CANADA
DOMINION BUREAU OF STATISTICS
MINING, METALLURGICAL AND CHEMICAL BRANCH

IRON AND STEEL

AND

THEIR PRODUCTS

1920

Published by Authority of the Hon. J. A. Robb, M.P.
Minister of Trade and Commerce

OTTAWA
F. A. ACLAND
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1923

LIST OF PUBLICATIONS

PREPARED IN THE

MINING, METALLURGICAL AND CHEMICAL BRANCH, DOMINION BUREAU OF STATISTICS

The following printed publications have been issued:

(1) Directory of Chemical Industries in Canada as of date January 1, 1919 (Supply exhausted).
(2) Directory of Chemical Industries in Canada as of date January, 1921.
(3) Preliminary Report on the Mineral Production of Canada for the six months ending June, 1921.
(4) Monthly Reports on the Production of Iron and Steel in Canada (series inaugurated January, 1921).
(5) Preliminary Report on the Mineral Production of Canada for 1921.
(6) Preliminary Report on the Mineral Production of Canada for the half-year ending June, 1922.
(7) Chemicals and Allied Products in Canada in 1919 and 1920.
(8) Annual Report on Coal Statistics for Canada for 1919, 1920 and 1921.
(9) Annual Report on the Iron and Steel Industry in Canada in 1920.

In addition the following reports have been issued in stencil form:

(1) Preliminary Report on Coal Statistics for Canada for 1920.
(2) Preliminary Reports on Coal Statistics for Canada:
    (a) For the six months ending June, 1921.
    (b) For the nine months ending September, 1921.
    (c) For the twelve months ending December, 1921.
(3) Monthly Report on Coal Statistics for Canada (series inaugurated, January, 1922).

The reports named below are in course of preparation and will be printed within the coming year:

(1) Chemicals and Allied Products in Canada in 1921.
(2) Annual Report on the Iron and Steel Industry in Canada in 1921.
(3) Annual Report on the Mineral Production of Canada, 1921.
    (a) Part one—Production, Imports and Exports by commodities.
    (b) Part two—General Statistics by Industries with summary tables.

Copies of issued publications listed above will be sent free on request.

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PREFACE.

The present report deals with Canadian manufactures of iron and steel, including not only the primary metallurgical operations but also the manufacture of finished products in which iron and steel form the chief materials of value.

Reports on the "Production of Iron and Steel in Canada" have been issued annually for several years prior to and including 1919 by the Department of Mines. These reviewed the production of pig-iron, steel ingots and castings, and the imports and exports of iron and steel products. The present report is in continuance of this series but marks a departure from previous practice in that the statistics of blast furnace and steel mill operations have been supplemented by additional chapters devoted to the leading phases of iron and steel manufacture. Altogether, twelve groups, including fifty-three distinct iron-using industries, have been included. The groups in question are set out in the Table of Contents (see following page).

The desirability of presenting a complete record of the iron-using industries had been recognized for some time, but a considerable amount of investigation was necessary before the preparation of a comprehensive report could be undertaken. Within the past year the work was found to be sufficiently advanced to permit of its consolidation, and a section on Metal Industries was established in the Mining, Metallurgical and Chemical Branch of the Bureau to carry on the preparation of data along this line.

The report was prepared under the direction of Mr. S. J. Cook, B.A., A.I.C., F.C.I.C., Chief of the Mining and Metallurgical Branch, by Mr. Sydney B. Smith, M.A.

R. H. COATS,
Dominion Statistician.

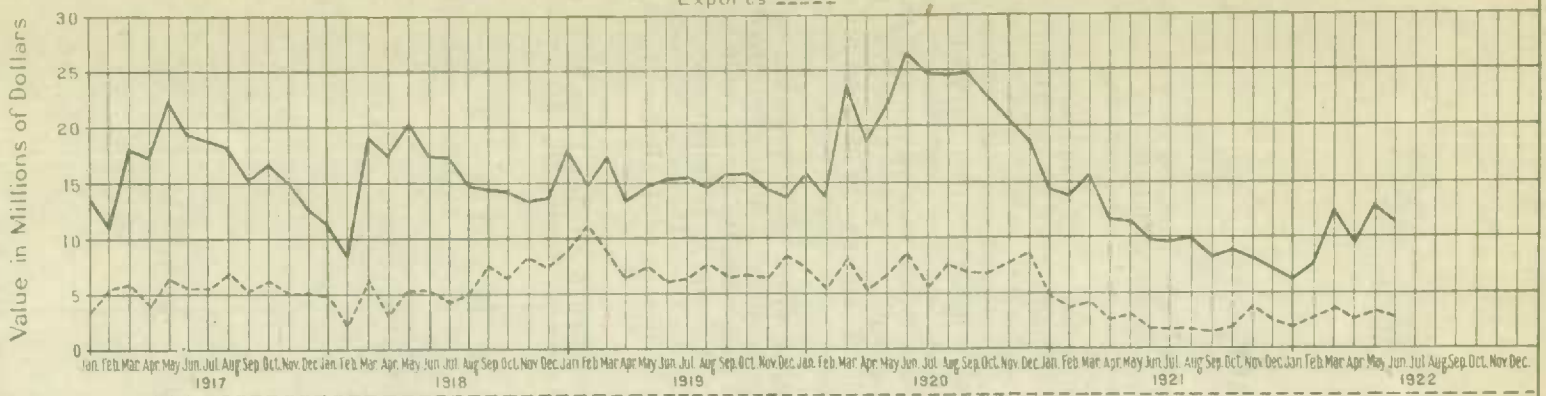
DOMINION BUREAU OF STATISTICS,
OTTAWA, September 1, 1922.

Value of Exports and Imports of Iron and its Products

Shown by months for period 1917-1922

Imports ——

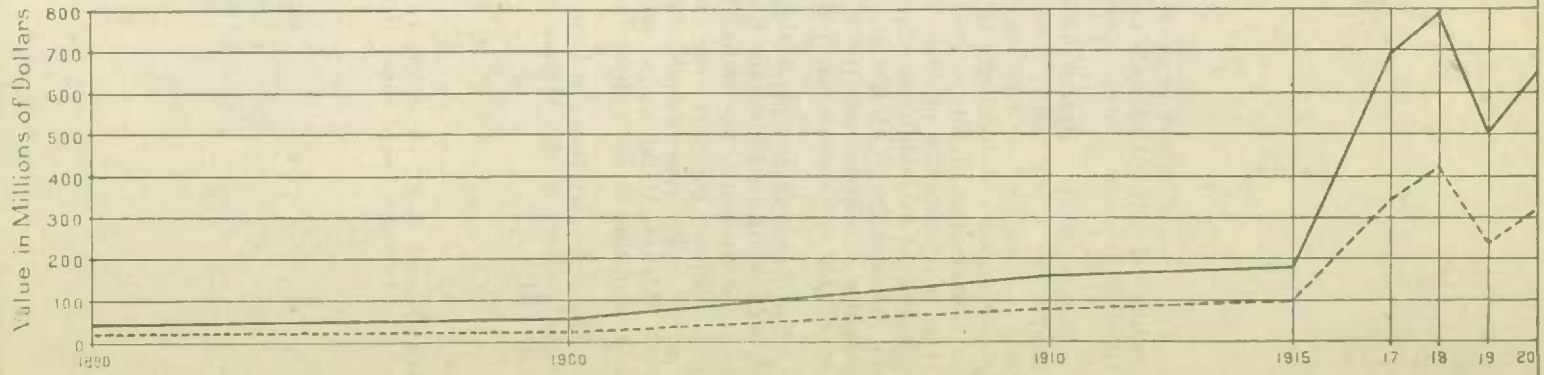
Exports - - - - -



Production in the Iron and Steel Industry.

Value of products ——

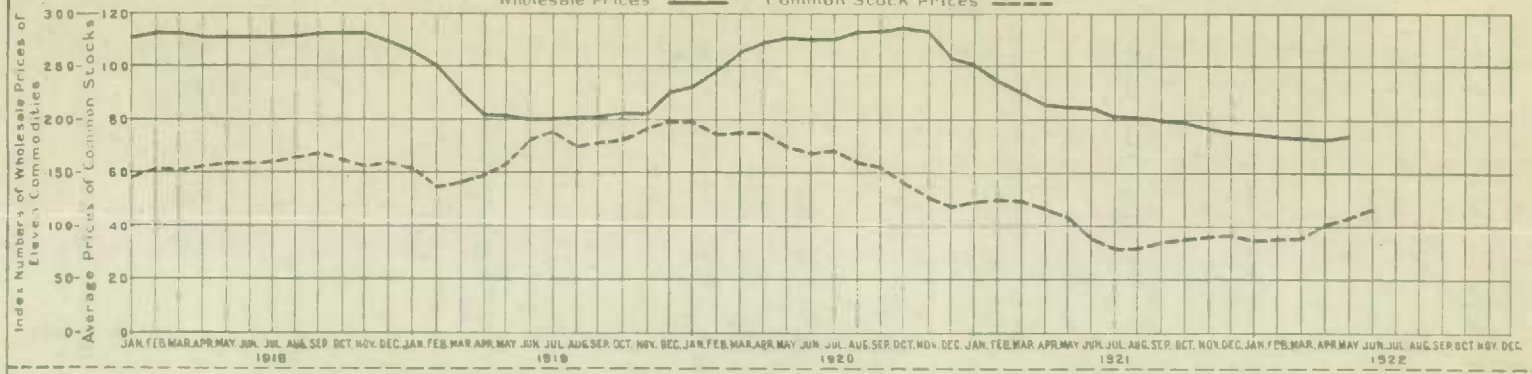
Value of materials - - - - -



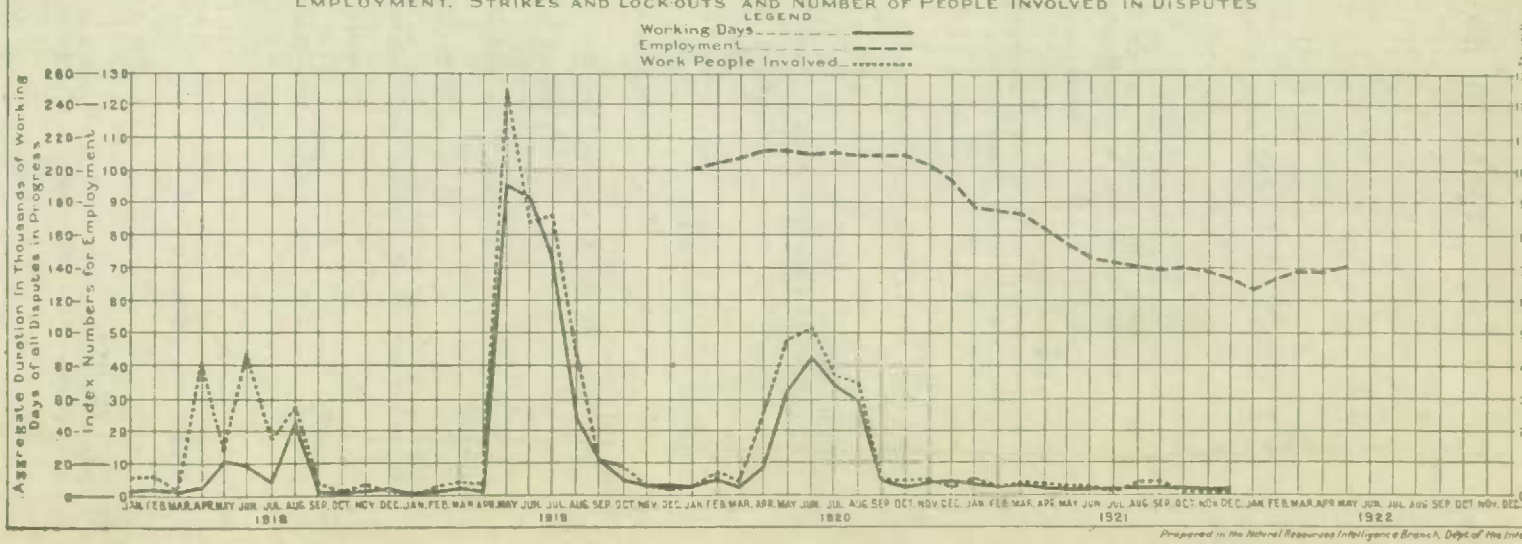
Prepared in the Natural Resources Intelligence Branch, Dept of the Interior

IRON AND STEEL INDUSTRY IN CANADA 1918-22

AVERAGE PRICES OF COMMON STOCKS AND INDEX NUMBERS OF WHOLESALE PRICES OF ELEVEN COMMODITIES



EMPLOYMENT, STRIKES AND LOCK-OUTS AND NUMBER OF PEOPLE INVOLVED IN DISPUTES



Prepared in the Natural Resources Intelligence Branch, Dept. of the Interior

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GENERAL REVIEW.

The object of the present report is to present, under one cover, a statistical record for the year 1920 of the iron and steel industry*, including the manufacture of products of which iron and steel constitute the chief material of value.

The statistics show that relative prosperity was enjoyed in the year 1920. Production while smaller than in either of the last two years of the war period was in excess of that of 1919. The maximum year from the viewpoint of the iron and steel trades was 1918 with a production value of nearly $789,000,000. A reduction of practically $300,000,000 was sustained in the next year, while the output during the year under review rose to a total of over $640,000,000. In addition the value of the equipment produced and work performed by the car repair shops in 1920 was more than $75,000,000.

The production of steel ingots and castings is an excellent index of the condition of the iron and steel trades. The output in 1920 was 1,234,976 net tons, as compared with a production of 747,582 tons in the following year. The depression which set in toward the end of 1920 continued during the following year and the first quarter of 1922.

The employment statistics substantiate in a general way the statements given above. The average number of wage-earners in 1918 was 128,125 and a decline to 88,300 was experienced in the following year, while in the year under review, employment increased to a monthly average of 102,661 wage-earners. The year opened with a pay-roll of 97,182 and continual increases were recorded until April when a maximum number of 107,012 was engaged. The minimum of the year was reported in December when 93,917 wage-earners were employed. The average employment in the car repair shops in 1920 was 28,670 additional wage-earners. The index number of employment, computed by the Employment Service of Canada, using a base of 100, the employment in iron and steel establishments as on January 17, 1920, showed that the average employment in this series in 1920 was represented by the number 104 while in 1921 there was a marked decline to an average index for the year of 76·6. For the first five months of 1922, the index was 68·1, the minimum occurring in January when the number stood at 64·5.

Table 1.—Provincial Distribution of Establishments in the Iron and Steel Series in the year 1920.

Classification.	Nova Scotia.	Prince Edward Island.	New Brunswick.	Quebec.	Ontario.	Manitoba.	Saskatchewan.	Alberta.	British Columbia.	Canada.
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Blast furnaces and steel mills	6	.....	1	17	22	2	.....	.....	2	50
Foundries and machine shops	34	3	17	113	281	17	26	29	61	581
Iron and steel fabrication	.....	.....	.....	10	39	3	.....	.....	3	55
Boilers and engines	2	.....	.....	7	32	4	.....	.....	10	55
Agricultural implements	1	2	.....	18	62	7	3	4	2	99
Machinery	1	.....	2	30	110	4	.....	2	7	156
Motors and cycles	.....	.....	.....	6	60	5	2	3	8	84
Cars and car parts	3	.....	1	5	10	2	.....	.....	.....	21
Heating and ventilating	.....	.....	2	10	40	.....	.....	.....	3	55
Wire and wire goods	.....	.....	4	9	28	1	.....	.....	3	45
Sheet metal products	4	1	2	17	72	13	2	7	4	122
Hardware and tools	2	.....	5	29	92	8	3	4	9	152
Total	53	6	34	271	848	66	36	49	112	1,475

*While the car repair shops operated by steam and electric railway companies are regarded as a part of the iron and steel series, the statistics of their operations are not included in the tables of the general review.

While the automobile and bicycle repair shops are classified under the custom and repair group and reference to them is excluded from the summary tables, the detailed statistics for the sake of convenience are given in the main body of the report.

Table 2.—Character and Distribution of Ownership of Concerns in the Iron and Steel Series in Canada as at December 31, 1920.

Classification	Number of Partnerships and Individual Owners	Number of Incorporated Companies	Par Value of Issued Securities				
			Held by Residents of				Total Par Value of Issued Shares
			Canada	Great Britain	United States	Other Countries	
			$	$	$	$	$
Blast furnaces and steel mills	–	38	37,235,731	450,600	29,325,120	76,350	[1]97,308,782
Foundries and machine shops	375	198	26,158,152	5,987,427	21,347,905	117,400	53,610,884
Iron and steel fabrication	20	35	4,337,475	.....	1,488,600	.....	5,826,075
Boilers and engines	22	33	3,565,565	581,100	4,954,950	293,700	9,395,315
Agricultural implements	25	71	43,191,735	8,637,900	33,559,600	1,003,400	86,392,635
Machinery	50	103	20,053,688	690,250	18,337,370	850,835	39,932,143
Motors and cycles	31	53	9,206,289	15,200	16,955,864	700	26,178,053
Car and car parts	1	13	4,317,250	48,437	1,651,979	46,784	6,064,450
Heating and ventilating	9	43	9,956,553	277,110	4,382,667	.....	14,616,330
Wire and wire goods	6	36	6,536,883	120,500	747,400	28,300	7,433,083
Sheet metal products	57	56	12,320,660	358,150	2,653,130	9,200	15,341,140
Hardware and tools	81	71	5,916,625	488,545	14,144,735	3,000	20,552,905
Total	677	750	182,796,606	17,655,219	149,549,320	2,429,669	392,651,795

[1] Including unregistered bonds, with a par value of $30,220,981.

Table 3.—Principal Statistics of the Iron and Steel Series in the Year 1920.

Distribution.	Establishments.	Average Number of Wage-earners.	Wages.	Capital Invested.	Cost of Materials.	Value of Products.
	No.		$	$	$	$
Blast furnaces and steel mills	50	12,944	20,728,447	119,761,718	75,023,488	138,882,823
Foundries and machine shops	581	16,345	21,197,293	68,346,628	32,603,268	76,766,903
Iron and steel fabrication	55	2,511	3,056,165	12,355,869	6,288,467	14,318,685
Boilers and engines	55	4,075	5,904,352	32,662,552	9,891,832	22,614,951
Agricultural implements	99	11,120	13,894,561	110,868,713	22,588,390	50,301,302
Machinery	156	9,438	11,710,591	52,066,936	13,605,268	40,535,474
Motors and cycles	84	10,455	15,047,739	72,252,428	78,840,140	123,148,206
Cars and car parts	21	14,722	18,834,322	66,951,866	33,009,752	60,359,520
Heating and ventilating	55	5,708	6,649,956	28,910,344	7,767,631	23,125,680
Wire and wire goods	45	3,420	4,020,256	18,339,020	14,219,338	30,254,349
Sheet metal products	122	6,366	6,809,846	27,589,735	20,260,820	37,369,576
Hardware and tools	152	5,557	5,031,604	32,798,513	7,200,002	22,556,316
Total	1,475	102,661	132,885,132	642,904,322	321,298,396	640,233,785

Table 4.—Historical Summary of the Iron and Steel Series as Presently Constituted by Censal Years 1870 to 1920.

Year.	Establishments	Average number of wage-earners.	Wages.	Capital.	Cost of materials	Value of products
	No.		$	$	$	$
1870	4,000	27,666	5,119,414	9,288,604	16,125,631	28,158,189
1880	1,202	20,980	7,510,831	19,515,290	12,095,991	25,683,054
1890	1,494	31,954	12,940,872	391,500,180	21,134,867	47,277,277
1900	662[1]	34,010	13,261,678	61,800,987	20,824,451	48,271,553
1905	864[1]	45,327	20,586,239	104,215,293	.....	80,243,452
1910	975[1]	66,314	34,489,912	195,696,098	74,038,394	156,434,604
1915	977[1]	77,808	40,093,378	341,360,749	92,315,043	179,991,200
1917	1,409	144,413	135,426,469	576,814,790	343,634,834	693,872,364
1918	1,352	128,399	45,773,485	547,932,654	431,448,368	793,080,850
1919	1,360	88,300	102,328,199	541,791,187	228,351,993	489,756,971
1920	1,475	102,661	132,885,132	642,904,322	321,298,396	640,233,785

[1] The scope of the industrial census in censal years from 1900 to 1915 inclusive was restricted to firms employing five hands and upwards.

Production.—The production of the iron and steel trades has been computed as in excess of $640,000,000 but this amount involves considerable duplication. Where goods passed through the hands of several manufacturers at different stages, their quantity and value were registered at each stage. The value of the gross output is therefore greater in the aggregate than the value of the goods taken as a whole when ready for export or consumption. This consequent duplication can be eliminated by deducting the total cost of materials used from the value of the gross output. The net value of the production in the iron and steel series as thus computed for 1920 was $318,935,389.

Table 5.—Production in the Iron and Steel Series in the Censal Years 1870 to 1910.

Year.	Cost of Materials.	Value of Products.	Value added by Manufacture	Year.	Cost of Materials.	Value of Products.	Value Added by Manufacture
	$	$	$		$	$	$
1870	16,125,631	28,158,189	12,032,558	1915	92,315,043	179,991,200	87,676,157
1880	12,005,991	25,683,054	13,677,063	1917	342,652,628	690,125,359	347,472,731
1890	21,134,867	47,277,277	26,142,410	1918	430,837,924	788,927,048	358,089,124
1900	20,824,451	48,271,553	27,447,102	1919	228,351,993	489,756,971	261,404,978
1905		80,243,452		1920	321,298,396	640,233,785	318,935,389
1910	74,038,394	156,434,604	82,396,210				

Table 5a.—Quantity and Value of Iron and Steel used in Certain Industries, 1920.

Industrial Group.	Quantity.	Value.
	Tons	$
General construction	19,700	2,719,336
Bridges	84,725	6,324,075
Carriages and wagons	11,579	1,017,515
Shipbuilding	102,477	13,184,517
Total	218,481	23,245,443

Table 6.—Exports of Semi-Manufactured Iron and Steel Goods, 1920.

——	Unit.	Quantity.	Value.
			$
Pig-iron	Tons	102,628	3,628,657
Ferro-alloys	"	25,422	1,297,720
Billets, ingots and blooms	"	69,269	3,696,974
Bars and rods	"	85,166	5,687,611
Castings, n.o.p.			895,650
Forgings			1,108,980
Structural steel	Tons	3,458	358,294
Tubing and pipe			2,614,154
Total			19,288,040

Principal Products.—The principal commodities, manufactured by the series, and the repair work, each valued in excess of $1,000,000, are presented in Table 7. The repair work performed by the car and car repair group valued at nearly $86,000,000, was the largest item. The passenger automobiles were

second in order of value being worth $80,558,204. The products of the blast furnaces and steel mills occupied a prominent place. There is considerable duplication in this connection as the value of the same material is registered at several different phases in the course of manufacture. For example, the $27,000,000 representing the value of pig-iron production is largely repeated in the $44,000,000 given as the value of steel ingots. The castings, rails, wire rods, bars, and blooms, billets and slabs are other items of large value produced by the group. The production of railway equipment included 5,124 railway cars worth $21,947,175 and 219 locomotives valued at $12,147,077.

Table 7.—Principal Iron and Steel Commodities Produced in Canada in the Year 1920.

Commodity.	Unit.	Quantity.	Value.
			$
I.			
Pig-iron	Net tons	1,090,396	27,912,147
Ferro-alloys	"	31,115	1,774,093
Castings	"	67,285	12,918,060
Ingots	"	1,166,691	44,623,332
Rails	"	255,190	11,772,951
Plates	"	64,894	4,536,774
Wire rods	"	216,172	12,480,120
Merchant bars	"	133,095	8,602,620
Steel bars	"	191,283	15,530,508
Iron bars	"	38,025	2,603,759
Merchant and scrap bar	"	24,009	1,055,250
Blooms, billets and slabs	"	737,729	15,791,687
Rail joints and tie plates	"	33,326	2,308,953
II.			
Bolts, nuts and rivets	"	56,483	7,139,912
Plumbers' goods			2,348,122
Soil pipe and fittings	Net tons	95,404	9,689,578
Screws	"	13,182	2,505,508
Valves	No.	287,855	1,036,311
Tubes and tubular goods	"		10,005,805
III.			
Ornamental ironwork	Net tons	5,936	1,679,751
Track equipment			1,001,218
Safes, vault doors			1,389,825
IV.			
Boilers and engines			9,902,427
Locomotives	No.	219	12,147,077
V.			
Threshers, grain	No.	5,484	3,917,267
Cultivators, wheel	"	14,125	1,914,107
Ploughs, gang and power	"	24,999	2,636,117
Manure spreaders	"	6,382	1,108,932
Harrows, disc	"	21,359	1,163,614
Drills grain, disc	"	17,304	2,498,182
Harvesters, grain	"	35,884	6,129,236
Mowers	"	32,650	2,203,934
Cream separators	"	31,001	1,683,634
Tractors	"	1,054	1,548,840
VI.			
Machinery:—			
Pulp and paper			4,739,763
Mining and engineering			1,191,336
Saw and shingle mill			1,175,031
Special			1,948,258
Transmission			1,542,466
Wood-working			1,305,896
Sewing machines	No.	72,949	2,353,072
Scales	"	22,489	1,739,468
Elevators, freight	"	542	1,101,979

Table 7.—Principal Iron and Steel Commodities Produced in Canada in the Year 1920. —Concluded.

Commodity.	Unit.	Quantity.	Value.
VII.			$
Automobiles, passenger	No.	83,970	80,558,204
Automobiles, freight	"	10,174	8,153,517
Bicycles	"	34,418	1,484,822
VIII.			
Cars, railway	No.	5,124	21,947,175
Car and locomotive repair	.....	.....	*85,903,850
IX.			
Stoves, coal	No.	117,421	4,564,314
Stoves, gas	"	39,189	1,041,342
Stoves, wood	"	34,278	1,165,612
Furnaces, hot air	"	16,520	1,650,787
Furnaces, hot water	"	15,513	1,852,349
Radiators and parts	"	13,678	3,289,723
X.			
Nails and washers	Net tons	185,566	11,307,523
Wire	"	138,630	12,477,524
Fencing	.....	.....	2,980,563
XI.			
Enamelware	.....	.....	3,331,328
Hollowware	.....	.....	1,446,437
Tinware	.....	.....	1,626,239
XII.			
Dies, taps and moulds	.....	.....	1,127,497
Hardware, builders'	.....	.....	2,696,689
Spades, shovels, scoops	Dozs.	240,300	1,075,943

*This amount includes the repair work performed by the entire car and car repair group.

Foreign Trade and Prices.—The external trade in iron and steel products is presented comparatively for three years by months in Tables 8 and 9. The monthly average imports for the first half year of 1922 were 58·8 per cent of the average for the five-year period from 1917 to 1921 inclusive. The imports for June, 1922, were 64·7 per cent of the average for the same month during the five-year period. The showing for the exports of Canadian products was not so favourable in that the 1922 half-yearly average was 49·86 per cent of the average for the base period. Except in the case of the exports for February, the tables indicate that the monthly value of this trade in 1920 was in excess of the five-year average.

The index number of prices for the period from 1912 to 1921 shows that while prices of iron and steel commodities were at a maximum in October 1917, the highest annual average in the last ten years was attained in 1918. Prices were stationary during September, October and November, 1918, and a rapid decline followed the signing of the Armistice. Prices advanced rapidly during 1920, reaching a maximum in October. The details for the last ten years by months are given in Table 10.

Table 8.—Imports of Iron and Its Products into Canada by Months from January, 1919 to June, 1922.

Months.	1919.	1920.	1921.	Five Year Average 1917–21.	1922.	Index (1922 of 5 year Average).
	$	$	$	$	$	%
January	17,885,204	15,810,733	14,164,624	14,586,669	6,358,712	43·59
February	14,754,217	13,976,717	13,755,894	12,423,691	7,572,246	60·95
March	17,229,254	23,492,764	15,511,137	18,702,628	12,270,369	65·60
April	13,395,850	18,564,783	11,490,033	15,667,021	9,121,931	58·82
May	14,748,700	21,304,946	11,322,669	17,988,234	12,803,074	71·17
June	15,130,254	26,308,404	9,862,201	17,597,575	11,376,979	64·65
July	15,320,856	24,695,090	9,542,316	17,160,491	.....	.....
August	14,678,741	24,590,545	9,721,923	16,445,101	.....	.....
September	15,755,078	24,787,673	8,125,891	15,663,202	.....	.....
October	15,842,354	22,761,182	8,795,890	15,661,466	.....	.....
November	14,281,550	20,608,425	8,076,320	14,300,942	.....	.....
December	13,886,269	18,543,750	7,071,969	13,182,137	.....	.....
Average	15,242,361	21,287,084	10,620,072	16,861,596	9,917,218	58·81

Table 9.—Exports of Iron and Steel Goods Produced in Canada by Months from January, 1919 to June, 1922.

