products less cost of materials, fuel, and purchased electric energy. See sec. 20, p. 11.

<sup>4</sup> No data.

<sup>5</sup> Figures for 1931 withheld to avoid disclosing approximations of data for individual establishments; included in items for "Other States."

<sup>6</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Ala., 1, 1; Calif., 5, 5; Colo., 1, 1; Del., 3, 3; Fla., 1, 1; Ga., 2, 3; Idaho, 1, 1; Iowa (1931), 4; Md., 2, 2; Mass., 1, 2; Mich., 1, 1; Okla. (1931), 3; Oreg., 1, 1; R. I., 1, 1; S. C., 1, 1; Tenn., 1, 2; Tex., 4, 5; Va., 2, 4; Wash., 4, 4; W. Va., 1, 1; Wyo., 1, 1.

<sup>7</sup> Ala., 1; Ga., 1; Ill., 1; Iowa, 1; N. Y., 2; Ohio, 2; Pa., 4; Va., 1.

TABLE 2.—CARS BUILT, AND REPAIR WORK DONE, FOR THE UNITED STATES: 1933, 1931, AND 1929

	NUMBER			VALUE		
	1933	1931	1929	1933	1931	1929
1. "Cars, electric and steam railroad, not built in railroad repair shops" industry, all products, total.....				\$46, 147, 507	\$99, 657, 122	\$328, 220, 204
2. Cars and parts.....				10, 364, 938	57, 377, 356	225, 443, 597
3. Other products (not normally belonging to the industry).....				2, 854, 430	4, 342, 644	5, 508, 989
4. Receipts for repair work.....				32, 928, 139	37, 937, 122	97, 267, 618
5. Cars, parts, and receipts for repair work, reported as secondary products of other industries.....				1, 456, 148	5, 819, 110	24, 684, 482
Cars, car parts, and repair work, aggregate (2, 4, and 5).....				44, 749, 225	101, 133, 588	347, 395, 697
Cars, total.....				( <sup>1</sup> )	48, 840, 687	249, 678, 748
Steam-railroad cars, freight service, total.....	1, 936	15, 011	86, 243	3, 474, 592	35, 010, 107	200, 576, 239
Box and tank.....	1, 123	3, 233	37, 458	2, 002, 573	6, 717, 787	87, 128, 404
Other.....	813	11, 778	48, 785	1, 472, 019	28, 292, 320	113, 447, 835
All other cars (steam, passenger service; electric, passenger, and freight; self-propelled).....	( <sup>1</sup> )	( <sup>2</sup> )	( <sup>2</sup> )			
Other products, including car parts.....				\$ 8,262, 459	{13, 830, 580	49, 102, 509
Receipts for repair work.....				33, 012, 174	{14, 290, 462	97, 716, 949
					38, 002, 439	

<sup>1</sup> Withheld to avoid disclosing, exactly or approximately, the output of individual establishments.

<sup>2</sup> Data incomplete.

<sup>3</sup> See "Detailed statistics of products," p. 599.

TABLE 3.—LOCOMOTIVES—PRODUCTION, BY KIND, NUMBER, AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929

	1933	1931	1929
1. Locomotive industry, all products, total value.....	\$6, 927, 300	\$22, 118, 636	\$83, 858, 258
2. Locomotives (other than electric) and parts.....	2, 827, 931	13, 763, 130	70, 961, 472
3. Other products (not normally belonging to the industry).....	3, 810, 284	6, 349, 851	8, 804, 961
4. Receipts for contract and repair work.....	289, 085	2, 005, 655	4, 091, 825
5. Locomotives and parts made as secondary products by establishments in other industries.....	424, 796	1, 539, 958	3, 292, 709
Locomotives (other than electric) and parts, total (2 and 5).....	3, 252, 727	15, 303, 088	74, 254, 181
Steam, standard-gauge and mining and industrial: <sup>1</sup>			
Number.....	13	179	995
Value.....	\$428, 526	\$12, 348, 831	\$62, 805, 107
Internal-combustion, standard-gauge and mining and industrial: <sup>1</sup>			
Number reported:			
Number.....	86		700
Value.....	\$279, 398		\$2, 398, 252
Number not reported, value.....	\$78, 750	\$724, 112	
Parts for steam, internal-combustion, and electric locomotives, value <sup>2</sup> .....	\$2, 466, 053	\$2, 230, 145	\$9, 050, 822

<sup>1</sup> Combined to avoid disclosing production of individual establishments.

<sup>2</sup> Data for values of parts for the several types of locomotives were not reported separately. The value of parts for electric locomotives included in this item represents only such parts made by establishments engaged primarily in the manufacture of steam and internal-combustion locomotives. Electric locomotives are treated for census purposes as products of the "Electrical machinery, apparatus, and supplies" industry, and therefore most of the parts for such locomotives are made by establishments classified in that industry.

TABLE 4.—CARS, ELECTRIC AND STEAM RAILROAD—WAGE EARNERS, BY MONTHS, FOR SELECTED STATES: 1933 AND 1931

[The month of maximum employment is indicated by bold-faced figures and that of minimum employment by *italic* figures. See sec. 26, p. 13]

	NUMBER REPORTED FOR—											
	January	February	March	April	May	June	July	August	September	October	November	December
United States:												
1933	12,457	<i>11,926</i>	12,367	12,831	13,118	12,866	14,470	16,210	16,238	16,398	15,610	<b>16,696</b>
1931	22,155	<i>21,322</i>	21,099	20,752	18,602	19,260	17,657	17,766	17,877	16,648	16,260	<i>16,022</i>
<i>States</i>												
California:												
1933	<i>819</i>	825	852	899	873	882	917	946	1,026	1,024	1,021	980
1931	1,182	1,219	1,187	1,216	1,251	1,110	1,018	939	858	930	915	<i>804</i>
Delaware:												
1933	352	356	355	357	367	366	392	<i>349</i>	403	406	414	398
1931	1,102	1,107	1,205	1,245	1,011	862	498	457	<i>416</i>	546	565	607
Illinois:												
1933	2,851	<i>2,714</i>	3,246	3,477	3,211	2,811	3,083	3,265	3,528	3,781	3,506	4,708
1931	3,920	4,273	4,216	4,745	3,974	3,708	3,715	3,689	3,628	<i>3,374</i>	3,420	3,457
Indiana:												
1933	<i>1,067</i>	1,116	1,217	1,194	1,330	1,447	1,875	2,314	1,825	1,846	1,718	1,840
1931	2,499	2,185	2,496	2,232	<i>1,460</i>	1,683	2,178	2,655	2,705	1,998	2,162	1,956
Iowa:												
1933	29	29	29	31	31	37	38	37	36	38	29	<i>23</i>
1931	354	338	343	340	100	319	294	278	71	68	51	<i>45</i>
Kansas:												
1933	<i>221</i>	243	243	288	277	263	266	295	289	273	252	236
1931	411	384	297	<i>278</i>	298	295	310	202	290	283	282	282
Louisiana:												
1933	<i>62</i>	64	63	66	87	95	85	88	93	90	94	89
1931	125	126	125	127	120	110	118	111	109	113	109	<i>104</i>
Minnesota:												
1933	<i>197</i>	210	255	252	243	261	269	349	341	338	316	293
1931	348	297	317	300	298	298	363	354	449	485	439	<i>257</i>
Missouri:												
1933	<i>977</i>	1,006	997	1,027	1,055	1,126	1,192	1,254	1,363	1,228	1,131	998
1931	1,589	1,502	1,602	1,446	1,376	1,371	1,150	<i>1,100</i>	1,128	1,115	1,388	1,370
Nebraska:												
1933	196	<i>193</i>	197	202	203	207	210	212	224	256	243	240
1931	124	123	<i>118</i>	120	140	149	148	141	188	205	204	212
New Jersey:												
1933	<i>51</i>	54	53	53	91	85	103	149	121	124	119	125
1931	179	162	198	141	191	284	<i>138</i>	204	174	208	142	170
New York:												
1933	1,249	1,231	1,228	1,328	1,458	1,177	1,477	1,648	1,385	1,417	1,597	1,617
1931	2,581	2,317	2,316	2,168	2,427	2,638	2,363	2,361	2,238	2,054	<i>1,764</i>	1,966
Ohio:												
1933	298	176	<i>163</i>	181	246	266	296	342	352	344	343	<b>362</b>
1931	159	207	<i>156</i>	186	202	268	177	279	273	264	304	267
Oklahoma:												
1933	139	141	147	136	134	135	133	138	131	<i>130</i>	135	<i>130</i>
1931	119	104	100	128	145	134	129	124	108	96	99	<i>80</i>
Pennsylvania:												
1933	2,052	1,662	1,288	<i>1,238</i>	1,444	1,472	1,904	2,391	2,441	2,472	2,098	2,090
1931	4,273	3,919	3,447	2,699	2,788	3,584	2,711	2,459	2,815	2,408	1,824	2,103
Texas:												
1933	30	<i>29</i>	32	36	37	33	35	34	33	38	36	32
1931	63	58	65	58	63	65	58	58	57	58	55	<i>55</i>
Washington:												
1933	<i>204</i>	276	308	267	202	280	296	483	478	461	405	<b>388</b>
1931	273	251	277	282	312	369	393	302	396	365	344	<i>213</i>
Wisconsin:												
1933	219	<i>217</i>	226	237	256	272	292	304	310	307	286	258
1931	<i>232</i>	242	245	254	252	252	255	254	<i>232</i>	248	249	255

## MOTOR-VEHICLE BODIES AND MOTOR-VEHICLE PARTS

[A preliminary report for this industry was issued on Sept. 27, 1934]

**Description of the industry.**—The establishments in this industry are engaged primarily in the manufacture, for sale as such (or for transfer to motor-vehicle manufacturing establishments located elsewhere but operated under the same ownership), of motor-vehicle bodies, tops, gears (transmission, differential, and steering), rims, frames, wheels, radiators, windshields, axles, bumpers, bumperettes, shock absorbers, various other parts and assemblies (except complete chassis), and trailers. The manufacture of certain other parts and assemblies, of which the most important are engines, motors for electric vehicles, tires, springs, ignition apparatus, batteries, starting and lighting systems, and stamped sheet-metal parts for motor vehicles (such as fenders, dust shields, and hoods), is not, however, included in this industry.<sup>1</sup> Where a manufacturer makes various motor-vehicle parts in his main plant and assembles them into complete vehicles at branches, the main plant, with its wage earners, is classified in the bodies and parts industry and the branches in the motor-vehicle industry. Similarly, if a manufacturer builds bodies in one plant and installs them on chassis in another, the first plant is classified in the bodies and parts industry and the second in the motor-vehicle industry. Where all the parts, including the bodies, are made and assembled in the same plant, the entire plant is classified in the motor-vehicle industry proper and no separate report is made covering the manufacture of the bodies and parts.

Establishments engaged primarily in the manufacture of trailers were classified in the "Motor-vehicle" industry for 1929 and prior census years, but are now assigned to the "Motor-vehicle bodies and motor-vehicle parts" industry, as trailers are more closely allied to the products of the latter industry than to those of the former. The statistics for 1929, as given in italics in table 1, have been revised to include data for manufacturers of trailers.

In making use of the figures in this report it must be kept in mind that they include some duplication due to the fact that certain simple parts are made and sold by some manufacturers to other manufacturers who install them in more complex parts and assemblies.

**Extent of coverage.**—The 1933 coverage of the establishments reporting in this industry for 1931 was nearly complete. Of the 940 such establishments, 73 failed to supply any information in regard to their status (active, idle, etc.) or their activities in 1933, but these establishments accounted for less than one percent of the total number of wage earners and of the total value of products reported for the industry for 1931.

<sup>1</sup> Establishments engaged primarily in the manufacture of engines, tires, and springs, for sale as such, are classified, respectively, in the "Engines, turbines, tractors, water wheels, and windmills" industry, the "Rubber tires and inner tubes" industry, and the "Springs, steel, except wire, not made in plants operated in connection with rolling mills" industry; those making ignition apparatus and other electrical equipment as their products of chief value are classified under "Electrical machinery, apparatus, and supplies"; and manufacturers of stamped sheet-metal parts are assigned to the "Stamped ware, enameled ware, and metal stampings; enameling, japanning, and lacquering" industry.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employes 1	Number of wage earners (average for the year)	Salaries 2	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture 3
<i>Thousands of dollars. (See sec. 25, p. 13)</i>								
<i>United States</i>								
1933.....	4 701	13,560	145,745	25,806	148,322	439,633	761,225	321,592
1931.....	940	(*)	150,649	(*)	193,770	516,945	945,407	428,461
1929 4.....	1,133	20,233	222,760	58,375	363,625	863,937	1,551,208	687,271
1929 5.....	1,154	19,941	221,832	57,663	366,503	856,986	1,537,930	680,944
1927.....	1,213	18,913	181,489	49,437	291,291	641,307	1,151,426	510,120
<i>States</i>								
<i>Alabama:</i>								
1933.....	4	11	51	21	39	124	226	103
1931.....	3	(*)	23	(*)	32	27	87	60
<i>California:</i>								
1933.....	56	212	1,260	386	1,303	6,644	9,738	3,094
1931.....	72	(*)	1,587	(*)	2,059	7,962	12,641	4,679
<i>Colorado:</i>								
1933.....	5	20	58	27	51	81	172	91
1931.....	8	(*)	65	(*)	79	85	223	138
<i>Connecticut:</i>								
1933.....	11	42	186	55	143	293	609	316
1931.....	19	(*)	452	(*)	479	782	1,857	1,075
<i>Illinois:</i>								
1933.....	68	838	3,869	1,527	4,089	6,065	15,285	9,220
1931.....	83	(*)	3,356	(*)	4,032	7,555	17,807	10,251
<i>Indiana:</i>								
1933.....	41	1,265	8,165	2,106	7,315	14,581	33,611	19,031
1931.....	53	(*)	8,353	(*)	9,428	19,340	46,249	26,909
<i>Iowa:</i>								
1933.....	11	28	159	44	116	327	580	253
1931.....	12	(*)	211	(*)	213	435	918	453
<i>Kentucky:</i>								
1933.....	5	26	158	34	134	377	797	420
<i>Maryland:</i>								
1933.....	4	6	70	9	88	54	175	122
1931.....	6	(*)	106	(*)	156	113	320	207
<i>Massachusetts:</i>								
1933.....	24	74	508	92	456	849	1,823	974
1931.....	37	(*)	977	(*)	1,159	1,528	3,892	2,365
<i>Michigan:</i>								
1933.....	4 99	6,185	91,475	13,482	95,531	292,808	496,556	203,748
1931.....	126	(*)	88,952	(*)	116,867	318,340	572,057	253,717
<i>Minnesota:</i>								
1933.....	15	51	199	54	184	762	1,279	518
1931.....	18	(*)	191	(*)	233	575	1,351	777
<i>Nebraska:</i>								
1933.....	5	10	28	10	20	50	76	26
1931.....	4	(*)	38	(*)	40	102	220	113
<i>New Jersey:</i>								
1933.....	26	225	1,277	383	1,368	1,705	4,061	2,357
1931.....	41	(*)	1,181	(*)	1,604	2,099	5,023	2,924
<i>New York:</i>								
1933.....	92	864	7,625	1,548	7,629	27,918	46,174	18,256
1931.....	136	(*)	9,160	(*)	12,696	37,324	68,858	31,534
<i>North Carolina:</i>								
1933.....	4	10	159	19	105	182	332	150
1931.....	7	(*)	224	(*)	215	297	750	453
<i>Ohio:</i>								
1933.....	4 80	1,534	16,246	2,792	15,473	46,803	80,612	34,009
1931.....	103	(*)	17,907	(*)	23,514	62,517	115,132	52,615
<i>Oregon:</i>								
1933.....	6	13	64	25	57	109	219	110
1931.....	5	(*)	62	(*)	72	126	265	138
<i>Pennsylvania:</i>								
1933.....	53	764	5,062	1,214	5,125	6,295	15,980	9,585
1931.....	66	(*)	5,117	(*)	6,816	8,185	19,153	10,999
<i>Rhode Island:</i>								
1933.....	3	8	25	15	31	38	84	47
1931.....	4	(*)	45	(*)	57	64	185	121
<i>Tennessee: 1933 7.....</i>								
	3	7	39	16	35	98	159	60

For footnotes, see end of table.

**TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931—Continued**

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employes <sup>1</sup>	Number of wage earners (average for the year)	Salaries <sup>2</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>3</sup>
<i>Thousands of dollars.</i> (See sec. 25, p. 13)								
<i>States—Continued</i>								
Texas:								
1933.....	12	23	96	27	70	132	263	131
1931.....	15	(5)	133	(5)	142	246	589	343
Washington:								
1933.....	7	23	126	43	125	128	355	228
1931.....	10	(5)	168	(5)	198	234	584	349
Wisconsin:								
1933.....	27	1,059	5,566	1,485	5,314	11,940	22,025	10,085
1931.....	35	(5)	8,315	(5)	9,040	27,239	45,156	17,917
Other States: <sup>4</sup>								
1933.....	40	262	3,275	451	3,471	21,471	30,131	8,660
1931.....	77	(5)	4,026	(5)	4,638	21,770	32,091	10,321

<sup>1</sup> Not including proprietors and firm members, as follows: 1933, 240; 1931, no data; 1929, 557; 1929, 540; 1927, 493.

<sup>2</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations, and therefore are not strictly comparable with the corresponding figures for 1929 and 1927, in which such data are included. No data for employees of central administrative offices are included in the figures for any year.

<sup>3</sup> Value of products less cost of materials, fuel, and purchased electric energy. See sec. 20, p. 11.

<sup>4</sup> The numbers of plants operated by the establishments in this industry in 1933 were as follows: United States, 714; Michigan, 108; Ohio, 83; Texas, 13. For the remaining States, the numbers of plants were identical with the numbers of establishments.

<sup>5</sup> No data.

<sup>6</sup> The 1929 figures in italics have been revised to include data for manufacturers of trailers and are comparable with those for subsequent years. The 1929 figures in Roman type have not been revised and are comparable with those for 1927. See "Description of the industry," second par., p. 603.

<sup>7</sup> Figures for 1931 withheld to avoid disclosing approximations of data for individual establishments; included in items for "Other States."

<sup>8</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Ariz., 1, 1; Ark., 0, 2; Del., 1, 1; Fla., 2, 3; Ga., 5, 6; Kans., 2, 4; Ky. (1931), 7; La., 4, 9; Me., 0, 1; Miss., 1, 1; Mo., 15, 20; N. H., 1, 3; Okla., 2, 2; S. C., 0, 2; S. Dak., 1, 2; Tenn. (1931), 5; Utah, 1, 3; Va., 4, 5.

TABLE 2.—PRODUCTS, BY KIND, NUMBER, AND VALUE, FOR THE UNITED STATES: 1933 AND 1931

	NUMBER			VALUE IN THOUSANDS OF DOLLARS <sup>1</sup>		
	1933	1931	1931	1933	1931	1931
	Reported on standard schedule <sup>2</sup>	Adjusted for comparison with 1933 <sup>3</sup>	Unadjusted	Reported on standard schedule <sup>2</sup>	Adjusted for comparison with 1933 <sup>3</sup>	Unadjusted
1. "Motor-vehicle" bodies and motor-vehicle parts industry, all products, total value.....				761,225		945,407
2. Bodies, parts, and trailers.....				679,106	812,636	854,878
3. Other products (not normally belonging to the industry).....				55,150	77,283	82,528
4. Receipts for contract and repair work.....				1,417	2,446	8,000
5. Bodies, parts, trailers, etc., contract and repair work, and products not normally belonging to the industry, not reported separately (on abbreviated schedule) <sup>2</sup> .....				25,552		
6. Bodies, parts, and trailers made as secondary products in other industries.....				54,048	97,328	97,328
Motor-vehicle bodies and parts and trailers, aggregate (2 and 6).....				733,154	909,963	952,206
Bodies, total value.....				181,200	246,551	262,562
Passenger (not including public conveyance), total.....	1,419,112	1,320,438	1,321,549	167,974	225,678	226,671
Four-door sedan.....	576,890	564,627	564,750	80,563	111,376	111,704
All other passenger bodies and those not reported by kind <sup>4</sup> .....	842,222	755,811	756,799	87,412	114,302	114,968
Public-conveyance, total.....	(?)	5,078	49,328	1,409	5,077	48,008
Bus, total.....	(?)	2,818	7,063	1,409	3,762	46,693
Under 21 passengers.....	384	512	2,032	185	290	1,153
21 to 32 passengers.....	(?)	859	2,840	610	1,620	2,875
33 passengers and over.....	945	486	1,235	674	681	1,494
Bus, not reported by size.....		956	956		1,170	1,170
Taxicab.....		2,265	2,265		1,315	1,315
Truck, commercial, and other, total value.....				11,817	15,795	27,882
Number reported.....	110,314	123,845	174,439	10,879	14,670	26,757
Number not reported.....				938	1,125	1,125
Panel (including van).....	23,391	35,772	48,763	3,433	5,108	9,098
Platform (including stake).....	27,307	32,068	42,350	1,658	1,623	3,666
Express (including screen).....	18,241	20,819	28,528	804	1,294	2,687
Dump.....	13,198	15,444	24,409	1,095	2,105	3,740
Hearse.....	85	239	844	138	162	834
Truck and commercial not reported by kind, total value.....				2,679	3,854	3,854
Number reported.....	16,532	12,164	12,164	1,868	2,730	2,730
Number not reported.....				811	1,125	1,125
Other (delivery, ambulance, and other special types), total.....		7,339	17,381	2,010	1,648	4,003
Number reported.....	11,560	7,339	17,381	1,883	1,648	4,003
Number not reported.....				127		
Truck cabs.....	87,062	(8)	(8)	3,974	(8)	(8)
Trailers, total.....		7,571	12,647	5,959	6,025	9,556
Number reported.....	7,438	7,571	12,647	4,408	6,025	9,556
Number not reported.....				1,551		

For footnotes, see end of table.

TABLE 2.—PRODUCTS, BY KIND, NUMBER, AND VALUE, FOR THE UNITED STATES: 1933 AND 1931—Continued

	NUMBER			VALUE IN THOUSANDS OF DOLLARS <sup>1</sup>		
	1933	1931	1931	1933	1931	1931
	Reported on standard schedule <sup>2</sup>	Adjusted for comparison with 1933 <sup>3</sup>	Unadjusted	Reported on standard schedule <sup>2</sup>	Adjusted for comparison with 1933 <sup>3</sup>	Unadjusted
Motor-vehicle bodies and parts and trailers—Continued.						
Parts, total value.....	-----	-----	-----	541,961	657,388	4 680,088
Radiators (shells and cores).....	-----	-----	-----	16,443	25,726	27,312
Windshields.....	727,536	489,721	4 523,214	4,230	2,977	4 3,178
Axles, total value.....	-----	-----	-----	44,534	67,745	67,745
Front.....	1,367,465	1,720,416	1,720,416	10,986	15,723	15,723
Rear, complete assemblies.....	1,251,286	1,593,838	1,593,838	33,548	52,022	52,022
Rear-axle shafts.....	2,288,913	1,969,882	2,437,763	3,641	3,071	4,052
Wheels (other than 6-wheel sets), total.....	11,719,350	12,853,866	12,898,113	14,531	23,973	24,164
Wire.....	7,460,278	9,654,883	9,654,883	7,756	14,787	14,787
Cast-metal-spoke.....	1,092,022	275,270	288,555	2,925	1,692	1,733
Disc and wood <sup>4</sup> .....	3,167,050	2,923,713	2,954,675	3,850	7,494	7,594
Rims.....	2,408,151	7,769,377	7,896,437	2,472	5,762	5,946
Frames, total.....	-----	-----	-----	15,934	21,765	21,765
Assembled.....	1,701,267	2,536,680	2,536,680	13,253	17,222	17,222
Unassembled (sets).....	290,584	421,621	421,621	2,681	4,543	4,543
Gears, steering, complete units.....	1,483,553	1,592,637	1,592,637	5,218	6,735	6,735
Gears, other than steering (transmission, differential, etc.).....	-----	-----	-----	26,274	44,793	45,576
Shock absorbers, total.....	6,890,220	-----	-----	6,895	11,072	11,132
Number reported.....	6,890,220	8,147,550	8,151,441	6,895	10,560	10,620
Number not reported.....	-----	-----	-----	-----	513	513
Bumpers, total.....	2,675,898	-----	-----	4,064	6,888	7,796
Number reported.....	2,675,898	2,650,979	4 2,991,639	4,064	6,704	7,612
Number not reported.....	-----	-----	-----	-----	184	184
Heaters, total.....	-----	624,194	879,844	3,898	3,507	4 4,495
Number reported.....	500,605	624,194	879,844	2,689	3,507	4 4,495
Number not reported.....	( <sup>7</sup> )	3,005,436	3,165,864	1,209	4,298	4 5,32
Horns.....	-----	-----	-----	4,081	-----	-----
Parts other than those for which separate figures are given above <sup>10</sup> .....	-----	-----	-----	389,745	429,076	4 445,660

<sup>1</sup> See sec. 25, p. 13.<sup>2</sup> See sec. 5c, p. 4.<sup>3</sup> See sec. 5c, p. 4. The figures given in this column represent the production, in 1931, of those classes of establishments (not in all cases the same individual establishments) which reported on the standard schedule for 1933.<sup>4</sup> Revised.<sup>5</sup> Includes data for knock-down bodies reported to a considerable extent by one manufacturer.<sup>6</sup> The figures for the several kinds of bodies covered by this item have been combined to avoid disclosing, exactly or approximately, the output of individual establishments.<sup>7</sup> Data incomplete.<sup>8</sup> No comparable data. Value of production in "Motor-vehicle bodies and parts" industry (i. e., not including value of cabs made as secondary products in other industries) included in figure for "Parts other than those for which separate figures are given above."<sup>9</sup> Figures combined to avoid disclosing approximations of data for individual establishments.<sup>10</sup> Includes, in addition to parts not reported separately, tops, 6-wheel sets, bumperettes, rear-axle housings, clutches, and windshield wipers, which were reported separately but for which the data for 1933 were combined to avoid disclosing, exactly or approximately, the output of individual establishments.

TABLE 3.—WAGE EARNERS, BY QUARTERS, FOR SELECTED STATES: 1933 AND 1931

[The average for the year (table 1) differs from the average of the quarterly figures below (see fourth sentence, sec. 13, p. 8). See sec. 26, p. 13]

	1933 <sup>1</sup>				1931			
	March	June	September	December	March	June	September	December
United States.....	115,930	146,466	168,996	167,309	178,112	163,204	181,772	130,629
<i>States</i>								
Alabama.....	44	54	57	56	24	21	22	25
California.....	1,101	1,352	1,531	1,071	1,686	1,718	1,534	1,832
Colorado.....	45	52	77	71	66	77	67	47
Connecticut.....	139	161	242	187	432	523	454	458
Georgia.....	504	516	608	386	496	539	532	559
Illinois.....	2,838	3,483	5,047	4,589	3,892	3,770	2,865	2,761
Indiana.....	5,401	7,964	10,706	9,715	9,785	8,635	7,263	7,784
Iowa.....	150	173	160	151	208	349	193	170
Kentucky.....	107	172	245	161	150	153	149	147
Louisiana.....	38	45	58	52	65	64	66	59
Maryland.....	52	73	88	66	108	114	110	82
Massachusetts.....	286	493	655	588	910	1,125	818	962
Michigan.....	77,744	92,189	103,075	106,202	110,402	97,863	77,265	72,603
Minnesota.....	139	200	264	211	198	194	229	173
Missouri.....	2,345	2,813	2,574	1,506	3,218	2,888	2,153	2,495
Nebraska.....	17	30	33	25	36	37	53	22
New Jersey.....	943	1,213	1,692	1,451	1,163	1,248	1,151	1,129
New York.....	5,802	7,835	9,176	7,544	9,932	9,805	8,115	8,488
North Carolina.....	114	151	235	137	171	211	307	214
Ohio.....	12,820	16,033	18,895	16,979	19,822	18,663	14,826	16,936
Oregon.....	49	60	76	73	57	69	64	47
Pennsylvania.....	1,736	5,024	6,158	7,056	5,395	5,013	4,587	6,444
Rhode Island.....	21	23	22	34	58	44	41	40
Tennessee.....	30	34	48	44	303	283	127	105
Texas.....	80	82	134	99	147	133	131	115
Virginia.....	167	249	246	175	240	262	221	246
Washington.....	70	129	196	161	185	187	149	122
Wisconsin.....	3,037	5,718	6,545	8,384	8,791	9,050	8,107	6,949

<sup>1</sup> See secs. 5, p. 4, and 13, p. 8. The 311 establishments canvassed with the standard schedule reported wage earners, by months, as follows:

January.....	135,763	May.....	126,212	September.....	160,524
February.....	119,393	June.....	139,248	October.....	138,409
March.....	110,471	July.....	154,657	November.....	135,879
April.....	116,779	August.....	155,095	December.....	159,435

## MOTOR VEHICLES

[A preliminary report for this industry was issued on August 10, 1934]

**Description of the industry.**—The classification "Motor vehicles, not including motorcycles" applies to all manufacturing establishments whose principal products are motor-propelled vehicles having 4 wheels or more, for use on highways. (The manufacture of motorcycles and bicycles is treated as a separate industry.) Manufacturers of motor-propelled fire-department apparatus, street sweepers, road oilers, etc., are also classified in this industry.

Establishments engaged primarily in the manufacture of trailers were classified in the "Motor vehicles" industry for 1929 and prior census years, but are now assigned to the "Motor-vehicle bodies and motor-vehicle parts" industry, as trailers are more closely allied to the products of the latter industry than to those of the former. The statistics for 1929 have been revised to exclude data for manufacturers of trailers. These revised figures, printed in italics in table 1, are comparable with those for subsequent years, and the unrevised 1929 figures, printed in Roman numerals, are comparable with those for 1927.

**Number of manufacturers.**—For census purposes an assembling plant (a plant in which parts made in another plant under the same management are assembled into complete motor vehicles) is treated as a manufacturing establishment. This is necessary in order that each State may be credited with its due share of the industry. As a result, the number of *establishments* shown, 122, is somewhat in excess of the actual number of *manufacturers*. The number of such manufacturers reporting at the census for 1933 (counting the General Motors organization as 6) was 90. The numbers of manufacturers of the several classes of vehicles were as follows:

Passenger vehicles except busses and taxicabs.....	25		Street-cleaning apparatus.....	2
Busses.....	15		Trucks.....	50
Taxicabs.....	3		Truck-tractors.....	17
Ambulances.....	6		Hearse and undertakers' wagons..	6
Fire-department apparatus.....	16		Other vehicles and apparatus.....	6

The explanation of the difference between the sum of the numbers given above (146) and the net number of manufacturers (90) is found in the fact that manufacturers of two or more classes of vehicles are counted more than once in this statement but only once in the net total. Of the total of 1,534,366 passenger cars (exclusive of busses and taxicabs) built in 1933, 1,470,545, or nearly 96 percent, were produced by 10 manufacturers (counting individually the six in the General Motors group).

**Detailed statistics of products (table 2).**—In the total value of products of this industry some duplication results from the inclusion of the value of bodies and parts made by certain manufacturers for sale to other manufacturers in the industry. (See item 3, table 2. Bodies

and parts for sale are made mainly in the "Motor-vehicle bodies and motor-vehicle parts" industry. See p. 603. On the other hand, the value of the complete vehicles, chassis, etc., made during the census year was somewhat less than the net value of the output of the industry, for the reason that the latter includes the value of bodies and parts, and especially parts, produced for sale direct to dealers or individual customers for use as additional equipment or for replacement.

**Annual totals of monthly sales figures.**—In addition to the biennial statistics, the Bureau of the Census compiles monthly statistics on factory sales of motor vehicles. The annual totals of the monthly figures for 1929, 1931, and 1933, given below, differ somewhat from the corresponding totals in the reports of the Biennial Census of Manufactures because the sum of the monthly figures for any one year represents exactly a calendar year, whereas the biennial-census returns in some cases cover fiscal years not coinciding with calendar years. Moreover, the monthly figures for all years represent sales, whereas the biennial-census figures for all years except 1929 cover production.

YEAR	Total	Passenger cars <sup>1</sup>	Trucks, busses, etc. <sup>2</sup>
1929.....	5, 358, 420	4, 587, 400	771, 020
1930.....	3, 355, 986	2, 784, 745	571, 241
1931.....	2, 389, 738	1, 973, 090	416, 648
1932.....	1, 370, 678	1, 135, 491	235, 187
1933.....	1, 920, 057	1, 573, 512	346, 545
1934.....	2, 778, 739	2, 190, 099	588, 640

<sup>1</sup> Light trucks using passenger chassis are here included with passenger vehicles, but in the biennial-census statistics the data for such trucks are included with those for light delivery trucks.

<sup>2</sup> Trucks, busses, funeral cars, fire apparatus, street sweepers, commercial and bus chassis, and foreign assemblies.

**Extent of coverage.**—All the establishments in this industry that reported at the census for 1931 were accounted for in the canvass for 1933.