Months.	1919.	1920.	1921.	Five Year Average 1917–21.	1922.	Index (1922 of 5 year Average).
	$	$	$	$	$	
January	8,944,743	7,206,773	4,635,564	5,814,733	1,899,583	32·66
February	11,251,792	5,274,583	3,821,966	5,651,945	2,704,933	47·85
March	8,777,535	8,001,822	4,021,568	6,582,196	3,565,912	54·17
April	6,385,010	5,379,189	2,537,552	4,365,532	2,743,016	62·83
May	7,368,857	6,645,800	3,030,082	5,760,858	3,114,572	54·06
June	6,011,532	8,799,321	1,786,291	5,552,860	2,929,556	52·75
July	6,179,786	5,700,989	1,687,934	4,724,012	.....	.....
August	7,510,498	7,544,480	1,631,933	5,717,935	.....	.....
September	6,468,805	6,811,264	1,199,105	5,487,381	.....	.....
October	6,649,524	6,732,494	1,977,032	5,597,841	.....	.....
November	6,333,178	7,780,542	3,901,409	6,317,565	.....	.....
December	8,395,461	8,627,564	2,390,506	6,435,572	.....	.....
Average	7,523,060	7,042,068	2,718,411	5,667,369	2,826,262	49·86

Table 10.—Index Numbers of Wholesale Prices of Eleven Iron and Steel Commodities in Canada, 1912-1922. (From the Labour Gazette.)

Average prices 1890-1899 = 100.

Year.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average for Year.
1912	98·6	97·8	97·8	97·5	97·5	97·5	97·5	98·0	99·8	102·5	103·5	105·1	99·4
1913	105·8	107·2	107·2	106·1	105·4	104·5	103·0	103·0	102·6	101·7	101·4	101·4	104·1
1914	102·9	102·9	103·3	102·7	102·2	102·0	101·8	100·5	100·6	100·4	99·8	99·9	101·5
1915	100·3	100·9	102·7	103·9	104·2	105·2	107·6	108·8	109·4	109·7	115·1	120·2	107·3
1916	128·9	132·6	137·3	144·0	146·3	148·9	149·3	150·5	153·1	157·9	166·9	180·9	149·7
1917	185·0	189·9	201·8	221·2	244·6	262·2	272·8	285·1	297·1	301·4	287·3	286·1	252·8
1918	278·7	282·6	281·4	278·0	278·4	278·3	277·5	278·8	281·0	281·0	281·0	273·6	278·3
1919	264·8	249·9	226·0	205·1	202·9	200·0	199·9	201·0	201·3	204·4	204·0	223·9	215·2
1920	230·6	245·4	262·3	273·2	275·4	274·4	275·1	282·9	282·9	286·1	282·1	255·8	268·8
1921	250·9	237·4	226·4	215·8	214·6	212·5	204·2	202·7	197·0	197·0	191·1	187·4	211·4
Average	174·7	174·7	174·6	174·8	177·2	178·6	178·9	181·1	182·5	184·2	183·2	183·4	149
1922	187·7	185·1	183·6	182·5	184·2	186·6	–	–	–	–	–	–	184·6

Employment.—The average number of employees engaged in the 1,475 plants classified to the iron and steel series was 115,761, of whom 88·7 per cent were wage-earners and 11·3 per cent were salaried employees. Classified as to sex, 94·4 per cent were males and 5·6 per cent were females. The amount paid in salaries and wages was $158,504,947, of which the wage-earners received 83·8 per cent and the salaried employees were remunerated with the remaining 16·2 per cent. The 3,094 officers, managers and superintendents received 6·8 per cent of the salary and wage account, and the 10,005 persons employed as clerical staff were paid 9·4 per cent.

Comparatively high wages prevailed in 1920, as evidenced by the statistics of classified weekly wage rates. Of the 96,162 wage-earners engaged on December 15, or nearest representative day, 40·5 per cent received between $20 and $30 per week, and 34·2 per cent were paid $30 and over, while 17·1 per cent received between $10 and $20, and 3·2 per cent received a weekly remuneration of less than $10.

The year consisted of 304 working days. Each plant on the average operated full time 273·08 days, worked part time 14·14 days, and was idle 16·78 days. The average day was 8·91 hours, and the average week was equivalent to 50·87 hours.

Table 11.—Averages of Working Time, 1920.

Classification	No. of Establishments	Average Working Time		Average Number of Days in Operation		
		Hours per day	Hours per week	On full time	On part time	Idle
Blast furnaces and steel mills	50	10·1	60·5	269	5	41
Foundries and machine shops	581	8·8	51·2	270	16	18
Iron and steel fabrication	55	9	50	269	19	16
Boilers and engines	55	9	50	279	10	15
Agricultural implements	99	9	53	284·2	9·4	10·3
Machinery	156	9	50	277·6	13·6	12·9
Motors and cycles	84	9	49	256	24	24
Cars and car parts	21	8·9	50·6	276	4	24
Heating and ventilating	55	9	51	274	8	22
Wire and wire goods	45	9·1	51·8	265	17·4	21·6
Sheet metal products	122	8·5	48·8	278	14	12
Hardware and tools	152	9	49	282	12	10
Total	1,475	8·91	50·87	273·08	14·14	16·78

Table 12.—Number of Employees, Salaries and Wages Paid, 1920.

Classification	Number of Employees			Salaries and Wages
	Male	Female	Total	
	No.	No.	No.	$
Blast furnaces and steel mills	13,694	180	13,874	22,824,530
Foundries and machine shops	17,406	875	18,281	24,941,887
Iron and steel fabrication	2,861	186	3,047	4,101,094
Boilers and engines	4,554	106	4,660	7,113,052
Agricultural implements	12,211	627	12,838	16,941,987
Machinery	10,479	752	11,231	14,958,987
Motors and cycles	11,071	850	11,921	18,771,213
Cars and car parts	15,599	131	15,730	20,838,716
Heating and ventilating	6,307	320	6,627	8,226,598
Wire and wire goods	3,386	427	3,813	4,731,717
Sheet metal products	6,402	924	7,326	8,495,838
Hardware and tools	5,330	1,083	6,413	6,559,328
Total	109,300	6,461	115,761	158,504,947

Table 13.—Number of Employees by Rank and Sex with Salaries and Wages, 1920.

Classification	No. of Employees			Salaries and Wages
	Male	Female	Total	$
Officers, managers and superintendents	3,046	48	3,094	10,751,820
Clerical staff	7,301	2,704	10,005	14,867,995
Total salaried employees	10,347	2,752	13,099	25,619,815
Wage earners	98,954	3,707	102,661	132,885,132
Total, salaried employees and wage earners	109,300	6,460	115,760	158,504,947

Table 14.—Classification of Wage Earners by Sex and Age, and According to their Weekly Rates of Pay, 1920.

Classification.	Over 16 years of age		Under 16 years of age		Total Wage Earners.
	Male	Female	Male	Female	
	No.	No.	No.	No.	No.
Under $5 per week	276	39	58	34	407
$5 but under $10	1,787	585	264	57	2,693
$10 " $15	4,094	1,461	336	35	5,926
$15 " $20	9,961	661	112	4	10,738
$20 " $24	14,676	135	33	1	14,795
$24 " $28	17,900	62	13	.....	17,975
$28 " $30	6,489	72	8	.....	6,569
$30 and over	38,010	44	5	.....	38,059
Total	93,143	3,059	829	131	97,162

Table 15.—Number of Employees, Salaries and Wages, by Provinces, 1920.

	Salaried Employees		Wage Earners	
	Number	Salaries	Number	Wages.
		$		$
CANADA	13,099	25,619,815	102,661	132,885,132
Nova Scotia	425	810,812	5,646	7,974,876
Prince Edward Island	19	27,550	98	94,497
New Brunswick	148	280,659	2,694	3,557,409
Quebec	3,029	5,627,079	26,158	31,437,472
Ontario	8,766	17,408,465	62,812	83,179,710
Manitoba	404	827,431	3,569	4,145,173
Saskatchewan	44	72,260	147	199,042
Alberta	59	107,334	430	633,318
British Columbia	205	458,225	1,107	1,663,635

Table 16.—Classification of Wage Earners, by industrial groups, 1920, According to their Weekly Rates of Pay.

	Weekly Rate of Pay.								
	Under $5 per week.	$5 but under $10	$10 but under $15	$15 but under $20	$20 but under $24	$24 but under $28	$28 but under $30	$30 and over	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Blast furnaces and steel mills	48	141	437	907	1,731	2,541	911	6,264	12,980
Foundries and machine shops	85	817	1,180	1,982	2,366	3,290	1,181	5,746	16,647
Iron and steel fabrication	8	64	142	302	421	583	212	654	2,386
Boilers and engines	16	96	134	288	618	716	271	1,663	3,802
Agricultural implements	27	160	560	1,193	2,525	2,158	903	4,024	11,550
Machinery	19	315	626	1,180	1,564	1,813	574	2,938	9,029
Motors and cycles	6	42	170	283	371	471	338	4,258	5,939
Cars and car parts	54	98	236	1,404	1,788	2,676	1,121	8,001	15,378
Heating and ventilating	12	87	321	558	999	1,209	388	1,598	5,172
Wire and wire goods	24	209	549	555	536	808	160	545	3,386
Sheet metal products	59	351	734	988	992	924	285	1,462	5,795
Hardware and tools	49	313	837	1,098	884	786	225	906	5,098
Total	407	2,693	5,926	10,738	14,975	17,975	6,569	38,059	97,162

Table 17.—Average Number of Wage-Earners employed in the Iron and Steel Series by Months, 1920.

Month	Number of Employees		
	Male	Female	Total
	No.	No.	No.
January	93,368	3,814	97,182
February	95,819	3,803	99,622
March	100,025	3,863	103,888
April	103,134	3,878	107,012
May	101,477	3,868	105,345
June	101,540	3,859	105,399
July	103,142	3,768	106,910
August	99,509	3,748	103,257
September	100,917	3,684	104,601
October	100,103	3,717	103,820
November	97,575	3,400	100,975
December	90,841	3,076	93,917
Average	98,954	3,707	102,661

Table 18.—Employment in the Iron and Steel Industry from January, 1920 to May, 1922 as Collected by the Employment Service of Canada.

Month.	Number of firms.	Employees on Date indicated.	* Index Number.
1920			
January	579	80,326	100·0
February	610	78,069	102·8
March	628	145,935	104·4
April	637	149,176	106·9
May	650	153,689	107·1
June	660	155,228	106·2
July	628	147,679	106·3
August	625	143,514	104·9
September	626	148,944	105·1
October	613	149,020	104·9
November	627	143,218	101·9
December	636	136,808	97·9
Monthly average			104·0

Table 18.—Employment in the Iron and Steel Industry from January, 1920 to May, 1922 as Collected by the Employment Service of Canada.—Continued.

Month.	Number of firms.	Employees on Date Indicated.	* Index Number.
1921			
January	641	126,438	89·2
February	662	126,896	88·5
March	675	124,335	87·7
April	641	116,563	82·4
May	652	114,135	78·2
June	663	105,257	73·7
July	659	106,124	72·4
August	653	102,419	70·2
September	669	104,802	69·9
October	682	107,241	70·5
November	688	106,216	69·2
December	681	103,535	67·1
Monthly average			76·6
1922			
January	700	100,294	64·5
February	724	105,597	67·7
March	727	107,523	69·0
April	729	107,445	68·9
May	734	109,329	70·5
Monthly average			68·1

* The index number for each month shows the percentage of the number of employees on the rolls of the firms reporting in that month as compared with the number of employees on the rolls of the same firms on January 17, 1920.

Strikes and Lockouts.—The employment situation from the viewpoint of strikes and lockouts was more favourable during 1920 than in the previous year. The table compiled by the Department of Labour regarding the number of working days lost from this cause in the past three years indicated that the greatest loss was in 1919 and that the situation in this regard has since been continually improving. The table follows:—

Table 19.—Strikes and Lockouts in the Metal and Engineering Group, 1918-1922.

(Statement furnished by the Department of Labour.)

(A) Number of Work People Involved in all Disputes in Progress

Month.	1918.	1919.	1920.	1921.	Average 4 years, 1918–21.	1922.
January	592	40	273	518	355	166
February	599	297	676	268	460	166
March	151	438	424	357	342	166
April	4,079	365	2,506	292	1,810	166
May	1,406	12,475	4,829	252	4,740	178
June	4,444	8,392	5,114	241	4,547	195
July	1,773	8,731	3,777	184	3,616	
August	2,712	4,249	3,546	475	2,745	
September	401	1,031	519	469	605	
October	104	960	492	166	430	
November	340	307	523	166	334	
December	161	262	279	166	217	
Average	1,397	3,129	1,913	296	1,683	172

Table 19.—Strikes and Lockouts in the Metal and Engineering Group, 1918-1922. —Concluded.

(B) Aggregate Duration in Man-Days of all Disputes in Progress

Month.	1918.	1919.	1920.	1921.	Average 4 years, 1918-21.	1922.
January	3,049	848	6,108	7,770	4,443	4,316
February	4,540	2,695	11,574	5,571	6,095	3,984
March	2,097	5,557	5,338	7,405	5,099	4,482
April	6,054	3,426	17,610	6,396	8,371	3,984
May	22,423	191,784	65,845	5,048	71,275	4,592
June	19,811	184,619	85,513	5,185	73,782	4,781
July	9,189	147,193	68,203	4,528	57,278	
August	46,854	48,774	59,437	5,547	40,153	
September	2,843	22,693	9,778	5,425	10,184	
October	2,059	9,555	5,253	4,316	5,295	
November	3,908	5,997	7,382	4,150	5,359	
December	4,025	6,175	7,254	4,316	5,442	
Average	10,571	52,443	29,108	5,471	24,398	4,357

Power and Fuel.—In Table 20, the rated horse-power of the equipment installed in the plants of each industrial group is given under the principal classes of power used. In each of the totals there has been included the rated power of all motors installed, irrespective of whether they were operated by purchased power or by current generated within the establishments reporting. It is possible that some of the steam engines and water turbines were used to operate generators which in turn provided current for use in some of the electric motors. The collected statistics indicated that about 15 per cent of the total rated horsepower of the electric motors reported was thus developed. The totals given in the table may be taken as giving the total plant power equipment installed.

The fuel requirements of the iron and steel trades included 1,386,033 tons of bituminous coal, valued at $9,753,156. This amount constituted 53·2 per cent of the total fuel cost. The chief remaining items listed in order of value were fuel oil constituting 20·2 per cent; coke, 12·5 per cent; and hard coal, 6·1 per cent.

Table 20.—Power Equipment in the Iron and Steel Series by Industries.

(Rated H.P.)

Industry	Boilers	Engines and Motors Operated by					Total H.P.*
		Steam	Gas or Oil	Water	Electricity	Power not given	
Blast furnaces and steel mills	60,036	89,499	.....	1,050	86,541	7,000	184,090
Foundries and machine shops	10,369	3,737	1,082	1,615	34,343	2,020	42,797
Iron and steel fabrication	435	55	16	.....	4,964	115	5,150
Boilers and engines	7,290	3,575	106	.....	17,208	20	20,909
Agricultural implements	9,592	5,020	155	512	14,856	1,114	21,657
Machinery	6,735	3,732	47	390	18,423	1,798	24,390
Motors and cycles	9,037	8,295	4,463	.....	17,169	3,352	32,704
Railway equipment	9,500	7,144	450	.....	26,490	.....	34,084
Heating and ventilating	3,893	3,041	176	90	7,743	117	11,167
Wire and wire goods	2,290	1,982	152	.....	7,523	1,246	10,903
Sheet metal products	3,968	2,050	19	480	14,150	292	16,991
Hardware and tools	2,065	675	51	1,421	10,804	222	13,173
Total	125,210	128,805	6,717	5,558	260,214	17,296	418,015

*Exclusive of boilers.

Table. 21—Fuel Used in the Iron and Steel Series, by Kinds, 1920.

Classification.	Unit of Measure.	Quantity.	Value.
			$
Bituminous coal	Net tons	1,386,033	9,753,156
Anthracite coal	"	94,977	1,111,797
Lignite coal	"	2,252	18,920
Coke	"	198,204	2,300,250
Gasoline	Gallons	825,370	220,112
Oil (fuel)	"	27,792,856	3,716,470
Wood	Cords	172,922	124,635
Gas	M cu. ft.	5,821,664	663,604
Other fuel	.....	.....	438,424
Total values	.....	.....	18,347,368

Table 22.—Fuel Used in the Iron and Steel Series, by Industrial Groups, 1920.

—	Total Value of Fuel Used	Bituminous Coal		Anthracite Coal	Coke	Gasoline	Fuel Oil	Wood	All other Fuel
		Quantity	Value						
	$	Tons	$	$	$	$	$	$	$
Blast furnaces and steel mills	8,414,100	847,014	5,089,256	108,850	241,798	10,324	2,079,213	22,025	862,634
Foundries and machine shops	2,967,121	158,681	1,475,665	144,223	748,325	98,971	350,185	57,352	92,400
Iron and steel fabrication	116,562	5,751	54,950	7,344	24,514	4,617	19,800	294	5,043
Boilers and engines	668,560	44,561	328,576	22,322	83,043	12,095	204,987	4,525	13,012
Agricultural implements	1,062,337	56,458	427,263	24,703	218,144	31,666	297,131	9,964	53,466
Machinery	746,344	29,080	439,876	130,951	116,139	15,089	28,797	4,015	11,477
Motors and cycles	886,966	25,324	227,759	561,811	2,634	16,898	61,114	.....	16,750
Cars and car parts	1,413,969	104,253	730,829	7,774	386,346	1,017	274,599	13,404	.....
Heating and ventilating	583,877	22,530	184,273	10,580	311,823	10,814	51,652	3,633	11,102
Wire and wire goods	490,387	36,902	341,298	26,523	73,371	2,476	42,356	317	3,946
Sheet metal products	566,419	38,677	285,218	20,019	52,918	11,350	151,383	7,030	38,501
Hardware and tools	430,726	16,802	168,093	46,697	41,195	4,795	155,253	2,076	12,617
All plants	18,347,368	1,386,033	9,752,156	1,111,797	2,300,250	220,112	3,716,470	124,635	1,120,948

Financial Statistics.—The capital invested in the series under review was $642,904,322, of which 53·2 per cent comprised the current assets and the remaining 46·8 per cent formed the fixed assets. The turnover, obtained by computing the ratio of gross production to the current assets, was 187·1 per cent. The operating ratio found by computing the percentage of the total expenditure to the value of production was 88·1 per cent.

It is noteworthy that of the value of the products manufactured during the year 24·8 per cent was paid in salaries and wages. The raw materials cost 50·2 per cent and the fuel account constituted 2·9 per cent of the gross output.

Table 23.—Capital Employed in the Iron and Steel Series by Industrial Groups, 1920.

Classification	Number of Establishments	Capital Employed as represented by				Total Capital Employed
		Lands, Buildings and Fixtures	Machinery and Tools	Materials on hand and Stocks in Process	Cash Account and Bills Receivable.	
		$	$	$	$	$
Blast furnaces and steel mills.	50	38,115,227	41,226,739	28,132,008	12,287,744	119,761,718
Foundries and machine shops.	581	18,312,350	20,422,743	17,015,919	12,595,616	68,346,628
Iron and steel fabrication.....	55	2,736,021	2,568,680	3,795,313	3,255,255	12,355,869
Boilers and engines.....	55	3,686,325	9,094,655	6,300,469	13,581,103	32,662,552
Agricultural implements.....	99	19,729,048	13,173,208	42,419,393	35,547,064	110,868,713
Machinery.....	156	10,981,876	12,712,652	17,596,082	10,776,326	52,066,936
Motors and cycles.....	84	13,867,260	11,784,105	29,404,181	17,196,882	72,252,428
Cars and car parts.....	21	21,526,908	12,757,334	20,696,412	11,971,212	66,951,866
Heating and ventilating.....	55	7,686,905	5,581,087	9,847,545	5,794,807	28,910,344
Wire and wire goods.....	45	4,283,903	5,721,156	5,049,169	3,284,792	18,339,020
Sheet metal products.....	122	7,430,713	6,010,603	8,294,649	5,853,770	27,589,735
Hardware and tools.....	152	4,761,507	6,481,549	9,093,170	12,462,287	32,798,513
Total.....	1,475	153,118,643	147,534,511	197,644,310	144,606,858	642,904,322

Table 24.—Financial Summary, Iron and Steel Series, 1920.

Classification	Capital	Salaries and Wages	Cost of Fuel	Cost of Materials	Miscellaneous Expenses	Total Expenditure	Value of Products
	$	$	$	$	$	$	$
Blast furnaces and steel mills.....	119,761,718	22,824,530	8,414,100	75,023,488	11,042,550	117,304,668	138,882,823
Foundries and machine shops...	68,346,628	24,941,887	2,967,121	32,603,268	8,310,814	68,823,090	76,766,903
Iron and steel fabrication.....	12,355,869	4,101,094	116,562	6,288,467	2,216,846	12,722,969	14,318,685
Boilers and engines.	32,662,552	7,113,052	668,560	9,891,832	2,545,829	20,219,273	22,614,951
Agricultural implements.....	110,868,713	16,941,987	1,062,337	22,588,390	5,133,036	45,725,750	50,301,302
Machinery.....	52,066,936	14,958,987	746,344	13,605,268	6,751,396	36,061,995	40,335,474
Motors and cycles..	72,252,428	18,771,213	886,966	78,840,140	13,672,049	112,170,368	123,148,206
Cars and car parts.	66,951,866	20,838,716	1,413,969	33,009,752	3,323,586	58,586,023	60,359,520
Heating and ventilating.....	28,910,344	8,226,598	583,877	7,767,631	3,613,834	20,191,940	23,125,680
Wire and wire goods	18,339,020	4,731,717	490,387	14,219,338	2,215,359	21,656,801	30,254,349
Sheet metal products.....	27,589,735	8,495,838	566,419	20,260,820	3,175,551	32,498,628	37,369,576
Hardware and tools	32,798,513	6,559,328	430,726	7,200,002	4,196,740	18,386,796	22,556,316
Total.....	642,904,322	158,504,947	18,347,368	321,298,396	66,197,590	564,348,301	640,233,785

Table 25.—Financial Summary of the Iron and Steel Series by Provinces for 1920.

	Capital	Salaries and Wages	Cost of Fuel	Cost of Materials	Miscellaneous Expenses	Total Expenditure	Value of Products
	$	$	$	$	$	$	$
Nova Scotia.....	50,280,303	8,785,688	2,651,432	32,584,723	2,930,279	46,952,122	58,512,632
Prince Edward Id.	399,533	122,047	12,042	166,415	35,053	335,557	404,868
New Brunswick....	10,335,843	3,838,068	394,885	3,799,650	576,491	8,609,094	8,857,894
Quebec.....	131,896,774	37,064,551	3,441,718	55,478,955	10,670,377	106,655,601	126,653,314
Ontario.....	423,552,628	100,588,175	11,406,065	221,272,083	49,826,574	383,092,897	424,842,242
Manitoba.....	19,277,700	4,972,604	307,636	4,858,066	1,180,809	11,319,115	12,582,139
Saskatchewan.....	1,121,026	271,302	16,747	229,382	158,400	675,831	908,231
Alberta.....	1,283,270	740,652	24,509	766,618	182,916	1,714,695	1,875,204
British Columbia..	4,757,245	2,121,860	92,334	2,142,504	636,691	4,993,389	5,597,261
Total for Canada	642,904,322	158,504,947	18,347,368	321,298,396	66,197,590	564,348,301	640,233,785

Provincial Distribution.—Ontario was easily the leading province in the manufacture of iron and its products. Out of a total capital investment of $642,904,322 in the industry in Canada, 65·9 per cent was invested in the province of Ontario; 61·8 per cent of the employment and 66·3 per cent of the production were also credited to the same source. The second place was held by Quebec, where 20·5 per cent of the entire capital was invested. The third rank in this connection was occupied by Nova Scotia, where 5·3 per cent of the employees were engaged and 9·1 per cent of the Canadian output was produced. The following tabular statement presents the percentage distribution throughout the nine provinces in regard to the iron and steel series:—

Table 26.—Percentage Distribution of the Iron and Steel Series by Provinces, 1920.

	Number of Establishments	Capital Investment.	Average No. of Employees	Salaries and Wages.	Cost of Fuel	Cost of Materials	Value of Products.
	%	%	%	%	%	%	%
Nova Scotia	3·6	7·8	5·3	5·6	14·4	10·1	9·1
Prince Edward Island	0·4	0·1	0·1	0·1	0·1	0·1	0·1
New Brunswick	2·3	1·6	2·5	2·4	2·1	1·2	1·3
Quebec	18·4	20·5	25·2	23·4	18·8	17·2	19·8
Ontario	57·5	65·9	61·8	63·5	62·2	68·9	66·3
Manitoba	4·5	3·0	3·4	3·1	1·7	1·5	2·0
Saskatchewan	2·4	0·2	0·2	0·1	0·1	0·1	0·2
Alberta	3·3	0·2	0·4	0·5	0·1	0·2	0·3
British Columbia	7·6	0·7	1·1	1·2	0·5	0·7	0·9
CANADA	100	100	100	100	100	100	100

CHAPTER ONE

BLAST FURNACES AND STEEL MILLS

General Review.—The group includes plants engaged in the production and rolling of iron and steel. Nine establishments were engaged chiefly in producing pig-iron and ferro-alloys and 41 plants were devoted to the conversion of iron into steel and the hot and cold rolling of the metals. Nine firms classified under the artificial abrasives industry manufactured ferro-alloys as a subsidiary product. Of the 41 plants included in the steel industry, 17 were steel furnaces only, 18 were rolling mills and 6 were steel furnaces and rolling mills combined. The provincial distribution of plants follows:—

Table 27.—Number of Plants Operating Blast Furnaces, Steel Furnaces and Rolling Mills in Canada in 1920.

Classification	Nova Scotia	New Brunswick.	Quebec	Ontario	Manitoba	British Columbia	Canada.
Pig iron and ferro-alloy plants	2	.....	1	6	.....	.....	9
Steel furnace plants.....	1	.....	10	4	1	1	17
Rolling mill plants.....	2	1	5	8	1	1	18
Combined steel mills.....	1	.....	1	4	.....	.....	6
Total.....	6	1	17	22	2	2	50

The industry enjoyed a maximum year in 1918 when 1,195,551 net tons of pig-iron and ferro-alloys and 1,873,708 tons of steel ingots and castings were produced. Consequent upon readjustment to peace conditions, a decline in activity was experienced in 1919, which continued through the first three months of 1920. From then on a marked improvement in the production led up to the maximum output for the year in October. Since that time production has declined to the lowest levels known in recent years.

The total production of iron and steel during 1920 was greater than in either 1919 or 1921. The average monthly output of pig-iron and ferro-alloys in 1920 reported as 90,866 net tons was 118·8 per cent of the monthly production of 1919 and 163·8 per cent of the record for 1921, and 253 per cent of the average monthly output during the first four months of 1922. The monthly output of steel ingots and castings in 1920 given as 102,725 net tons was 119·6 per cent of the monthly production in 1919 and 164·8 per cent of that for 1921 and 322·8 per cent of the average monthly output during the first four months of 1922. The following statement illustrates the fluctuation in production during recent years:—

Table 28.—Annual and Monthly Production of Iron and Steel in Canada, 1913-1922. Short Tons.

——	1913	1917	1918	1919	1920	Ten-year average 1911-1920	1921
Iron production.....	1,128,967	1,170,480	1,195,551	917,781	1,090,396	1,030,149	665,676
Monthly average.....	94,081	97,540	99,629	76,482	90,866	85,845	55,473
Steel production.....	1,168,993	1,745,734	1,873,708	1,030,342	1,232,697	1,216,934	747,582
Monthly average.....	97,416	145,478	156,142	85,862	102,725	101,411	62,299

As far as employment was concerned, the maximum month for 1919 was January when 16,726 wage-earners were engaged. The pay-rolls exhibited a decline until the end of the year. In January of the next year 11,569 wage-earners were employed and gradual increases were recorded until October, which was the month of maximum employment for the year with 13,785 wage-earners. In November and December declines were recorded and the year ended with 12,497 wage-earners on the pay-rolls.