**Motor-vehicle registration.**—Annual figures on motor-vehicle registration are assembled and published by the Bureau of Public Roads, Department of Agriculture.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1, 2</sup>	Number of wage earners (average for the year)	Salaries <sup>2</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>3</sup>
<i>Thousands of dollars.</i> (See sec. 25, p. 13)								
<i>United States</i>								
1933.....	122	15,155	97,869	25,477	103,785	767,768	1,096,946	329,178
1931.....	178	( <sup>4</sup> )	134,866	( <sup>4</sup> )	156,756	1,044,406	1,567,526	523,120
1929 <sup>5</sup> .....	<i>210</i>	<i>26,784</i>	<i>224,688</i>	<i>78,955</i>	<i>364,457</i>	<i>2,394,661</i>	<i>3,709,515</i>	<i>1,314,954</i>
1929 <sup>5</sup> .....	244	27,076	226,116	79,866	366,579	2,401,512	3,722,793	1,321,282
1927.....	264	26,030	187,910	71,118	321,664	1,889,426	2,848,443	959,017
<i>States</i>								
<i>California:</i>								
1933.....	9	580	2,121	807	2,204	34,449	46,144	11,695
1931.....	13	( <sup>4</sup> )	3,316	( <sup>4</sup> )	4,655	51,637	67,682	16,044
<i>Indiana:</i>								
1933.....	9	1,354	7,033	2,500	6,585	31,466	45,883	14,416
1931.....	15	( <sup>4</sup> )	12,507	( <sup>4</sup> )	14,440	71,249	114,481	43,232
<i>Michigan:</i>								
1933.....	24	8,454	59,725	14,311	66,045	390,197	588,302	198,105
1931.....	29	( <sup>4</sup> )	64,077	( <sup>4</sup> )	75,248	375,175	635,942	260,767
<i>Ohio:</i>								
1933.....	14	1,145	6,938	2,008	6,638	35,322	49,679	14,357
1931.....	25	( <sup>4</sup> )	14,932	( <sup>4</sup> )	14,899	94,382	136,573	42,190
<i>Pennsylvania:</i>								
1933.....	8	800	4,942	1,135	4,471	25,470	36,187	10,717
1931.....	13	( <sup>4</sup> )	5,853	( <sup>4</sup> )	7,061	29,366	41,058	11,692
<i>Other States:<sup>6</sup></i>								
1933.....	58	2,822	17,110	4,715	17,240	250,364	330,752	79,888
1931.....	83	( <sup>4</sup> )	34,181	( <sup>4</sup> )	40,453	422,597	571,791	149,194

<sup>1</sup> Not including proprietors and firm members, as follows: 1933, 12; 1931, no data; 1929, 19; 1929, 36; 1927, 30.<sup>2</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations, and therefore are not strictly comparable with the corresponding figures for 1929 and 1927, in which such data are included. No data for employees of central administrative offices are included in the figures for any year.<sup>3</sup> Value of products less cost of materials, fuel, and purchased electric energy. See sec. 20, p. 11.<sup>4</sup> No data.<sup>5</sup> The 1929 figures in italics have been revised to exclude data for manufacturers of trailers and are comparable with those for subsequent years; the 1929 figures in Roman type have not been revised and are comparable with those for 1927. See "Description of the industry," second paragraph, p. 609.<sup>6</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Colo., 3, 3; Del., 1, 0; D. C., 0, 1; Fla., 0, 1; Ga., 1, 2; Ill., 10, 14; Iowa, 0, 1; Ky., 1, 1; La., 0, 1; Me., 1, 0; Md., 1, 1; Mass., 4, 4; Minn., 0, 1; Mo., 4, 5; Nebr., 1, 3; N. J., 4, 4; N. Y., 14, 18; N. C., 1, 2; Okla., 0, 1; Oreg., 0, 1; Tenn., 1, 1; Tex., 2, 3; Va., 1, 1; Wash., 1, 2; Wis., 7, 12.

TABLE 2.—PRODUCTS, BY KIND, NUMBER, AND VALUE, FOR THE UNITED STATES: 1933, 1931, and 1929

	NUMBER			VALUE IN THOUSANDS OF DOLLARS <sup>1</sup>		
	1933	1931	1929	1933	1931	1929
1. Motor-vehicle industry, all products, total value.....				1,096,946	1,567,526	2,709,515
2. Complete vehicles and chassis.....	1,847,997	2,294,949	2,529,377	928,606	1,386,082	2,410,858
3. Other products (including motor-vehicle parts), not normally belonging to the industry.....				167,253	174,069	287,659
4. Receipts for repair work.....				1,087	7,376	10,998
5. Motor vehicles and chassis made as secondary products in other industries.....	16	114	710	44	1,092	1,198
Motor vehicles and chassis, aggregate (2 and 5).....	1,848,013	2,295,063	5,294,087	928,650	1,387,173	3,412,056
Passenger vehicles (not including busses and taxicabs), total.....	1,534,366	1,911,717	4,362,215	753,134	1,119,817	2,767,339
Closed, total.....	1,516,343	1,786,393	3,917,370	744,268	1,059,550	2,537,938
Coupés (including convertible).....	346,662	506,257	945,062	160,710	271,228	567,118
2-door sedans and coaches.....	516,572	503,921	1,268,170	221,900	223,954	625,715
4-door sedans.....	644,720	763,884	1,629,806	352,015	553,685	1,269,460
Other closed (landaus, broughams, etc.).....	8,389	12,331	74,332	9,643	10,682	75,644
Open, total.....	18,023	125,324	444,845	8,866	60,267	229,402
Roadsters and runabouts.....	10,211	103,947	298,401	4,974	47,741	151,109
Other.....	7,812	21,377	146,444	3,891	12,526	78,293
Motor busses (school, sight-seeing, and public-utility), total.....	1,574	4,241	9,072	6,948	17,927	31,612
Under 21 passengers.....	407	1,147	5,639	860	1,275	7,452
21 to 32 passengers.....	886	1,967	2,332	4,551	8,032	13,373
33 passengers and over.....	281	1,127	1,101	1,536	8,620	10,588
Trucks, total.....	213,683	243,647	385,756	110,765	159,211	269,508
Light delivery (less than 1 ton).....	78,911	79,821	124,414	30,380	35,673	64,229
One to 5 tons, inclusive.....	133,836	163,826	261,342	77,610	123,538	205,279
Over 5 tons.....	936	1,145	2,316	2,775	2,954	5,655
Hearse and undertakers' wagons.....	825	1,145	2,316	1,911	2,954	5,655
Taxicabs, truck-tractors, and commercial vehicles not specified above, total.....	6,114	5,946	20,549	8,014	9,941	28,937
Taxicabs.....	(*)	5,477	17,028	(*)	8,348	26,749
Truck-tractors and commercial vehicles not specified above.....	(*)	469	3,521	(*)	1,593	2,189
Other vehicles and apparatus, total.....	708	2,154	1,960	2,215	6,163	10,156
Ambulances.....	418	196	361	520	449	1,006
Fire-department apparatus, total.....	244	666	1,350	1,475	4,990	7,864
Engines.....	216	475	(*)	1,243	3,549	(*)
Hook-and-ladder trucks.....	9	108	(*)	102	855	(*)
Chemical wagons and other fire-department apparatus.....	19	83	(*)	131	586	(*)
Other (patrol wagons, street sprinklers, street sweepers, etc.).....	46	292	249	219	725	1,287
Chassis, total.....	90,743	127,213	512,219	45,663	71,162	298,847
Passenger.....	8,756	7,556	76,401	3,875	3,739	32,398
Commercial.....	81,804	119,264	433,112	41,569	66,618	259,431
Bus.....	183	393	2,706	219	805	7,018

<sup>1</sup> See sec. 25, p. 13.<sup>2</sup> Revised.<sup>3</sup> Withheld to avoid disclosing, exactly or approximately, the output of individual establishments.<sup>4</sup> No data.

TABLE 3.—WAGE EARNERS, BY MONTHS, FOR SELECTED STATES: 1933 AND 1931

[For average for the year, see table 1. The month of maximum employment is indicated by bold-faced figures and that of minimum employment by *italic* figures. See sec. 26, p. 13.]

	NUMBER REPORTED FOR—											
	January	February	March	April	May	June	July	August	September	October	November	December
<i>United States</i>	93,738	91,984	77,624	85,856	91,687	101,211	107,005	109,668	110,666	100,907	100,015	104,078
1931	136,925	140,523	146,490	192,471	162,233	141,407	138,004	135,830	130,893	117,136	107,408	119,131
<i>States</i>												
California:												
1933	315	1,140	2,064	2,731	2,668	2,598	2,386	2,703	3,777	2,039	1,561	1,970
1931	3,730	3,979	4,074	4,124	4,267	4,177	3,992	3,792	1,952	1,940	1,649	1,916
Colorado:												
1933	265	26	26	21	17	18	17	22	33	31	36	38
1931	668	775	748	710	747	744	717	735	701	665	288	149
Illinois:												
1933	1,285	1,495	2,541	2,794	2,617	2,842	2,944	3,009	2,278	914	2,002	2,489
1931	2,339	2,410	2,489	2,404	2,673	2,400	2,284	2,295	2,203	2,272	1,631	1,839
Indiana:												
1933	7,880	7,838	2,674	5,727	6,953	7,326	5,777	4,281	7,064	9,742	9,710	9,420
1931	12,764	13,386	13,730	15,188	13,965	12,390	11,870	11,703	11,212	11,535	10,772	12,561
Massachusetts:												
1933	160	941	1,317	1,449	1,527	1,219	1,189	1,261	1,280	966	1,227	1,281
1931	1,542	2,050	2,434	2,880	2,699	1,943	1,831	1,831	1,798	1,718	417	582
Michigan:												
1933	55,806	53,389	48,205	49,927	53,760	61,255	68,177	70,411	72,424	63,805	58,895	60,641
1931	64,148	66,470	68,705	70,694	69,661	64,473	64,156	63,279	62,796	58,774	55,015	65,848
Missouri:												
1933	1,807	2,304	2,767	2,806	2,825	3,434	4,074	3,012	3,601	2,682	3,104	4,242
1931	3,026	3,103	3,107	3,073	3,143	3,128	3,047	3,010	2,946	2,902	2,230	1,878
New Jersey:												
1933	2,070	2,053	2,617	2,908	2,828	2,783	2,288	2,300	1,424	1,245	2,528	3,273
1931	4,163	3,838	4,393	5,102	5,175	4,339	4,252	4,284	4,130	3,757	1,701	1,708
New York:												
1933	3,571	2,710	2,453	2,367	3,351	3,596	3,835	4,070	4,141	3,875	3,204	3,253
1931	5,143	5,785	6,660	6,948	7,014	5,953	5,828	6,337	5,938	5,615	5,669	5,900
Ohio:												
1933	11,605	11,787	4,196	5,358	5,803	6,131	6,902	6,955	5,887	6,190	7,151	5,285
1931	15,455	14,531	15,739	17,128	17,698	17,053	15,912	14,313	14,091	13,220	11,997	11,639
Pennsylvania:												
1933	9,783	9,514	4,654	5,122	5,099	5,380	5,248	5,678	5,260	4,243	5,133	5,765
1931	6,692	6,514	6,540	6,132	6,600	6,018	5,820	5,674	5,763	5,048	4,437	4,567
Wisconsin:												
1933	2,989	2,843	2,636	2,575	2,468	2,611	1,945	1,977	2,287	3,455	3,920	4,007
1931	5,955	6,035	6,195	6,389	6,315	6,441	6,330	6,110	5,670	5,128	4,827	5,452

## SHIP AND BOAT BUILDING, STEEL AND WOODEN, INCLUDING REPAIR WORK

[A preliminary report for this industry was issued on Dec. 3, 1934]

**Description of the industry.**—This industry, as defined for Census purposes, embraces shipyards and other establishments engaged primarily in building and repairing vessels of all classes and sizes, and establishments producing masts, spars, and other such accessories for vessels. Since 1919 no data have been collected from shipyards operated by the Federal Government.

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 tons are designated as "boats." (See below, "Tonnage, gross, net, and displacement.")

**Value of products.**—The term "value of products" as used in reference to craft that were begun and completed within the year covers the entire value, including shipbuilders' profits, but in the cases of those that were begun within the preceding year and completed in the census year or were begun within the census year and completed later, it represents only the actual expenditures for labor, materials, etc. Thus only a small part of the total "value of products" for the industry—namely, the value of small craft begun and completed within the year—represents the actual selling values of completed ships and boats.

**Tonnage, gross, net, and displacement.**—The term "gross tonnage" is applied to the total internal capacity of a vessel expressed in tons of 100 cubic feet. "Net tonnage" refers to the internal cubic capacity remaining after deductions have been made from gross tonnage for space occupied by boilers, machinery, and coal bunkers or oil tanks, for quarters of officers and crew, and for other purposes directly or indirectly connected with the operation of the vessel. In other words, the net tonnage represents that portion of the vessel which is available for passengers and cargo. "Displacement tonnage" refers to the weight of the volume of water displaced, which, of course, is the same as the weight of the vessel itself. It is calculated on the basis of 35 cubic feet (approximately the volume of a long ton of sea water) to the ton. Naval vessels, and in a few cases other vessels built for the Federal Government, have been reported in displacement tonnage; and since in most cases it is impracticable to reduce such tonnage to gross tonnage, it has been necessary to combine displacement tonnage and gross tonnage in the totals given in table 3 (see footnote 1), although there is a considerable difference between the two units of measure.

**Extent of coverage.**—The 1933 coverage of the establishments reporting in this industry for 1931 was nearly complete. Of the 518 such establishments, 43 failed to supply any information in regard to their status (active, idle, etc.) or their activities in 1933, but these establishments accounted for only about 1 percent of the total number of wage earners and of the total value of products reported for the industry for 1931.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employ-ees <sup>1,2</sup>	Number of wage earners (average for the year)	Salaries <sup>3</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufac-ture <sup>3</sup>
<i>United States</i>								
1933.....	395	3,868	30,885	7,494	33,890	31,172	92,696	61,524
1931.....	518	( <sup>4</sup> )	45,262	( <sup>4</sup> )	62,028	72,322	186,993	114,671
1929.....	624	5,935	55,089	15,717	88,274	85,849	231,300	145,451
1927.....	559	5,480	55,014	14,607	87,081	78,626	211,127	132,501
<i>States</i>								
California:								
1933.....	39	193	2,240	434	2,635	2,268	7,717	5,448
1931.....	47	( <sup>4</sup> )	2,938	( <sup>4</sup> )	4,188	3,612	12,085	8,473
Connecticut:								
1933.....	15	45	578	118	788	719	2,227	1,507
1931.....	20	( <sup>4</sup> )	653	( <sup>4</sup> )	761	716	2,074	1,358
Florida:								
1933.....	17	27	345	32	271	184	720	535
1931.....	23	( <sup>4</sup> )	499	( <sup>4</sup> )	468	486	1,571	1,085
Illinois:								
1933.....	9	11	121	16	147	102	365	264
1931.....	10	( <sup>4</sup> )	251	( <sup>4</sup> )	407	306	1,144	839
Indiana:								
1933.....	4	3	21	3	17	23	53	30
Louisiana:								
1933.....	9	122	953	122	799	556	1,841	1,285
1931.....	7	( <sup>4</sup> )	1,165	( <sup>4</sup> )	1,383	892	3,038	2,146
Maryland:								
1933.....	19	139	1,543	297	1,681	1,353	4,228	2,885
1931.....	27	( <sup>4</sup> )	1,481	( <sup>4</sup> )	2,167	2,797	6,818	4,021
Michigan:								
1933.....	14	70	351	152	432	592	1,600	1,008
1931.....	18	( <sup>4</sup> )	926	( <sup>4</sup> )	1,290	1,809	4,655	2,846
Minnesota:								
1933.....	7	4	84	8	79	81	182	100
1931.....	9	( <sup>4</sup> )	152	( <sup>4</sup> )	250	227	572	345
New Jersey:								
1933.....	35	839	5,437	1,496	6,146	5,204	15,424	10,220
1931.....	37	( <sup>4</sup> )	8,499	( <sup>4</sup> )	11,021	14,749	31,311	16,562
New York:								
1933.....	76	630	5,566	1,029	6,700	4,653	16,926	12,273
1931.....	89	( <sup>4</sup> )	7,178	( <sup>4</sup> )	11,416	8,105	31,688	23,583
Ohio:								
1933.....	13	88	536	211	599	601	1,847	1,246
1931.....	16	( <sup>4</sup> )	1,083	( <sup>4</sup> )	1,541	1,144	3,324	2,180
Oregon:								
1933.....	6	1	78	( <sup>6</sup> )	90	60	180	120
1931.....	9	( <sup>4</sup> )	81	( <sup>4</sup> )	152	72	257	185
Pennsylvania:								
1933.....	14	246	2,122	341	2,449	2,239	5,060	2,821
1931.....	16	( <sup>4</sup> )	3,123	( <sup>4</sup> )	3,926	6,457	13,731	7,274
Rhode Island:								
1933.....	6	18	285	20	305	289	619	330
1931.....	9	( <sup>4</sup> )	427	( <sup>4</sup> )	621	678	1,442	764
Washington:								
1933.....	25	101	778	64	1,067	901	2,458	1,557
1931.....	43	( <sup>4</sup> )	780	( <sup>4</sup> )	1,208	1,182	2,944	1,763
Wisconsin:								
1933.....	10	61	311	93	310	362	919	557
1931.....	15	( <sup>4</sup> )	631	( <sup>4</sup> )	734	707	1,964	1,257
Other States: <sup>7</sup>								
1933.....	77	1,270	9,536	3,058	9,376	10,985	30,321	19,336
1931.....	123	( <sup>4</sup> )	15,395	( <sup>4</sup> )	20,495	28,382	68,374	39,991

<sup>1</sup> Not including proprietors and firm members, as follows: 1933, 144; 1931, no data; 1929, 345; 1927, 337.<sup>2</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations, and therefore are not strictly comparable with the corresponding figures for 1929 and 1927, in which such data are included. No data for employees of central administrative offices are included in the figures for any year.<sup>3</sup> Value of products less cost of materials, fuel, and purchased electric energy. See sec. 20, p. 11.<sup>4</sup> No data.<sup>5</sup> Figures for 1931 withheld to avoid disclosing approximations of data for individual establishments; included in items for "Other States."<sup>6</sup> Withheld to avoid disclosing compensation of an individual employee; included in figure for "Other States."<sup>7</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Ala., 4, 5; Del., 4, 8; Ga., 1, 2; Idaho, 0, 1; Ind. (1931), 6; Iowa, 1, 1; Kans., 0, 1; Ky., 1, 3; Me., 13, 18; Mass., 24, 35; Miss., 1, 4; Mo., 0, 1; N. C., 0, 2; S. C., 1, 1; Tex., 5, 8; Vt., 1, 1; Va., 19, 22; W. Va., 2, 4.