Table 29.—Number of Employees in Blast Furnaces and Steel Mills Group, by Months, 1919-1920.

Year	Monthly average	January	February	March	April	May	June
1919	14,834	16,726	15,958	15,758	15,597	15,444	14,056
1920	12,944	11,569	11,570	12,637	13,210	13,197	13,533
		July	August	September	October	November	December
1919		14,353	14,374	13,744	13,826	13,834	14,337
1920		13,570	13,037	12,955	13,785	13,762	12,497

The fifty establishments in the group in 1920 were owned by 38 incorporated companies. Four of the blast furnace plants were owned by companies who also owned steel plants. The par value of stocks and bonds issued by the companies in the group was $97,308,782, of which 31 per cent were unregistered bonds. Of the remaining securities about 43·7 per cent were owned by residents of the United States, 55·5 per cent were held in Canada, 0·7 per cent were held in Great Britain and the remainder consisting of 0·1 per cent were held in other countries. The summary of the principal statistics of the group from 1917 to 1920 is presented in Table 31.

Table 30.—Distribution of the Ownership of Blast Furnaces and Steel Mills Group in 1920.

Class of Security	Par Value of Issued Securities Held by Residents of—				Total
	Canada	Great Britain	United States	Other Countries	
	$	$	$	$	$
Registered—					
Stocks	34,470,588	450,600	29,055,120	76,350	64,052,658
Bonds	2,765,143	.....	270,000	.....	3,035,143
Unregistered—					
Bonds	.....	.....	.....	.....	30,220,981
Total	37,235,731	450,600	29,325,120	76,350	97,308,782

NOTE.—The data given in the foregoing table refer only to the securities issued by joint stock companies whose major product in 1920 was iron or steel. The capitalization of the British Empire Steel Corporation operating coal mines and steel mills in Nova Scotia has been excluded from this compilation since it is included in the report on coal mining, and the stock of the Grand Trunk Railway Company which operates a rolling mill in Montreal, has been included with that of the other transportation companies.

Table 31.—Summary Showing the Development of the Blast Furnaces and Steel Mills Group from 1917 to 1920.

—	Year	Number of Establishments.	Average Number of Wage Earners	Wages	Capital	Cost of Materials	Value of Products
				$	$	$	$
Pig iron	1917	10	1,241	1,590,893	32,500,389	10,659,576	25,767,060
	1918	11	1,366	2,085,294	35,974,894	26,164,722	32,102,900
	*1919	9	1,393	2,140,649	35,766,836	6,811,898	24,965,092
	*1920	9	1,165	2,214,700	29,128,967	22,136,141	29,294,124
Ferro-alloys	1917	4	654	671,592	2,200,512	982,206	3,747,005
	1918	3	274	449,776	1,138,379	610,444	4,153,802
Steel furnaces and rolling mills.	1917	40	15,021	18,320,740	91,894,777	108,638,956	170,679,000
	1918	46	19,006	25,767,032	109,538,103	135,308,883	209,706,319
	1919	41	13,432	16,332,984	88,106,635	43,950,062	89,229,144
	1920	41	11,779	18,513,747	90,632,751	52,887,347	109,588,699
Totals	1917	54	16,916	20,583,225	12,659,078	120,280,738	120,193,065
	1918	60	20,646	28,302,102	146,651,376	162,084,049	245,963,021
	1919	50	14,825	18,473,633	123,873,471	50,762,560	114,194,236
	1920	50	12,944	20,728,447	119,761,718	75,023,488	138,882,823

*In the figures for 1919 and 1920 ferro-alloys are included with pig iron.

Table 32.—Principal Statistics of the Blast Furnaces and Steel Mills Group, by Provinces, 1920.

—	Number of Establishments	Average Number of Wage Earners	Wages	Capital	Cost of Materials	Value of Products
			$	$	$	$
Maritime Provinces—						
All plants	7	3,089	14,812,765	35,143,791	23,200,245	43,307,693
Quebec—						
All plants	17	3,602	4,674,772	21,484,491	6,873,050	20,208,939
Ontario, Manitoba and British Columbia—						
Pig-iron and ferro-alloy plants	6	711	1,474,241	19,494,706	15,638,391	21,460,968
Steel furnaces and rolling mills	20	5,542	9,766,669	43,638,739	29,311,802	53,815,223
Total	26	6,253	11,240,910	63,133,436	44,950,193	75,276,191
Canada—						
Pig-iron and ferro-alloy plants	9	1,165	2,214,700	29,128,967	22,136,141	29,294,124
Steel furnaces and rolling mills	41	11,779	18,513,747	90,632,751	52,887,347	109,588,699
Total	50	12,944	20,728,447	119,761,718	75,023,488	138,882,823

Commodity Statistics.—(a) Pig-Iron and Ferro-Alloys.—The total iron ore charged to blast furnaces in 1920 was 2,103,796 net tons, valued at $8,910,038. Of this quantity 1,951,434 tons, worth $8,288,145, was imported and 152,362 tons, worth $621,893, was of Canadian origin. Three mines were in operation during the year with an output of 195,870 tons, from which shipments were made amounting to 127,614 tons, valued at $509,315. The preliminary estimate for 1921 indicated that 42,938 tons was mined in that year and that the shipments consisted of 59,408 tons.

The total imports of iron ore into Canada in 1920 were 1,938,943 tons, worth $5,812,912, and the exports totalled 19,879 tons, valued at $99,179. A noteworthy decline was recorded for 1921 when only 661,168 tons, valued at

$2,109,094, was imported and 4,261 tons, valued at $13,373, was exported. The imports from the United States were 1,300,647 tons in 1920 and only 514,651 tons in 1921. The imports from Newfoundland amounted to 616,287 tons in 1920 and 139,394 tons in 1921. A comparative statement of the imports for 1920 and 1921 follows;—

Table 33.—Imports into Canada of Iron Ore in 1920-1921.

Year.	From United States.		From Newfoundland.		Total.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Tons.	$	Tons.	$	Tons.	$
1920	1,300,647	4,866,644	616,287	861,432	1,938,943	5,812,912
1921	514,651	1,885,494	139,394	184,851	661,168	2,109,094

The total quantity of coke charged to blast furnaces in 1920 was 1,201,398 tons, worth $11,360,363. According to the returns 1,069,392 tons, valued at $9,488,153, was produced in Canada, and 132,006 tons, valued at $1,872,210, was imported or produced from foreign coal.

The production of pig-iron by the establishments classified in this group in 1920 was 1,087,534 tons, valued at $27,734,129. The output by plants classified in other groups was 2,862, tons, valued at $178,018. The imports were 57,483 tons, valued at $2,383,442 and the exports were 102,628 tons, worth $3,628,657. The charges to steel furnaces were 737,012 tons, valued at $18,894,998. The net quantity then available for consumption in Canada for foundry and other purposes was 308,239 tons. The production of pig-iron in 1921 declined to 665,676 tons and the imports were only 18,636 tons, worth $501,418.

An output of 26,224 tons of ferro-alloys, valued at $1,316,686 in 1920 was an item of importance. Nine firms in the abrasive industry also produced 4,891 tons of ferro-alloys, worth $457,407. The importation of ferro-alloys was reported as 7,908 tons, valued at $1,324,061, while the exports were 25,524 tons, worth $1,300,184. The charges to steel furnaces were given as 28,794 tons, indicating that recourse was had to stocks carried over from the previous year. The data for 1921 in Tables 36, 37 and 38 were taken from the monthly report of iron and steel production issued by the Bureau and the statistics for previous years were extracted from the reports of the Mines Branch. The whole of Table 39 is quoted from the Mines Branch records and Table 43 is repeated from the "Iron Age."

Table 34.—Production of Pig Iron and Ferro-Alloys in Canada during 1920.
Short Tons.

Grades.	For Interplant Use.		For Sale.		Total.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Net tons	$	Net tons	$	Net tons	$
Pig-iron from blast furnaces	681,141	15,964,464	406,393	11,769,665	1,087,534	27,734,129
Pig-iron produced in other industries	.....	.....	2,862	178,018	2,862	178,018
Total pig-iron	681,141	15,964,464	409,255	11,947,683	1,090,396	27,912,147
Ferro-alloys from blast furnaces	5,580	163,656	20,644	1,153,030	26,224	1,316,686
Ferro-alloys produced in abrasives industry	.....	.....	4,891	457,407	4,891	457,407
Total	.....	16,128,120	.....	13,558,120	.....	29,686,240

Table 35.—Comparative Statement of the Production of Pig-Iron in 1920 and 1921, by Grades. Short Tons.

(Mines Branch).

Grades.	1920.		1921.		Decrease.	
	Quantity.	Per cent.	Quantity.	Per cent.	Quantity.	Per cent.
Basic	740,598	67·9	516,967	77·7	223,631	30·2
Foundry and malleable	340,963	31·3	148,026	22·2	192,937	56·6
Electric	8,335	·8	683	·1	8,152	92·3
Total pig-iron	1,090,396	100	665,676	100	424,720	38·9

Table 36.—Monthly Production of Pig-Iron in Short Tons, 1916-1921.

(Mines Branch).

Month.	1916.	1917.	1918.	1919.	1920.	5 year average.	1921.
January	562,097	89,187	74,239	103,963	81,634	88,541	46,199
February		83,801	78,507	86,840	71,200	82,806	64,636
March		103,789	96,848	91,286	77,491	92,619	67,696
April		100,564	104,331	93,359	86,611	95,709	43,568
May		108,891	104,867	83,059	97,593	97,618	62,822
June		99,998	103,037	66,470	89,258	90,489	61,389
July	92,012	93,499	109,723	60,927	94,417	90,115	60,576
August	87,864	100,727	96,164	67,404	104,482	91,328	56,175
September	102,744	100,690	95,102	56,806	104,922	92,052	48,954
October	113,608	103,277	106,962	56,049	117,347	99,448	55,522
November	104,436	97,905	106,585	73,092	104,748	97,353	53,431
December	106,496	87,152	119,186	78,526	60,693	90,410	44,707
Totals	1,169,257	1,170,480	1,195,551	917,781	1,090,396	1,108,693	665,676
Monthly average	97,438	97,540	99,629	76,482	90,866	92,392	55,473

Table 37.—Annual Production of Pig-Iron in Short Tons by Grades and by Fuels.

(Mines Branch).

Year.	Total.	By Grades.			By Fuels.		
		Basic.	Bessemer	Foundry and all other.	Charcoal.	Coke.	Electric.
1913	1,128,967	614,845	265,685	248,437	23,696	1,105,271	.....
1914	783,104	346,553	230,817	205,794	9,380	773,784	.....
1915	913,775	739,643	29,052	145,110	13,692	900,083	.....
1916	1,169,257	953,627	31,388	184,242	17,304	1,151,953	.....
1917	1,170,480	961,656	*27,783	181,041	14,092	1,142,097	13,691
1918	1,195,551	966,409	*47,446	178,099	.....	1,163,520	32,031
1919	917,781	580,426	*15,338	322,017	.....	910,080	7,701
1920	1,090,396	740,598	*8,835	340,963	.....	1,081,561	8,835
Average 1911-20	1,030,149	691,248	*112,116	226,425	12,232	1,011,861	.....
1921	665,676	516,967	*683	148,026	.....	664,993	683

*Including electric furnace pig.

Table 38.—Annual Production of Pig-Iron by Provinces, 1913 to 1920.

(Mines Branch).

Year.	Nova Scotia.		Ontario.		Quebec.		Total.	
	Short tons.	Value.	Short tons.	Value.	Short tons.	Value.	Short tons.	Value.
		$		$		$		$
1913	480,068	7,201,020	648,899	9,338,992	.....	.....	1,128,967	16,540,012
1914	227,052	2,951,676	556,112	7,051,180	.....	.....	783,164	10,002,856
1915	420,275	5,463,575	493,500	5,910,624	.....	.....	913,775	11,374,199
1916	470,055	7,050,825	699,202	9,700,073	.....	.....	1,169,257	16,750,898
1917	472,147	10,387,234	684,642	13,902,867	(a) 13,691	735,859	1,170,480	25,025,960
1918	415,870	10,451,400	747,650	21,324,857	(a) 32,031	1,718,914	1,195,551	33,495,171
1919	285,087	7,141,641	624,993	17,104,151	(a) 7,701	331,797	917,781	24,577,589
1920	332,493	7,687,614	749,068	22,252,062	(a) 8,835	379,348	1,090,396	30,319,024
Average 1911-20	391,828	6,939,280	632,029	12,236,783	.....	.....	1,030,149	18,494,383
1921	169,504	.....	495,489	.....	683	.....	665,676	.....

(a) Total Production in Canada of Pig Iron made in electric furnaces from scrap metal.

Table 39.—Iron Ore, Fuel and Flux Charged to Blast Furnaces, 1913-1919.

(Mines Branch).

Year.	Iron Ore Charged.		Fuel and Flux Charged.			
	Canadian.	Imported.	Charcoal.	Coke from Canadian Coal.	Coke Imported or Made from Imported Coal.	Limestone.
	Short tons	Short tons	Bushels	Short tons	Short tons	Short tons
1913	139,436	2,110,828	2,206,191	710,260	706,888	630,119
1914	182,964	1,324,326	920,045	330,269	590,902	447,641
1915	293,305	1,463,488	1,314,957	578,743	486,022	573,743
1916	221,773	1,964,598	1,843,209	712,715	645,488	701,690
1917	92,065	2,084,231	1,288,390	634,9 2	723,657	760,826
1918	96,745	2,146,995	.....	561,135	861,522	755,660
1919	78,391	1,674,194	117,795	372,203	689,548	547,695

Table 40.—Quantity and Value of Material Charged to Blast Furnaces According to Origin, 1920.

(Bureau Report)

——	Totals.		Produced in Canada.		Imported.		
	Quantity.	Cost at Plant.	Quantity.	Cost at Plant.	Source.	Quantity.	Cost at Plant.
	Short tons.	$	Short tons.	$		Short tons.	$
Iron, ore, crude	1,907,167	7,948,571	152,362	621,893	Nfd.,U.S.A	1,754,805	7,326,678
Calcined or treated ore	193,426	883,969	.....	.....	U.S.A.	193,426	883,969
Manganiferous ore	3,203	77,498	.....	.....	Brazil, G.B. U.S.A.	3,203	77,498
Flux	609,635	1,085,059	258,646	529,387	Nfd.,U.S.A.	350,989	555,672
Coke	1,201,398	11,360,363	1,069,392	9,488,153	U.S.A.	132,006	1,872,210
Scale, mill cinder, etc.	57,382	230,503	57,382	230,503	.....	.....	.....
Scrap	35,729	515,632	27,329	361,582	U.S.A.	8,400	154,050
Other materials	.....	34,546	.....	29,815	.....	.....	4,731
Totals	.....	22,136,141	.....	11,261,333	.....	.....	10,874,888

Table 41.—Annual Imports into Canada of Pig-Iron by Countries of Origin.

Calendar year.	From United States.			From Great Britain.			From Other Countries.		
	Short tons.	Value.	Value per ton.	Short tons.	Value.	Value per ton.	Short tons.	Value	Value per ton.
		$	$		$	$		$	$
1913	213,969	2,888,974	13·50	22,800	358,431	15·72	.....	.....	.....
1914	69,254	862,598	12·46	9,426	119,591	12·68	.....	.....	.....
1915	46,894	615,268	13·12	588	8,932	15·19	.....	.....	.....
1916	57,256	1,129,799	19·73	594	10,614	17·87	280	4,737	1,691
1917	83,276	2,760,415	33·15	.....	.....	.....	140	3,750	2,678
1918	67,385	2,101,798	31·19	11	608	55·27	.....	.....	.....
1919	35,649	1,015,799	28·49	151	7,072	46·83	.....	.....	.....
1920	56,297	2,319,595	41·20	1,186	63,847	53·83	.....	.....	.....
1921	17,798	476,791	26·78	257	10,854	42·23	581	13,773	2,371

Table 42.—Annual Imports of Pig-Iron and Ferro-Alloys, 1913-1921.

Calendar Year.	Pig Iron.			Ferro-Alloys.		
	Short tons.	Value.	Average value.	Short tons.	Value.	Average value.
		$	$		$	$
1913	236,709	3,247,405	13·71	30,355	940,443	32·62
1914	78,680	982,189	12·48	22,147	549,485	24·81
1915	47,482	624,200	13·15	13,758	807,312	58·68
1916	58,130	1,145,150	19·70	14,772	1,879,538	127·19
1917	83,416	2,764,165	33·14	12,828	2,029,990	158·25
1918	67,397	2,102,435	31·19	35,284	4,283,133	121·39
1919	35,800	1,022,871	28·57	16,222	901,678	55·58
1920	57,483	2,383,442	41·46	7,908	1,324,061	167·40
1921	18,636	501,418	26·91	22,296	298,818	130·40

Table 43.—Composite Monthly Prices of Pig-Iron: An Average of Quotations on Foundry and Basic Pig Irons; Basic Iron at Valley Furnace; Foundry Iron an average of Chicago, Birmingham and Philadelphia; quoted in Dollars per gross ton. (From "The Iron Age.").

Month.	1913.	1918.	1919.	1920.	1921.
	$	$	$	$	$
Average	14·68	33·24	28·97	42·76	22·58
January	10·49	33·21	31·36	39·08	31·18
February	16·31	33·21	31·36	42·35	28·45
March	16·07	33·21	30·10	42·17	25·18
April	15·74	32·71	27·11	42·93	23·73
May	14·08	32·71	26·91	43·64	22·78
June	14·35	32·71	26·46	44·09	21·73
July	13·99	32·73	26·37	45·44	20·22
August	13·93	32·73	26·83	47·38	18·97
September	13·97	32·73	27·11	47·83	19·89
October	13·93	34·31	27·52	45·05	19·97
November	13·39	34·36	30·34	38·65	19·79
December	13·06	34·26	36·13	34·51	19·11

(b) Steel Furnace and Mill Products.—The total production of ingots reported for 1920 as 1,167,691 tons, valued at $44,623,332, may be divided into three parts. The quantity produced for interplant use was 114,822 tons, while 2,208 tons was made for sale. The remainder consisting of 1,049,661

tons, was intended for consumption in other parts of the plant in which it was produced. In view of the duplication which would be involved, the value of the ingots made and consumed in the same plants was not included in the valuation of the production of the industry. The import and export classification does not permit of the differentiation of the ingots from the blooms and billets.

The total production of direct steel castings in 1920 by the establishments classified to this group was 67,285 tons, worth $12,918,060. The castings manufactured for interplant use amounted to 5,857 tons, valued at $924,124.

The production of blooms, billets and slabs was reported as 737,729 tons, of which 614,315 tons was for interplant use and 123,414 tons was made for sale. This record does not include the blooms, billets and slabs manufactured for consumption in the plant reporting. The importation of blooms, billets and ingots was 9,995 tons, valued at $863,183 and the exports were 71,548 tons, worth $3,833,725.

The plates and sheets rolled during 1920 were reported as 75,986 tons, valued at $4,911,634. The imports were worth $31,029,780 and the exports were not of sufficient importance to justify separate mention. The value of plates and sheets made available for consumption in Canada was therefore approximately $35,941,414.

The production of rails was 255,190 tons, valued at $11,772,951. The imports including railway bars were 19,474 tons, valued at $970,299, and the exports were 62,968 tons, worth $2,733,155. The quantity made available for consumption in Canada was about 211,696 tons. Rail joints and fastenings to the quantity of 33,326 tons, valued at $2,308,953, were manufactured during the year; the imports were 2,897 tons, worth $198,766 and the exports were not separately reported. The production of switches, frogs and crossings was valued at $900,129 and the imports were worth $93,640.

The output of structural steel was 63,754, tons, valued at $3,846,042. The imports were approximately 155,243 tons, valued at $9,170,970. The imports included an estimated quantity of 1,460 tons for item "iron and steel bridges or parts thereof, iron or steel structural work, columns, shapes or sections drilled, punched or in any further state of manufacture than as rolled or cast n.o.p." The value of the importation for this item was $86,137 and the tonnage was computed at a rate of $59. Structural steel amounting to 7,149 tons, worth $566,189, was exported. The quantity made available for consumption was approximately 211,848 tons.

The total quantity of bars rolled during the year was 171,120 tons, worth $11,206,379. The imports were valued at $5,107,805, while the exports including rods were 92,560 tons, worth $6,112,352. Since rods were included in the export item, the value of bars made available for consumption was somewhat less than $10,201,832.

The growing importance of scrap iron and steel to the industry is demonstrated by the statement that 766,128 tons were reported as material used. Of this quantity 730,399 tons was used by the steel furnaces and rolling mills. The charges to blast furnaces were 35,729 tons, valued at $515,632. The total Canadian scrap used by the group was 751,837 tons, while 14,291 tons was imported. The total importation during the year was 135,625 tons, worth $2,341,365, and the exports were 127,199 tons, valued at $2,449,028.

Referring to Table 49, the item "bars and plates" was divided for 1920 into two parts, consisting of plates and sheets comprising 78,566 tons, and merchant bars and structural shapes comprising 423,855 tons. The iron sheets and plates amounting to 11,943 tons, worth $1,112,009, in 1919, to 13,725 tons, worth $1,630,543, in 1920, and to 6,406 tons, worth $597,611, in 1921, were excluded from the item "sheets and plates" listed in Table 51 to ensure comparability with former years.

The data for 1921 given in Table 47 is quoted from the Bureau monthly reports of iron and steel production. The statistics for previous years in Table

47 as well as in Tables 46 and 49 are extracted from the reports of the Mines Branch. Table 48 is quoted, with permission, from the annual statistical report of the American Iron and Steel Institute and Table 52, showing a composite price of finished steel, is quoted from the "Iron Age."

Following are Tables 44 to 52 presenting statistics regarding steel furnace and rolling mill products.—

Table 44.—Materials Used in Steel Furnaces and Rolling Mills, 1920.
(Bureau Report.)

Item.	Produced in Canada.		Imported.	
	Quantity.	Value.	Quantity.	Value.
	Short tons.	$	Short tons.	$
Flux	209,760	564,131	49,152	177,727
Aluminium	101	18,187	25	15,351
Spiegeleisen and ferro manganese	13,981	501,240	7,358	965,514
Ferro and other alloys	2,738	228,966	4,717	497,330
Iron ore	92	3,386	64,355	511,754
Pig-iron	712,842	17,846,500	24,170	1,048,498
Steel, crude and semi-finished	273,421	12,120,332	10,190	386,277
Brick, clay and miscellaneous refractories	.....	220,815	.....	112,892
Sand	5,663	245,987	23,460	152,740
Steel bars	.....	.....	750	52,400
Wire rods	3,223	237,614	.....	.....
Rails for re-rolling	35,110	1,308,959	.....	.....
Scrap	724,508	14,889,050	5,891	164,876
Miscellaneous	.....	245,990	.....	370,831
Total	.....	48,431,157	.....	4,456,190

Table 45.—Production of Steel Furnaces and Rolling Mills in the Year 1920.
(Bureau Report.)

Item.	For Interplant Use.		For Sale.	
	Quantity.	Value.	Quantity.	Value.
	Short tons.	$	Short tons.	$
Castings	5,857	924,124	61,428	11,993,936
Ingots	114,822	4,290,045	2,208	143,504
Rails	169	7,351	255,021	11,765,600
Plates	540	32,793	64,354	4,503,981
Nail, tack and washer plate	2,864	119,268	.....	.....
Sheets	1,175	102,520	9,917	272,340
Wire rods	115,489	6,090,329	100,683	6,389,791
Iron and steel rods	200	20,000	2,600	282,772
Merchant bars	19,464	1,120,767	113,631	7,481,853
Steel bars	25,314	2,340,677	165,969	13,189,831
Iron bars	18,041	1,162,322	19,984	1,441,437
Sheet and tin plate bars	441	24,991	1,261	299,730
Muck and scrap bar	23,829	1,048,052	180	7,198
Blooms, billets and slabs	614,315	9,685,642	123,414	6,106,045
Wire nails and staples	137	10,150	21,583	2,354,013
Wire	22,338	1,281,172	8,043	419,368
Axles	37	2,590	18,997	2,028,948
Structural steel, including shapes	.....	.....	63,754	3,846,042
Rail joints, tie-plates, etc	.....	.....	33,326	2,308,953
Railway spikes	.....	.....	9,313	876,998
Frogs, switches, etc	.....	.....	.....	900,129
Pig-iron	2,233	89,320	2,862	178,018
Merchant iron	3,933	237,969	.....	.....
Bolts, nuts, rivets	401	177,737	7,276	931,036
Horseshoes	.....	.....	5,508	740,370
Various small tools	.....	.....	.....	126,677
Miscellaneous products other than iron and steel	170	15,756	1,720	163,974
Miscellaneous rolled products	.....	.....	20,633	1,318,793
Other miscellaneous products	.....	43,814	.....	679,973
Total	.....	28,837,389	.....	80,751,310

Table 45.—Production of Steel Furnace and Rolling Mills in the Year 1920.—Concluded.

Consumed in Plant.	Quantity.	Value.
	Short tons.	$
Ingots	1,049,661	40,189,783

Table 46.—Pig-Iron, Scrap Iron and Other Materials in Short Tons Charged to Steel Furnaces, 1913-1919.

(From the Annual Report of the Mines Branch).

Year.	Pig-iron.	Ferro-alloys.	Scrap Iron and Steel.	Iron Ore.	Manganese	Fluor-spar.	Lime-stone and Dolomite.
1913	913,722	29,408	406,403	55,018	1,342	10,687	197,028
1914	619,030	20,252	286,863	37,686	723	7,845	114,859
1915	748,114	13,941	413,266	74,872	908	13,520	252,045
1916	949,444	25,940	469,162	55,059	1,578	13,213	224,772
1917	1,112,082	34,779	1,022,456	39,793	2,726	17,084	231,563
1918	897,537	44,697	1,068,434	48,599	59	17,307	243,383
1919	609,670	21,395	575,213	52,409	52	12,796	196,320

Table 47.—Annual Production of Steel Ingots and Castings in Short Tons from 1913 to 1921.

(From the Bureau Monthly and the Mines Branch Annual Reports)

Year.	Total ingots and castings.	Steel Ingots.				Steel Castings.			
		Open hearth.	Bessemer and other.	Electric.	Total Ingots.	Open hearth.	Converter.	Electric.	Total castings.
1913	1,168,993	824,818	301,932	.....	1,126,750	39,217	3,026	.....	42,243
1914	828,641	608,383	203,184	.....	811,567	15,315	1,698	61	17,074
1915	1,020,896	962,411	21,993	5,425	989,829	28,384	2,483	200	31,067
1916	1,428,249	1,377,387	2,377	17,939	1,397,703	23,496	5,350	1,700	30,546
1917	1,745,734	1,642,085	378	48,828	1,691,291	43,630	9,174	1,639	54,443
1918	1,873,708	1,684,317	239	115,615	1,800,171	62,017	8,005	3,515	73,537
1919	1,030,342	983,236	1,062	8,741	993,039	24,259	6,283	6,761	37,303
1920	1,232,697	1,153,376	404	13,493	1,167,273	38,769	11,847	14,808	65,424
1921	747,582	719,176	105	3,203	722,484	7,601	1,835	15,662	25,098

Table 48.—Production in Gross Tons of Finished Rolled Products from 1913 to 1920.*

Year.	Rolled Products.			Steel Rails.	Structural Shapes and Wire Rods.	Plates, Sheets, Nail Plates, Merchant Bars, Tie Plates and Bars.
	Iron.	Steel.	Total.			
1913	95,881	871,216	967,097	506,709	68,048	392,340
1914	47,309	612,210	659,519	382,344	59,050	218,125
1915	40,797	612,521	653,318	209,752	114,829	328,737
1916	76,478	887,332	963,810	81,497	174,490	707,823
1917	101,795	874,403	976,198	44,349	189,687	745,162
1918	96,296	905,012	1,001,308	145,309	141,978	714,021
1919	56,410	683,589	742,999	282,415	163,489	297,095
1920	67,800	864,106	931,906	227,967	246,582	457,357

*(From the Annual Report of the American Iron and Steel Institute).

Table 49.—Annual Production of Rolling Mills in Short Tons from 1913 to 1919.
(From the Annual Reports of the Mines Branch).

Year.	Steel Rails.	Wire Rods.	Bars and Plates.	Other Products.
1913	554,481	57,389	269,096	51,654
1914	428,226	63,856	143,754	42,070
1915	232,411	124,381	294,595	34,358
1916	90,123	179,226	619,500	152,668
1917	46,645	195,392	631,389	87,155
1918	162,747	154,789	451,430	395,644
1919	316,304	153,723	309,290	25,090

Table 50.—Imports of Iron and Steel Ingots, Blooms, Billets, etc.

—	1913	1915	1916*	1917*	1918*	1919	1920	1921
IRON AND STEEL BILLETS WEIGHING NOT LESS THAN 60 POUNDS PER LINEAL YARD								
Short tons	51,765	32,210	12,627	10,186	2,992	11,870	8,515	9,629
Value $	1,178,151	715,493	495,625	663,668	232,065	479,170	619,884	318,614
Per ton $	22·76	22·21	39·25	65·15	77·55	40·37	72·80	33·09
IRON OR STEEL INGOTS, COGGED INGOTS, BLOOMS, SLABS, PUDDLED BARS, AND LOOPS OR OTHER FORMS, N.O.P., LESS FINISHED THAN IRON OR STEEL BARS BUT MORE ADVANCED THAN PIG-IRON, EXCEPT CASTINGS								
Short tons	665	10,980	7,946	10,243	374	215	1,332	781
Value $	19,379	316,814	385,816	714,908	27,537	12,215	232,098	60,567
Per ton $	29·61	28·85	47·29	69·79	73·71	56·81	174·25	77·55
STEEL BILLETS, N.O.P.								
Short tons	453	10,928	303	348	43	50	148	33
Value	14,784	238,380	14,005	22,573	2,608	2,716	11,201	1,173
Per ton $	32·67	21·81	46·24	64·83	60·79	54·21	75·68	35·54
TOTAL INGOTS, BLOOMS, BILLETS, ETC.								
Short tons $	52,883	54,118	20,876	20,777	3,409	12,135	9,995	10,443
Value $	1,212,314	1,270,687	895,446	1,401,149	262,210	494,101	863,183	380,354

*Import record not complete.

Table 51.—Exports of Various Iron and Steel Products from the United States to Canada, 1913-1921.*

	Billets, Ingots and Blooms of Steel			Steel Rails for Railways			Sheets and Plates		
	Short Tons	Value	Value per ton	Short tons	Value	Value per ton	Short tons	Value	Value per ton
		$	$		$	$		$	$
1913	45,568	964,373	21·16	181,408	4,791,559	26·41	356,344	12,364,721	34·70
1914	16,044	311,267	19·40	25,949	685,468	26·42	207,203	6,855,494	33·09
1915	65,504	1,528,155	23·33	8,521	230,037	27·07	223,715	7,781,270	34·78
1916	117,891	6,657,538	56·43	46,011	1,586,639	34·48	255,935	14,712,640	57·49
1917	168,597	11,962,280	70·95	54,088	1,815,768	33·57	256,948	25,451,608	99·05
1918	277,012	19,787,779	71·43	74,545	3,163,301	42·43	275,444	24,281,654	88·15
1919	11,452	536,665	46·86	28,650	1,064,417	37·25	287,066	19,966,335	69·52
1920	9,495	645,407	67·97	17,537	835,287	47·63	331,115	26,905,551	81·25
1921	8,079	264,386	32·73	25,796	1,057,752	41·00	180,428	11,950,255	66·28

*Compiled from United States Trade Report.

Table 52.—Composite Price of Finished Steel in Cents per Pound.

Month	1913	1918	1919	1920	1921
Monthly average.....Cents	1·663	3·542	3·115	3·675	2·532
January	1·771	3·549	3·371	3·158	3·057
February	1·766	3·549	3·371	3·486	2·918
March	1·786	3·549	3·282	3·743	2·764
April	1·79	3·549	3·031	3·842	2·737
May	1·727	3·549	3·021	3·804	2·764
June	1·687	3·549	3·021	3·756	2·643
July	1·667	3·549	3·021	3·885	2·455
August	1·624	3·549	3·021	3·967	2·341
September	1·591	3·549	3·004	3·956	2·248
October	1·559	3·55	3·052	3·81	2·218
November	1·505	3·549	3·084	3·566	2·129
December	1·463	3·461	3·11	3·114	2·107

Compiled from the "Iron Age" quotations on steel bars, beams, tank plates, plain wire, open-hearth rails, black pipe and black sheets. Quoted in cents per pound.

Employees, Salaries and Wages.—The average number employed during the year was 13,874, of whom 93·3 per cent were wage-earners and 6·7 per cent were salaried employees. The 174 officers, managers and superintendents were paid $829,529, or 3·6 per cent of the total salaries and wages, and 756 clerical employees were paid $1,266,556, or 5·6 per cent, and the 12,944 wage-earners were paid $20,728,447, or 90·8 per cent of the salary and wage fund.

The blast furnaces are normally in continuous operation. For some furnaces the day shift was 11 hours, and the night shift 13 hours, but in other cases equal shifts of 12 hours obtained. A slight variation from the general practice reduced the average shift from 12 hours to 11·5 and the weekly working time from 84 hours to 81·4. The normal yearly working time for plants producing chiefly pig-iron and ferro-alloys was 366 days. Including only those plants that were operated at some time during the year in computing the time worked, it was found that, on the average, each plant was operated 288 days on full time, 20 days on part time and was idle 58 days during the year.

With reference to Table 56 it will be observed that 189 wage-earners or 1·5 per cent received less than $10 per week, 1,344 or 10·35 per cent received $10 and less than $20 per week, 51,830 or 39·9 per cent were paid $20 and less than $30 per week and 6,264 wage-earners or 48·25 per cent were paid a weekly remuneration of $30 or over.

Table 53.—Number of Employees with Salaries and Wages Paid in the Blast Furnaces and Steel Mills, 1920.

	Number of employees			Salaries and wages
	Total	Male	Female	
		No.	No.	$
Maritime Provinces—				
Totals	3,221	3,198	23	5,099,286
Officers, superintendents and managers	37	37	.....	143,198
Clerks, stenographers and other salaried employees	95	76	19	143,323
Wage earners	3,089	3,085	4	4,812,765
Quebec—				
Totals	3,922	3,839	83	5,331,521
Officers, superintendents and managers	52	52	.....	232,577
Clerks, stenographers and other salaried employees	268	225	43	424,172
Wage earners	3,602	3,562	40	4,674,772
Ontario, Manitoba and British Columbia—				
Totals	6,731	6,657	74	12,393,723
Officers, superintendents and managers	85	84	1	453,752
Clerks, stenographers and other salaried employees	393	321	72	699,061
Wage earners	6,253	6,252	1	11,240,910
Pig-Iron and Ferro-Alloy Plants—Canada				
Totals	1,240	1,232	8	2,411,827
Officers, superintendents and managers	33	32	1	127,970
Clerks, stenographers and other salaried employees	42	35	7	69,157
Wage earners	1,165	1,165	.....	2,214,700
Steel Furnaces and Rolling Mills—Canada				
Totals	12,634	12,462	172	20,412,703
Officers, superintendents and managers	141	141	.....	701,557
Clerks, stenographers and other salaried employees	714	587	127	1,197,399
Wage earners	11,779	11,734	45	18,513,747
Canada—				
Totals	13,874	13,694	180	22,824,530
Officers, managers and superintendents	174	173	1	829,527
Clerks, stenographers and other salaried employees	756	622	134	1,266,556
Wage earners	12,944	12,899	45	20,728,447

Table 54.—Averages of Working Time in the Blast Furnaces and Steel Mills in the Year 1920.

	Number of Establishments	Working Time—Hours		Days in Operation		
		Per shift or per day	Per week	On full time	On part time	Idle
Blast furnaces and steel mills	50	10·1	60·5	269	5	41
Pig-iron and ferro-alloy production	9	11·5	81·4	288	20	58
Steel furnaces and rolling mills	41	9·8	55·9	265	2	37

Table 55.—Average Number of Wage-Earners Employed in the Blast Furnaces and Steel Mills.

	Total for Blast Furnaces and Steel Mills			Pig-iron and Ferro-alloy Production	Steel Furnaces and Rolling Mills	
	Total	Male	Female	Male	Male	Female
Monthly average	12,944	12,899	45	1,165	11,734	45
January	11,569	11,513	56	1,094	10,419	56
February	11,570	11,521	49	1,070	10,451	49
March	12,637	12,581	56	1,187	11,394	56
April	13,210	13,162	48	1,288	11,874	48
May	13,197	13,148	49	1,222	11,926	49
June	13,533	13,484	49	1,219	12,265	49
July	13,570	13,529	41	1,085	12,444	41
August	13,037	12,997	40	1,128	11,869	40
September	12,955	12,915	40	1,130	11,785	40
October	13,785	13,746	39	1,233	12,513	39
November	13,762	13,723	39	1,273	12,450	39
December	12,497	12,466	31	1,052	11,414	31

Table 56.—Number of Employees in Blast Furnaces and Steel Mills Group for Canada, 1920, Classified by Age and Sex and According to their Weekly Rates of Pay.

Weekly Wages	Total Wage earners	Over 16 Years		Under 16 years
		Male	Female	Male
	No.	No.	No.	No.
Blast Furnaces and Steel Mills Group— Totals	12,980	12,913	30	37
Under $5 per week	48	39	2	7
$5 and under $10 per week	141	114	14	13
$10 and under $15 per week	437	417	11	9
$15 and under $20 per week	907	898	2	7
$20 and under $24 per week	1,731	1,729	1	1
$24 and under $28 per week	2,541	2,541	.....	.....
$28 and under $30 per week	911	911	.....	.....
$30 per week and over	6,264	6,264	.....	.....
Pig-iron and ferro-alloy production— Totals	1,157	1,157	.....	.....
Under $5 per week	5	5	.....	.....
$5 and under $10 per week	18	18	.....	.....
$10 and under $15 per week	35	35	.....	.....
$15 and under $20 per week	26	26	.....	.....
$20 and under $24 per week	69	69	.....	.....
$24 and under $28 per week	57	57	.....	.....
$28 and under $30 per week	68	68	.....	.....
$30 per week and over	879	879	.....	.....
Steel furnaces and rolling mills— Total	11,823	11,756	30	37
Under $5 per week	43	34	2	7
$5 and under $10 per week	123	96	14	13
$10 and under $15 per week	402	382	11	9
$15 and under $20 per week	881	872	2	7
$20 and under $24 per week	1,662	1,660	1	1
$24 and under $28 per week	2,484	2,484	.....	.....
$28 and under $30 per week	843	843	.....	.....
$30 per week and over	5,385	5,385	.....	.....

Power and Fuel.—The amount of power employed and the quantity and value of the fuel consumed are shown in the following tables. In the blast furnaces 34,124 short tons of bituminous coal was used for power purposes. The total value of the fuel used in the steel furnaces and rolling mills was $8,234,918, of which bituminous coal constituted $4,910,669, or 59.6 per cent.

Table 57.—Power Employed in the Blast Furnaces and Steel Mills, 1920.

Class	Pig Iron and Ferro-Alloys Production			Steel Furnaces and Rolling Mills		
	No. of Units	Rated H.P.	Used H.P.	No. of Units	Rated H.P.	Used H.P.
Boilers	46	23,472	22,372	203	36,564	30,030
Steam engines	35	25,980	18,780	243	63,609	50,936
Water wheels	.....	.....	.....	8	1,050	600
Electric motors	154	7,197	3,323	2,137	79,344	53,322
Other power	4	3,100	2,920	4	3,900	2,300
Totals	193	36,187	25,023	2,392	147,903	107,158

Table 58.—Consumption of Fuel in Blast Furnaces in the Year 1920.

Kind of Fuel.	Total		Source			
			Canadian		Foreign	
	Quantity.	Cost.	Quantity.	Cost.	Quantity.	Cost.
	Short Tons.	$	Short Tons.	$	Short Tons.	$
Total	34,202	179,182	17,367	1,868	16,835	97,314
Bituminous coal, slack	17,367	81,868	17,367	81,868	.....	.....
Bituminous coal, lump	16,757	96,719	.....	.....	16,757	96,719
Anthracite coal	78	595	.....	.....	78	595

Table 59.—Consumption of Fuel in Steel Furnaces and Rolling Mills in the Year 1920.

Kind of Fuel	Unit of Measure	Total		Source			
				Canadian		Foreign	
		Quantity.	Cost.	Quantity.	Cost.	Quantity.	Cost.
			$		$		$
Total values	.....	.....	8,234,918	.....	4,105,433	.....	4,129,485
Bituminous coal, slack	Net Ton	150,598	674,682	134,422	569,052	16,176	105,630
" lump	"	462,505	3,009,382	163,403	704,061	299,102	2,305,321
" run of mine	"	199,787	1,226,605	161,276	874,697	38,511	351,908
Anthracite coal	"	12,663	108,850	.....	.....	12,663	108,850
Lignite	"	30	240	30	240	.....	.....
Coke	"	41,739	241,198	34,132	134,592	7,607	107,206
Gasoline	Gal.	93,126	10,324	93,126	10,324	.....	.....
Oil (fuel)	"	15,699,553	2,079,213	8,096,366	928,643	7,603,187	1,150,570
Wood	Cord	2,720	22,025	2,720	22,025	.....	.....
Gas	1,000 cu.ft.	5,526,449	518,981	5,526,449	518,981	.....	.....
Other fuel	.....	.....	342,818	.....	342,818	.....	.....

Financial Statistics.—The capital invested in the blast furnaces and steel mills group at the end of 1920 was $119,761,718, of which 66·25 per cent was fixed capital and 33·75 per cent comprised the working assets. The turnover found by taking the percentage of the value of the output to the working assets was 343·6 per cent. The operating ratio, or the percentage of the total expense to the gross production was 84·5 per cent.

Table 60.—Capital Invested in the Blast Furnaces and Steel Mills Group by Provinces, and by Classes of Industries, 1920.

Location and Industry	Total Capital Employed.	Capital Represented by			
		Lands, Buildings and Fixtures.	Machinery and Tools.	Materials on Hand, Stocks in Process.	Cash Accounts, and Bills Receivable.
Canada.	$	$	$	$	$
Total for blast furnaces and steel mills group	119,761,718	38,115,227	41,226,739	28,132,008	12,287,744
Pig iron and ferro alloy production	29,128,967	10,030,830	8,595,201	6,486,980	4,015,956
Steel furnaces and rolling mills	90,632,751	28,084,397	32,631,538	21,645,028	8,271,788
Maritime Provinces.					
Blast furnaces and steel mills	35,143,791	7,868,191	12,656,297	11,220,951	3,398,352
Quebec.					
Blast furnaces and steel mills	21,484,491	6,875,559	6,358,179	5,028,298	3,222,455
Ontario, Manitoba and British Columbia.					
Blast furnaces and steel mills	63,133,436	23,371,477	22,212,263	11,882,759	5,666,937
Pig iron and ferro alloy production	19,494,706	8,344,262	3,880,733	5,138,796	2,130,915
Steel furnaces and rolling mills	43,638,730	15,027,215	18,331,530	5,743,963	3,536,022

Table 61.—Miscellaneous Expenses Disbursed by Blast Furnaces and Steel Mills in the year 1920.

Kind.	Total for Blast Furnaces Steel Mills.	Pig Iron and Ferro-Alloy Production.	Steel Furnaces and Rolling Mills.
	$	$	$
Total	11,042,550	2,381,634	8,660,916
Rent of offices, works and machinery	17,926	4,156	13,770
Cost of purchased power	1,261,630	392,412	869,218
Insurance	411,955	55,279	356,676
Taxes—Excise	46,708	1,605	45,103
Taxes—Excise profits tax	761,718	362,972	398,746
Taxes—Provincial and municipal	188,619	22,285	166,334
Royalties, use of patents, etc	85,778	.....	85,778
Advertizing expenses	104,610	1,620	102,990
Travelling expenses	142,833	12,870	129,963
Repairs to buildings and machinery	3,921,885	927,640	2,994,245
All other sundry expenses (Fuel, materials, salaries and wages excepted.)	4,098,888	600,795	3,498,093

Table. 62.—Financial Summary of the Blast Furnaces and Steel Mills Group in the Year 1920.

Location of Plants	No. of Establishments.	Capital.	Salaries and Wages.	Cost of Fuel.	Cost of Materials.	Miscellaneous Expenses.	Total Expenditure.	Value of Products.
Canada.		$	$	$	$	$	$	$
Total for blast furnaces and steel mills group	50	119,761,718	22,824,530	8,414,100	75,023,488	11,042,550	117,304,668	138,882,823
Pig iron and ferro-alloy production	9	29,128,967	2,411,827	179,182	22,136,141	2,381,634	27,108,784	29,294,125
Steel furnaces and rolling mills	41	90,632,751	20,412,703	8,234,918	52,887,347	8,660,916	90,195,884	109,588,699
Maritime Provinces								
Blast furnaces and steel mills	7	35,143,791	5,099,286	2,211,207	23,200,245	1,858,024	32,368,762	43,307,693
Quebec.								
Blast furnaces and steel mills	17	21,484,491	5,331,521	1,336,202	6,873,050	1,692,216	15,232,989	20,298,939
Ontario, Manitoba and British Columbia.								
Blast furnaces and steel mills	26	63,133,436	12,393,723	4,866,691	44,950,193	7,492,310	69,702,917	75,276,190
Pig iron and ferro-alloy production	6	19,494,706	1,627,039	96,719	15,638,391	1,954,584	19,316,733	21,460,968
Steel furnaces and rolling mills	20	43,638,730	10,766,684	4,769,972	29,311,802	5,537,726	50,386,184	53,815,223

Provincial Distribution.—The total output of the group was valued at $138,882,823, of which 31·2 per cent was produced in the Maritime Provinces, 14·6 per cent in Quebec and 54·2 per cent in Ontario and the western provinces. Of the average number of wage-earners 3,089, or 23·9 per cent, were employed in the Maritime Provinces, 3,602, or 27·8 per cent, were employed in Quebec, and 6,253, or 48·3 per cent, were employed in Ontario and the western provinces. The capital investment in the Maritime Provinces was $35,143,791, or 29·3 per cent, of the total for the country. The investment in Quebec was $21,484,491 or 17·9 per cent, and the capital employed in the plants in Ontario and the western provinces was $631,334,360, or 52·7 per cent, of the total capital.

CHAPTER TWO

FOUNDRIES AND MACHINE SHOPS.

The group foundries and machine shops includes the establishments which, not being otherwise classified, are engaged in forging, casting and machining operations. The following table presents the scope of the group and the provincial distribution of the establishments:—

Table 63.—Provincial Distribution of Plants in the Foundry and Machine Shop Group.

Industry	N.S.	P.E.I.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Canada
Bolts, nuts, rivets and washers	1	.....	1	4	5	.....	.....	.....	.....	11
Iron pipe and fittings	.....	.....	.....	6	13	2	.....	.....	1	22
Chains	.....	.....	.....	.....	5	.....	.....	.....	.....	5
Drop and other forgings	.....	.....	.....	2	7	.....	.....	.....	.....	9
Miscellaneous iron castings	2	.....	1	3	41	2	.....	.....	5	54
Machine shops and foundries combined	19	3	8	52	107	3	4	9	19	224
Machine shops only	10	.....	6	40	88	8	18	16	30	216
Oxy-acetylene cutting and welding	2	.....	1	6	15	2	4	4	6	40
Total	34	3	17	113	281	17	26	29	61	581

The output for 1920 was valued at $76,766,903, of which $23,972,550, or 31·2 per cent, was the production of combined machine shops and foundries, and $21,997,839, or 28·7 per cent, was the output of the plants engaged in the manufacture of iron pipe and fittings.

The average employment was 16,345 wage-earners. The year opened with a pay-roll of 15,786 and increases were recorded until April when 16,803 were employed. A recession of 260 occurred in May, but increases were again reported for June and July, when the maximum employment of 16,839 was reached. Steady decreases then occurred until December, the year closing with a pay-roll of 15,007 wage-earners.

The securities issued by the incorporated companies in this group, as at December 1920, had a par value of $53,610,884, of which $26,158,152, or 48·8 per cent, was held in Canada, $21,347,905, or 39·8 per cent, was owned in the United States, $5,987,427, or 11·2 per cent, was held in Great Britain, and the remainder constituting $117,400, or 0·2 per cent, was owned in other countries.

An historical summary of the foundries and machine shops from 1870 to 1919 as published in census reports is given in Table 65. The principal statistics for 1920 on a somewhat different basis are presented in Table 66.

Table 64.—Character and Distribution of Ownership of Foundry and Machine Shop Group, 1920.

—	Establishments.	Manufacturing Concerns.	Partnership and Individual Owners.	Incorporated Companies.	Par Value of Securities Issued by Incorporated Companies.				
					Total.	Held by Residents of			
						Canada.	Great Britain.	United States.	Other Countries.
	No.	No.	No.	No.	$	$	$	$	$
Bolts, nuts, rivets and washers	11	9	2	7	1,211,300	1,173,900	10,800	25,700	900
Iron pipe and fittings	22	21	2	19	21,289,068	11,568,811	5,921,377	3,700,380	98,500
Chains	5	5	1	4	5,961,225	31,950	1,250	5,910,525	17,500
Drop and other forgings	9	7	.....	7	7,513,900	125,200	27,600	7,361,100	
Miscellaneous iron castings	54	54	23	31	5,590,219	2,678,419	.....	2,911,800	
Machine shops and foundries combined	224	223	123	100	10,834,627	9,761,577	19,900	1,052,650	500
Machine shops only	216	216	189	27	812,595	777,095	6,500	29,000	
Oxy-acetylene cutting and welding	40	40	35	5	397,950	41,200	.....	356,750	
Total for Canada	581	573	375	198	53,610,884	26,158,152	5,987,427	21,347,905	117,400

Table 65.—Summary of the Development of Foundry and Machine Shop Group from 1870 to 1919.*

Industry.	Year.	Establishments.	Average Number of Wage Earners.	Wages.	Capital.	Cost of Materials.	Value of Products.
		No.		$	$	$	$
Foundries and machine shops	1870	430	7,653	2,429,815	3,760,505	2,427,423	7,325,531
	1880	548	7,789	2,724,898	7,675,911	3,581,175	8,863,957
	1890	648	13,374	5,409,919	17,337,489	7,097,962	17,191,430
	1900	315	11,784	4,604,124	16,274,645	5,293,248	15,292,445
	1905	470	15,972	7,337,676	30,351,498	.....	24,013,094
	1910	514	24,367	12,185,187	53,068,046	18,302,465	45,611,416
	1915	536	19,985	10,093,232	68,914,734	14,387,898	36,736,288
	1917	629	21,535	18,692,821	69,915,032	23,623,101	66,945,483
	1918	667	23,586	24,509,092	84,122,446	27,788,059	82,493,897
	1919	731	21,680	23,414,073	100,606,542	26,301,761	81,710,215
Chains	1919	5	297	308,834	2,129,628	799,570	1,611,358
	1918	7	438	371,680	2,412,286	960,266	2,020,295
	1917	7	434	380,419	1,982,537	651,720	1,758,576
	1915	5	661	156,136	942,585	151,829	760,910

*The change in classification makes the above figures not exactly comparable with 1920 group totals.

Table 66.—Principal Statistics of the Foundry and Machine Shop Group in the year 1920.

Industry.	Establishments	Average Number of Wage-Earners.	Wages.	Capital.	Cost of Materials.	Value of Products.
	No.		$	$	$	$
Totals	581	16,345	21,197,293	68,346,628	32,603,268	76,766,903
Bolts, nuts, rivets and washers	11	1,223	1,292,532	5,051,607	3,039,173	7,401,206
Iron pipe and fittings	22	2,687	3,221,016	15,019,275	12,937,918	21,997,839
Chains	5	423	502,553	2,782,081	1,009,931	2,373,878
Drop and other forgings	9	793	1,110,581	5,417,213	1,992,378	4,810,124
Miscellaneous iron castings	54	3,580	5,153,095	9,083,634	3,951,629	11,955,131
Machine shops and foundries combined	224	6,523	8,440,787	26,668,402	8,625,382	23,972,550
Machine shops only	216	1,045	1,365,005	4,091,479	982,353	3,816,359
Oxy-acetlyene cutting and welding	40	71	111,724	232,937	64,504	439,816

Commodity Statistics.—The production of bolts, nuts and rivets in Canada in 1920 was 56,483 tons, worth $7,139,912. The imports were 1,539 tons, valued at $414,406, and the exports were 1,471 tons, worth $292,097. The quantity made available for use was 56,551 tons.

The visible supply of chains was worth $2,902,588, comprising 7,796 tons, worth $1,607,852, manufactured in Canada, and imports valued at $1,294,736.

The iron pipe and fittings output was 95,404 tons, worth $9,689,578, and the tubes and tubular goods were valued at $10,005,805. The imports of tubes, pipes and fittings were worth $6,489,815 and the exports of tubing and pipe were $2,667,763. The visible supply was worth approximately $23,571,435. According to the returns, 1,041,314 valves with a valuation of $2,418,045 were manufactured in Canada, and iron and steel valves worth $868,109 and brass valves worth $562,153 were imported. The exports of brass valves were valued at $328,141, resulting in a visible supply worth $3,520,166. The value of springs imported during the year was $622,305 and Canadian products added $598,426, making the total value of springs rendered available for use in Canada about $1,220,731.

The production of grey and malleable iron castings was 107,118 tons, worth $15,708,728, and the imports were valued at $916,993. The output of light steel castings was 1,574 tons, worth $481,921, and the imports were worth $224,145. The exports of iron and steel castings were valued at $927,720 The imports of iron castings n.o.p. other than malleable, were worth $1,169,120. The valuation of the output of forgings was $4,336,948 and the imports were 1,726 tons, valued at $418,490. The exports were valued at $1,316,407, resulting in a visible supply worth $3,439,031.

Horseshoes to the extent of 5,767 tons, valued at $779,215, were manufactured in Canada, and horse, mule and ox shoes worth $50,939 were imported. An output of 636 tons of horseshoe calks, worth $136,669, was also reported. The foundry patterns manufactured in Canada were worth $218,303 and the imports were $170,108.

Table 67.—Materials Used by the Foundry and Machine Shop Group in the Year 1920.

Commodities.	Quantity	Value	Value per Unit
	Tons	$	$
Iron—			
Pig and scrap	185,714	7,069,093	38
Bar and sheet	38,244	2,694,561	70
Malleable and wrought	890	114,150	128
Castings of all kinds	11,085	1,278,598	115
Tubing	38	10,177	267
Coupling iron	2,573	221,241	85
Steel—			
Sheet-plate and tool	8,270	1,187,879	143
Bars, billets and shapes	39,319	3,207,022	81
Castings, all kinds	1,392	227,237	163
Vanadium steel	7,340	807,500	110
Carbon steel	3,800	266,222	70
Blank shoes		29,250	
Skelp	93,808	5,629,389	60
Iron pipe and fittings		1,259,714	
Aluminum	394	22,725	57
Brass, sheet and bar	404	227,909	564
Brass castings	348	179,204	514
Bronze castings	102	58,481	573
Tin, pig, sheet, etc	22	27,295	1,240
Copper, pig, bar, etc	480	177,805	370
Nickel	81	58,000	716
Zinc	2,843	560,694	197
Wire	17,758	1,444,272	81
Castings	470	42,007	89
Other metals	3,010	342,575	113
Smithing coal	5,508	70,395	12
	M ft.		
Lumber	4,747	301,126	63
Moulding and other goods		222,143	
Bolts, nuts, rivets, screws and nails		467,584	
Saws, knives, etc., for machines		63,394	
Switches, plugs, anodes, wire		67,709	
Foundry facings		227,530	
Paints, oils and varnishes		182,033	
Leather and rubber		97,352	
	Tons		
Sulphuric acid	1,987	40,190	20
All other materials		3,720,812	
Total value		32,603,268	

Table 68.—Principal Items of Foundry and Machine Shop Products Manufactured in Canada in the Year 1920.