TABLE 2.—VESSELS LAUNCHED, DISTRIBUTED ACCORDING TO MATERIAL (STEEL AND WOOD) AND KIND OF POWER, BY NUMBER AND BY VALUE OF WORK DONE, FOR THE UNITED STATES: 1933, 1931, AND 1929

	NUMBER			VALUE		
	1933	1931	1929	1933	1931	1929
1. Ship and boat building industry, all products, total <sup>1</sup> .....				\$92,696,191	\$186,993,411	\$231,300,165
2. Ship and boat building (work done on vessels under construction), repair work, and miscellaneous products belonging to the industry, value.....				89,089,082	179,811,278	223,308,025
3. Other products (not normally belonging to the industry), value.....				3,607,109	7,182,133	7,992,140
4. Ship and boat building reported as a secondary activity of other industries.....				22,828	<sup>2</sup> 966,310	<sup>2</sup> 1,876,229
Ship and boat building and repair work, aggregate value (2 and 4).....				89,111,910	180,777,588	225,184,254
Ship and boat building, total.....				35,291,912	99,031,899	104,883,513
Vessels of 5 gross tons and over, total.....	188	812	1,553	16,712,491	58,024,566	68,953,802
Steel, total.....	113	324	475	16,171,517	52,149,705	53,417,638
Steam.....	7	38	43	12,494,771	38,266,268	36,104,864
Motor.....	7	54	64	335,383	7,574,580	9,524,472
Other.....	99	232	368	3,341,363	6,308,877	7,788,302
Wooden, total.....	75	488	1,078	540,974	5,874,861	15,536,164
Motor.....	58	342	626	349,777	4,544,618	10,712,880
Other.....	17	146	452	191,197	1,330,243	4,823,284
Boats under 5 gross tons, total.....	5,347	16,542	29,442	1,693,369	5,897,898	13,358,064
Motor, total.....	2,133	6,169	14,930	1,315,385	4,520,666	11,397,119
Inboard.....	796	2,724	2,600	1,206,315	3,822,878	8,147,501
Outboard.....	1,337	3,445	12,330	109,070	697,788	3,249,618
Sailboats.....	592	690	768	119,476	350,418	531,528
Rowboats.....	971	4,859	6,591	41,618	271,083	399,919
Other.....	1,651	4,824	7,213	216,890	755,731	1,029,498
Ships and boats not distributable by material and kind of power.....				22,828	779,532	1,086,878
Value of work done on vessels under construction but not yet launched:						
Steel.....				16,511,482	33,148,169	18,061,390
Wooden.....				351,742	1,181,734	3,423,379
Amount received for repair work:						
Steel.....				39,522,878	58,166,179	80,437,032
Wooden.....				12,225,818	20,275,538	34,291,205
Other products, value, and receipts <sup>3</sup> .....				2,074,302	3,303,972	5,572,504

<sup>1</sup> See "Value of products," p. 614.

<sup>2</sup> Includes data for repair work; not comparable with 1933.

<sup>3</sup> For 1933: Floating docks, life rafts, receipts for machine-shop work, receipts for storage, etc.

TABLE 3.—VESSELS (5 GROSS TONS AND OVER) LAUNCHED, DISTRIBUTED ACCORDING TO MATERIAL (STEEL AND WOOD) AND KIND OF POWER, BY NUMBER AND BY GROSS AND NET TONNAGE FOR THE UNITED STATES: 1933 AND 1931

	1933			1931		
	Number	Tonnage		Number	Tonnage	
		Gross	Net		Gross	Net
Vessels of 5 gross tons and over, aggregate.....	188	1 71, 698	39, 030	812	1 347, 586	211, 203
Steel, total.....	113	1 68, 134	35, 749	324	1 315, 331	183, 967
Steam.....	7	28, 125	1, 073	38	198, 109	85, 504
Motor.....	7	1, 677	972	54	18, 841	11, 452
Other.....	99	38, 332	33, 704	232	98, 381	87, 011
Wooden, total.....	75	3, 564	3, 281	488	32, 255	27, 236
Motor.....	58	984	749	342	8, 870	5, 756
Other.....	17	2, 580	2, 532	146	23, 385	21, 480

<sup>1</sup> Includes 29,640 tons, 1933, and 63,990 tons, 1931, reported as displacement tonnage. (See "Tonnage, gross, net, and displacement," p. 614.)

TABLE 4.—WAGE EARNERS, BY QUARTERS, FOR SELECTED STATES: 1933 AND 1931

[ The average for the year (table 1) differs from the average of the quarterly figures below. (See fourth sentence, sec. 13, p. 8.) See sec. 26, p. 13.]

	1933 <sup>1</sup>				1931			
	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.
United States.....	27, 537	28, 697	35, 042	35, 945	48, 401	47, 231	41, 889	41, 563
<i>States</i>								
Alabama.....	1, 167	1, 463	1, 769	1, 691	1, 515	1, 306	979	1, 900
California.....	1, 935	2, 383	2, 108	2, 648	3, 574	3, 211	2, 573	2, 018
Connecticut.....	461	576	552	771	590	802	565	521
Delaware.....	360	375	365	476	537	601	273	313
Florida.....	308	376	263	342	620	562	463	466
Illinois.....	99	167	99	99	325	269	175	217
Indiana.....	48	20	13	16	105	92	72	60
Louisiana.....	849	768	1, 134	1, 029	796	1, 203	1, 436	1, 264
Maine.....	449	562	607	657	1, 492	1, 294	854	790
Maryland.....	1, 053	1, 170	2, 239	1, 803	1, 683	1, 570	1, 218	1, 371
Massachusetts.....	1, 167	1, 457	2, 022	2, 069	4, 183	5, 197	5, 338	5, 380
Michigan.....	234	375	274	606	1, 353	1, 285	371	489
Minnesota.....	78	106	78	70	131	245	105	121
New Jersey.....	6, 310	4, 105	5, 840	5, 886	7, 540	8, 736	8, 715	8, 971
New York.....	4, 635	5, 381	6, 780	6, 275	8, 199	7, 616	6, 512	6, 481
Ohio.....	253	742	461	626	1, 154	601	1, 230	881
Oregon.....	59	111	78	64	104	106	74	46
Pennsylvania.....	1, 661	1, 783	2, 577	2, 673	4, 045	3, 250	2, 253	2, 231
Rhode Island.....	285	328	226	308	599	410	393	318
Texas.....	473	365	439	620	306	368	533	445
Virginia.....	4, 215	4, 430	5, 272	5, 148	6, 665	6, 349	5, 814	5, 595
Washington.....	686	781	855	1, 129	1, 039	668	565	612
Wisconsin.....	389	344	315	362	794	547	376	481

<sup>1</sup> See secs. 5, p. 4, and 13, p. 8. The 220 establishments canvassed with the standard schedule reported wage earners, by months, as follows:

January.....	28, 006	May.....	25, 913	September.....	33, 126
February.....	26, 134	June.....	26, 586	October.....	34, 423
March.....	26, 081	July.....	27, 202	November.....	31, 786
April.....	24, 292	August.....	31, 613	December.....	34, 416

## GROUP 15.—RAILROAD REPAIR SHOPS

### THE GROUP AS A WHOLE

[See p. 39]

This group comprises only two industries, "Railroad repair shops, electric" and "Railroad repair shops, steam." Although some cars and a few locomotives have been built by railroad repair shops, the greater part of the work done by such shops consists in making repairs rather than in new construction, and some of it has no connection with rolling stock. For these reasons, and because of the fact that the method of valuing their production differs from the methods employed in most other industries, railroad repair shops have been classified separately from establishments engaged primarily in the manufacture of railroad rolling stock. (See introductory text for Group 14, p. 592.)

SUMMARY FOR GROUP 15.—RAILROAD REPAIR SHOPS: 1927 TO 1933

INDUSTRY	Cen- sus year	Num- ber of estab- lish- ments	Wage earners (aver- age for the year)	Wages	Cost of ma- terials, fuel, and pur- chased elec- tric energy	Value of products	Value added by manu- facture <sup>1</sup>
Total for the group..	1933	1,901	241,875	\$284,449,927	\$191,845,201	\$506,031,832	\$314,186,631
	1931	2,167	309,034	435,247,970	298,823,638	740,762,962	441,939,324
	1929	2,297	398,156	637,311,434	548,343,565	1,269,916,839	721,573,274
	1927	2,309	428,672	648,908,452	545,491,754	1,289,695,158	744,203,404
Railroad repair shops, elec- tric.	1933	315	21,116	26,682,642	15,088,501	44,230,586	29,142,085
	1931	384	26,629	38,854,148	22,118,657	61,840,620	39,721,963
	1929	446	29,475	47,108,710	32,781,113	85,481,577	52,700,464
	1927	515	31,584	48,391,897	30,421,479	84,504,448	54,082,969
Railroad repair shops, steam.	1933	1,586	220,760	257,767,285	176,756,700	461,801,246	285,044,546
	1931	1,783	282,405	396,393,822	276,704,981	678,922,342	402,217,361
	1929	1,851	368,681	590,202,724	515,562,452	1,184,435,282	668,872,810
	1927	1,794	397,088	600,516,555	515,070,275	1,205,190,710	690,120,435

<sup>1</sup> Value of products less cost of materials, fuel, and purchased electric energy. See sec. 20, p. 11.

# RAILROAD REPAIR SHOPS, ELECTRIC; RAILROAD REPAIR SHOPS, STEAM

**Description of the industries.**—These two industries embrace repair shops maintained, respectively, by steam-railroad companies and by electric-railroad companies for the purpose of making shop repairs on rolling stock, bridges, and other equipment. The steam-railroad repair shops industry does not cover the operation of round-houses in which incidental repairs are made but no machine-shop work is performed. Cars are built to some extent in repair shops, and locomotives were also built in repair shops in former census years, but the bulk of the work done in these shops consists in repairing and rebuilding.

**Value of products.**—The "Value of products" shown for these industries represents, in general, the cost of materials plus the amounts of salaries and wages paid to shop employees.

**Extent of coverage.**—All the establishments in the steam-railroad repair shops industry that reported at the census for 1931 were accounted for in the canvass for 1933. The 1933 coverage of the establishments reporting in the electric-railroad repair shops industry for 1931 was practically complete. Of the 384 such establishments, only 3 failed to supply any information in regard to their status (active, idle, etc.) or their activities in 1933, and these establishments accounted for only a small fraction of 1 percent of the total number of wage earners and of the total value of products reported for the industry for 1931.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1</sup>	Number of wage earners (average for the year)	Salaries <sup>1</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products <sup>2</sup>	Value added by manufacture <sup>3</sup>
<b>RAILROAD REPAIR SHOPS, ELECTRIC</b>								
<i>United States</i>								
1933.....	315	1,044	21,116	2,047	26,683	15,089	44,231	29,142
1931.....	384	( <sup>4</sup> )	26,629	( <sup>4</sup> )	38,854	22,119	61,841	39,722
1929.....	446	2,507	29,475	5,424	47,109	32,781	85,482	52,700
1927.....	515	2,553	31,584	5,249	48,392	30,421	84,504	54,083
<i>States</i>								
Alabama:								
1933 <sup>5</sup> .....	5	6	97	15	112	67	194	127
Arkansas:								
1933.....	4	( <sup>4</sup> )	37	( <sup>4</sup> )	47	22	73	51
1931.....	4	( <sup>4</sup> )	36	( <sup>4</sup> )	45	11	56	45
California:								
1933.....	21	73	1,942	137	2,488	1,013	3,650	2,637
1931.....	19	( <sup>4</sup> )	2,486	( <sup>4</sup> )	3,713	1,251	4,970	3,719
Florida:								
1933 <sup>5</sup> .....	4	15	92	29	105	47	186	139
Illinois:								
1933.....	21	119	2,830	224	3,758	1,829	5,880	4,052
1931.....	24	( <sup>4</sup> )	3,019	( <sup>4</sup> )	4,806	2,209	7,092	4,883
Indiana:								
1933.....	16	35	525	60	492	239	811	571
1931.....	22	( <sup>4</sup> )	879	( <sup>4</sup> )	1,124	615	1,853	1,238

For footnotes, see end of table.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931—Continued

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1</sup>	Number of wage earners (average for the year)	Salaries <sup>1</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products <sup>2</sup>	Value added by manufacture <sup>3</sup>
<i>Thousands of dollars.</i> (See sec. 25, p. 13)								
<b>RAILROAD REPAIR SHOPS, ELECTRIC—continued</b>								
<i>States—Continued</i>								
<b>Iowa:</b>								
1933.....	9	13	142	20	157	91	273	182
1931.....	9	(4)	161	(4)	171	108	280	172
<b>Kansas:</b>								
1933.....	6	12	54	19	40	21	79	58
1931.....	5	(4)	63	(4)	60	58	118	60
<b>Maine:</b>								
1933.....	4	3	75	5	62	38	105	67
1931.....	8	(4)	116	(4)	131	86	217	132
<b>Massachusetts:</b>								
1933.....	10	17	794	36	1,085	374	1,503	1,128
1931.....	15	(4)	1,080	(4)	1,823	933	2,856	1,924
<b>New York:</b>								
1933.....	27	193	5,492	410	8,069	5,027	13,565	8,538
1931.....	34	(4)	7,272	(4)	11,873	7,261	19,238	11,977
<b>North Carolina:</b>								
1933.....	5	2	56	(9)	50	29	83	54
1931.....	7	(4)	73	(4)	82	51	136	85
<b>Ohio:</b>								
1933.....	28	42	1,122	82	1,366	831	2,422	1,591
1931.....	33	(4)	1,170	(4)	1,745	869	2,840	1,971
<b>Oklahoma:</b>								
1933.....	4	3	88	5	57	53	114	61
1931.....	7	(4)	175	(4)	205	112	318	206
<b>Pennsylvania:</b>								
1933.....	29	124	1,530	240	1,869	1,070	3,199	2,129
1931.....	32	(4)	1,795	(4)	2,759	1,639	4,454	2,815
<b>South Carolina:</b>								
1933.....	3	1	32	(9)	29	17	48	31
<b>Texas:</b>								
1933.....	10	25	339	45	365	328	753	425
1931.....	9	(4)	445	(4)	572	449	1,076	627
<b>Utah:</b>								
1933.....	3	6	88	8	100	59	167	108
1931.....	3	(4)	80	(4)	97	99	196	97
<b>Washington:</b>								
1933.....	6	10	248	18	338	177	539	362
1931.....	10	(4)	331	(4)	547	318	882	565
<b>West Virginia:</b>								
1933.....	10	8	222	17	259	127	403	276
<b>Other states:<sup>7</sup></b>								
1933.....	90	337	5,311	677	5,835	3,631	10,184	6,563
1931.....	143	(4)	7,448	(4)	9,100	6,051	15,258	9,208
<b>RAILROAD REPAIR SHOPS, STEAM</b>								
<i>United States</i>								
1933.....	1,586	12,012	220,760	25,682	257,767	176,757	461,801	285,045
1931.....	1,733	(4)	282,405	(4)	396,394	276,705	678,922	402,217
1929.....	1,851	29,974	368,681	76,171	590,203	515,562	1,184,435	668,873
1927.....	1,794	35,059	397,088	85,366	600,517	515,070	1,205,191	690,120
<i>States</i>								
<b>Alabama:</b>								
1933.....	20	136	3,475	285	3,784	1,812	5,883	4,071
1931.....	20	(4)	5,107	(4)	6,719	2,963	9,682	6,719
<b>Arkansas:</b>								
1933.....	14	146	2,289	317	1,796	1,724	3,880	2,156
1931.....	16	(4)	2,621	(4)	3,692	2,883	6,575	3,692
<b>California:</b>								
1933.....	64	389	8,589	897	9,059	6,662	16,634	9,972
1931.....	64	(4)	9,411	(4)	14,198	8,891	23,321	14,430