Commodity.	Unit of Measure	Total Canadian Production		Production in Foundry and Machine Shop Group.	
		Quantity	Value	Quantity	Value
			$		$
Cars, dump	No.	508	108,951	508	108,951
Castings, grey and malleable iron	Tons	107,118	15,708,728	75,422	13,313,894
Castings, steel	Tons	1,574	481,921	1,504	412,750
Castings, all other	Tons	2,011	287,214	1,207	135,539
Bolts, nuts, rivets and washers	Tons	56,483	7,139,912	38,035	7,139,912
Fire extinguishers and accessories	No.	24,344	336,910	4,312	55,652
Foundry supplies and facings			118,458		118,458
Foundry patterns			218,303		174,176
Forgings			4,336,948		4,126,648
Hydrants	No.	1,406	130,155	1,300	122,601
Plumbers' goods			2,348,122		1,816,684
Soil pipes and fittings	Tons	95,404	9,689,578	92,073	9,207,375
Valves	No.	1,041,314	2,418,045	84,918	287,347
Chains	Tons	7,796	1,607,852	7,745	1,597,005
Tubes and tubular goods			10,005,805		10,005,805
Springs			598,426		429,469
Horseshoes	Tons	5,767	779,215	259	38,845
Horseshoe calks	Tons	636	136,669	434	116,797

Table 69.—Principal Imports into Canada of Foundry and Machine Shop Products in the Calendar Years 1920 and 1921.

Commodity.	1920	1921
	$	$
Castings, iron, malleable, when imported by manufacturers of mowers, binders, harvesters, and reapers	446,545	139,218
Castings, malleable iron, n.o.p.	470,448	235,994
Castings, iron, n.o.p., not malleable	1,169,120	570,752
Castings, steel	224,145	256,729
Iron or steel pipe or tubing, plain or galvanized, rivetted, corrugated or otherwise specially manufactured, including lock-joint pipe, n.o.p.	252,537	146,916
Iron tubing, brass covered, not over 3 inches in diameter, and brass trimmings not polished, lacquered or otherwise manufactured, for the manufacture of iron or brass bedsteads	488,904	106,134
Rolled or drawn square tubing of iron or steel adapted for use in the manufacture of agricultural implements	2,838	5,677
Seamless steel or wrought iron boiler tubes, including flues and corrugated tubes for marine boilers	2,591,452	807,364
Seamless steel tubing valued at not less than 3½ cents per pound (quantity compiled)	480,517	100,424
Steel or iron tubes, rolled, not joined or welded, not more than 1¼ inches in diameter, n.o.p.	123,761	35,407
Wrought or seamless tubing, iron or steel, plain or galvanized, threaded and coupled or not, 4 inches or less in diameter, n.o.p.	460,903	344,698
Wrought or seamless tubing, iron or steel, plain or galvanized, threaded and coupled or not, over 4 inches but not over 10 inches in diameter, n.o.p.	642,279	217,651
Wrought or seamless iron or steel tubing, plain or galvanized, threaded and coupled or not, over 10 inches in diameter, n.o.p.	256,188	121,743
Screws, nuts, rivets and bolts	614,309	305,291
Axles and axle parts	3,190,403	1,474,450
Fittings of iron and steel	1,082,655	683,954
Forgings of iron and steel	418,490	140,005
Gas buoys (articles for manufacture of)	7,186	26,683
Chains	1,294,736	684,370
Nuts, rivets and bolts	414,406	205,008
Cast iron pipe	107,781	276,070
Fittings, iron or steel, for iron or steel pipe of every description	1,082,655	683,954
Horse, mule, and ox shoes	50,939	66,925
Springs	622,305	263,668
Patterns of brass, iron or steel or other metal, not being models	170,108	91,304
Valves, iron and steel	868,109	609,219
Brass valves	562,153	186,036

Table 70.—Exports from Canada of the Principal Foundry and Machine Shop Products in the Calendar Years, 1920-1921.

	Canadian Products		Foreign Products Re-exported.	
	1920	1921	1920	1921
	$	$	$	$
Castings, n.o.p.	895,650	289,968	32,070	23,278
Forgings	1,108,980	43,061	207,427	1,721
Bolts and nuts	265,970	164,381	26,127	2,483
Brass valves	325,974	156,804	2,167	4,797
Tubing and pipe	2,614,154	2,019,860	53,609	22,331

Employment.—The average number of employees was 18,281, of whom 1,936, or 10·6 per cent, were on salary and 16,345, or 89·4 per cent, were wage-earners. More than 95 per cent of those on the pay-roll were males and 4·8 per cent were females. Of the 875 females engaged 370 were office employees and 490 were wage-earners about the plant. The total amount paid in salaries and wages was $24,941,887, of which 8·1 per cent was paid to 686 officers, managers and superintendents, 6·9 per cent was paid to 1,250 clerical workers and 85 per cent was paid to the 16,345 wage-earners.

The weekly wage-rates paid throughout the group are presented in Table 75. The average employment on December 15 or nearest representative date was 16,647. Of this number 5·4 per cent were paid less than $10 per week,

19 per cent were paid from $10 to $20, and 41·1 per cent were paid from $20 to $30, and 34·5 per cent received a weekly remuneration of $30 per week and over. In a year of 304 working days, each establishment, on the average, worked full time 270 days, worked part time 16 days and was idle 18 days. The average day was 8·8 hours and an average of 51·2 hours was worked per week.

Table 71.—Number of Employees with Salaries and Wages Paid in the Foundry and Machine Shop Group by Industries in 1920.

	Number of employees.			Salaries and wages.
	Total	Males.	Females.	
		No.	No.	$
Foundry and Machine Shop Group:—				
Totals	18,281	17,406	875	24,941,887
Officers, managers and superintendents	686	671	15	2,019,018
Clerks, stenographers and other salaried employees	1,250	880	370	1,725,576
Wage-earners	16,345	15,855	490	21,197,293
Bolts, nuts, rivets and washers:—				
Totals	1,330	1,143	187	1,486,957
Officers, managers and superintendents	29	29	.....	96,275
Clerks, stenographers and other salaried employees	78	55	23	98,150
Wage-earners	1,223	1,059	164	1,292,532
Iron pipe and fittings:—				
Totals	2,913	2,835	78	3,730,428
Officers, managers and superintendents	59	56	3	249,975
Clerks, stenographers and other salaried employees	167	153	14	259,437
Wage-earners	2,687	2,626	61	3,221,016
Chains:—				
Totals	527	439	88	676,595
Officers, managers and superintendents	12	12	.....	39,947
Clerks, stenographers and other salaried employees	92	62	30	134,095
Wage-earners	423	365	58	502,553
Drop and other forgings:—				
Totals	906	874	32	1,344,175
Officers, managers and superintendents	21	21	.....	112,307
Clerks, stenographers and other salaried employees	92	66	26	121,287
Wage-earners	793	787	6	1,110,581
Miscellaneous iron castings:—				
Totals	3,843	3,624	219	5,745,895
Officers, managers and superintendents	105	105	.....	360,955
Clerks, stenographers and other salaried employees	158	89	69	231,845
Wage-earners	3,580	3,430	150	5,153,095
Machine shops and foundries combined:—				
Totals	7,425	7,192	233	10,117,677
Officers, managers and superintendents	321	313	8	893,526
Clerks, stenographers and other salaried employees	581	400	181	783,364
Wage-earners	6,523	6,479	44	8,440,787
Machine Shops only:—				
Totals	1,233	1,197	36	1,673,570
Officers, managers and superintendents	116	112	4	225,362
Clerks, stenographers and other salaried employees	72	47	25	83,203
Wage-earners	1,045	1,038	7	1,365,005
Oxy-acetylene cutting and welding:—				
Totals	104	102	2	166,590
Officers, managers and superintendents	23	23	.....	40,671
Clerks, stenographers and other salaried employees	10	8	2	14,195
Wage-earners	71	71	.....	111,724

Table 72.—Number of Employees, Salaries and Wages in the Foundry and Machine Shop Group by Provinces, 1920.

Distribution.	Salaried Employees.		Wage Earners.	
	Number.	Salaries.	Number.	Wages.
		$		$
CANADA	1,936	3,744,594	16,345	21,197,293
Nova Scotia	124	225,695	1,158	1,357,130
New Brunswick	51	98,114	412	487,060
Prince Edward Island	14	21,800	69	77,334
Quebec	537	1,014,841	4,134	4,684,227
Ontario	999	1,950,514	9,365	12,783,340
Manitoba	58	132,845	340	508,290
Saskatchewan	26	39,154	90	124,072
Alberta	35	67,264	248	364,853
British Columbia	92	194,367	529	810,987

Table 73.—Average Number of Wage-Earners Employed in the Foundry and Machine Shop Group by Industries and by Months in 1920.

—	Totals for the Foundry and Machine Shop Group.			Industry.					
				Bolts, Nuts, Rivets and Washers.		Iron Pipe and and Fittings.		Chains.	
	Totals.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Monthly average	16,345	15,855	490	1,059	164	2,626	61	365	58
January	15,786	15,327	459	1,038	150	2,458	60	411	63
February	15,974	15,504	470	1,043	157	2,392	60	415	60
March	16,736	16,260	476	1,069	161	2,554	58	391	56
April	16,803	16,306	497	1,057	172	2,590	61	312	54
May	16,543	16,063	480	1,053	169	2,593	60	326	45
June	16,714	16,219	495	1,064	159	2,714	62	310	53
July	16,838	16,351	487	1,087	167	2,543	58	332	51
August	16,726	16,223	503	1,050	171	2,696	64	326	57
September	16,636	16,121	515	1,027	169	2,747	63	309	60
October	16,313	15,791	522	1,094	173	2,764	65	414	65
November	16,063	15,569	494	1,101	159	2,778	65	397	69
December	15,007	14,526	481	1,029	158	2,685	64	383	59

—	Industry.									
	Drop and other Forgings.		Miscellaneous Iron Castings.		Machine Shops and Foundries Combined.		Machine Shops Only.		Oxy-Acetylene Cutting and Welding.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Monthly average	787	7	3,430	150	6,479	43	1,038	7	71	.....
January	825	6	3,228	132	6,310	40	992	7	65	1
February	831	6	3,273	138	6,472	41	1,018	7	60	1
March	893	7	3,567	146	6,676	40	1,047	7	63	1
April	935	7	3,555	155	6,742	40	1,044	7	71	1
May	820	7	3,028	150	6,505	43	1,069	6	69	.....
June	897	7	3,737	166	6,364	42	1,060	6	73	.....
July	900	7	3,721	154	6,597	44	1,088	6	83	.....
August	875	7	3,526	153	6,571	45	1,103	6	76	.....
September	821	7	3,492	159	6,542	50	1,047	7	76	.....
October	623	7	3,311	162	6,501	47	1,011	7	73	.....
November	549	7	3,245	140	6,415	47	1,013	7	71	.....
December	470	7	2,879	138	6,046	48	960	7	74	.....

Table 74.—Averages of Working Time in the Foundry and Machine Shop Group.

Class of Industry.	Number of Establishments.	Average Working Time.				
		Hours.		Days in Operation.		
		Per shift or per day	Per week.	On full time.	On part time.	Idle.
Bolts, nuts, rivets and washers	11	9	51·4	272	17	15
Iron pipe and fittings	22	9·2	52·6	262	9·9	32
Chains	5	9	54	252	32·8	19
Drop and other forgings	9	9·6	53·8	269·2	26·5	8·3
Miscellaneous iron castings	54	8·8	50·7	272	8·4	23·6
Machine shops and foundries combined	224	9·9	51·9	276·4	12·5	15·1
Machine shops only	216	8·6	50·8	264·4	21·3	18·3
Oxy-acetylene welding and cutting	40	8·4	48·4	271	12·7	20·2
Total for Foundry and machine shop group.	581	8·8	51·2	270	16	18

Table 75.—Number of Wage Earners in the Foundry and Machine Shop Group for 1920, by Age and by Sex, Classified According to their Weekly Rates of Pay.

Weekly Wage Rates	Totals	Number of Employees			
		Over 16 Years of Age		Under 16 Years of Age	
		Male	Female	Male	Female
Under $5 per week	85	68	8	7	2
$ 5 but under $ 6	111	94	6	8	3
$ 6 but under $ 7	178	157	9	12	.....
$ 7 but under $ 8	129	95	26	8	.....
$ 8 but under $ 9	240	189	33	18	.....
$ 9 but under $10	159	114	29	15	1
$10 but under $11	201	144	45	12	.....
$11 but under $12	198	129	68	1	.....
$12 but under $13	291	228	48	15	.....
$13 but under $14	265	225	36	4	.....
$14 but under $15	225	195	28	2	.....
$15 but under $16	330	287	39	4	.....
$16 but under $18	617	583	30	4	.....
$18 but under $20	1,035	1,010	23	2	.....
$20 but under $22	1,137	1,121	14	1	1
$22 but under $24	1,229	1,219	9	1	.....
$24 but under $26	1,558	1,553	4	1	.....
$26 but under $28	1,732	1,730	2	.....	.....
$28 but under $30	1,181	1,179	2	.....	.....
$30 and over	5,746	5,715	31	.....	.....
Total	16,647	16,035	490	115	7

Power and Fuel.—The several items under which a record of the power equipment installed was obtained are shown in the following table. The 158,681 tons of bituminous coal were valued at $1,475,615, or 49.7 per cent of the total expenditure for fuel. The 66,418 tons of coke was next in order of value comprising $748,325, or 25.2 per cent of the total fuel cost.

Table 76.—Power Employed in the Foundry and Machine Shop Group in the year 1920.

Class	Bolts, Nuts, Rivets and Washers			Iron Pipe and Fittings			Chains		
	No. of Units	Rated H.P.	Used H.P.	No. of Units	Rated H.P.	Used H.P.	No. of Units	Rated H.P.	Used H.P.
Boilers	5	250	130	17	1,182	1,080	1	40	15
Steam engines	4	385	330	1	155	75	.....	.....	.....
Internal combustion	.....	.....	.....	1	10	10	.....	.....	.....
Water wheels	4	319	219	1	7	7	.....	.....	.....
Electric motors	77	1,495	811	846	6,419	4,568	47	676	433
Other power	15	470	350	.....	.....	.....	62	800	610
	Drop and Other Forgings			Miscellaneous Iron Castings			Machine Shops and Foundries Combined		
	No. of Units	Rated H.P.	Used H.P.	No. of Units	Rated H.P.	Used H.P.	No. of Units	Rated H.P.	Used H.P.
Boilers	11	1,635	905	13	1,590	1,285	66	5,112	3,482
Steam engines	1	300	300	6	795	520	34	1,872	1,658
Internal combustion	.....	.....	.....	2	34	26	34	632	540
Water wheels	5	845	335	2	68	40	7	338	303
Water motors	.....	.....	.....	.....	.....	.....	2	18	12
Electric motors	169	2,451	1,969	242	4,676	3,678	857	16,421	10,449
Other power	6	195	170	2	15	14	6	473	337
	Machine Repair Shops			Oxy-acetylene Cutting and Welding			Foundries and Machine Shops		
	No. of Units	Rated H.P.	Used H.P.	No. of Units	Rated H.P.	Used H.P.	No. of Units	Rated H.P.	Used H.P.
Boilers	12	515	240	1	45	20	126	10,369	7,157
Steam engines	6	200	105	1	30	20	53	3,737	3,008
Internal combustion	49	271	232	13	135	135	99	1,082	943
Water wheels	1	20	15	.....	.....	.....	20	1,597	919
Water motors	.....	.....	.....	.....	.....	.....	2	18	12
Electric motors	222	1,933	1,558	31	272	258	2,491	34,343	23,724
Other power	3	57	55	1	10	2	95	2,020	1,538

Table 77.—Fuel Consumed in the Foundry and Machine Shop Group in the Year 1920.

Classification.	Total cost.	Coal.			Coke.
		Bituminous.	Anthracite.	Lignite.	
		Short tons.	Short tons.	Short tons.	Short tons.
Foundry and Machine Shop Group	.....	158,681	13,044	868	66,418
Value	$ 2,967,121	1,475,665	144,223	10,178	748,325
Bolts, nuts, rivets and washers	.....	9,961	4,490	.....	1,111
Value	$ 209,950	89,903	43,848	.....	15,275
Iron pipe and fittings	.....	40,231	3,449	40	16,219
Value	$ 791,545	396,830	29,867	440	282,044
Chains	.....	1,175	73	.....	180
Value	$ 45,772	11,724	777	.....	964
Drop and other forgings	.....	20,988	470	.....	100
Value	$ 313,035	113,982	5,551	.....	1,000
Miscellaneous iron castings	.....	51,929	856	296	10,379
Value	$ 721,364	468,241	12,517	3,811	170,886
Machine shops and foundries combined	.....	32,326	3,057	286	37,269
Value	$ 770,896	372,809	42,280	3,166	256,990
Machine shops only	.....	1,836	602	231	1,155
Value	$ 74,928	19,553	8,608	2,582	21,106
Oxy-acetylene cutting and welding	.....	235	47	15	5
Value	$ 39,631	2,623	775	179	60

Table 77.—Fuel Consumed in the Foundry and Machine Shop Group in the year 1920. Concluded.

Classification.	Gasoline.	Fuel Oil.	Wood.	Gas.	Other Fuel.
	Gallons.	Gallons.	Cords.	M cu. ft.	
Foundry and Machine Shop Group	451,715	2,697,770	15,129	86,313	.....
Value $	98,971	350,185	57,352	42,095	40,127
Bolts, nuts, rivets and washers	.....	402,873	100	.....	.....
Value $	.....	60,016	908	.....	.....
Iron pipe and fittings	5,965	285,196	3,160	463	.....
Value $	2,341	49,344	22,549	463	7,667
Chains	780	263,312	75	1,027	.....
Value $	330	30,471	300	666	540
Drop and other forgings	362,854	1,112,874	7,343	.....	.....
Value $	62,353	126,225	3,243	.....	681
Miscellaneous iron castings	10,221	341,283	813	4,120	.....
Value $	4,082	50,450	6,781	3,108	1,488
Machine shops and foundries combined	44,520	281,540	2,828	22,408	.....
Value $	17,483	30,481	19,515	20,303	7,869
Machine shops only	20,481	9,288	795	2,823	.....
Value $	9,489	2,669	3,957	1,530	5,434
Oxy-acetylene cutting and welding	6,894	1,404	15	55,472	.....
Value $	2,893	529	99	16,025	16,448

Financial Statistics.—The capital invested in the foundries and machine shops in 1920 was $68,346,628. The fixed capital was $38,735,093, or 56·7 per cent, and the working assets were $29,611,535, or 43·3 per cent of the total capital. The operating ratio obtained by computing the percentage of the total expenditure, reported as $68,823,090, to the gross output was 89·7 per cent. The turnover defined as the percentage of the gross output to the working assets was 259·2 per cent.

Table 78.—Capital Invested in the Foundry and Machine Shop Group in the Year 1920.

—	Total Capital Employed.	Capital represented by			
		Lands, Buildings and Fixtures.	Machinery and Tools.	Materials on Hand, Stocks in Process.	Cash Accounts and Bills Receivable.
	$	$	$	$	$
Foundry and Machine Shop Group Total	68,346,628	18,312,350	20,422,743	17,015,919	12,595,616
Bolts, nuts, rivets and washers	5,051,607	1,240,848	2,079,944	1,234,126	496,689
Iron pipe and fittings	15,019,275	3,894,747	5,458,275	3,652,421	2,013,832
Chains	2,782,085	444,912	730,340	898,691	708,138
Drop and other forgings	5,417,213	864,359	2,114,719	1,847,297	590,838
Miscellaneous iron castings	9,083,634	2,791,964	2,203,774	2,557,136	1,530,760
Machine shops and foundries combined	26,668,402	7,943,756	6,459,166	6,254,811	6,010,669
Machine shops only	4,091,479	1,104,036	1,269,556	548,752	1,169,135
Oxy-acetylene cutting and welding	232,937	27,728	106,969	22,685	75,555

Table 79.—Miscellaneous Expenses Disbursed by the Foundry and Machine Shop Group in the Year 1920.

	Total for Foundry and Machine Shop Group.	Industry.		
		Bolts, Nuts, Rivets and Washers.	Iron Pipe and Fittings.	Chains.
	$	$	$	$
Total	8,310,814	425,888	2,106,862	388,926
Rent of offices, works and machinery	246,899	2,103	6,180	4,366
Cost of purchased power	458,734	34,598	91,763	8,973
Insurance	453,845	32,830	62,068	10,019
Taxes:				
Excise	166,363	1,760	52,313	30,364
Excess profits tax	465,187	22,847	176,539	57,582
Provincial and municipal	3,342,311	13,600	81,845	5,856
Royalties, use of patents, etc	39,235	.....	4,685	.....
Advertising expenses	251,018	35,708	32,754	38,649
Travelling expenses	282,343	6,363	39,037	30,482
Repairs to buildings and machinery	1,599,037	172,958	506,031	57,791
All other sundry expenses (exclusive of fuel, materials, salaries and wages)	4,005,842	103,121	1,053,647	144,844

	Industry				
	Drop and other Forgings.	Miscellaneous Iron Castings.	Machine Shops and Foundries Combined.	Machine Shops only.	Oxy-Acetylene Cutting and Welding.
	$	$	$	$	$
Total	892,330	1,308,976	2,651,514	429,551	106,767
Rent of offices, works and machinery	480	26,283	134,981	56,555	15,951
Cost of purchased power	46,930	61,255	174,116	37,320	3,779
Insurance	28,754	70,385	214,404	31,876	3,509
Taxes:					
Excise	715	21,682	54,650	3,423	1,456
Excess profits tax	99,544	22,655	77,155	8,820	45
Provincial and municipal	9,633	45,443	145,422	38,399	2,113
Royalties, use of patents, etc	.....	9,615	24,327	608	.....
Advertising expenses	7,050	11,136	96,936	20,009	8,176
Travelling expenses	30,686	19,008	126,426	23,884	6,457
Repairs to buildings and machinery	175,874	307,544	308,662	60,469	9,708
All other sundry expenses (exclusive of fuel, materials, salaries and wages)	492,064	713,970	1,294,435	148,188	55,573

Table 80.—Financial Summary of the Foundry and Machine Shop Group by Industries and by Provinces for 1920.

	Total Capital Employed.	Salaries and Wages.	Cost of Fuel.	Cost of Material.	Miscellaneous Expenses.	Total Expenditure.	Value of Products.
Canada.	$	$	$	$	$	$	$
Total	68,346,128	24,941,887	2,967,121	32,603,268	8,310,814	68,823,090	76,766,903
Bolts, nuts, rivets and washers	5,051,607	1,486,957	209,050	3,039,173	425,888	5,161,968	7,401,206
Iron pipe and fittings	15,049,275	3,730,428	791,545	12,937,918	2,106,862	19,566,753	21,997,839
Chains	2,782,081	676,595	45,772	1,009,931	388,926	2,121,224	2,373,878
Drop and other forgings	5,417,213	1,344,175	313,035	1,992,378	892,330	4,541,918	4,810,124
Miscellaneous iron castings	9,083,634	5,745,895	721,364	3,951,629	1,308,976	11,727,864	11,955,131
Machine shops and foundries combined	26,668,402	10,117,677	770,896	8,625,382	2,651,514	22,165,469	23,972,550
Machine shops only	4,091,479	1,673,570	74,928	982,353	429,551	3,160,402	3,816,359
Oxy-acetylene cutting and welding	232,937	166,590	39,631	64,504	106,767	377,492	439,816

Table 80.—Financial Summary of the Foundry and Machine Shop Group by Industries and by Province for 1920—Continued.

	Total Capital Employed.	Salaries and Wages.	Cost of Fuel.	Cost of Material.	Miscellaneous Expenses.	Total Expenditure.	Value of Products.
	$	$	$	$	$	$	$
Nova Scotia.							
Total	4,183,141	1,582,825	113,184	1,183,208	347,685	3,226,902	3,353,604
Machine shops and foundries combined	3,241,172	1,333,906	94,438	1,003,132	297,794	2,729,270	2,777,470
Machine shops only	298,218	118,763	5,273	68,972	26,691	219,699	237,058
Remaining establishments	643,751	130,156	13,473	111,104	23,200	277,933	339,076
Prince Edward Island.							
Total	308,241	99,134	10,345	83,892	26,108	219,479	222,062
Machine shops and foundries combined	308,241	99,134	10,345	83,892	26,108	219,479	222,062
New Brunswick.							
Total	1,199,912	585,174	56,533	538,689	163,824	1,344,220	1,539,242
Machine shops and foundries combined	882,202	402,300	40,900	428,048	121,389	992,637	1,087,453
Machine shops only	159,715	116,511	5,833	31,854	15,729	169,927	265,945
Remaining establishments	157,995	66,363	9,800	78,787	26,706	181,656	185,844
Quebec.							
Total	20,086,417	5,699,068	670,783	8,775,450	1,963,082	17,108,383	19,538,581
Bolts, nuts, rivets and washers	1,559,354	441,572	72,450	929,758	90,461	1,534,241	2,560,395
Iron pipe and fittings	8,114,049	1,686,412	340,866	4,641,660	864,011	7,532,949	7,946,487
Machine shops and foundries combined	8,493,914	2,788,776	195,000	2,552,320	779,076	6,315,172	7,147,198
Machine shops only	1,247,008	530,939	24,678	433,063	142,207	1,130,927	1,245,910
Oxy-acetylene cutting and welding	44,824	47,565	12,683	15,924	25,721	101,893	103,028
Remaining establishments	627,178	203,804	25,106	202,725	61,566	493,201	535,563
Ontario.							
Total	37,193,937	14,733,854	1,977,285	20,276,794	5,169,740	42,157,673	46,839,442
Bolts, nuts, rivets and washers	2,898,911	943,247	127,338	1,986,062	312,528	3,369,175	4,526,275
Iron pipe and fittings	6,491,716	1,892,923	421,061	8,117,511	1,194,092	11,625,587	13,639,537
Chains	2,782,081	676,595	45,772	1,009,931	388,926	2,121,224	2,373,878
Drop and other forgings	5,146,661	1,308,701	311,653	1,931,839	863,978	4,416,171	4,688,045
Miscellaneous iron castings	8,228,989	5,290,923	665,018	3,550,080	1,232,233	10,738,254	10,892,796
Machine shops and foundries combined	10,618,356	4,198,947	376,437	3,523,527	1,049,076	9,147,987	9,778,551
Machine shops only	932,320	360,223	14,951	123,005	89,937	588,116	773,581
Oxy-acetylene cutting and welding	94,903	62,295	15,055	34,839	38,970	151,159	166,779
Manitoba.							
Total	1,964,964	641,135	57,530	670,275	195,146	1,564,086	1,628,907
Machine shops and foundries combined	1,384,174	378,213	26,344	424,024	117,324	945,905	982,001
Machine shops only	53,462	49,829	1,658	28,670	12,011	92,168	113,089
Remaining establishments	527,328	213,093	29,528	217,581	65,811	526,013	533,817

Table 80.—Financial Summary of the Foundry and Machine Shop Group by Industries and by Province for 1920—Concluded.

	Total Capital Employed.	Salaries and Wages.	Cost of Fuel.	Cost of Materials.	Miscellaneous Expenses.	Total Expenditure.	Value of Products.
	$	$	$	$	$	$	$
Saskatchewan.							
Total	597,446	163,226	13,530	103,410	75,064	355,230	454,806
Machine shops and foundries combined	260,908	91,334	6,045	70,792	27,961	196,132	231,620
Machine shops only	315,735	67,628	4,612	30,238	41,387	143,865	197,419
Oxy-acetylene cutting and welding	20,803	4,264	2,873	2,380	5,716	15,233	25,767
Alberta.							
Total	797,976	432,117	17,318	315,664	107,420	872,519	964,640
Machine shops and foundries combined	574,830	347,917	7,510	268,384	82,255	706,066	789,991
Machine shops only	209,546	78,392	7,087	43,587	18,922	147,988	148,266
Oxy-acetylene cutting and welding	13,600	5,808	2,721	3,693	6,243	18,465	26,383
British Columbia.							
Total	2,014,594	1,005,354	50,613	655,886	262,745	1,974,598	2,225,619
Machine shops and foundries combined	904,605	477,150	13,877	271,263	150,531	912,821	956,204
Machine shops only	875,385	351,285	10,836	222,964	82,627	667,712	835,091
Oxy-acetylene cutting and welding	15,921	9,919	3,727	2,501	5,774	21,921	28,179
Remaining establishments	218,683	167,000	22,173	159,158	23,813	372,144	406,145

Provincial Distribution.—The relative importance of the Foundry and Machine Shop Group in the several provinces is presented by means of percentages in the following table:—

Table 81.—Financial Summary of the Foundry and Machine Shop Group given by Percentages for Canada and the Provinces.

	Capital.	Salaries and Wages.	Cost of Fuel.	Cost of Materials.	Miscellaneous Expenses.	Total Expenditure.	Value of Products.
	%	%	%	%	%	%	%
Nova Scotia	6·1	6·3	3·8	3·6	4·2	4·7	4·4
Prince Edward Island	·4	·4	·4	·3	·3	·3	·3
New Brunswick	1·8	2·4	1·9	1·7	2·0	1·9	2·0
Quebec	29·4	22·8	22·6	26·9	23·6	24·9	25·5
Ontario	54·4	59·1	66·6	62·2	62·2	61·2	61·0
Manitoba	2·9	2·6	1·9	2·0	2·3	2·3	2·1
Saskatchewan	·9	·7	·5	·3	·9	·5	·6
Alberta	1·2	1·7	·6	1·0	1·3	1·3	1·2
British Columbia	2·9	4·0	1·7	2·0	3·2	2·9	2·9
Total	100	100	100	100	100	100	100

CHAPTER THREE

IRON AND STEEL FABRICATION

The group includes establishments engaged in the fabrication of iron and steel products such as metal furniture, safes, railway track equipment, architectural and structural iron and steel. Twenty-four plants were devoted to the manufacture of ornamental and architectural ironwork, and 19 were reported as engaged in the fabrication of structural iron and steel. The compilation does not include the returns of the bridge construction companies whose shop work may be considered as subsidiary to the structural operations.

The 55 plants produced goods to the value of $14,318,685, of which $8,030,218 was the value added by manufacture. The 19 establishments fabricating structural iron and steel had a production of $5,897,467. The average monthly pay-roll carried 2,511 wage-earners as compared with a minimum employment of 2,341 in December and a maximum of 2,627 in August.

The par value of the issued securities of the 35 incorporated companies was $5,826,075. The structural iron and steel companies had a capitalization of $2,424,800 or 41·6 per cent of the par value of the securities issued by the group.

Table 82.—Character and Distribution of Ownership of the Iron and Steel Fabrication Group in 1920.

Distribution.	All Plants	Metal Bedsteads	Ornamental and Architectural Iron	Railway Track Equipment	Safes and Steel Boxes	Structural Iron and Steel, n.e.s.
Establishments.....No.	55	6	24	3	3	19
Manufacturing concerns.....No.	55	6	24	3	3	19
Partnership and individual owners..No.	20	1	13	.....	.....	6
Incorporated companies.....No.	35	5	11	3	3	13
Issued securities at par value—	$	$	$	$	$	$
Held in Canada.....	4,337,475	411,900	746,700	1,085,275	678,700	1,414,900
Held in United States.....	1,488,600	.....	54,000	412,200	12,500	1,009,900
Total.....	5,826,075	411,900	800,700	1,497,475	691,200	2,424,800

Table 83.—Principal Statistics of the Iron and Steel Fabrication Group in the Year 1920.

Distribution	No. of Establishments	Average No. of Wage Earners	Wages	Capital Invested	Cost of Materials	Value of Products
			$	$	$	$
Quebec—						
Structural iron and steel, n.e.s..	5	188	219,612	1,222,540	526,292	1,028,924
Remaining plants.....	5	118	179,099	276,297	330,812	674,589
Total.....	10	306	398,711	1,498,837	857,104	1,703,513
Ontario—						
Ornamental and architectural iron.....	16	370	462,947	1,332,443	712,150	1,693,272
Structural iron and steel, n.e.s...	13	575	778,081	3,933,027	2,138,595	4,567,253
Remaining plants.....	10	1,017	1,050,042	4,122,516	1,996,510	4,988,660
Total.....	39	1,962	2,291,070	9,387,986	4,847,255	11,249,185
Manitoba—						
Total.....	3	180	276,053	783,761	327,174	890,378
British Columbia—						
Total.....	3	63	90,331	685,285	256,934	475,609

Table 83.—Principal Statistics of the Iron and Steel Fabrication Group in the Year 1920.—Concluded.

Distribution	No. of Establishments	Average No. of Wage Earners	Wages	Capital Invested	Cost of Materials	Value of Products
Canada—			$	$	$	$
Metal bedsteads	6	390	438,586	2,014,626	1,325,829	2,545,415
Ornamental and architectural iron	24	508	663,043	1,662,823	994,698	2,394,719
Railway track equipment	3	399	509,260	2,135,326	764,121	1,800,137
Safes and steel boxes	3	413	393,207	831,024	368,649	1,680,947
Structural iron and steel, n.e.s.	19	801	1,052,069	5,712,070	2,835,170	5,897,467
Total	55	2,511	3,056,165	12,355,869	6,288,467	14,318,685

Commodity Statistics.—The importation of safes and doors for safes and vaults was $215,208 and the production was $1,389,825. The apparent domestic consumption was about $1,605,033. The following table presents a fairly complete statement of the total production of several items, characteristic of the group:—

Table 84.—Production of Iron and Steel Fabricated Commodities in the Year 1920.

Commodity	Unit	Total Production in all Groups		Production in Fabrication Group.	
		Quantity.	Value.	Quantity.	Value.
			$		$
Barn and stable equipment			937,415		65,620
Ornamental iron work	Tons	5,936	1,679,751	5,162	1,512,281
Track equipment			1,001,218		880,237
Structural iron and steel	"	102,641	9,741,431	30,886	4,717,796

Table 85.—Materials Used in the Iron and Steel Fabrication Group.

Commodity	Unit	Quantity	Cost at Foundry or Works
			$
Iron (pig and scrap)	Tons	2,641	127,325
Iron (bar and sheet)	"	2,185	221,778
Iron (black and galvanized)	"	229	23,823
Iron (malleable and wrought)	"	122	18,466
Castings (all kinds)	"	1,137	162,736
Steel (sheet, plate and tool)	"	7,277	909,369
Steel (bars, billets or other shapes)	"	12,903	1,505,435
Castings, all kinds	"	2,152	177,870
Brass, sheet and bar	"	27	21,538
Bronze, castings	"	28	13,356
Copper, bar, sheet, and castings, pig, etc.	"	47	30,072
Wire	"	258	34,469
Lumber, all kinds	Ft.	547	51,094
Bolts, nuts, rivets, screws			141,212
Paints, oils, varnishes			59,175
Iron pipes and fittings			21,182
Other articles, n.s.			11,003
Angles, plates, bars, beams, etc.			329,923
Structural steel shapes, beams, channels, etc.	Tons	9,000	450,000
Blue annealed steel	"	137	13,700
Structural steel sections	"	105	11,550
Steel channels angles	"	125	16,250
Cabinet locks	No.	9,900	10,890
Iron and steel pipe	Tons	40	11,000
Grey iron castings	"	101	15,755
Iron and steel bars	"	369	38,730
Steel stampings	"	98	21,446
Miscellaneous			1,758,969
Total			14,318,685

Table 86.—Products of the Iron and Steel Fabrication Group in the Year 1920.

Commodity	Unit.	Quantity.	Value.
			$
Farm and stable equipment			65,620
Castings (grey and malleable iron)	Tons	554	73,664
Castings (brass and copper)	"	57	44,088
Castings (steel)	"	70	69,171
Castings (all other)	"	58	29,455
Hot air registers and grills	No.	56,644	136,435
Ornamental iron work	Tons	5,162	1,512,281
Plow parts			23,213
Amount received for custom and repair			266,130
Steel filing cases			80,475
Steel office furniture			21,152
Safes, vaults, doors of safety, deposit boxes			1,389,825
Steel grave vaults	No.	1,003	63,189
Brass beds	"	79,286	1,112,039
Enamel beds	"	4,125	49,000
Iron beds	"	50,866	263,762
Couches	"	65,636	402,794
Springs	"	21,540	52,475
Mattresses	"	60,100	519,870
Pulp and paper machinery			46,319
Saw and shingle mill machinery			16,324
Special machinery			47,316
Transmission machinery			110,028
Track equipment			880,237
All other tools			277,012
Structural iron and steel	Tons	30,886	4,717,796
Steel plate	"	522	92,018
Steel plate construction	"	2,351	423,209
Universal fuel saving boiler jackets			18,412
Circular saws	No.	400	40,499
Cross-cut saws	"	2,411	74,383
Hand saws	"	8,199	108,689
Wood saws	"	499	28,345
Wire work			64,177
Steel sash			269,370
Steel metal products, lockers and cabinets			184,500
Metal lockers, cabinets and steel shelving			11,172
Fire escapes			25,672
Fencing			173,917
Wire and wire goods			19,760
Fireplace fittings			71,429
Ornamemtal wire			26,000
Miscellaneous products			70,225

Employment.—On the average each of the 55 plants worked full time 269 days, worked part time 19 days, and was idle 16 days. The average day was 9 hours and the week consisted of an average of 50 hours. Three per cent of the wage-earners received less than $10 per week, 18·6 per cent were paid from $10 to $20 per week, 51 per cent received from $20 to $30 per week and 27·4 per cent received a weekly remuneration of $30 or over.

Table 87.—Number of employees, Salaries and Wages Paid by the Iron and Steel Fabrication Group, by Industries and by Provinces, 1920.

Classification	No. of Employees			Salaries and Wages
	Total	Male	Female	
	No.	No.	No.	$
(a) By Industries				
Metal bedsteads.—Totals	466	420	46	584,385
Officers, managers and superintendents	15	15		66,081
Clerical staff	61	39	22	79,718
Wage-earners	390	366	24	438,586
Ornamental and architectural iron. Totals	614	601	13	874,667
Officers, managers and superintendents	47	44	3	127,091
Clerical staff	59	50	9	84,533
Wage-earners	508	507	1	663,933
Railway track equipment.—Totals	463	429	34	626,933
Officers, managers and superintendents	14	14		48,853
Clerical staff	50	29	21	68,820
Wage-earners	399	386	13	509,260
Safes and steel boxes.—Totals	466	409	57	492,263
Officers, managers and superintendents	13	13		48,606
Clerical staff	40	31	9	50,390
Wage-earners	413	365	48	393,207
Structural iron and steel, n.e.s. Totals	1,038	1,002	36	1,522,846
Officers, managers and superintendents	69	69		247,389
Clerical staff	168	132	36	223,388
Wage-earners	801	801		1,052,069
(b) By Provinces				
Quebec.—Totals	367	358	9	514,988
Officers, managers and superintendents	21	20	1	68,897
Clerical staff	40	32	8	47,380
Wage-earners	306	306		398,711
Ontario.—Totals	2,392	2,226	166	3,124,950
Officers, managers and superintendents	123	121	2	420,997
Clerical staff	307	229	78	412,883
Wage-earners	1,962	1,876	86	2,291,070
Manitoba.—Totals	213	203	10	92,104
Officers, managers and superintendents	6	6		23,498
Clerical staff	27	17	10	41,001
Wage earners	180	180		276,053
British Columbia.—Totals	75	74	1	120,604
Officers, managers and superintendents	8	8		14,688
Clerical staff	4	3	1	5,585
Wage-earners	63	63		90,331
Canada				
Officers, managers and superintendents	158	155	3	538,080
Clerical staff	378	281	97	506,849
Wage-earners	2,511	2,425	86	3,056,165
Totals	3,047	2,861	186	4,101,094

Table 88.—Average Number of Days in Operation and of Hours Worked per Day and per Week in the Iron and Steel Fabrication Group, 1920.

Classification	Number of Establishments.	Average Working Time.		Average Days in Operation		
		Hours per day.	Hours per week.	On full time.	On part time.	Idle time.
All plants	55	9	50	269	19	16
Metal bedsteads	6	9	50	259	39	6
Ornamental and architectural iron	24	9	49	284	5	15
Railway track equipment	3	9	51	268	33	3
Safes and steel boxes	3	9	56	300	.....	4
Structural iron and steel, n.e.s.	19	9	51	250	29	25

Table 89.—Average Number of Wage-Earners Employed in the Iron and Steel Fabrication Group in the Year 1920.

Month	Totals for the Iron and Steel Fabrication Group			Industry			
				Metal Bedsteads		Ornamental and Architectural Iron	
	Total	Male	Female	Male	Female	Male	Female
	No.	No.	No.	No.	No.	No.	No.
Monthly average	2,511	2,425	86	366	24	507	
January	2,427	2,333	94	425	27	443	1
February	2,412	2,320	92	433	26	413	1
March	3,480	2,384	96	405	24	456	1
April	2,462	2,373	89	369	24	477	1
May	2,529	2,436	93	380	24	492	1
June	2,579	2,493	86	366	26	525	1
July	2,624	2,539	85	371	25	520	1
August	2,627	2,542	85	360	25	521	1
September	2,569	2,490	79	338	19	538	1
October	2,601	2,526	75	342	21	572	1
November	2,482	2,400	82	330	26	555	1
December	2,341	2,260	81	275	24	574	1

Month.	Industry					
	Railway Track Equipment		Safes and Steel boxes		Structural Iron and Steel, n.e.s.	
	Male	Female	Male	Female	Male	Female
	No.	No.	No.	No.	No.	
Monthly average	386	13	365	48	801	.....
January	378	14	368	52	719	.....
February	410	15	372	50	692	.....
March	426	14	368	57	729	.....
April	430	15	347	49	750	.....
May	411	20	361	48	792	.....
June	455	16	359	43	788	.....
July	407	17	349	42	892	.....
August	385	16	354	43	922	.....
September	355	13	364	46	805	.....
October	343	8	364	45	905	.....
November	327	6	376	49	812	.....
December	302	5	396	51	713	.....

Table 90.—Number of Wage-Earners in the Iron and Steel Fabrication Group, 1920, by Industries, Classified According to their Weekly Rates of Pay.

Classification.	Totals.	Weekly Wage Rates							
		Under $5 per week.	$5 but under $10.	$10 but under $15.	$15 but under $20.	$20 but under $24.	$24 but under $28.	$28 but under $30.	$30 and over.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Totals for all plants in the group	2,386	8	64	142	302	421	583	212	654
Over 16 years of age—									
Male	2,191	6	24	60	265	408	573	205	650
Female	86	2	36	39	4	3	2	.....	.....
Under 16 years of age—									
Male	96	.....	4	30	33	10	8	7	4
Female	13	.....	.....	13	.....	.....	.....	.....	.....
Metal bedsteads—									
Totals	299	3	19	24	72	66	61	17	37
Over 16 years of age—									
Male	273	2	5	14	72	66	60	17	37
Female	24	1	12	10	.....	.....	1	.....	.....
Under 16 years of age—									
Male	2	.....	2	.....	.....	.....	.....	.....	.....
Ornamental and architectural iron—									
Totals	583	4	14	21	33	77	151	77	206
Over 16 years of age—									
Male	580	3	12	21	33	77	151	77	206
Female	1	1	.....	.....	.....	.....	.....	.....	.....
Under 16 years of age—									
Male	2	.....	2	.....	.....	.....	.....	.....	.....
Railway track equipment—									
Totals	307	.....	.....	43	33	12	58	32	129
Over 16 years of age—									
Male	201	.....	.....	.....	.....	1	50	25	125
Female	1	.....	.....	.....	.....	1	.....	.....	.....
Under 16 years of age—									
Male	92	.....	.....	30	33	10	8	7	4
Female	13	.....	.....	13	.....	.....	.....	.....	.....
Safes and steel boxes—									
Totals	447	.....	25	38	59	127	118	29	51
Over 16 years of age—									
Male	396	.....	1	11	59	127	118	29	51
Female	51	.....	24	27	.....	.....	.....	.....	.....
Structural iron and steel, n.e.s.—									
Totals	750	1	6	16	105	139	195	57	231
Male	741	1	6	14	101	137	194	57	231
Female	9	.....	.....	2	4	2	1	.....	.....

Power and Fuel.—Electric motors furnished pratically all the power used by the group. The structural iron and steel industry expended the sum of $36,969 for fuel comprising 31·7 per cent of the entire fuel cost.

Table 91.—Power Equipment Used in the Iron and Steel Fabrication Group in 1920.

Industry		Boilers	Engines		Electrical Motors	Water Power
			Steam	Internal Combustion		
Metal Bedsteads	No. of Units	2	1	.....	32	.....
	H. P. Rating	80	20	.....	445	.....
	H. P. Used	60	10	.....	523	.....
Ornamental & Architectural Iron.	No. of Units	3	.....	3	60	10
	H. P. Rating	205	.....	16	548	115
	H. P. Used	65	.....	10	374	115
Railway Track Equipment.	No. of Units	2	1	.....	50	.....
	H. P. Rating	150	35	.....	908	.....
	H. P. Used	95	35	.....	853	.....
Safes and Steel Boxes	No. of Units	.....	.....	.....	12	.....
	H. P. Rating	.....	.....	.....	358	.....
	H. P. Used	.....	.....	.....	358	.....
Structural Iron and Steel, n.e.s.	No. of Units	.....	.....	.....	213	.....
	H. P. Rating	.....	.....	.....	2,705	.....
	H. P. Used	.....	.....	.....	1,686	.....
Total Iron and Steel Fabrication.	No. of Units	7	2	3	367	10
	H. P. Rating	435	55	16	4,964	115
	H. P. Used	220	45	10	3,794	115

Table 92.—Fuel Used in the Iron and Steel Fabrication Group in the Year 1920.

Classification.	Unit of Measure.	All Plants.		Metal Bedsteads.	
		Quantity.	Value.	Quantity.	Value.
Total Values	.....	.....	$ 116,562	.....	$ 21,485
Bituminous coal	Ton	5,763	54,950	1,563	14,153
Anthracite coal	"	541	7,344	.....	.....
Lignite	"	88	1,373	.....	.....
Coke	"	1,468	24,514	489	7,332
Gasoline	Gal.	11,179	4,617		
Oil (fuel)	"	172,772	19,800		
Wood	Cord	40	294		
Gas	M cu. ft.	2,515	952		
Other fuel	.....	.....	2,718		

Classification.	Unit of Measure.	Ornamental and Architectural Iron.		Railway Track Equipment.	
		Quantity.	Value.	Quantity.	Value.
Total Values	.....	.....	$ 24,698	.....	$ 23,992
Bituminous coal	Ton	1,067	11,635	1,119	8,483
Anthracite coal	"	143	2,222	93	935
Lignite	"	39	610		
Coke	"	333	5,786	425	7,644
Gasoline	Gal.	766	310	93	44
Oil (fuel)	"	16,517	1,811	100,795	6,886
Wood	Cord	38	284		
Gas	M cu. ft.	186	170		
Other fuel	.....	.....	1,870		

Table 92.—Fuel Used in the Iron and Steel Fabrication Group in the Year 1920.—Concluded.

Classification.	Unit of Measure.	Safes and Steel Boxes.		Structural Iron and Steel n.e.s.	
		Quantity.	Value.	Quantity.	Value.
			$		$
Total Values			9,418		36,969
Bituminous coal	Tons	630	8,818	1,384	12,073
Anthracite coal	"			305	4,187
Lignite	"			49	763
Coke	"	43	600	178	3,152
Gasoline	Gal.			10,320	4,263
Oil (fuel)	"			55,460	11,103
Wood	Cord			2	10
Gas	M cu. ft.			2,329	782
Other fuel					636

Financial Statistics.—The capital investment for the group was $12,355,869, of which 46·2 per cent was invested in the structural iron and steel plants and 17·3 was involved in the railway track equipment industry. The operating ratio, computed by taking the percentage of the total expenditure to the value of the products was 88·8 per cent.

Table 93.—Capital Invested in the Iron and Steel Fabrication Group in the Year 1920.

Classification.	Number of Establishments.	Total Capital Invested.	Capital represented by			
			Lands, Buildings and Fixtures.	Machinery and Tools.	Materials on Hand and Stocks in Process.	Cash Accounts and Bills Receivable.
		$	$	$	$	$
Canada—						
All plants	55	12,355,869	2,736,621	2,568,680	3,795,313	3,255,255
Metal bedsteads	6	2,014,626	466,505	299,698	876,646	371,777
Ornamental and architectural iron	24	1,662,823	379,813	273,043	434,587	575,380
Railway track equipment	3	2,135,326	392,346	709,273	486,153	547,554
Safes and steel boxes	3	831,024	254,771	255,384	264,476	56,393
Structural iron and steel, n.e.s	19	5,712,070	1,243,186	1,031,282	1,733,451	1,704,151
Quebec—						
All plants	10	1,498,837	307,928	271,546	351,416	567,947
Structural iron and steel, n.e.s	5	1,222,540	290,015	234,143	278,200	420,182
Remaining plants	5	276,297	17,913	37,403	73,216	147,775
Ontario—						
All plants	39	9,387,986	2,197,787	1,935,652	2,965,156	2,289,391
Ornamental and architectural iron	16	1,332,443	328,438	206,333	369,477	428,195
Structural iron and steel, n.e.s	13	3,933,027	898,090	701,197	1,156,881	1,176,859
Remaining plants	10	4,122,416	971,259	1,028,122	1,439,798	684,337
Manitoba—						
All plants	3	783,761	148,675	229,221	149,894	255,971
British Columbia—						
All plants	3	685,285	82,231	132,261	328,847	141,946

Table 94.—Miscellaneous Expenses Incurred by the Iron and Steel Fabrication Group During the Year 1920.

Classification.	All Plants.	Industry.				
		Metal Bedsteads.	Ornamental and Architectural Iron	Railway Track Equipment.	Safes and Steel Boxes.	Structural Iron and Steel, n.e.s.
	$	$	$	$	$	$
Total	2,216,846	563,156	314,580	233,422	80,078	1,025,610
Rent of offices, works and machinery	42,278	10,430	10,361	8,179	840	12,468
Rent of power	56,562	9,779	8,835	4,121	4,763	29,064
Insurance	66,634	6,434	15,890	9,095	5,762	29,453
Taxes: excise	23,422	6,808	2,779	.....	4,113	9,722
Excess profits	36,620	622	3,967	13,559	526	17,946
Provincial and municipal	65,100	8,903	16,332	9,046	6,304	24,515
Royalties, use of patents	7,201	2,480		2,337	.....	2,384
Advertising expenses	142,569	80,872	29,058	6,775	5,889	19,975
Travelling expenses	101,830	21,938	9,960	15,463	25,100	29,369
Repairs to buildings and machinery	217,052	35,912	15,865	62,595	12,732	89,948
All other sundry expenses, except fuel, materials, salaries and wages	1,457,578	378,978	201,533	102,252	14,049	760,766

Table 95.—Financial Summary of the Iron and Steel Fabrication Group for the Year 1920.

Classification.	No. of Establishments.	Capital Invested.	Salaries and Wages.	Cost of Fuel.	Cost of Materials.	Miscellaneous Expenses.	Total Expenditure.	Value of Products.
		$	$	$	$	$	$	$
Canada—								
All plants	55	12,355,869	4,101,094	116,562	6,288,467	2,216,846	12,722,969	14,318,685
Metal bedsteads	6	2,014,626	584,385	21,485	1,325,829	563,156	2,494,855	2,545,415
Ornamental and architectural iron	24	1,662,823	874,667	24,698	994,698	314,580	2,208,643	2,394,719
Railway track equipment	3	2,135,326	626,933	23,992	764,121	233,422	1,648,468	1,800,137
Safes and steel boxes	3	831,024	492,263	9,418	368,649	80,078	950,408	1,680,947
Structural iron and steel, n.e.s.	19	5,712,070	1,522,846	36,969	2,835,170	1,025,610	5,420,595	5,897,467
Quebec—								
All plants	10	1,498,837	514,988	16,150	857,104	202,204	1,590,446	1,703,513
Structural iron and steel, n.e.s.	5	1,222,540	290,539	12,357	526,292	104,724	933,912	1,028,904
Remaining plants	5	276,297	224,449	3,793	330,812	97,480	656,534	674,589
Ontario—								
All plants	39	9,387,986	3,124,950	88,176	4,847,255	1,825,651	9,886,032	11,249,185
Ornamental and architectural iron	16	1,332,443	611,343	19,903	712,150	209,510	1,552,906	1,693,272
Structural iron and steel, n.e.s.	13	3,933,027	1,159,916	23,348	2,138,595	894,759	4,216,618	4,567,253
Remaining plants	10	4,123,516	1,353,691	44,925	1,996,510	721,382	4,116,508	4,988,660
Manitoba—								
All plants	3	783,761	340,552	10,542	327,174	130,231	808,499	890,378
British Columbia—								
All plants	3	685,285	120,604	1,694	256,934	58,760	437,992	475,609

Provincial Distribution.—The province of Ontario is chiefly interested in the operations of the group, thirty-nine of the 55 establishments being located in the province. The investment was $9,387,986, as compared with a group capital of $12,355,869. The production in the province was also predominant, comprising 78·6 per cent of the entire output. The following table presents the distribution of plants among the four provinces:—

Table 96.—Distribution of Establishments in the Iron and Steel Fabrication Group, 1920.

Industry	Quebec.	Ontario.	Manitoba.	British Columbia.	Canada.
	No.	No.	No.	No.	No.
Metal bedsteads	1	5			6
Ornamental and architectural iron	4	16	2	2	24
Railway track equipment		2	1		3
Safes and steel boxes		3			3
Structural iron and steel, n.e.s.	5	13		1	19
Total	10	39	3	3	55

CHAPTER FOUR

BOILERS AND ENGINES

The group includes the establishments engaged in the manufacture of boilers, tanks and engines. The plants other than railway shops devoted to the manufacture of locomotives are also classified under this group. The returns of 54 establishments owned by the same number of firms are included in the compilation. Twenty-eight of these plants are engaged in the manufacture and repair of boilers and tanks and the remaining 26 comprise the engine and locomotive works.

The production during 1920 was valued at $22,614,951, of which the boiler and tank industry comtributed $5,265,913 or 23·3 per cent. The products of the engine and locomotive industry were valued at $17,349,038, or 76·7 per cent of the output for the group. The net production of the group, obtained by deducting the cost of materials from the value of the products, was $12,723,-119. The net output for the boiler and tank industry was $3,178,960, and $9,544,159 formed the net product of the engine and locomotive works.

The average employment was 4,660, of whom 4,075 were wage-earners and 585 were on salaries. The amount paid in salaries was $1,208,700, while the wage pay-roll was valued at $5,904,352. The maximum month of employment was July, when 4,637 wage-earners were engaged. February with a pay-roll of 3,425 was the minimum month and steady increases were recorded until July. During the remainder of the year the decline was continuous with the exception of December when the same number were employed as in November. The year closed with 3,735 on pay-rolls as compared with 4,075, the average for the year.

The issued securities at par value were reported as $9,395,315, of which 38 per cent was held in Canada, 52·73 per cent in the United States, 6·2 per cent in Great Britain and 3·1 per cent in other countries.

In view of the alteration in the basis of classification the data of 1920 are not comparable except in a general way with the statistics for 1919. The principal statistics for 1920 are given in Table 98, while the historical summary of the group from 1870 to 1919 is presented in Table 99.

Table 97.—Character and Distribution of Ownership of the Boiler and Engine Group in the Year 1920.

Classification.	Boilers and Engines.	Engines and Locomotives.	Total for all Plants.
Number of establishments	28	27	55
Total number of manufacturing concerns	28	27	55
Number of partnerships and individual owners	16	6	22
Number of incorporated companies	12	21	33
Stocks and bonds at par value issued by the incorporated companies: and held by residents of:			
Canada	1,573,120	1,992,445	3,565,565
Great Britain	.....	581,100	581,100
United States	299,600	4,655,350	4,954,950
Other Countries	.....	293,700	293,700
Total	$1,872,720	$7,522,595	$9,395,315

Table 98.—Principal Statistics of the Boiler and Engine Group in the Year 1920.