For footnotes, see end of table.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931—Continued

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employes <sup>1</sup>	Number of wage earners (average for the year)	Salaries <sup>1</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products <sup>2</sup>	Value added by manufacture <sup>3</sup>
<i>Thousands of dollars. (See sec. 25, p. 13)</i>								
<b>RAILROAD REPAIR SHOPS, STEAM—continued</b>								
<i>States—Continued</i>								
Colorado:								
1933.....	26	137	3,061	269	3,489	2,020	5,890	3,871
1931.....	27	( <sup>4</sup> )	3,374	( <sup>4</sup> )	4,995	2,893	7,976	5,083
Florida:								
1933.....	21	125	2,478	301	2,793	1,736	4,830	3,094
1931.....	21	( <sup>4</sup> )	2,670	( <sup>4</sup> )	3,541	2,448	6,143	3,696
Georgia:								
1933.....	30	227	4,364	520	4,551	3,412	8,507	5,095
1931.....	30	( <sup>4</sup> )	5,476	( <sup>4</sup> )	6,894	5,259	12,169	6,910
Illinois:								
1933.....	108	791	15,243	1,726	19,385	12,274	33,633	21,360
1931.....	137	( <sup>4</sup> )	22,402	( <sup>4</sup> )	32,454	21,719	54,392	32,673
Indiana:								
1933.....	67	529	8,678	999	10,427	7,351	18,798	11,446
1931.....	76	( <sup>4</sup> )	10,596	( <sup>4</sup> )	14,744	9,942	24,811	14,869
Iowa:								
1933.....	43	263	4,533	541	6,035	3,276	9,852	6,577
1931.....	58	( <sup>4</sup> )	6,837	( <sup>4</sup> )	10,029	5,118	15,864	10,746
Kansas:								
1933.....	29	362	5,213	759	5,602	4,043	10,414	6,371
1931.....	41	( <sup>4</sup> )	7,335	( <sup>4</sup> )	10,149	6,888	17,430	10,542
Kentucky:								
1933.....	28	213	7,250	531	9,070	5,099	14,700	9,600
1931.....	29	( <sup>4</sup> )	9,551	( <sup>4</sup> )	13,615	6,926	20,544	13,618
Louisiana:								
1933.....	26	136	2,259	299	2,430	1,441	4,174	2,733
1931.....	24	( <sup>4</sup> )	2,858	( <sup>4</sup> )	3,757	2,440	6,209	3,769
Maryland:								
1933.....	20	175	4,076	381	4,568	3,612	8,589	4,977
1931.....	20	( <sup>4</sup> )	5,429	( <sup>4</sup> )	7,107	6,719	15,067	8,348
Massachusetts:								
1933.....	16	139	3,065	257	4,092	2,675	7,024	4,349
1931.....	17	( <sup>4</sup> )	2,994	( <sup>4</sup> )	4,041	4,020	8,061	4,041
Michigan:								
1933.....	37	195	4,035	457	4,488	2,730	7,675	4,945
1931.....	44	( <sup>4</sup> )	4,784	( <sup>4</sup> )	6,081	3,826	10,009	6,183
Minnesota:								
1933.....	53	242	6,801	513	7,490	5,423	13,426	8,003
1931.....	57	( <sup>4</sup> )	9,624	( <sup>4</sup> )	11,699	7,958	19,870	11,912
Mississippi:								
1933.....	12	80	914	180	1,145	705	2,030	1,325
1931.....	18	( <sup>4</sup> )	1,813	( <sup>4</sup> )	2,676	1,710	4,386	2,676
Missouri:								
1933.....	46	408	5,497	887	7,426	5,566	13,904	8,308
1931.....	57	( <sup>4</sup> )	7,636	( <sup>4</sup> )	11,295	6,492	17,789	11,298
Montana:								
1933.....	21	59	1,987	157	2,545	1,651	4,353	2,701
1931.....	23	( <sup>4</sup> )	2,613	( <sup>4</sup> )	3,639	2,033	5,674	3,641
Nebraska:								
1933.....	24	144	2,539	306	3,149	2,215	5,671	3,455
1931.....	29	( <sup>4</sup> )	3,631	( <sup>4</sup> )	5,356	3,450	8,820	5,370
Nevada:								
1933.....	14	18	737	44	869	540	1,454	914
1931.....	16	( <sup>4</sup> )	853	( <sup>4</sup> )	1,428	917	2,427	1,510
New Jersey:								
1933.....	26	172	4,719	319	6,214	2,200	8,733	6,533
1931.....	29	( <sup>4</sup> )	5,929	( <sup>4</sup> )	9,558	4,279	13,837	9,558
New York:								
1933.....	113	1,027	14,169	2,206	18,972	11,840	33,540	21,700
1931.....	135	( <sup>4</sup> )	16,671	( <sup>4</sup> )	25,597	17,125	42,791	25,665
North Carolina:								
1933.....	15	154	2,987	365	3,140	2,618	6,124	3,505
1931.....	16	( <sup>4</sup> )	3,355	( <sup>4</sup> )	4,496	3,545	8,043	4,498

For footnotes, see end of table.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931—Continued

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees <sup>1</sup>	Number of wage earners (average for the year)	Salaries <sup>1</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products <sup>2</sup>	Value added by manufacture <sup>3</sup>
<i>Thousands of dollars.</i> (See sec. 25, p. 13)								
RAILROAD REPAIR SHOPS, STEAM—continued								
States—Continued								
North Dakota:								
1933.....	15	18	803	49	1,142	737	1,930	1,192
1931.....	18	( <sup>4</sup> )	951	( <sup>4</sup> )	1,544	762	2,306	1,544
Ohio:								
1933.....	126	946	15,202	2,096	19,994	11,894	33,984	22,090
1931.....	138	( <sup>4</sup> )	20,074	( <sup>4</sup> )	28,965	19,783	48,944	29,162
Oklahoma:								
1933.....	19	60	888	130	1,264	832	2,232	1,400
1931.....	23	( <sup>4</sup> )	1,648	( <sup>4</sup> )	2,382	1,414	3,798	2,384
Oregon:								
1933.....	20	54	1,285	114	1,476	771	2,362	1,591
Pennsylvania:								
1933.....	162	2,147	35,907	4,151	36,786	35,047	76,436	41,389
1931.....	189	( <sup>4</sup> )	46,891	( <sup>4</sup> )	61,717	54,723	117,282	62,559
South Carolina:								
1933.....	11	87	1,276	200	1,383	641	2,224	1,583
South Dakota:								
1933.....	10	7	434	14	573	359	945	586
1931.....	14	( <sup>4</sup> )	587	( <sup>4</sup> )	933	315	1,256	941
Tennessee:								
1933.....	21	226	4,841	518	5,789	3,465	9,780	6,315
1931.....	22	( <sup>4</sup> )	6,307	( <sup>4</sup> )	8,882	5,677	14,559	8,882
Texas:								
1933.....	88	450	8,818	957	9,004	6,854	16,828	9,973
1931.....	98	( <sup>4</sup> )	10,865	( <sup>4</sup> )	14,777	11,154	25,944	14,790
Utah:								
1933.....	10	35	1,437	78	1,653	1,007	2,739	1,732
1931.....	11	( <sup>4</sup> )	1,511	( <sup>4</sup> )	2,437	1,408	3,923	2,514
Vermont:								
1933.....	5	39	672	62	679	442	1,193	751
1931.....	5	( <sup>4</sup> )	770	( <sup>4</sup> )	981	436	1,467	981
Virginia:								
1933.....	36	579	8,617	1,366	9,326	5,705	16,397	10,692
1931.....	38	( <sup>4</sup> )	10,140	( <sup>4</sup> )	13,432	11,731	25,163	13,432
Washington:								
1933.....	31	103	2,793	250	3,122	2,189	5,560	3,371
1931.....	29	( <sup>4</sup> )	3,811	( <sup>4</sup> )	4,864	4,586	9,847	5,261
West Virginia:								
1933.....	44	418	6,151	1,035	7,060	3,494	11,604	8,110
1931.....	47	( <sup>4</sup> )	7,455	( <sup>4</sup> )	10,035	5,280	15,381	10,101
Wisconsin:								
1933.....	39	107	4,729	213	6,135	3,672	10,081	6,359
1931.....	46	( <sup>4</sup> )	6,073	( <sup>4</sup> )	7,753	5,776	13,740	7,964
Other States: <sup>5</sup>								
1933.....	76	469	7,949	934	9,862	6,991	17,841	10,849
1931.....	101	( <sup>4</sup> )	12,742	( <sup>4</sup> )	19,331	13,166	33,422	20,256

<sup>1</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations, and therefore are not strictly comparable with the corresponding figures for 1929 and 1927, in which such data are included. No data for employees of central administrative offices are included in the figures for any year.

<sup>2</sup> See "Value of products" p. 619.

<sup>3</sup> Value of products less cost of materials, fuel, and purchased electric energy. See sec. 20, p. 11.

<sup>4</sup> No data.

<sup>5</sup> Figures for 1931 withheld to avoid disclosing approximations of data for individual establishments; included in items for "Other States."

<sup>6</sup> Withheld to avoid disclosing compensation of an individual employee; included in item for "Other States."

<sup>7</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Ala. (1931), 7; Ariz., 1, 1; Colo., 4, 5; Conn., 7, 7; Del., 1, 1; D. C., 2, 2; Fla. (1931), 5; Ga., 4, 5; Ky., 4, 4; La., 4, 4; Md., 3, 4; Mich., 3, 12; Minn., 2, 4; Miss., 1, 3; Mo., 5, 6; Mont., 1, 3; Nebr., 2, 2; N. H., 1, 1; N. J., 20, 27; N. D., 1, 2; Oreg., 2, 2; R. I., 2, 2; S. C. (1931), 2; Tenn., 4, 6; Va., 9, 10; W. Va. (1931), 8; Wis., 7, 8.

<sup>8</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Ariz., 13, 14; Conn., 9, 8; Del., 5, 5; D. C., 1, 2; Idaho, 13, 9; Me., 7, 9; N. H., 3, 2; N. Mex., 9, 9; Oreg. (1931), 18; R. I., 2, 2; S. C. (1931), 10; Wyo., 14, 13.



TABLE 2.—WAGE EARNERS, BY MONTHS, FOR SELECTED STATES: 1933 AND 1931—Continued

[The month of maximum employment is indicated by bold-faced figures and that of minimum employment by italic figures. See sec. 26, p. 13]

		NUMBER REPORTED FOR—											
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
RAILROAD REPAIR SHOPS, ELECTRIC—continued													
States—Continued													
Louisiana:													
1932	129	131	129	129	129	125	125	125	125	126	126	125	124
1933	145	145	144	<i>143</i>	144	145	144	144	<i>143</i>	<i>143</i>	147	148	143
Malta:													
1933	84	84	84	76	74	74	67	69	70	71	71	72	72
1931	122	122	122	119	121	120	120	111	111	112	110	108	110
Maryland:													
1931	774	772	771	769	768	771	765	765	780	785	785	792	788
1933	339	324	324	473	467	465	462	459	457	448	446	446	446
Massachusetts:													
1931	805	799	804	810	792	794	791	788	788	788	789	776	789
1933	1,103	1,081	1,085	1,087	1,102	1,094	1,090	1,065	1,053	1,065	1,066	1,070	1,072
Michigan:													
1931	487	464	466	441	443	440	429	429	429	430	425	427	432
1933	1,034	1,019	972	948	869	883	885	856	856	861	853	847	745
Missouri:													
1931	713	676	671	651	672	668	665	668	668	664	674	677	680
1933	948	847	841	815	816	794	804	805	803	803	793	786	797
New Jersey:													
1931	737	735	722	720	720	704	707	710	710	707	702	712	708
1933	1,263	1,256	1,253	1,251	1,251	1,278	1,271	1,190	1,190	1,213	1,166	1,149	1,154
New York:													
1931	5,713	5,653	5,613	5,473	5,445	5,370	5,429	5,393	5,393	5,413	5,431	5,493	5,502
1933	7,721	7,594	7,536	7,351	7,255	7,108	7,134	7,086	7,086	7,088	7,076	7,161	7,132
North Carolina:													
1931	57	57	57	57	56	55	55	55	55	56	58	58	56
1933	74	73	73	74	74	73	71	72	72	73	72	72	72
Ohio:													
1931	1,142	1,147	1,129	1,118	1,127	1,111	1,105	1,103	1,103	1,108	1,102	1,136	1,140
1933	1,184	1,194	1,197	1,196	1,169	1,193	1,175	1,170	1,170	1,177	1,151	1,184	1,184
Oklahoma:													
1931	87	87	86	87	83	85	84	87	87	90	91	96	96
1933	188	183	177	183	183	173	170	175	175	176	169	168	165
Pennsylvania:													
1931	1,499	1,518	1,516	1,543	1,571	1,553	1,525	1,528	1,528	1,510	1,530	1,528	1,535
1933	1,830	1,833	1,809	1,880	1,846	1,838	1,822	1,792	1,792	1,723	1,730	1,698	1,659

	30	33	32	33	38	33	32	32	32	31	31	30	49
South Carolina:													
1933	363	355	377	355	328	328	323	323	323	329	329	339	341
1931	472	471	478	469	467	454	445	445	420	424	414	414	415
Utah:													
1933	93	97	91	89	88	85	89	89	89	88	88	85	85
1931	86	85	87	85	81	84	69	69	74	74	74	75	81
Virginia:													
1933	300	287	287	284	288	283	288	288	285	300	299	297	296
1931	192	204	199	209	195	187	190	190	188	194	199	189	188
Washington:													
1933	255	254	249	251	249	248	245	245	245	243	244	245	250
1931	350	345	345	344	336	322	316	316	320	323	329	319	317
West Virginia:													
1933	225	225	226	221	228	220	219	219	219	221	223	219	220
1931	234	229	232	231	224	223	224	224	223	223	215	200	191
Wisconsin:													
1933	433	432	430	438	436	430	423	423	415	412	407	400	398
1931	602	602	597	593	570	515	507	507	504	500	494	494	491
RAILROAD REPAIR SHOPS, STEAM													
United States													
1933	219,600	216,761	211,570	209,899	208,645	210,494	220,883	228,112	228,112	232,014	233,012	231,194	226,841
1931	306,676	303,952	300,736	296,935	292,669	283,710	280,535	276,949	276,949	267,942	266,241	259,676	262,841
States													
Alabama:													
1933	3,612	3,248	3,274	3,284	3,272	3,339	3,500	3,626	3,626	3,732	3,660	3,600	3,481
1931	6,567	3,545	5,449	5,287	5,219	5,079	5,074	5,064	5,064	4,934	4,863	4,792	4,414
Arkansas:													
1933	1,980	1,680	1,900	1,865	1,193	2,433	2,522	2,522	2,412	2,767	2,639	2,631	2,487
1931	2,867	2,974	2,933	2,862	2,513	2,610	2,788	2,685	2,685	2,587	2,487	2,034	1,910
California:													
1933	8,853	8,653	8,551	8,478	8,463	8,478	8,469	8,615	8,615	8,633	8,604	8,708	8,437
1931	9,863	9,967	9,923	9,821	9,511	9,023	9,110	9,213	9,213	9,104	9,201	9,128	8,972
Colorado:													
1933	2,947	2,828	3,093	3,076	3,068	3,073	3,070	3,070	3,070	3,100	3,181	3,065	3,087
1931	3,773	3,783	3,745	3,687	3,608	3,468	3,177	3,113	3,113	3,075	3,051	2,971	3,095
Delaware:													
1933	955	1,208	1,321	1,136	1,140	1,117	1,138	1,165	1,165	1,250	1,263	1,230	1,286
1931	1,565	1,631	1,538	1,538	1,627	1,504	1,506	1,470	1,470	1,482	1,464	1,479	1,484
Florida:													
1933	2,493	2,553	2,531	2,504	2,457	2,478	2,432	2,436	2,436	2,436	2,482	2,481	2,476
1931	2,968	3,013	3,081	2,812	2,647	2,627	2,577	2,511	2,495	2,485	2,488	2,483	2,428
Georgia:													
1933	4,484	4,295	4,232	4,311	4,329	4,378	4,370	4,385	4,385	4,418	4,425	4,361	4,395
1931	6,032	6,004	5,768	5,453	5,482	5,416	5,397	5,360	5,360	5,319	5,241	5,166	5,116