	Number of Establishments.	Average Number of Wage-Earners.	Wages.	Capital.	Cost of Materials.	Value of Products.
			$	$	$	$
Canada—						
All plants	55	4,075	5,904,352	32,662,552	9,891,832	22,614,951
Boilers and tanks	28	1,097	1,557,781	5,177,905	2,086,953	5,265,913
Engines and locomotives	27	2,978	4,346,571	27,484,647	7,804,879	17,349,038
Nova Scotia and Quebec—						
All plants	9	1,310	2,133,732	13,710,343	4,045,373	9,297,270
Boilers and tanks	3	53	64,633	128,172	84,894	188,535
Engines and locomotives	6	1,257	2,069,099	13,582,171	3,960,479	9,108,735
Ontario—						
All plants	32	2,499	3,350,162	17,906,423	5,306,259	11,872,689
Boilers and tanks	18	890	1,226,754	4,554,207	1,711,682	4,239,201
Engines and locomotives	14	1,609	2,123,408	13,352,216	3,594,577	7,633,488
Manitoba—						
All plants	4	72	89,239	397,447	125,118	328,007
British Columbia—						
All plants	10	194	331,219	648,339	415,082	1,116,985
Boilers and tanks	6	148	256,195	436,876	287,660	798,677
Engines and locomotives	4	46	75,024	211,463	127,422	318,308

Table 99.—Summary Showing the Development of the Boiler and Engine Group from 1870 to 1919.

Year.	Establishment Number.	Average Number of Wage-earners.	Wages.	Capital.	Cost of Materials.	Value of Products.
			$	$	$	$
1870	27	1,265	422,086	762,400	600,708	1,407,675
1880	39	1,391	482,812	1,123,000	816,400	1,662,253
1890	48	1,707	697,975	1,664,273	1,122,341	2,452,978
1900	59	3,713	1,565,309	5,552,862	1,783,915	4,626,214
1905	38	2,245	1,101,328	4,648,058	.....	3,473,899
1910	71	5,300	3,024,160	14,063,990	4,289,428	11,873,903
1915	51	474	542,486	16,106,315	3,050,194	8,546,488
1917	58	7,646	8,253,379	23,502,637	8,042,105	26,269,442
1918	66	7,051	7,743,433	28,891,924	12,662,788	29,470,457
1919	64	4,903	6,203,319	31,277,375	9,789,399	24,708,143

Commodity Statistics.—The cost of materials for all plants in the group was $9,891,832, of which $2,086,953 or 21·1 per cent was expended by the boiler and tank shops and $7,804,879 or 78·9 per cent was the cost to the engine and locomotive shops. The 14,774 tons of steel in varied forms, not otherwise specified, valued at $1,731,909 was the principal commodity used as a material. The 4,351 tons of iron and steel tubes worth $976,786 and the 8,606 tons of boiler plates valued at $860,195 were materials characteristic of the industry.

The number of locomotives built in Canada in 1920 was 219 valued at $12,147,077. A considerable portion of these were reported by the car and car repair shops. The imports numbered 70, worth $628,076, of which 60, worth $574,743, were railway locomotives and the remaining 10 were electric. Seventy-seven locomotives manufactured in Canada, worth $3,463,914, were exported during the year, and 44, worth $781,312, were re-exported, leaving 168 available for addition to the railway rolling stock of the country.

According to the returns received at the Bureau, boilers and engines to the value of $9,902,427 were manufactured in 1920. This amount is exclusive of the 219 locomotives mentioned above as well as the 59,025 engines manufactured by automobile plants for assembling into cars. Of this amount, $6,183,444 constituted the value of the production in the boiler and engine group and $3,718,983 comprised the value assigned to the output of other industrial groups.

The imports were valued at $11,542,553 and the exports, consisting chiefly of gasoline engines, were worth $265,487. The boilers and engines made available for power service were therefore worth nearly $22,000,000.

The occurrence of bulk items without sufficient description renders a further analysis rather inconclusive. The items include "engines" valued at $203,350 and "boilers and engines" worth $770,752 included in the returns of the boiler and engine group, and a valuation of $2,223,872 for "boilers and engines" listed in the returns for the other groups. With this qualification, an attempt is made to present data leading to a deduction as to the numbers of the new boilers and engines made available during the year for the generation of power.

Thirty-one automobile engines with a rating of 930 horse-power worth $77,500 were manufactured by the firms owning engine works. The automobile group manufactured 59,025 engines rated at 1,458,610 horse-power, and the imports were 30,526 engines valued at $7,627,386. The total number rendered available was about 89,582.

The internal combustion engines other than automobile, manufactured by the boiler and engine group were 11,952 in number, rated at 41,378 horse-power and valued at $1,804,688. The engines of this nature specifically described in the returns of the other groups numbered 2,490 valued at $533,605. The imports were 19,378 valued at $2,479,584, the exports were 1,569 worth $265,487, and the re-exports were 263 valued at $90,405. The exports may include automobile engines, as a distinct class was not provided for in the classification. The steam engines manufactured in the group were 130 rated at 22,073 horse-power and valued at $1,405,623. The number of steam engines of which particular mention is made in the returns of the other groups was 24 rated at 2,330 horse-power and valued at $54,883. The imports were 209 worth $593,854 and the exports were not given separately. The resultant number rendered available was 363 steam engines, but the engines included in the bulk items are doubtless of considerable importance.

The 572 boilers manufactured by the group were rated at 66,199 horse-power and valued at $1,901,425. The returns from the foundry and machine shop group differentiated 68 boilers rated at 6,808 horse-power and valued at $175,164. Three other groups reported boilers worth $817,422 without giving the number or rating. The imports of steam boilers were valued at $565,867 and other boilers at $275,862.

Table 100.—Materials Used in the Boiler and Engine Group in the Year 1920.

Commodity.	Unit of Measure.	Quantity.	Cost.
			$
Iron	Tons.	8,059	497,315
Structural steel	"	247	53,437
Steel, all other	"	15,145	1,731,909
Brass	"	104	63,201
Other metals	"	439	133,484
Castings:—			
Iron	"	6,059	848,619
Steel	"	5,877	1,182,631
Brass	"	506	274,933
Other castings	"	36	9,226
Boiler plates	"	8,606	860,195
Gas engines	Value only	.....	37,200
Engine packing material	"	.....	39,020
Asbestos and other lining and coverings	"	.....	68,160
Magnetos	No.	8,877	151,078
Generators	"	1,722	134,842
Other electrical equipment	"	.....	32,378
Iron and steel tubing	Tons.	4,351	976,786
Other metal tubing	"	33	14,378
Metal fittings, valves, etc	Value only.	.....	284,255
Bolts, nuts, rivets and screws	"	.....	203,742
Lumber	M. Ft. B.M.	1,354	101,185
Paints, oils and varnishes	Value only	.....	75,197
Equipment parts and accessories	"	.....	1,356,211
All other specified materials	.....	.....	49,974
All other materials	.....	.....	652,476
Total	.....	.....	9,891,832

Table 101.—Products of the Boiler and Engine Group in the Year 1920.

Kind.	No.	Total Horse-power.	Total Value.
			$
Boilers—			
(a) Upright, stationary	92	1,216	40,137
(b) Water tube horizontal	170	24,548	675,903
(c) Locomotive type	41	4,342	134,317
(d) Marine type	45	15,060	564,320
(e) Steam for heat radiating systems	141	14,490	342,754
(f) All other	83	6,543	143,994
Engines—			
Steam, single cylinder	111	4,813	314,495
Steam, compound	8	2,080	85,228
Steam, triple expansion	11	15,180	1,005,900
Steam turbine	11	88	7,800
Oil	8,033	25,832	1,275,673
Gasoline—			
(a) Automobile type	31	930	77,500
(b) Marine type	1,586	10,134	188,818
(c) Stationary type	2,322	5,324	332,397
Engines, n.o.p.	.....	.....	223,456
Boilers and engines, n.o.p.	.....	.....	770,752
All other power units	516	333,998	10,489,406

Table 101.—Products of the Boiler and Engine Group in the Year 1920.—Concluded.

Commodity	Unit of Measure	Quantity	Total Value.
			$
Tanks			98,670
Tanks and bridges			77,307
Galvanized range boilers and tanks			218,995
Motor fire apparatus			224,280
Safes, vaults, doors, deposit boxes, etc.			648,169
Pulp and paper mills			169,090
Grey and malleable iron castings	Tons	208	41,600
Stoves, coal	No.	400	20,000
Grain threshers	No.	141	160,000
Parts for boilers			63,969
Parts for engines			470,190
Accessories for boilers and engines			122,553
Amount received for boiler repairs			699,024
Amount received for engine repairs			1,306,452
All other specified products			62,503
All other unspecified products			1,559,299
Total			22,614,951

Table 102.—Principal Imports into Canada of Boilers and Engines in 1920 and 1921.

—	Unit.	Calendar Year, 1920.			Calendar Year, 1921.		
		Quantity	Value.	Rate per unit.	Quantity.	Value.	Rate per unit.
			$	$		$	$
Engines, automobile	No.	30,526	7,627,386		9,939	2,677,913	
Engines, internal combustion, n.o.p.	No.	19,378	2,479,584	127 95	5,719	1,208,140	211 25
Engines, fire	No.	11	14,623	1,329 00	4	34,999	8,750 00
Engines, steam	No.	209	593,854	2,841 00	81	259,529	2,448 00
Boilers, steam and parts of			565,867			170,360	
Boilers, n.o.p., and parts of			275,862			189,282	
Locomotives for railways, electric	No.	10	53,333	5,217 00	12	48,348	4,029 00
Locomotives for railways n.o.p.	No.	60	574,743		25	162,054	
Locomotive parts			64,130			72,467	

Table 103.—Principal Exports of the Boiler and Engine Group in the Years 1920-1921.

—	Unit.	Calendar Year, 1920.		Calendar Year, 1921.	
		Quantity.	Value.	Quantity.	Value.
			$		$
Internal combustion engines and parts	No.	1,569	265,487	681	282,688
Locomotives and parts of	No.	77	3,463,614	46	1,948,233
Steam engines and parts	No.			*8	*50,664

*Nine months only.

Employment.—During the year, consisting of 304 working days, each of the 55 plants, on the average, worked full time 279 days, worked part time 10 days and was idle 14 days. The average day consisted of 9 hours and the average time worked per week was 50 hours.

The average employment in the boiler and tank shops was 1,274, of whom 177 or 13·9 per cent were salaried employees and 1,097 or 86·1 per cent were wage-earners. In the engine and locomotive works 3,386 employees were engaged, of whom 12 per cent were classed as salaried employees and 88 per cent were wage-earners.

Of the 3,802 wage-earners employed on December 15 or nearest representative date, it will be observed that 112 or 2·9 per cent received less than $10 per week, 422 or 11·1 per cent received between $10 and $20 per week, 1,605 or 42 per cent received from $20 to $30 per week, and 1,663 received $30 or over per week. The employment statistics are given in Tables 104 to 107.

Table 104.—Average Working Time in the Boiler and Engine Group in the Year 1920.

—	Number of Establishments.	Working Time—Hours.				Average Number of Days in Operation.		
		Per shift or day		Per week.		On Full Time.	On Part Time.	Idle.
		Total.	Average.	Total.	Average.			
All plants	55	482	9	2,768	50	279	10	15
Boilers and tanks	28	239	8	1,360	48	271	11	22
Engines and locomotives	27	243	9	1,408	52	288	8	8

Table 105.—Average Number of Wage-Earners in the Boiler and Engine Group, 1920.

Month.	All Plants.			Boiler Works.		Engine and Locomotive Works.	
	Total.	Male.	Female.	Male.	Female.	Male.	Female.
	No.	No.	No.	No.	No.	No.	No.
Monthly average	4,075	4,070	5	1,094	3	2,976	2
January	3,570	3,566	4	1,108	2	2,458	2
February	3,425	3,421	4	1,099	2	2,322	2
March	3,709	3,705	4	1,126	2	2,579	2
April	4,178	4,173	5	1,150	3	3,023	2
May	4,475	4,470	5	1,203	3	3,267	2
June	4,505	4,500	5	1,140	3	3,360	2
July	4,637	4,632	5	1,181	3	3,451	2
August	4,507	4,502	5	1,092	3	3,410	2
September	4,391	4,386	5	1,066	3	3,320	2
October	4,029	4,024	5	1,060	3	2,964	2
November	3,735	3,730	5	940	3	2,790	2
December	3,735	3,730	5	963	3	2,767	2

Table 106.—Number of Employees and Salaries and Wages Paid in the Boiler and Engine Group, 1920.

	Number of Employees.			Salaries and Wages.
	Total.	Male.	Female.	
	No.	No.	No.	$
(a) By Industries:				
Boiler and Tank Shops—				
Totals	1,274	1,230	44	1,932,717
Officers, superintendents and managers	64	64	.....	237,757
Clerks, stenographers and other salaried employees	113	72	41	137,179
Wage-earners	1,097	1,094	3	1,557,781
Engine and Locomotive Works—				
Totals	3,386	3,324	62	5,180,335
Officers, superintendents and managers	52	52	.....	209,110
Clerks, stenographers and other salaried employees	336	296	60	624,654
Wage-earners	2,978	2,976	2	4,346,571
(b) By Provinces:				
Nova Scotia and Quebec—				
Totals	1,542	1,517	25	2,556,397
Officers, superintendents and managers	19	19	.....	61,043
Clerks, stenographers and other salaried employees	213	189	24	361,622
Wage-earners	1,310	1,309	1	2,133,732
Ontario—				
Totals	2,802	2,729	73	4,028,659
Officers, superintendents and managers	77	77	.....	332,634
Clerks, stenographers and other salaried employees	226	157	69	345,863
Wage-earners	2,499	2,495	4	3,350,162
Manitoba—				
Totals	91	85	6	113,395
Officers, superintendents and managers	5	5	.....	11,600
Clerks, stenographers and other salaried employees	14	8	6	12,556
Wage-earners	72	72	.....	89,239
British Columbia—				
Totals	225	223	2	414,601
Officers, superintendents and managers	15	15	.....	41,590
Clerks, stenographers and other salaried employees	16	14	2	41,792
Wage-earners	194	194	.....	331,219
Canada				
Totals	4,660	4,554	106	7,113,052
Officers, managers and superintendents	116	116	.....	446,867
Clerks, stenographers and other salaried employees	469	368	101	761,833
Wage-earners	4,075	4,070	5	5,904,352

Table 107.—Number of Employees in the Boiler and Engine Group by Classes of Plants in 1920.

——	Totals.	Weekly Wage Rates							
		Under $5 per week.	$5 and under $10 per week.	$10 and under $15.	$15 and under $20.	$20 and under $24.	$24 and under $28.	$28 and under $30.	$30 and over.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Totals for all Plants....	3,802	16	96	134	288	618	716	271	1,663
Over 16 years of age—									
Male.....	3,787	16	94	126	283	618	716	271	1,663
Female.....	12	.....	2	6	4	.....	.....	.....	.....
Under 16 years of age—									
Male.....	3	.....	.....	2	1	.....	.....	.....	.....
Boilers and Tanks—									
Totals.....	994	3	22	23	58	250	260	54	324
Over 16 years of age—									
Males.....	990	3	22	21	56	250	260	54	324
Females.....	4	.....	.....	2	2	.....	.....	.....	.....
Engines and Locomotives.									
Totals.....	2,808	13	74	111	230	368	456	217	1,339
Over 16 years of age—									
Males.....	2,797	13	72	105	227	368	456	217	1,339
Females.....	8	.....	2	4	2	.....	.....	.....	.....
Under 16 years of age—									
Males.....	3	.....	.....	2	1	.....	.....	.....	.....

Power and Fuel.—Over 1,000 electric motors principally operated by purchased current, were used by the group and over 10,000 horsepower was developed by this means. Forty-three boilers with a manufacturer's rating of 7,290 horse-power formed a portion of the equipment of the group. It was reported that 5,200 horse-power was developed by the boilers in question.

The 44,561 tons of bituminous coal valued at $328,576 formed the principal item in the fuel account. The 1,498,797 gallons of fuel oil worth $204,987, constituted the second item in order of value. The total value of the fuel consumed in the boiler and engine group was $668,560. The power and fuel statistics are presented in Tables 108 and 109.

Table 108.—Power Used in the Boiler and Engine Group in the Year 1920.

——	Boilers and Tanks.			Engines and Locomotives.			Total		
	Number of Units.	Horse-power.		Number of Units.	Horse-power.		Number of Units.	Horse-power.	
		Rated.	Used.		Rated.	Used.		Rated	Used
Boilers.....	13	1,885	925	30	5,405	4,275	43	7,290	5,200
Engine: Steam.....	9	1,210	590	22	2,365	1,644	31	3,575	2,234
Internal Combustion..	5	25	25	4	81	74	9	106	99
Electric Motors.....	146	2,804	2,123	855	14,404	8,683	1,001	17,208	10,806
Other Power.....	2	20	10	.....	.....	.....	2	20	10

Table 109.—Fuel Used in the Boiler and Engine Group in the Year 1920.

	Unit of Measure.	Total.		Boilers and Tanks.		Engines and Locomotives.	
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
			$		$		$
Total values			668,560		100,677		567,883
Bituminous coal	Net ton.	44,561	328,576	6,043	59,829	38,618	268,747
Anthracite coal	"	2,737	22,322	298	3,525	2,439	18,797
Lignite	"	469	1,999			469	1,999
Coke	"	5,293	83,043	811	12,693	4,482	70,350
Gasoline	Gallons	32,382	12,095	5,949	2,245	26,433	9,850
Oil, fuel	"	1,498,797	204,987	105,753	16,092	1,393,044	188,895
Wood	Cord	878	4,525	627	3,118	251	1,407
Gas	M. cu. ft.	10,570	4,247	7,007	1,950	3,563	2,297
Other fuel			6,766		1,225		5,541

Financial Statistics.—The total capital investment was $32,662,552, of which the fixed capital constituted about 39·1 per cent and the current assets formed about 60·9 per cent. The operating ratio, consisting of the proportion of the total manufacturing expense to the gross production, was 89·4 per cent. The ratio of the production to current assets was 113·7 per cent. The financial statistics are given in Tables 110 and 112.

Table 110.—Capital Invested in the Boiler and Engine Group by Class of Industry, 1920.

	Establishments.	Total Capital.	Capital represented by			
			Lands, Buildings and Fixtures.	Machinery and Tools.	Materials on Hand, Stocks in Process.	Cash Accounts and Bills Receivable.
	No.	$	$	$	$	$
Canada.						
All plants	55	32,662,552	3,686,325	9,094,655	6,300,469	13,581,103
Boilers and tanks	28	5,177,905	1,304,110	1,329,967	1,657,316	1,156,512
Engines and locomotives	27	27,484,647	2,652,215	7,764,688	4,643,153	12,424,591
Nova Scotia and Quebec.						
All plants	9	13,710,343	1,577,388	1,122,485	1,811,077	9,199,393
Boilers and tanks	3	128,172	34,823	40,125	13,806	39,418
Engines and locomotives	6	13,582,171	1,542,565	1,082,360	1,797,271	9,159,975
Ontario.						
All plants	32	17,706,423	1,959,912	7,676,046	4,237,342	4,033,123
Boilers and tanks	18	4,554,207	924,695	1,166,997	1,581,578	880,937
Engines and locomotives	14	13,352,216	1,035,217	6,509,049	2,655,764	3,152,186
Manitoba.						
All plants	4	397,447	92,881	110,707	125,940	67,919
British Columbia.						
All plants	10	648,339	56,144	185,417	126,110	280,668
Boilers and tanks	6	436,876	34,592	113,052	59,215	230,017
Engines and locomotives	4	211,463	21,552	72,365	66,895	50,651

Table 111.—Miscellaneous Expenses Disbursed by the Boiler and Engine Group in 1920.

——	Total.	Boilers and Tanks.	Engines and Locomotives.
	$	$	$
Total	2,545,829	732,485	1,813,344
Rent of offices, works and machinery	32,446	10,876	21,570
Rent of power	123,605	18,487	105,118
Insurance	93,244	38,064	55,180
Taxes:—			
Excise	62,672	6,331	56,341
Excess profits tax	313,470	11,562	301,908
Provincial and municipal	104,604	25,461	79,143
Royalties, use of patents	88,189	16,584	71,605
Advertising expenses	97,784	37,516	60,268
Travelling expenses	127,552	33,922	93,630
Repairs to buildings and machinery	380,729	73,105	307,624
All other sundry expenses (excepting fuel, materials, salaries and wages)	1,121,534	460,577	660,957

Table 112.—Financial Summary of the Boiler and Engine Group in the Year 1920.

——	Establishments.	Capital.	Salaries and Wages.	Cost of Fuel.	Cost of Material.	Miscellaneous Expenses.	Total Expenditure.	Value of Products.
Canada.	No.	$	$	$	$	$	$	$
Total	55	32,662,552	7,113,052	668,560	9,891,832	2,545,829	20,219,273	2,261,451
Boilers and tanks	28	5,177,905	1,932,717	100,677	2,086,953	732,485	4,852,832	5,265,913
Engines and locomotives	27	27,484,647	5,180,335	567,883	7,804,879	1,813,344	15,366,441	17,349,938
Nova Scotia and Quebec.								
Total	9	13,710,343	2,556,397	298,140	4,045,373	535,242	7,435,153	9,297,170
Boilers and tanks	3	128,172	78,018	1,905	84,894	27,381	192,198	188,435
Engines and locomotives	6	13,582,171	2,478,379	296,235	3,960,479	507,861	7,242,954	9,108,735
Ontario.								
Total	32	17,906,423	4,028,659	353,436	5,306,259	1,828,416	11,516,770	11,872,689
Boilers and tanks	18	4,554,207	1,528,646	90,364	1,711,682	596,954	3,927,646	4,239,201
Engines and locomotives	14	13,352,216	2,500,013	263,072	3,594,577	1,231,462	7,589,124	7,633,488
Manitoba								
Total	4	397,447	113,395	4,909	125,118	50,312	293,734	328,007
British Columbia.								
Total	10	648,339	414,601	12,075	415,082	131,859	973,617	1,116,985
Boilers and tanks	6	436,876	313,094	7,936	287,660	103,365	712,055	798,677
Engines and locomotives	4	211,463	101,507	4,139	127,422	28,494	261,562	318,308

Provincial Distribution.—The distribution of the establishments covered in the present report follows:—

Table 113.—Distribution of Establishments in the Boiler and Engine Group, 1920.

Industry.	Canada.	Nova Scotia.	Quebec.	Ontario.	Manitoba.	British Columbia.
	No.	No.	No.	No.	No.	No.
Boilers and tanks	28	.....	3	18	1	6
Engines and locomotives	27	2	4	14	3	4
All plants	55	2	7	32	4	10

The capital investment of $32,662,552 was distributed between the different provinces in the following order: Ontario, 54·8 per cent; Nova Scotia and Quebec, 42 per cent; Manitoba, 1·2 per cent; and British Columbia, 2 per cent. The average employment in Canada was 4,660 persons, of whom 2,802, or 60·1 per cent, were engaged in Ontario. The distribution in the remaining provinces follows: Nova Scotia and Quebec, 1,542 persons, or 33·1 per cent; Manitoba, 91 persons, or 2 per cent; and British Columbia, 225 persons, or 4·8 per cent. Ontario was also predominant as far as the value of output is concerned, producing a value of $11,872,689, or nearly 52·5 per cent of the total amount of $22,614,951. Nova Scotia and Quebec produced a value of $9,297,270, or about 41·1 per cent. The production of Manitoba was valued at $328,007, or approximately 1·5 per cent, and in British Columbia the output was worth $1,116,985, or 4·9 per cent.

CHAPTER FIVE

AGRICULTURAL IMPLEMENTS

The agricultural implement group includes establishments whose products of chief value are machinery or implements designed for use in agriculture. The manufacture of cream separators reported by 8 firms and the manufacture of metal pumps and windmills by 11 firms have been reported in connection with the agricultural implement industry proper. The group, consisting of the three subdivisions, included 99 establishments owned by 96 firms.

An examination of the record of the number of plants disclosed an adverse tendency, in that 88 establishments were reported in 1919 in the implement industry proper, while the operations of 80 plants were returned in 1920. The firms manufacturing cream separators increased from 6 in 1919 to 8 in 1920. A change made in the classification of industries resulted in 34 establishments, engaged chiefly in the manufacture of wooden pumps, being excluded from the compilation for this report in which only statistics of iron and steel commodities have been included. The net result is that 139 plants were included in the three industries in 1919, while 99 establishments are covered by the present report.

The agricultural implement group enjoyed increased activity during 1920. Judging by employment, the peak for the year was reached in November, when 11,698 wage-earners were engaged. The year opened with a pay-roll of 10,665 and with slight recessions, especially in May and June, substantial improvement in trend was recorded until near the end of the year. In December 11,140 wage-earners were employed and the average monthly employment throughout the year was 11,220.

Comparing these results with the record of 1919, it was found that 11,295 during March was the maximum employment for the year. The average employment was 10,423 wage-earners, a decrease of 697 or 6·7 per cent of the average employment for 1920, given above.

The advance over 1919 was confirmed by the record of production. The total value for 1920 was $50,301,302, as compared with $41,063,341 in 1919, an increase of $9,237,961 or 22·5 per cent. The value added by manufacture, or the excess of the value of the product over the cost of materials, was $27,712,912 in 1920 and $22,953,386 in 1919. The increasing acreage under cultivation and the difficulty in procuring farm hands in Canada, together with the demand for agricultural implements from foreign markets, were factors contributing to this improvement in agricultural implement production.

The value of implements as owned by the farmers of Canada has been estimated at $391,660,000,* which is 6·1 per cent of the gross agricultural wealth. The provincial distribution of the ownership of implements was reported as follows: Nova Scotia, $5,723,000; Prince Edward Island, $4,475,000; New Brunswick, $7,634,000; Quebec, $64,943,000; Ontario, $97,168,000; Manitoba, $44,887,000; Saskatchewan, $111,170,000; Alberta, $51,224,000; and British Columbia, $4,436,000.

The cost of materials in the agricultural implement industry was $20,474,379, while the value of the products was reported as $44,073,847. The value added by manufacturing was $23,599,468. For the cream separator industry the value added by manufacturing was $2,410,589, computed by deducting the cost of materials reported as $919,442 from the value of the products stated as $3,330,031. The pump and windmill industry showed the smallest amount added in value in the group, or a total of $1,702,855, the difference between the value of production amounting to $2,897,424, and the cost of materials

*From the "Monthly Bulletin of Agricultural Statistics."

reported as $1,194,569. The difference between the cost of raw materials and the selling value of products made in the three industries comprising the group was $27,712,912.

The par value of the securities issued by the joint stock companies operating plants in the agricultural implements group was $86,392,635 at the end of the year, of which $43,191,735, or about 50 per cent, was owned in Canada. Of the remainder, $33,559,600 was held in the United States, $8,637,900 was owned in Great Britain, and $1,003,400 in other countries. An historical summary in given in Table 115 presents a résumé of the development of the industry as published in Census reports. From 1900 to 1915, inclusive, returns were collected from firms employing 5 hands and over. This restriction accounted for the sudden drop in the number of establishments in 1900 as compared with 1890.

Table 114.—Character and Distribution of Ownership of the Agricultural Implement Industry, 1920.

	Industry			Total
	Agricultural Implements	Cream separators	Pumps and windmills	
Number of Establishments	80	8	11	99
" Manufacturing concerns	77	8	11	96
" Partnerships and individual owners	23	1	1	25
" Incorporated companies	54	7	10	71
Par Value of Stock and Bonds issued by the Incorporated Companies and held, at Dec. 15, 1920, by residents of the countries indicated:	$	$	$	$
Canada	39,925,633	2,613,000	653,102	43,191,735
Great Britain	7,501,700	732,700	403,500	8,637,900
United States	31,353,600	2,002,300	203,700	33,559,600
Other Countries	1,003,400	.....	.....	1,003,400
Total	79,784,333	5,348,000	1,260,302	86,392,635

Table 115.—Summary Showing Development of the Agricultural Implement Group, 1870-1920.