1 Figures for 1931 withheld to avoid disclosing data for individual establishments.

TABLE 2.—WAGE EARNERS, BY MONTHS, FOR SELECTED STATES: 1933 AND 1931—Continued

[The month of maximum employment is indicated by bold-faced figures and that of minimum employment by *italic* figures. See sec. 26, p. 13]

		NUMBER REPORTED FOR—											
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
RAILROAD REPAIR SHOPS, STEAM—Continued													
<i>States—Continued</i>													
Idaho:	1933	800	807	780	791	782	826	894	819	907	1,004	1,047	1,064
	1931	949	920	946	937	931	925	917	898	906	923	901	880
Illinois:	1933	15,924	15,984	14,805	13,983	13,766	<b>15,684</b>	15,205	15,630	15,805	16,400	16,023	15,737
	1931	25,267	24,507	23,965	23,315	23,432	23,918	22,918	22,000	20,798	20,391	19,262	18,566
Indiana:	1933	8,700	7,890	7,738	7,650	7,696	8,083	9,149	9,835	9,619	9,611	9,415	9,399
	1931	12,200	11,889	11,584	11,800	11,375	10,262	10,280	9,857	9,760	10,068	9,879	8,094
Iowa:	1933	4,131	4,479	<i>4,053</i>	4,281	4,337	4,510	4,579	4,863	4,887	4,840	4,820	4,630
	1931	7,584	7,671	7,428	7,358	6,985	6,645	6,668	6,911	6,492	6,405	6,057	5,804
Kansas:	1933	5,004	5,012	4,833	5,280	5,434	5,475	5,205	5,200	5,352	5,315	5,225	5,220
	1931	7,538	7,532	7,477	7,504	7,402	7,441	7,568	7,435	6,717	7,242	7,145	7,017
Kentucky:	1933	7,089	7,132	<b>6,217</b>	6,221	6,708	7,003	7,530	7,797	8,081	8,013	8,049	7,195
	1931	10,073	10,111	10,062	9,828	9,859	9,811	9,755	9,553	9,619	8,867	8,627	8,370
Louisiana:	1933	2,228	2,185	2,158	<b>2,156</b>	2,215	2,289	2,316	2,324	2,387	2,350	2,290	2,254
	1931	3,008	2,915	2,977	2,933	2,918	2,909	2,824	2,841	2,883	2,763	2,749	2,608
Maine:	1933	431	446	441	418	449	450	434	487	534	539	541	615
	1931	914	882	846	829	815	800	780	699	693	679	687	699
Maryland:	1933	4,123	4,114	3,580	3,488	<b>2,876</b>	3,432	4,122	4,540	4,560	4,617	4,718	4,785
	1931	6,449	6,432	6,448	6,449	6,230	6,780	5,922	6,840	3,849	3,860	3,973	3,925
Massachusetts:	1933	3,096	3,069	3,068	2,871	2,903	<b>2,477</b>	2,995	3,114	3,252	3,247	3,320	3,340
	1931	3,445	3,483	3,494	3,010	3,089	2,850	2,516	2,601	2,691	3,008	3,026	3,442
Michigan:	1933	3,962	3,959	3,974	3,918	<b>3,901</b>	3,974	4,048	4,180	4,157	4,150	4,166	4,080
	1931	5,449	5,092	4,942	4,990	4,905	4,846	4,753	4,419	4,325	4,673	4,589	4,472
Minnesota:	1933	7,086	7,103	6,527	6,841	6,214	<b>6,966</b>	6,412	6,802	7,096	7,107	7,920	7,967
	1931	10,530	10,589	10,238	10,235	10,081	9,612	9,520	9,492	8,684	8,964	8,859	8,741



TABLE 2.—WAGE EARNERS, BY MONTHS, FOR SELECTED STATES, 1933 AND 1931—Continued

[The month of maximum employment is indicated by bold-faced figures and that of minimum employment by *italic* figures. See sec. 26, p. 13.]

		NUMBER REPORTED FOR—											
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
RAILROAD REPAIR SHOPS, STEAM—continued													
States—Continued													
Utah:													
1933	1,414	1,400	1,372	1,437	1,446	1,471	1,488	1,523	1,481	1,485	1,438		
1931	1,772	1,760	1,695	1,684	1,497	<i>1,277</i>	1,306	1,288	1,345	1,288	1,468		
Vermont:													
1933	692	672	667	660	654	656	667	660	668	673	688		
1931	821	799	790	771	764	760	772	782	722	713	751		
Virginia:													
1933	8,768	8,599	8,608	8,570	8,579	8,636	8,645	8,682	8,598	8,553	8,566		
1931	10,178	10,322	10,336	10,128	10,257	10,228	10,069	10,197	9,939	9,844	9,802		
Washington:													
1933	2,999	2,942	2,951	2,746	2,782	2,674	2,848	2,866	2,818	2,721	2,729		
1931	4,114	4,131	4,142	3,894	3,702	3,545	3,612	3,668	3,636	3,626	3,553		
West Virginia:													
1933	8,860	8,811	8,806	8,794	8,773	8,166	8,441	8,518	8,533	8,625	8,829		
1931	8,204	8,147	7,991	7,259	7,204	7,217	7,254	7,045	6,989	7,020	7,043		
Wisconsin:													
1933	4,310	4,176	4,466	4,507	4,549	4,840	5,074	5,175	5,226	5,123	5,190		
1931	7,073	7,068	7,126	6,900	6,320	5,574	5,509	4,798	5,476	5,389	4,961		
Wyoming:													
1933	1,300	1,337	1,331	1,297	1,337	1,362	1,378	1,457	1,561	1,589	1,618		
1931	2,206	2,137	2,114	2,103	2,092	2,096	2,052	2,069	2,071	1,501	1,548		

## GROUP 16.—MISCELLANEOUS INDUSTRIES

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### THE GROUP AS A WHOLE

[See p. 39]

Some of the industries in this group cannot be properly classified in any of the other groups because of the varied character of materials used, and others because of the peculiar nature or uses of the products made. To a large extent the industries in Group 16 are those which use as their materials the products of certain industries in other groups. A few industries are included, however, which use strictly raw materials, such as tobacco for the manufacture of cigars, cigarettes, and other tobacco products; bone and shell for making buttons, hairpins, and fancy articles; broomcorn for brooms; straw for straw hats; and sand for foundry supplies.

Group 16 includes also a class of industries whose manufacturing operations consist principally in processes or treatments which prepare commodities for the trade or the market but produce little change in their character. These industries include "Feathers, plumes, and manufactures thereof," "Furs, dressed and dyed," "Hair work," and "Lapidary work."

**Changes in classification.**—The manufacture of cigars and the manufacture of cigarettes, formerly classified in combination under the title "Cigars and cigarettes," are not treated as separate industries, "Cigars" and "Cigarettes," respectively. Manufacturers of papeteries, formerly assigned to the "Stationery goods not elsewhere classified" industry, in this group, have been transferred to other industries, principally "Paper goods not elsewhere classified," in Group 4.

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## SUMMARY FOR GROUP 16.—MISCELLANEOUS INDUSTRIES: 1927 TO 1933

INDUSTRY	Cen- sus year	Num- ber of estab- lish- ments	Wage earn- ers (aver- age for the year)	Wages	Cost of materials, containers, fuel, and purchased electric energy	Value of products	Value added by manu- facture <sup>1</sup>
Aggregate for the group.	1933	8,679	261,081	\$204,351,127	\$998,313,583	\$1,677,357,437	\$679,043,854
	1931	11,758	300,696	303,015,191	1,280,579,826	2,312,634,671	1,032,054,845
	1929	14,612	417,410	500,533,958	1,359,280,203	3,426,094,915	(9)
	1927	14,313	440,366	529,586,690	1,377,934,712	3,316,779,856	(9)
Musical instruments, total.	1933	170	6,106	5,097,008	5,423,610	15,715,434	10,291,824
	1931	230	10,003	11,151,664	10,762,421	32,206,671	21,444,250
	1929	316	18,625	25,782,387	30,030,326	79,981,287	49,950,961
	1927	371	28,769	40,585,227	52,691,020	131,065,983	78,374,963
Organs-----	1933	29	574	510,269	387,173	1,626,804	1,239,631
	1931	42	1,460	1,753,270	1,626,948	5,710,028	4,083,080
	1929	62	2,389	3,603,631	3,090,676	11,322,736	8,232,060
	1927	63	2,770	4,363,731	4,494,449	15,438,623	10,944,174
Pianos-----	1933	36	2,700	2,381,694	2,828,287	* 7,242,819	4,414,532
	1931	50	4,737	5,156,909	5,892,230	15,293,048	9,400,813
	1929	81	9,970	14,000,826	18,866,437	42,501,375	23,634,933
	1927	124	16,582	23,890,846	33,898,668	75,490,681	41,592,013
Piano and organ parts and materials.	1933	33	768	527,402	584,480	1,732,193	1,147,713
	1931	50	1,213	1,178,187	1,004,845	3,089,883	2,085,038
	1929	67	3,090	3,597,210	4,247,919	11,853,098	7,653,179
	1927	85	5,399	6,593,645	9,657,350	22,244,731	12,887,381
Musical instruments and parts and materials, not elsewhere classified.	1933	72	2,064	1,677,643	1,623,670	5,113,618	3,489,948
	1931	88	2,593	3,053,298	2,238,398	8,113,712	5,875,314
	1929	106	3,176	4,580,720	3,825,294	14,274,078	10,448,784
	1927	99	4,018	5,737,005	4,640,593	17,891,948	13,251,395
Tobacco manufac- tures, total.	1933	804	87,325	50,932,946	* 659,095,090	909,082,316	* 249,987,228
	1931	1,228	99,769	69,411,167	* 785,502,241	1,155,851,190	* 370,348,949
	1929	1,788	116,119	94,578,749	* 429,272,352	1,246,241,839	(9)
	1927	2,166	129,299	105,250,631	* 420,666,513	1,163,768,379	(9)
Cigarettes-----	1933	27	22,544	13,835,250	* 503,559,633	637,775,557	* 134,215,924
	1931	40	20,146	14,663,675	* 555,048,846	759,339,235	* 204,340,389
	1929	49	21,142	18,401,203	* 218,423,773	755,245,050	(9)
	1927	37	21,618	18,119,470	* 187,342,344	626,557,026	(9)
Cigars-----	1933	665	54,588	30,060,615	* 72,589,039	139,372,193	* 66,783,154
	1931	1,063	68,182	46,074,013	* 119,295,138	227,348,832	* 108,053,694
	1929	1,587	84,166	67,222,095	* 138,364,250	311,663,538	(9)
	1927	1,900	94,556	76,469,741	* 148,013,781	338,966,676	(9)
Tobacco: Chewing and smoking, and snuff.	1933	112	10,223	7,037,081	* 82,946,418	131,934,566	* 48,988,148
	1931	125	11,441	8,673,479	* 111,158,257	169,113,123	* 57,954,866
	1929	152	10,811	8,955,451	* 72,494,329	179,332,951	(9)
	1927	159	13,125	10,661,420	* 85,310,438	198,244,677	(9)
Other industries, total.	1933	7,705	167,652	148,321,173	333,794,883	752,559,687	418,764,804
	1931	10,300	190,924	222,667,360	484,315,164	1,124,576,810	640,261,646
	1929	12,508	282,666	380,172,822	899,977,525	2,089,871,789	2,199,894,264
	1927	11,786	282,298	383,750,832	904,627,179	2,021,945,494	1,117,318,315
Artificial and preserved flow- ers and plant.	1933	131	2,338	1,565,877	2,480,608	6,964,924	3,944,316
	1931	158	2,348	2,139,643	3,415,284	9,035,476	5,620,192
	1929	191	3,216	3,217,642	5,527,451	14,425,420	8,897,969
	1927	190	4,715	5,050,438	7,888,833	19,576,337	11,687,504
Artists' materials-----	1933	56	844	726,607	2,013,766	4,961,255	2,947,489
	1931	65	838	890,840	2,136,852	5,822,597	3,685,745
	1929	68	1,167	1,428,728	4,155,817	9,459,565	5,304,248
	1927	61	1,211	1,429,983	3,771,503	8,204,521	4,433,018
Brooms-----	1933	280	3,757	2,111,180	4,601,014	9,072,921	4,471,907
	1931	334	4,086	* 3,325,998	6,264,020	13,134,907	6,870,837
	1929	497	4,542	4,169,087	9,647,688	19,166,353	9,518,665
	1927	394	4,450	4,274,688	9,175,710	18,444,912	9,259,202
Brushes, other than rubber.	1933	221	5,809	4,821,015	12,200,138	24,575,879	12,375,741
	1931	264	5,891	5,991,850	14,227,575	30,827,087	16,599,512
	1929	303	7,261	7,962,538	21,688,253	45,849,270	23,861,017
	1927	302	7,673	8,244,032	22,553,058	47,844,124	25,291,066

For footnotes, see end of table.

## SUMMARY FOR GROUP 16.—MISCELLANEOUS INDUSTRIES: 1927 TO 1933—Contd.

INDUSTRY	Census year	Number of establishments	Wage earners (average for the year)	Wages	Cost of materials, containers, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>1</sup>
Buttons.....	1933	200	9,888	\$6,705,511	\$8,614,088	\$22,411,607	\$13,797,519
	1931	212	8,224	6,661,117	8,303,222	21,624,572	13,221,350
	1929	242	9,034	8,813,927	11,501,401	28,977,919	17,476,518
	1927	229	9,642	9,433,821	11,237,579	29,130,168	17,892,589
	1933	47	1,171	1,242,933	5,156,605	*\$11,225,436	6,068,831
Carbon paper and inked ribbons.	1931	54	1,198	1,462,688	6,033,733	13,475,518	7,441,780
	1929	57	1,251	1,702,358	7,990,753	17,295,140	9,304,337
	1927	49	1,078	1,514,230	6,019,758	13,793,128	7,773,370
	1933	17	411	278,835	470,561	911,287	440,726
Combs and hairpins, not made from metal or rubber.	1931	23	653	571,112	1,816,641	2,482,419	1,079,540
	1929	24	656	640,857	1,006,824	2,482,419	1,475,595
	1927	36	1,259	1,249,064	1,873,003	4,436,656	2,563,653
	1933	172	5,450	6,925,320	16,371,116	42,246,758	25,875,642
Dairymen's supplies; creamery, cheese-factory and butter-factory equipment; and poultrymen's and apirists' supplies. <sup>7</sup>	1927	152	5,091	6,373,561	15,686,293	36,823,648	21,137,355
	1933	79	3,120	2,451,544	6,945,258	16,437,222	9,491,964
Dentists' supplies and equipment, except instruments.	1931	84	3,874	3,948,762	9,362,441	24,005,221	14,642,780
	1929	87	4,559	5,359,432	17,326,748	35,180,165	17,853,417
	1927	97	3,759	3,941,289	18,188,584	32,348,979	14,160,395
	1933	40	322	264,817	227,027	835,362	608,335
Feathers, plumes, and manufactures thereof.	1931	53	527	559,053	588,029	1,897,656	1,309,627
	1929	39	257	309,693	386,356	1,141,418	755,062
	1927	38	322	396,683	534,149	1,433,441	904,292
	1933	40	334	315,149	1,325,998	2,788,115	1,462,117
Foundry supplies.....	1931	52	428	491,502	2,080,108	3,998,401	1,918,293
	1929	59	853	1,255,801	5,534,548	10,458,589	4,924,041
	1927	65	941	1,200,141	6,539,050	11,635,060	5,096,010
	1933	1,463	8,210	11,500,346	50,060,529	80,524,414	30,463,885
Fur goods.....	1931	2,354	12,358	24,792,600	102,634,150	164,749,401	62,115,251
	1929	2,855	15,752	33,329,965	176,106,910	277,592,752	101,485,842
	1927	2,756	16,640	37,670,610	195,322,988	299,615,047	104,292,059
	1933	181	5,364	6,246,303	9,539,725	24,947,543	15,407,818
Furs, dressed and dyed.....	1931	243	5,160	7,968,006	16,220,722	37,872,653	21,551,931
	1929	248	5,167	8,596,377	18,648,954	40,237,192	21,688,238
	1927	172	5,540	10,360,987	7,071,850	27,680,635	20,608,785
	1933	37	228	187,637	306,495	985,888	679,393
Hair work.....	1931	52	267	287,642	310,574	1,184,240	873,666
	1929	59	359	432,340	538,479	1,693,588	1,155,109
	1927	69	515	598,034	829,891	2,279,226	1,449,335
	1933	256	2,196	2,062,129	1,855,263	7,636,990	5,781,727
Hand stamps and stencils and brands.	1931	288	2,496	3,370,835	2,394,753	10,045,366	7,650,613
	1929	332	2,971	4,080,780	3,811,158	15,036,023	11,224,865
	1927	293	2,668	3,841,771	3,733,718	14,155,607	10,421,889
	1933	46	3,147	2,056,272	5,217,227	9,947,460	4,730,233
Hats, straw, men's.....	1931	50	2,823	2,784,007	7,253,048	13,892,102	6,639,054
	1929	50	3,380	3,687,570	8,704,621	18,738,994	10,034,373
	1927	48	3,263	4,232,332	11,782,956	21,717,689	9,934,733
	1933	210	6,211	6,711,753	6,299,967	25,286,674	18,986,707
Instruments, professional and scientific, and gauges, except machinists' gauges.	1931	270	9,138	11,114,765	10,140,960	40,733,637	30,592,677
	1929	276	16,876	22,682,052	28,411,430	89,746,369	61,334,939
	1927	280	16,414	22,288,973	28,880,222	87,733,488	58,908,266
	1933	62	1,095	840,573	1,134,811	3,095,753	1,960,942
Jewelry and instrument cases.	1931	92	1,398	1,414,842	1,941,319	4,919,423	2,978,104
	1929	113	2,469	2,472,850	3,324,459	8,826,727	5,502,268
	1927	107	2,406	2,597,056	3,293,986	8,810,065	5,516,079
	1933	34	107	124,428	483,058	822,873	339,815
Lapidary work.....	1931	53	205	339,503	1,373,233	2,474,998	1,096,765
	1929	100	506	1,001,706	8,234,889	11,942,421	3,707,532
	1927	92	547	1,220,647	9,133,059	12,351,503	3,218,444

For footnotes, see end of table.

## SUMMARY FOR GROUP 16.—MISCELLANEOUS INDUSTRIES: 1927 TO 1933—Contd.

INDUSTRY	Cen- sus year	Num- ber of estab- lish- ments	Wage earners (aver- age for the year)	Wages	Cost of materials, containers, fuel, and purchased electric energy	Value of products	Value added by manu- facture <sup>1</sup>
Mattresses and bed springs not elsewhere classified.	1933	645	13,280	\$10,694,395	\$32,491,011	\$59,724,019	\$27,233,008
	1931	781	13,622	14,702,335	37,509,418	77,508,242	39,998,824
	1929	951	17,187	22,583,835	61,527,026	123,279,717	61,752,691
	1927	838	13,481	16,886,711	52,182,075	98,834,558	46,652,483
Miscellaneous articles not elsewhere classified.	1933	557	13,024	9,615,027	16,173,517	40,899,639	24,726,122
	1931	709	13,892	13,118,853	22,379,662	55,133,489	32,753,827
	1929	835	19,113	19,465,294	35,657,179	86,649,387	50,992,208
	1927	617	17,259	18,636,262	35,001,678	83,917,773	48,916,095
Models and patterns, not in- cluding paper patterns.	1933	422	2,795	3,525,136	1,482,536	8,627,170	7,144,634
	1931	649	4,332	7,378,165	2,786,962	16,192,426	13,405,491
	1929	804	6,778	13,233,622	5,314,359	30,621,074	25,306,715
	1927	693	5,584	10,544,694	4,659,266	23,494,992	18,835,726
Motion pictures, not includ- ing projection in the- aters. <sup>9</sup>	1929	142	10,784	24,860,092	38,441,025	184,102,419	145,661,394
	1927	142	8,415	18,637,005	34,867,472	134,343,360	99,475,888
Optical goods.....	1933	103	7,598	7,300,493	8,155,143	26,214,159	18,050,016
	1931	102	7,446	8,755,958	7,523,942	27,887,459	20,363,517
	1929	117	9,701	12,633,947	11,859,128	40,562,459	28,703,331
	1927	96	7,596	9,560,725	8,865,025	32,757,210	23,892,185
Paving materials: Blocks (except brick and stone) and mixtures. <sup>10</sup>	1933	93	1,151	1,214,698	6,287,323	10,950,433	4,663,110
	1931	97	1,081	1,555,533	8,587,054	16,003,091	7,416,037
	1929	77	1,376	2,187,347	11,997,915	22,059,896	10,061,981
Pencils, lead (including me- chanical).	1933	25	3,469	2,699,477	4,109,222	11,569,487	7,460,265
	1931	26	3,459	3,177,315	5,202,253	13,958,854	8,756,601
	1929	38	5,703	6,292,276	10,756,296	27,772,955	17,016,659
	1927	27	5,301	5,942,783	9,931,493	24,499,839	14,568,346
Pens, fountain and stylo- graphic: pen points, gold, steel, and brass.	1933	54	3,099	2,341,439	4,124,440	11,597,763	7,473,323
	1931	68	3,945	4,364,216	7,219,257	23,798,701	16,579,444
	1929	76	4,600	5,304,142	11,459,411	34,211,384	22,751,973
	1927	68	4,031	4,734,661	10,374,789	25,645,189	15,270,490
Phonographs <sup>11</sup>	1929	59	14,416	17,825,855	37,323,137	96,849,048	59,525,911
	1927	60	14,216	20,176,208	37,467,711	95,296,137	57,828,426
Photographic apparatus and materials and projection apparatus.	1933	84	8,975	10,154,891	11,984,799	53,859,955	41,875,156
	1931	110	10,609	13,082,078	20,867,793	79,506,499	58,638,706
	1929	115	12,967	20,507,499	30,392,531	102,827,336	72,434,855
	1927	122	12,120	18,310,992	29,020,235	90,827,737	61,807,502
Pipes (tobacco).....	1933	22	1,362	1,145,314	960,270	3,273,851	2,313,581
	1931	24	1,677	1,761,388	1,775,548	5,522,316	3,746,768
	1929	24	1,680	1,961,020	1,749,222	5,557,982	3,808,760
	1927	23	1,807	2,278,537	2,722,706	7,273,806	4,581,100
Roofing, built-up and roll; asphalt shingles; roof coat- ings other than paint.	1933	74	4,418	4,435,500	23,892,848	44,833,073	20,940,225
	1931	83	4,123	5,331,030	32,706,052	53,962,919	26,256,867
	1929	102	6,027	8,951,537	61,391,590	103,506,090	42,114,500
1927	100	7,255	10,712,626	67,327,735	123,210,305	55,882,570	
Sandpaper, emery paper, and other abrasive paper and cloth. <sup>12</sup>	1929	11	1,228	1,739,544	8,375,277	17,218,590	8,843,313
	1927	10	917	1,228,420	5,470,629	12,232,064	6,761,435
Signs and advertising novel- ties.	1933	848	12,044	11,577,349	15,311,910	47,144,351	31,892,441
	1931	1,078	14,463	18,484,776	21,297,359	74,681,351	53,383,992
	1929	1,239	20,000	27,900,605	35,701,412	118,044,137	82,342,745
	1927	813	16,907	24,044,389	30,892,294	98,481,024	67,588,730
Soda fountains and accesso- ries.	1933	40	816	948,128	2,649,345	6,035,064	3,385,719
	1931	47	1,563	2,189,982	5,235,695	14,605,952	9,370,257
	1929	54	2,764	3,921,538	10,489,871	24,509,783	14,019,912
	1927	48	2,838	4,222,944	10,390,971	23,929,068	13,538,097
Sporting and athletic goods, not including firearms or ammunition.	1933	176	8,215	6,523,373	10,569,823	25,267,452	14,697,629
	1931	217	10,176	11,219,076	20,098,655	49,257,447	29,158,892
	1929	242	10,793	13,135,484	24,482,236	58,288,728	33,806,492
	1927	188	9,689	11,595,480	19,393,661	44,942,778	25,549,117

For footnotes, see end of table.

## SUMMARY FOR GROUP 16.—MISCELLANEOUS INDUSTRIES: 1927 TO 1933—Contd.

INDUSTRY	Cen- sus year	Num- ber of estab- lish- ments	Wage earn- ers (aver- age for the year)	Wages	Cost of materials, containers, fuel, and purchased electric energy	Value of products	Value added by manu- facture <sup>1</sup>
Stationery goods not else- where classified. <sup>13</sup>	1933	86	3,467	\$2,737,622	\$6,818,251	\$14,241,040	\$7,422,789
	<sup>9</sup> 1931	128	5,088	5,345,044	12,211,296	27,195,824	14,984,528
Steam and other packing, pipe and boiler covering, and gaskets, not elsewhere classified.	1933	129	4,575	4,006,368	9,183,115	20,274,722	11,091,607
	1931	141	4,705	5,173,814	11,297,358	25,400,577	14,103,219
	1929	171	7,206	9,660,414	21,596,489	45,433,135	23,836,646
	1927	159	5,946	7,904,603	19,794,205	43,044,501	23,250,296
Surgical and orthopedic ap- pliances and related prod- ucts.	1933	250	6,958	6,118,814	28,846,426	51,442,064	22,595,638
	1931	325	6,740	7,271,373	22,954,244	51,012,062	28,057,818
	1929	363	7,910	8,921,668	36,004,844	71,607,119	38,602,275
	1927	335	7,310	8,371,278	30,763,598	60,623,497	29,859,899
Theatrical scenery and stage equipment.	1933	40	312	396,699	616,898	2,043,785	1,426,887
	1931	45	365	649,117	1,218,498	3,002,860	1,784,362
	1929	55	547	992,133	2,098,498	5,507,827	3,409,329
	1927	39	561	1,379,971	2,330,377	5,745,472	3,415,095
Toys (not including chil- dren's wheel goods or sleds), games, and play- ground equipment.	1933	285	12,484	8,877,414	17,118,923	37,221,503	20,102,580
	1931	380	13,231	12,379,612	21,514,744	53,600,779	32,086,035
	1929	476	16,660	17,660,673	29,981,527	74,828,981	44,847,454
	1927	397	14,738	15,543,383	25,805,418	63,955,706	38,150,288
Umbrellas, parasols, and canes.	1933	80	2,155	1,530,932	4,971,566	8,258,667	3,287,101
	1931	93	1,852	1,610,627	5,135,961	9,114,759	3,978,798
	1929	141	2,855	2,768,410	10,907,373	17,994,376	7,087,003
	1927	164	3,308	3,411,261	14,020,984	23,156,400	9,135,416
Window shades and fixtures.	1933	312	2,903	2,264,192	9,115,379	16,169,887	7,054,508
	1931	448	3,119	3,313,322	11,198,002	20,561,734	9,368,732
	1929	482	4,708	5,623,588	19,785,350	36,964,694	17,179,344
	1927	386	4,733	5,855,781	21,065,474	37,081,937	16,016,463

<sup>1</sup> Value of products less cost of materials, containers, fuel, and purchased electric energy. See sec. 20, p. 11.

<sup>2</sup> Amount of internal-revenue tax paid by tobacco, cigar, and cigarette manufacturers included in "Cost of materials," etc., to avoid inflating "Value added by manufacture." See "Inclusion of internal-revenue tax in cost of materials and value of products," p. 654.

<sup>3</sup> "Cost of materials," etc., revised to include amount of internal-revenue tax; "Value added by manufacture" revised accordingly. (See footnote 2.)

<sup>4</sup> Not including amount of internal-revenue tax.

<sup>5</sup> No comparable figures available. (See "Inclusion of internal-revenue tax in cost of materials and value of products," p. 654.)

<sup>6</sup> Revised; revision carried into total for subgroup but not into aggregate for group.

<sup>7</sup> Abandoned as a separate classification at the census for 1931. Manufacturers formerly assigned to this industry are not classified in other industries, according to the character of their principal products.

<sup>8</sup> Revised; revision not carried into total for subgroup or aggregate for group.

<sup>9</sup> Not treated as a manufacturing industry at censuses for 1931 and 1933.

<sup>10</sup> No comparable figures available for 1927.

<sup>11</sup> Manufacturers of phonographs have been classified in the "Radio apparatus and phonographs" industry, in group 13, at the 1931 and 1933 censuses.

<sup>12</sup> Abandoned as a separate classification at the census for 1931; now included in "Abrasive wheels, stones, paper, and cloth, and related products," in group 10.

<sup>13</sup> At the 1933 census manufacturers of papeteries, formerly classified in this industry, were transferred to other industries, principally "Paper goods not elsewhere classified," group 4. The figures for 1931 have been adjusted for comparison with 1933, but those for earlier years have not been thus adjusted.

\* Pianos, \$6,391,050; other products, \$851,769.

\*\* Carbon paper, \$7,156,440; typewriter ribbons, \$2,190,287; other inked ribbons, \$1,366,485; other products and receipts, \$512,224.

## BROOMS AND BRUSHES

[Preliminary reports for these industries were issued on Aug. 1, 1934]

**Description of the industries.**—The establishments classified in the "Broom" industry are engaged primarily in the manufacture of household brooms, whisk brooms, etc., made of broom corn and of bassine, and of street-sweeping brooms made of heavier materials. The "Brush" industry embraces manufacturers of all kinds of brushes except those made of rubber.

**Manufacture of brooms in institutions for the blind.**—Statistics on the production of brooms in institutions for the blind are given in table 2, but no data for such institutions are included in any of the other tables.

**Extent of coverage.**—As the result of a variety of causes beyond the Bureau's control, including the numerous industrial changes which were taking place during the period, the census coverage of these industries was slightly incomplete. Of the 334 establishments that reported the manufacture of brooms in 1931, 23 failed to supply any information in regard to their status (active, idle, etc.) or their activities in 1933, but these establishments accounted for only 2.2 percent of the total number of wage earners and 1.9 percent of the total value of products reported for the industry for 1931. Of the 264 establishments that reported the manufacture of brushes in 1931, 11 failed to supply any information for 1933, but these accounted for only eight-tenths of 1 percent of the total number of wage earners and five-tenths of 1 percent of the total value of products.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employees 1 2	Number of wage earners (average for the year)	Salaries 3	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufacture 4
<i>Thousands of dollars. (See sec. 25, p. 13)</i>								
<b>BROOMS</b>								
<i>United States</i>								
1933.....	260	259	3,757	299	2,111	4,601	9,073	4,472
1931.....	334	(1)	4,086	(1)	3,325	6,264	13,135	6,871
1929.....	407	474	4,542	1,097	4,169	9,648	19,168	9,519
1927.....	394	550	4,450	1,157	4,275	9,176	18,445	9,269
<i>States</i>								
<b>Alabama:</b>								
1933.....	6	6	61	5	30	76	129	52
1931.....	8	(1)	82	(1)	51	105	243	138
<b>California:</b>								
1933.....	10	7	99	6	78	127	238	111
1931.....	16	(1)	120	(1)	130	230	483	253
<b>Florida:</b>								
1933.....	5	1	108	(1)	41	56	115	59
1931.....	6	(1)	43	(1)	25	55	118	62
<b>Georgia:</b>								
1933.....	5	7	48	6	20	72	135	63
1931.....	5	(1)	45	(1)	23	56	105	48
<b>Illinois:</b>								
1933.....	20	18	285	19	192	415	772	367
1931.....	25	(1)	312	(1)	269	561	1,018	467
<b>Indiana:</b>								
1933.....	11	22	226	24	95	211	471	260
1931.....	11	(1)	240	(1)	165	313	716	403
<b>Iowa:</b>								
1933.....	14	6	99	10	61	124	260	135
1931.....	15	(1)	125	(1)	121	204	458	254
<b>Kansas:</b>								
1933.....	5	27	27	17	39	74	35	35
1931.....	8	(1)	68	(1)	64	110	228	118
<b>Kentucky:</b>								
1933.....	12	28	376	26	134	333	649	316
1931.....	10	(1)	324	(1)	206	429	820	391
<b>Louisiana:</b>								
1933.....	3	1	27	(1)	24	43	80	37
1931.....	7	(1)	59	(1)	58	76	152	76
<b>Massachusetts:</b>								
1933.....	7	2	68	(1)	53	104	198	94
1931.....	8	(1)	32	(1)	34	72	143	71
<b>Michigan:</b>								
1933.....	9	4	53	4	40	77	145	69
1931.....	7	(1)	66	(1)	73	87	221	134
<b>Minnesota:</b>								
1933.....	7	2	40	(1)	33	60	129	69
1931.....	10	(1)	57	(1)	61	91	215	124
<b>Missouri:</b>								
1933.....	9	10	86	13	58	134	245	112
1931.....	11	(1)	79	(1)	66	98	221	123
<b>New York:</b>								
1933.....	26	35	371	40	205	443	927	484
1931.....	33	(1)	464	(1)	401	657	1,466	809
<b>North Carolina:</b>								
1933.....	5	5	41	5	20	85	139	55
1931.....	6	(1)	59	(1)	32	85	172	86
<b>Ohio:</b>								
1933.....	14	15	123	14	82	193	362	170
1931.....	16	(1)	155	(1)	140	291	579	288
<b>Oklahoma:</b>								
1933.....	3	13	13	9	19	52	33	33
1931.....	10	(1)	39	(1)	34	49	107	58
<b>Oregon:</b>								
1933.....	3	3	38	4	23	35	103	67
1931.....	4	(1)	45	(1)	42	70	139	70
<b>Pennsylvania:</b>								
1933.....	21	22	261	28	146	334	716	331
1931.....	29	(1)	278	(1)	257	511	1,090	578
<b>Texas:</b>								
1933.....	22	20	205	19	117	247	462	215
1931.....	25	(1)	247	(1)	133	343	747	403

For footnotes, see end of table.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES, 1933 AND 1931—Continued

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employes <sup>1</sup>	Number of wage earners (average for the year)	Salaries <sup>2</sup>	Wages	Cost of materials, fuel, and purchased electric energy	Value of products	Value added by manufactures <sup>3</sup>
<i>States—Continued</i>								
Washington:								
1933.....	4	2	18	(5)	14	30	62	32
1931.....	5	(4)	31	(4)	33	52	108	56
Wisconsin:								
1933.....	6	1	38	(5)	26	52	109	56
1931.....	9	(4)	49	(4)	46	61	163	102
Other States: <sup>6</sup>								
1933.....	33	42	1,047	74	594	1,291	2,501	1,210
1931.....	50	(4)	1,067	(4)	811	1,656	3,424	1,768
<b>BRUSHES, OTHER THAN RUBBER</b>								
<i>United States</i>								
1933.....	221	835	5,809	1,400	4,821	12,200	24,576	12,376
1931.....	264	(4)	5,891	(4)	5,992	14,228	30,827	16,600
1929.....	303	1,498	7,261	4,240	7,963	21,688	45,549	23,861
1927.....	302	1,584	7,673	3,752	8,244	22,553	47,844	25,291
<i>States</i>								
California:								
1933.....	10	18	111	34	93	219	485	286
1931.....	9	(4)	91	(4)	105	251	587	336
Illinois:								
1933.....	24	31	295	38	250	537	1,105	569
1931.....	25	(4)	251	(4)	263	591	1,292	701
Indiana:								
1933.....	5	25	236	39	165	431	977	546
1931.....	5	(4)	137	(4)	119	347	812	464
Maryland:								
1933.....	7	99	704	159	518	1,179	2,511	1,332
1931.....	8	(4)	724	(4)	561	1,324	2,826	1,502
Massachusetts:								
1933.....	19	115	649	231	589	1,294	3,129	1,835
1931.....	21	(4)	762	(4)	837	1,271	4,854	3,584
Michigan:								
1933.....	8	16	66	18	63	202	390	189
1931.....	10	(4)	97	(4)	123	362	657	295
New Jersey:								
1933.....	18	45	345	76	318	775	1,620	845
1931.....	22	(4)	496	(4)	502	983	2,481	1,498
New York:								
1933.....	44	191	1,558	342	1,424	3,888	7,050	3,162
1931.....	61	(4)	1,567	(4)	1,649	4,370	8,174	3,805
Ohio:								
1933.....	15	120	489	196	376	950	2,081	1,131
1931.....	17	(4)	387	(4)	458	1,004	2,419	1,414
Pennsylvania:								
1933.....	19	31	210	47	203	445	937	491
1931.....	23	(4)	283	(4)	270	551	1,252	701
Rhode Island:								
1933.....	5	4	30	6	21	23	84	61
1931.....	6	(4)	34	(4)	32	39	117	79
Wisconsin:								
1933.....	8	20	98	23	81	112	258	146
1931.....	8	(4)	114	(4)	87	117	336	219
Other States: <sup>7</sup>								
1933.....	39	120	1,018	194	722	2,146	3,948	1,802
1931.....	49	(4)	993	(4)	979	3,017	5,018	2,001

<sup>1</sup> Not including proprietors and firm members, as follows: Brooms—1933, 220; 1931, no data; 1929, 389; 1927, 388. Brushes—1933, 98; 1931, no data; 1929, 188; 1927, 202.

<sup>2</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations, and therefore are not strictly comparable with the corresponding figures for 1929 and 1927, in which such data are included. No data for employees of central administrative offices are included in the figures for any year.

<sup>3</sup> Value of products less cost of materials, fuel, and purchased electric energy. See sec. 20, p. 11.

<sup>4</sup> No data.

<sup>5</sup> Withheld to avoid disclosing compensation of individual employees; included in item for "Other States."

<sup>6</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Ariz., 1, 2; Ark., 2, 4; Colo., 3, 3; Conn., 0, 1; Maine, 1, 2; Md., 8, 10; Miss., 1, 2; Mont., 1, 1; Nebr., 3, 3; N. J., 3, 4; N. Dak., 0, 1; R. I., 1, 2; S. C., 1, 1; S. Dak., 1, 1; Tenn., 1, 4; Utah, 2, 3; Va., 2, 4; W. Va., 2, 2.

<sup>7</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Colo., 2, 3; Conn., 5, 7; Del., 2, 3; Fla., 2, 2; Ga., 1, 1; Iowa, 1, 1; Kans., 2, 2; Ky., 1, 1; Maine, 1, 2; Minn., 2, 4; Mo., 3, 3; Nebr., 2, 3; N. H., 2, 2; N. C., 2, 3; Oreg., 2, 3; Tex., 1, 0; Vt., 4, 4; Va., 1, 1; Wash., 3, 4.

TABLE 2.—BROOMS—PRODUCTION, BY KIND, QUANTITY, AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929

	QUANTITY <sup>1</sup>			VALUE IN THOUSANDS OF DOLLARS <sup>1</sup>		
	1933	1931	1929	1933	1931	1929
1. "Broom" industry, all products, total.....	-----	-----	-----	9,073	13,135	19,166
2. Brooms.....	-----	-----	-----	8,829	12,700	18,705
3. Other products, not normally belonging to the industry.....	-----	-----	-----	244	435	462
4. Brooms made as secondary products in other industries.....	-----	-----	-----	293	387	622
5. Brooms made in institutions for the blind.....	-----	-----	-----	744	855	1,508
6. Brooms, aggregate (2, 4, and 5).....	-----	-----	-----	<sup>2</sup> 9,867	13,942	20,834
	<i>M doz.</i>	<i>M doz.</i>	<i>M doz.</i>			
Made in commercial establishments, total.....	-----	-----	-----	9,122	13,087	19,327
Household brooms.....	2,398	2,788	3,133	7,468	10,906	15,899
Whisk brooms.....	384	518	535	512	916	1,172
Toy and hearth brooms.....	81	71	68	100	89	102
Industrial brooms.....	210	196	264	930	999	1,540
Other brooms (except street-sweeping-machine).....	( <sup>3</sup> )	( <sup>3</sup> )	5	113	141	572
	<i>Number</i>	<i>Number</i>	<i>Number</i>			
Street-sweeping-machine brooms.....	-----	1,688	1,800	-----	35	40
	<i>M doz.</i>	<i>M doz.</i>	<i>M doz.</i>			
Made in institutions for the blind, total.....	-----	-----	-----	744	855	1,508
Household brooms.....	190	159	215	544	609	1,034
Whisk brooms.....	8	13	18	13	20	36
Toy and hearth brooms.....	8	20	18	6	21	23
Industrial brooms.....	40	35	68	182	204	415

<sup>1</sup> See sec. 25, p. 13.<sup>2</sup> Brooms are also manufactured in penal institutions, which are not treated, for census purposes, as manufacturing establishments. According to the results of a survey made by the Bureau of Labor Statistics, the production of brooms in penal institutions in 1932 amounted to 295,388 dozens, valued at \$878,030.<sup>3</sup> No data.

TABLE 3.—BRUSHES—PRODUCTION, BY KIND AND VALUE, FOR THE UNITED STATES: 1933, 1931, AND 1929

	1933	1931	1929
1. "Brushes, other than rubber" industry, all products, total value.....	\$24,575,879	\$30,827,087	\$45,549,270
2. Brushes.....	23,679,111	29,103,253	43,203,422
3. Other products (not normally belonging to the industry).....	896,768	1,663,611	2,302,593
4. Receipts for contract and custom work.....	-----	60,223	43,255
5. Brushes made as secondary products in other industries, value.....	1,940,456	1,516,516	2,029,235
Brushes, aggregate value (2 and 5).....	25,619,567	30,619,769	45,232,747
Paint and varnish brushes (including artists' brushes).....	8,319,262	10,466,164	16,705,771
Toothbrushes.....	4,724,684	4,952,253	5,714,727
Other toilet brushes.....	2,049,320	4,195,792	5,129,097
Household brushes.....	4,230,093	3,918,957	7,394,636
Industrial brushes.....	3,232,170	4,162,016	6,228,375
Brushes not reported by kind.....	3,064,038	2,924,587	4,060,091

## BUTTONS

[A preliminary report for this industry was issued on Aug. 28, 1934]

**Description of the industry.**—The establishments assigned to this industry are those whose principal products are buttons, parts of buttons, and button blanks and molds, regardless of kind of material of which made.

**Duplication in cost of materials and value of products.**—The figure for value of products includes some duplication due to the fact that button blanks and molds and parts of buttons, backs, etc., reported as products by certain establishments are purchased and used as materials by other establishments in the industry. For 1931, this duplication amounted to \$2,439,922, or more than 11 percent of the total value of products for the industry. The returns for 1933 do not afford a basis for calculating the amount of duplication included in the figures for that year.

**Extent of coverage.**—The 1933 coverage of the establishments reporting in this industry for 1931 was nearly complete. Of the 212 such establishments, 15 failed to supply any information in regard to their status (active, idle, etc.) or their activities in 1933, but these establishments accounted for only a little more than 1 percent of the total number of wage earners and of the total value of products reported for the industry for 1931.

**TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES: 1933 AND 1931**

[See sec. 24, p. 13]

	Number of establishments	Number of salaried employes <sup>1 2</sup>	Number of wage earners (average for the year)	Salaries <sup>3</sup>	Wages	Cost of contract work	Cost of materials, containers, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>4</sup>
<i>Thousands of dollars.</i> (See sec. 25, p. 13)									
<i>United States</i>									
1933.....	200	566	9,838	956	6,706	558	8,614	422,412	13,798
1931.....	212	( <sup>5</sup> )	8,224	( <sup>5</sup> )	6,661	442	8,303	21,525	13,221
1929.....	242	894	9,034	2,442	8,314	( <sup>5</sup> )	11,501	28,978	17,477
1927.....	229	889	9,642	2,175	9,436	( <sup>5</sup> )	11,238	29,130	17,893
<i>States</i>									
<b>Connecticut:</b>									
1933.....	13	91	895	145	690	15	705	2,188	1,484
1931.....	11	( <sup>5</sup> )	699	( <sup>5</sup> )	678	9	780	2,170	1,390
<b>Delaware:</b>									
1933.....	4	5	127	7	70	-----	94	104	70
1931.....	3	( <sup>5</sup> )	82	( <sup>5</sup> )	63	-----	69	135	66
<b>Illinois:</b>									
1933.....	9	8	275	8	120	-----	68	225	157
1931.....	8	( <sup>5</sup> )	223	( <sup>5</sup> )	130	10	118	275	158
<b>Iowa:</b>									
1933.....	26	74	2,334	153	1,342	151	1,898	4,247	2,350
1931.....	29	( <sup>5</sup> )	2,066	( <sup>5</sup> )	1,354	101	1,689	4,218	2,529
<b>Kentucky:</b>									
1933.....	4	5	205	6	63	-----	49	139	90
<b>Massachusetts:</b>									
1933.....	9	9	148	8	92	1	145	307	161
1931.....	7	( <sup>5</sup> )	109	( <sup>5</sup> )	108	-----	94	271	176

For footnotes, see end of table.

TABLE 1.—SUMMARY FOR THE UNITED STATES, 1927 TO 1933, AND FOR STATES: 1933 AND 1931—Continued

[See sec. 26, p. 13]

	Number of establishments	Number of salaried employes <sup>1, 2</sup>	Number of wage earners (average for the year)	Salaries <sup>2</sup>	Wages	Cost of contract work	Cost of materials, containers, fuel, and purchased electric energy	Value of products	Value added by manufacture <sup>3</sup>
				Thousands of dollars. (See sec. 25, p. 13)					
<i>States—Continued</i>									
Missouri:									
1933.....	3	4	159	5	74		57	160	102
1931.....	3	( <sup>6</sup> )	139	( <sup>6</sup> )	85		63	149	86
New Jersey:									
1933.....	23	37	830	75	646	84	767	1,928	1,161
1931.....	23	( <sup>6</sup> )	792	( <sup>6</sup> )	730	1	924	2,275	1,351
New York:									
1933.....	83	198	2,995	300	2,322	282	3,211	8,620	5,409
1931.....	90	( <sup>6</sup> )	2,252	( <sup>6</sup> )	2,133	299	2,982	7,683	4,652
Pennsylvania:									
1933.....	7	34	581	59	380	8	543	1,210	667
1931.....	8	( <sup>6</sup> )	370	( <sup>6</sup> )	269	1	423	977	555
Other States: <sup>7</sup>									
1933.....	19	101	1,338	190	906	18	1,077	3,223	2,146
1931.....	30	( <sup>6</sup> )	1,492	( <sup>6</sup> )	1,112	21	1,163	3,421	2,258

<sup>1</sup> Not including proprietors and firm members, as follows: 1933, 115; 1931, no data; 1929, 127; 1927, 131.

<sup>2</sup> The figures for 1933 do not include data for number and compensation of salaried officers of corporations, and therefore are not strictly comparable with the figures for 1929 and 1927, for which such data are included. No data for employees of central administrative offices are included in the figures for any year.

<sup>3</sup> Value of products less cost of materials, containers, fuel, and purchased electric energy. See sec. 20, p. 11.

<sup>4</sup> Includes \$909,409, value of products not normally belonging to this industry, but does not include \$262,948, value of buttons made as secondary products in other industries. The total value of buttons and parts of buttons produced in 1933, regardless of the classification of the establishments in which made, amounted to \$21,765,146.

<sup>5</sup> No data.

<sup>6</sup> Figures for 1931 withheld to avoid disclosing approximations of data for individual establishments; included in items for "Other States."

<sup>7</sup> States included and numbers of establishments reporting for 1933 and 1931, respectively, are: Ark., 3, 4; Calif., 0, 1; Ind., 1, 3; Ky. (1931), 4; Me., 1, 1; Md., 2, 3; Mich., 3, 5; Minn., 1, 1; N. H., 1, 1; N. C., 2, 2; Ohio, 1, 1; R. I., 1, 1; Tenn., 1, 0; Va., 2, 1; Wis., 0, 2.

TABLE 2.—WAGE EARNERS, BY QUARTERS, FOR SELECTED STATES: 1933 AND 1931

[The average for the year (table 1) differs from the average of the quarterly figures below. (See fourth sentence, sec. 13, p. 8.) See sec. 26, p. 13]

	1933 <sup>1</sup>				1931			
	March	June	Sept.	Dec.	March	June	Sept.	Dec.
United States.....	8,284	9,938	10,978	9,982	8,608	8,339	8,400	8,201
<i>States</i>								
Connecticut.....	823	851	1,038	949	705	714	692	686
Delaware.....	116	120	135	135	89	82	83	66
Illinois.....	262	282	262	241	270	227	204	279
Iowa.....	2,096	2,293	2,458	2,619	2,136	2,065	2,045	2,083
Kentucky.....	101	237	142	147	198	182	160	162
Massachusetts.....	135	157	95	171	121	118	118	117
Michigan.....	209	233	257	219	251	237	246	232
Missouri.....	116	152	72	196	127	118	163	188
New Jersey.....	732	908	737	734	859	855	763	690
New York.....	2,091	2,882	3,893	3,033	2,299	2,160	2,468	2,230
Pennsylvania.....	517	588	661	547	367	370	390	369

<sup>1</sup> See secs. 5, p. 4, and 13, p. 8. The 150 establishments canvassed with the standard schedule reported wage earners, by months, as follows:

January.....	7,910	May.....	8,620	September.....	10,488
February.....	8,490	June.....	8,610	October.....	10,937
March.....	7,949	July.....	10,327	November.....	10,367
April.....	8,284	August.....	11,346	December.....	9,541