—	Year.	Establishments.	Average Number of Wage-earners.	Wages.	Capital.	Cost of Materials.	Value of Products.
		No.	$	$	$	$	$
All plants	1870	409	2,826	925,324	1,171,272	927,495	2,877,213
	1880	471	4,126	1,362,163	4,193,299	1,956,930	4,783,372
	1890	526	5,085	1,975,375	9,144,693	3,331,659	8,095,137
	1900	131	6,266	2,300,405	18,947,079	4,420,957	10,330,539
	1905	137	7,148	3,248,997	29,232,501	.....	13,667,913
	1910	110	9,590	5,101,590	47,561,553	11,462,955	22,975,600
	1915	92	7,288	3,414,337	61,857,328	6,347,124	14,596,216
	1917	156	11,188	9,475,397	76,528,980	16,788,400	36,567,771
	1918	141	9,794	9,313,534	77,257,247	18,938,005	38,305,216
	1919	139	10,423	10,960,866	93,123,864	18,109,955	41,063,341
	1920	99	11,120	13,894,561	110,868,713	22,588,390	50,301,302
Agricultural implements, n.e.s.	1870	252	2,546	856,084	1,104,308	889,847	2,685,393
	1880	234	3,656	1,241,279	3,995,782	1,839,197	4,405,397
	1890	221	4,543	1,812,050	8,624,803	3,126,966	7,493,624
	1900	114	5,788	2,129,241	18,207,342	4,128,526	9,597,389
	1905	88	6,711	3,076,753	28,489,806	.....	12,835,748
	1910	77	8,834	4,739,750	45,232,098	10,477,140	20,722,722
	1915	56	6,737	3,125,066	59,529,091	5,983,236	13,372,506
	1917	90	9,562	8,012,560	70,493,801	15,641,019	32,471,300
	1918	84	8,943	8,618,201	74,410,603	17,319,840	34,853,673
	1919	88	9,668	10,125,931	84,331,715	16,978,378	37,715,331
	1920	80	10,022	12,517,828	101,107,516	20,474,379	44,073,847

Table 115.—Summary Showing Development of the Agricultural Implement Group, 1870-1920—Concluded.

——	Year.	Establishments.	Average Number of Wage-earners.	Wages.	Capital	Cost of Materials.	Value of Products.
		No.	$	$	$	$	$
Cream separators.....	1910	4	216	88,967	923,950	217,600	639,656
	1917	3	438	409,150	1,835,431	614,825	1,750,076
	1918	5	513	399,653	2,026,045	1,163,571	2,348,614
	1919	6	337	399,235	6,314,089	475,345	1,826,273
	1920	8	487	672,615	6,672,750	919,442	3,330,031
Pumps and windmills..	1870	157	280	69,240	66,964	37,648	191,820
	1880	237	470	120,884	197,517	117,733	377,975
	1890	305	542	163,325	519,890	204,693	601,513
	1900	17	478	171,164	739,737	292,431	733,150
	1905	49	437	172,244	742,695	.....	832,165
	1910	29	540	272,873	1,405,505	768,215	1,613,222
	1915	36	551	289,271	2,328,237	363,888	1,223,710
	1917	63	1,188	1,053,687	4,199,748	532,556	2,346,395
	1918	52	338	295,680	820,599	454,594	1,102,929
	1919	45	418	435,700	2,478,060	656,232	1,521,737
	1920	11	611	704,118	3,088,447	1,194,569	2,897,424

Table 116.—Principal Statistics of the Agricultural Implement Group in the Year 1920.

Classification.	Establishments.	Average Number of Wage Earners.	Wages.	Capital.	Cost of Materials.	Value of Products.
	No.		$	$	$	$
Canada.						
All plants.....	99	11,120	13,894,561	110,868,713	22,588,390	50,301,302
Agricultural implements.....	80	10,022	12,517,828	101,107,516	20,474,379	44,073,847
Cream separators.....	8	487	672,615	6,672,750	919,442	3,330,031
Pumps and windmills.....	11	611	704,118	3,088,447	1,194,569	2,897,424
Maritime Provinces.						
All plants.....	3	13	10,333	56,512	12,968	42,957
Quebec.						
All plants.....	18	615	511,535	4,347,565	753,653	2,210,601
Ontario.						
All plants.....	62	10,172	12,967,404	104,783,526	21,325,958	46,783,206
Agricultural implements.....	49	9,165	11,689,516	95,603,876	19,321,169	40,872,862
Cream separators.....	8	487	672,615	6,672,750	919,442	3,330,031
Pumps and windmills.....	5	520	605,273	2,506,900	1,085,347	2,580,313
Manitoba.						
Agricultural implements.....	7	218	277,690	1,182,264	379,156	840,067
Saskatchewan.						
Agricultural implements.....	3	29	38,027	281,115	61,877	207,353
Alberta and British Columbia.						
All plants.....	6	73	89,572	217,731	54,778	217,118
Agricultural implements.....	3	24	35,487	181,015	18,558	78,444
Pumps and windmills.....	3	49	54,085	36,716	36,220	138,674

Commodity Statistics.—The products manufactured by the firms included in the group were divided into four classes. The production of the first division comprising horse and power implements accounted for $28,783,424 out of a total production of $50,301,302. The 35,884 grain harvesters alone were worth $6,129,236 while 30,619 valued at $5,509,158 were produced in 1919. The production of threshers was practically maintained as 5,484 were manufactured as compared with 5,344 the output in 1919. The valuation increased to $3,917,267 from $3,066,228. An interesting development was the increase in the production of tractors to 1,054 valued at $1,548,840 in 1920, or more than twice the number made in 1919; the value of the products was slightly less than double of that for the previous year. The manufacture of tractor ploughs increased more than six times over 1919 records. Mechanical power as a factor in Canadian farming operations is becoming more important each year. Comparative statistics of production for the principal items from 1917 to 1920 are given in Table 117, and a complete list of products for 1920 is shown in Table 117a.

In the second class were included the hand implements and tools produced by the industry. The chief items are given in Table 117a and the total value for the year was $1,173,130. The third class consisting of dairy equipment showed a total valuation of $2,431,842.

The fourth class included power units such as boilers, engines and windmills, and machinery not distinctively agricultural. The production of the class as detailed in Table 117a was valued at $3,488,451. The remaining division covers miscellaneous items which could not be logically included in the other classes, and the value assigned to these products is $14,434,454.

Table 117.—Production of Certain Implements as Reported by Firms Engaged in the Manufacture of Agricultural Implements, 1917-1920.

Kinds of Implements.	1917.		1918.		1919.		1920.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	No.	$	No.	$	No.	$	No.	$
Mowing machines		5,542,822	37,751	2,073,149	28,019	1,777,358	32,650	2,203,934
Harvesters		951,400	32,435	4,999,502	30,619	5,509,158	36,090	6,159,345
Reapers		296,729	466	38,471	698	99,618	1,742	207,501
Cultivators		858,226	35,467	955,607	41,406	1,386,644	18,495	1,382,002
Harrows		1,269,306	117,226	1,959,904	99,514	1,623,829	100,024	1,665,113
Hay rakes		504,326	24,556	722,066	15,375	566,735	19,918	786,577
Drills, grain		1,187,142	31,270	3,084,497	27,912	3,560,631	18,420	2,591,630
Manure spreaders		700,290	6,082	926,270	5,715	1,057,090	6,382	1,108,932
Ploughs		3,412,776	70,552	3,075,737	76,323	4,044,353	81,142	4,773,503
Engines, gasoline			61	24,775	633	197,555	2,400	521,605
Boilers and engines			86	126,460	103	198,244		302,335
Engines, n.o.p.								89,095
Tractors, steam			400	492,820	525	840,335	67	177,200
Tractors, gas							971	1,346,523
Threshers, horse		787,204	1,762	281,155	5,344	3,066,228	929	1,123,958
Threshers, power				759,793			4,409	2,628,484
Wind stackers			400	50,000	299	34,983	654	65,638
Threshers, steam with wind stackers and feeders			345	310,500				
Total production of industry including cream separators, pumps and windmills		36,567,771		38,305,216		41,063,341		50,301,302

Table 117a.—Products of the Agricultural Implement Group in the Year 1920.

Commodity.	Quantity.	Value.
	No.	$
Horse and Power Implements—		
Cultivators, wheel	14,125	1,014,102
Cultivators, all other	4,370	367,900
Tractors, steam	67	177,200
Tractors, gas	971	1,346,523
Ploughs, walking	33,873	652,253
Ploughs, riding, single	7,013	409,430
Ploughs, riding, double	8,536	701,292
Ploughs, gang, horse	3,356	117,579
Ploughs, gang, power	24,999	2,636,117
Ploughs, disc	2,188	211,602
Ploughs, all other	1,177	45,230
Manure spreaders	6,382	1,108,932
Harrows, disc	21,359	1,163,614
Harrows, spike tooth	73,567	397,402
Harrows, spring tooth	5,098	104,097
Pulverizers and packers	1,306	139,352
Drills, grain	18,420	2,591,630
Grain grinders	5,136	174,720
Ensilage cutters	1,161	176,800
Stump pullers	678	108,323
Sleighs	5,098	235,655
Trussers	655	101,918
Potato planters	513	47,129
Hoes, horse	15,476	155,731
Harvesters, corn	206	30,109
Harvesters, grain	35,884	6,129,236
Reapers	1,742	207,501
Mowers	32,650	2,203,934
Hay rakes	16,725	544,277
Hay rakes, side delivery or windrow	3,193	242,300
Hay tedders	825	43,030
Hay loaders	5,019	454,703
Hay carriers	7,920	308,790
Hay forks	5,269	40,855
Diggers, potato	1,123	114,281
Threshers, horse	929	1,123,958
Threshers, power	4,409	2,628,484
Clover hullers	60	65,000
Fanning mills	4,857	205,911
Horse and power implements, n.e.c.	.....	349,967
Total Horse and Power Implements	.....	28,783,424
Hand Implements and Tools—		
Wheelbarrows	18,767	117,401
Litter carriers	3,087	276,552
Scythes and snathes	60,000	44,500
Sheaf loaders	366	183,800
Lawn mowers	13,148	82,170
Implements and tools, hand, n.e.c.	.....	468,707
Total Hand Implements and Tools	.....	1,173,130
Dairy Equipment—		
Churns	7,918	128,540
Cream separators	31,001	1,683,634
Milking machines	5,478	583,844
All other dairy equipment	.....	25,825
Total Dairy Equipment	.....	2,421,843

Table 117a.—Products of the Agricultural Implement Group in the Year 1920—Con.

Commodity.	Quantity.	Value.
	No.	$
Power Units and Machinery—		
Pumps	3,750	364,584
Pumps and windmills	.....	350,628
Pumps, n.o.p.	.....	22,829
Windmills and towers	.....	201,541
Engines, gasoline	2,400	521,605
Boilers and engines	.....	302,335
Engines, n.o.p.	.....	89,095
Road rollers	18	105,300
Road scrapers	.....	108,536
Other road machinery	.....	148,220
Washing machines and wringers	.....	864,662
Washing machines, hand	9,720	87,480
Special machinery	.....	321,636
Total Power Units and Machinery	.....	3,488,451
Miscellaneous Products—		
Silos	601	158,511
Wagons, complete	5,481	438,665
Wagon boxes	3,098	120,826
Shafts	.....	300,050
Trees, yokes, spreaders, etc.	.....	118,681
Castings	.....	188,429
Attachments	.....	117,819
Parts and accessories	.....	2,688,423
Amounts received for repairs	.....	3,696,010
All other specified products	.....	2,393,977
All other products	.....	4,213,063
Total Miscellaneous Products	.....	14,434,454
Total	.....	50,301,302

The principal items of the materials used in the group are listed in Table 118. The predominance of iron and steel as a material is shown by the occurrence of such items as 75,417 tons of steel, valued at $6,007,969. The total importation into Canada in 1920 of machinery and implements for use principally on the farm was $28,188,576, and the exports for the year were valued at $12,399,116. Included in the foregoing records of imports were agricultural implements valued at $11,386,140; pumps and windmills valued at $1,475,917, and farm tractors and engines valued at $15,325,301. By adding the value of production and imports and deducting the exports, it as been estimated that implements to the value of about $66,090,762 were made available for the farming community of Canada during the year. In view of the variation in size and efficiency of implements, it is perhaps not of much advantage to make a comparison of prices for the two years. The customs returns, however, indicated that the prices for implements during 1921 advanced over the rates of the previous year. The average price for cream separators in 1920 was $38.70, while in 1921 the price increased to $40.26. The production reports assigned an average value of $180 to the harvesters in 1919 and of about $172 in 1920. The imports figures indicated a rate for the self-binding harvester of $181.82 in 1920 and the price advanced to $239.69 in 1921. The detail for some of the principal items showing production, imports, exports and possible consumption is given in the following table:—

Table 117b.—Apparent Consumption of Principal Products of the Agricultural Implement Group, 1920.

Product.	Production.		Imports.		Exports and Re-exports.		Apparent Consumption.	
	Number	Value.	Number	Value.	Number	Value.	Number	Value.
		$		$		$		$
Cream separators	31,001	1,683,634	27,071	1,047,711	.....	224,813	.....	2,506,532
Harvesters, grain	35,884	6,129,236	5,545	1,006,361	13,427	2,804,524	28,002	4,331,073
Mowers	32,650	2,203,934	1,291	80,432	13,139	955,330	20,805	1,329,036
Potato diggers	1,123	114,281	1,345	103,034	.....	.....	2,468	217,315
Rakes, hay	19,918	786,577	1,188	41,240	3,394	148,847	17,712	678,970
Harrows and parts	100,024	1,065,113	.....	359,041	12,195	397,982	.....	1,626,172
Ploughs	81,142	4,773,503	.....	2,448,808	.....	3,607,987	.....	3,614,324
Fanning mills	4,857	205,911	3,405	65,260	.....	.....	8,262	271,171
[1]Threshing machines	5,484	3,917,267	1,756	1,522,821	.....	926,781	.....	4,513,307
[2]Traction engines	1,054	1,548,840	13,494	13,459,814	.....	.....	14,532	14,983,537

[1]Includes 146 threshers manufactured in another industrial group.

[2]Includes 16 traction engines manufactured in another group.

Table 118.—Materials Used in the Agricultural Implement Group in the Year 1920.

Commodity.	Unit of Measure	Quantity	Cost.
			$
Steel	Tons	75,417	6,007,969
Pig and scrap iron	"	.....	376,422
Malleable and grey iron	"	16,780	1,717,593
Iron, other	"	.....	1,255,468
Other metals	"	.....	136,387
Steel castings	"	.....	192,198
Iron castings	"	21,608	1,421,161
Other castings	"	.....	163,565
Iron piping	Feet	3,042,311	307,337
Galvanized and black sheets	Tons	4,757	589,481
Lumber and timber	Ft. B.M.	51,541	2,673,993
Wood turned shapes	.....	.....	138,058
Metal wheels	No.	23,524	153,262
Leather	.....	.....	114,316
Cotton, duck, canvas and textile goods	Yds.	851,285	930,825
Paints, oils, and varnishes	Gals.	.....	670,425
Rubber goods	.....	.....	195,258
Accessories and equipment for tractors and engines	.....	.....	475,851
Separator parts	.....	.....	77,927
Stampings	.....	.....	91,797
Bolts, nuts, rivets, etc	.....	.....	127,070
All other specified materials	.....	.....	347,541
All other materials	.....	.....	4,424,486
Total cost	.....	.....	22,588,390

Table 119.—Principal Items of Agricultural Implements Imported in the Calendar Years 1920-1921.

Commodity.	Unit.	Calendar Year 1920.			Calendar Year 1921.		
		Quantity.	Value.	Value per unit.	Quantity.	Value.	Value per unit.
			$	$		$	$
Cream separators	No.	27,071	1,047,711	38.70	10,779	433,967	40.26
Cream separators, steel bowl for	.....	.....	34,897	.....	.....	12,491	
Cream separators, materials for	.....	.....	761,203	.....	.....	978,700	
Harvesters, self binding	No.	5,535	1,006,361	181.82	1,405	336,758	239.69
Mowing machines	"	1,284	77,859	60.64	599	42,572	71.07
Potato diggers	"	1,345	103,034	76.61	233	22,312	95.76
Rakes, horse	"	1,188	41,240	34.71	302	11,207	37.11
Reapers	"	331	31,737	95.88	164	14,718	89.74
Scythes	Doz.	1,579	18,654	11.81	1,581	19,557	12.37
Other harvesting implements, cultivators, weeders and parts	.....	.....	190,996	.....	.....	128,788	
Drills, seed	No.	4,171	274,587	65.83	2,116	125,415	
Harrows and parts	.....	.....	359,041	.....	.....	165,811	
Ploughs and parts of	.....	.....	2,448,808	.....	.....	1,028,242	
Rollers, farm, road or field	No.	71	68,632	966.65	98	70,508	719.47
Fanning mills	"	3,405	65,260	19.17	840	18,064	21.50
Threshing machine separators	"	1,756	1,522,821	867.21	1,985	2,231,647	1,124.26
Parts for threshing machine separators	.....	.....	1,000,043	.....	.....	651,073	
Fodder or feed cutters	No.	756	92,850	122.82	646	57,972	89.74
Hay presses	"	151	80,134	530.69	42	22,454	534.62
Plough plates, mould boards or shares, land sides and other plates for agricultural implements when cut to shape from rolled plates of steel but not moulded, punched, polished or otherwise manufactured	Cwt.	108,755	892,949	8.21	11,221	95,721	8.53
Parts of agricultural implements, n.o.p.	.....	.....	938,432	.....	.....	523,426	
Pumps, hand, iron and steel, n.o.p.	No.	28,044	307,781	10.98	15,351	229,642	14.96
Pumps, power and parts of	"	6,520	1,113,286	170.75	4,546	1,025,124	225.50
Windmills and complete parts	.....	.....	54,850	.....	.....	39,412	
Traction engines costing not more than $1,400 in country of production	No.	12,408	10,905,178	879.00	2,654	2,228,484	840.00
Traction engines, n.o.p.	"	1,094	2,554,636	2,336.00	107	624,580	1,884.00
Repairs for traction engines	.....	.....	1,862,131	.....	.....	1,001,218	
Other portable and traction engines	.....	.....	3,356	.....	.....	656	

Table 120.—Principal Exports of Agricultural Implements in the Years 1920 and 1921.

Commodity.	Unit.	Calendar Year 1920.			Calendar Year 1921.		
		Quantity.	Value.	Rate per unit.	Quantity.	Value.	Rate per unit.
			$	$		$	$
Cream separators and parts	.....	.....	213,585	.....	.....	181,118	.....
Harvesters and binders	No.	13,427	2,804,524	208.87	4,769	987,247	207.01
Hay rakes	"	3,394	148,847	43.85	2,288	91,395	39.95
Mowing machines	"	13,139	955,330	72.71	7,377	549,015	74.42
Reapers	"	2,048	231,470	113.06	439	52,485	119.56
Cultivators	"	6,470	434,666	67.18	5,176	330,862	63.92
Drills	"	2,522	310,685	123.19	3,986	650,730	163.25
Harrows	"	12,195	397,982	32.63	6,872	216,340	31.48
Ploughs and parts of	.....	.....	3,578,687	.....	.....	2,135,210	.....
Garden and farm tools	.....	.....	278,341	.....	.....	133,198	.....
Spades and shovels	.....	.....	234,942	.....	.....	206,855	.....
Threshing machines, separators and parts	.....	.....	918,667	.....	.....	754,975	.....
Parts of agricultural implements and machines	.....	.....	1,202,272	.....	.....	968,216	.....

Employment Statistics.—The employment data are given in Tables 121 to 124. The average full time worked in each establishment was 284·2 days in a year of 304 working days. The average idle time, per establishment, was 10·3 days and the average part time worked was 9·4 days. The average time worked per day was 9 hours and 53 hours constituted the average working period per week. The average number of employees consisted of 12,838 persons, of whom 11,120, or 86·6 per cent, were wage-earners. Of the 1,718 salaried employees, the officials, managers and superintendents numbered 241, or 14 per cent, while the clerical staff numbered 1,477, or 86 per cent. The wage-earners were paid $13,894,561, or 82 per cent of the total amount disbursed for wages and salaries.

Referring to the weekly wage rates it should be observed that about 1 per cent of the male wage-earners were paid less than $10 per week, 14 per cent were paid at rates between $10 and $20 per week, 49 per cent were paid between $20 and $30 and 36 per cent were paid $30 or over per week.

Table 121.—Number of Days in Operation and Average Number of Hours Normally Worked by Wage-Earners per Day and per Week, 1920.

—	No. of Establishments	Average Working Time—Hours.		Days in Operation.		
		Per shift or day.	Per week.	On Full time.	On Part time.	Idle.
All plants	99	9	53	284·2	9·4	10·3
Agricultural implements	80	9	54	282·8	11	10·2
Cream separators	8	9	50	299·8	1·2	3
Pumps and windmills	11	9	49·5	283·5	4·5	16

Table 122.—Number of Employees, with Salaries and Wages Paid in the Manufacturing of Agricultural Implements, 1920.

Classification.	No. of Employees.			Salaries and Wages.
	Total.	Males.	Females.	
				$
A.—*By Industries.*				
Agricultural Implements, n.e.s.—				
Totals	11,490	10,953	537	14,953,170
Officers, managers, and superintendents	193	189	4	775,145
Clerks, stenographers and other salaried employees	1,275	973	302	1,660,197
Wage-earners	10,022	9,791	231	12,517,828
Cream Separators—				
Totals	667	589	78	1,184,050
Officers, managers and superintendents	26	24	2	160,163
Clerks, stenographers and other salaried employees	154	89	65	351,272
Wage-earners	487	476	11	672,615
Pumps and Windmills—				
Totals	681	669	12	804,767
Officers, managers and superintendents	22	22	.....	50,581
Clerks, stenographers and other salaried employees	48	36	12	50,068
Wage-earners	611	611	.....	704,118

Table 122.—Number of Employees, with Salaries and Wages Paid in the Manufacturing of Agricultural Implements, 1920—Concluded.

Classification.	No. of Employees.			Salaries and Wages.
	Total.	Males.	Females.	
B.—*By Provinces.*	No.	No.	No.	$
Maritime Provinces—				
Totals	15	15		13,033
Officers, managers and superintendents	1	1		1,500
Clerks, stenographers and other salaried employees	1	1		1,200
Wage-earners	13	13		10,333
Quebec—				
Totals	749	730	19	684,158
Officers, managers and superindentents	30	30		68,802
Clerks, stenographers and other salaried employees	104	85	19	103,821
Wage-earners	615	615		511,535
Ontario—				
Totals	11,696	11,100	596	15,729,566
Officers, managers, and superintendents	183	177	6	846,590
Clerks, stenographers and other salaried employees	1,341	991	350	1,915,602
Wage-earners	10,172	9,932	240	12,967,404
Manitoba—				
Totals	256	247	9	346,806
Officers, managers and superintendents	14	14		36,570
Clerks, stenographers and other salaried employees	24	17	7	32,546
Wage-earners	218	216	2	277,690
Saskatchewan—				
Totals	40	38	2	58,605
Officers, managers and superintendents	7	7		17,175
Clerks, stenographers and other salaried employees	4	2	2	3,403
Wage-earners	29	29		38,027
Alberta and British Columbia—				
Totals	82	81	1	109,789
Officers, managers and superintendents	6	6		15,252
Clerks, stenographers and other salaried employees	3	2	1	4,965
Wage-earners	73	73		89,572
Canada.				
All plants—				
Totals	12,838	12,211	627	16,941,987
Officers, managers, and superintendents	241	235	6	985,889
Clerks, stenographers and other salaried employees	1,477	1,098	379	2,061,537
Wage-earners	11,120	10,878	242	13,894,561

Table 123.—Average Number of Wage-Earners Employed in the Agricultural Implement Group by Months in the Year 1920.

	Total.	All Plants		Industry.				
				Agricultural Implements.		Cream Separators.		Pumps and Windmills
		Males.	Females.	Males.	Females.	Males.	Females.	Males.
	No.	No.	No.	No.	No.	No.	No.	No.
Average	11,120	10,878	242	9,791	231	476	11	611
January	10,665	10,419	246	9,458	236	421	10	540
February	10,657	10,447	210	9,462	199	425	11	560
March	11,103	10,877	226	9,804	215	468	11	605
April	11,061	10,831	230	9,722	216	478	14	631
May	10,797	10,573	224	9,424	212	508	12	641
June	10,959	10,728	231	9,577	218	502	13	649
July	11,298	11,055	243	9,900	232	474	11	681
August	11,122	10,802	230	9,777	218	469	12	646
September	11,421	11,186	235	10,070	225	493	10	623
October	11,520	11,237	283	10,114	273	503	10	620
November	11,698	11,410	288	10,325	279	512	9	573
December	11,140	10,887	253	9,864	244	464	9	559

Table 124.—Number of Employees in the Agricultural Implement Group on December 15, 1920 or Nearest Representative Date, classified by Sex, and by Weekly Rates of Pay.

Classification.	Total Number of Wage Earners.	Weekly Wage Rates.							
		Under $5 per week.	$5 but under $10	$10 but under $15	$15 but under $20	$20 but under $24	$24 but under $28	$28 but under $30	$30 per week and over.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
All Plants.									
Over 16 years—									
Male	11,211	18	128	414	1,094	2,489	2,146	901	4,021
Female	234	1	9	94	83	30	12	2	3
Under 16 years—									
Male	103	8	22	52	15	6	.....	.....	.....
Female	2	.....	1	.....	1	.....	.....	.....	.....
Agricultural Implements.									
Over 16 years—									
Male	10,159	13	121	347	931	2,218	1,872	843	3,814
Female	225	1	8	88	83	29	11	2	3
Under 16 years—									
Male	102	8	22	51	15	6	.....	.....	.....
Female	2	.....	1	.....	1	.....	.....	.....	.....
Cream Separators.									
Over 16 years—									
Male	463	.....	3	21	39	139	148	12	101
Female	9	.....	1	6	.....	1	1	.....	.....
Under 16 years—									
Male	1	.....	.....	1	.....	.....	.....	.....	.....
Female	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pumps and Windmills.									
Over 16 years—									
Male	589	5	4	46	124	132	126	46	106

Power and Fuel.—The power statistics given in Table 125 indicate that 16,020 primary horse-power was used in the group during 1920. This includes the steam engines, internal combustion engines, and the rented power principally electric. The rated horse-power for the same units is reported as 20,136. The 78 boilers with a rating of 9,592 horse-power, are not included in the compilation in view of the duplication which would be involved. A detail of the electric power generated in the establishments reporting is shown but the results are also excluded from the total given for the primary power.

Bituminous coal constitutes the principal item of fuel being valued at $427,263, or 40·2 per cent of the total fuel cost of $1,062,337. An absolute quantity of 55,377 tons, or 98 per cent of the bituminous coal was imported from United States.

Table 125.—Power Employed in the Agricultural Implement Group in 1920.

		Agricultural Implements.	Cream Separators.	Pumps.	Total.
Boilers:—	No.	65	7	6	78
	Rated H.P.	8,967	350	275	9,592
	H.P. Used	7,074	310	215	7,599
Steam Engines:—	No.	40	2	2	44
	Rated H.P.	4,740	140	140	5,020
	H.P. Used	3,255	115	130	3,500
Internal Combustion:—	No.	14			14
	Rated H.P.	155			155
	H.P. Used	99			99
Water Wheels:—	No.	9	1		10
	Rated H.P.	502	10		512
	H.P. Used	435	10		445
Electric Motors:—	No.	538	73	51	662
	Rated H.P.	13,440	673	743	14,856
	H.P. Used	10,820	516	622	11,958
Other Power:—	No.	4		1	
	Rated H.P.	1,061		53	1,114
	H.P. Used	1,061		53	1,114

Table 126.—Fuel Used in the Agricultural Implement Group in the Year 1920.

	Unit.	All Plants		Agricultural Implements.		Cream Separators.		Pumps and Windmills.	
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
			$		$		$		$
Total values			1,062,337		993,666		33,865		34,806
Coal—									
Bituminous	Short tons	56,458	427,263	52,248	386,686	2,977	25,365	1,233	15,212
Anthracite	"	1,989	24,703	1,568	21,434	87	380	1,334	2,889
Lignite	"	238	2,354	238	2,354				
Coke	"	16,445	218,144	15,139	197,366	300	4,489	1,006	16,289
Gasoline	Gallons	83,945	31,666	80,501	30,299	3,394	1,345	50	22
Oil (fuel)	"	2,635,480	297,131	2,635,480	297,131				
Wood	Cord	1,970	9,964	1,884	9,368	76	496	10	100
Gas	1,000 cu. ft.	17,228	11,360	16,884	10,953	244	303	100	104
Other			39,752		38,075		1,487		190

Financial Statistics.—The financial statistics are given in Tables 127 to 129. The capital investment was reported as $110,868,713, of which $32,902,256, or 29·6 per cent, was fixed capital and $77,966,457, or 70·4 per cent, was working capital. Of this capital $104,783,526, or 94·5 per cent, was invested in Ontario and $4,347,565, or 3·9 per cent, was under control of firms operating in Quebec, $56,512, or ·05 per cent invested in the Maritime Provinces and $1,621,110, or 1·5 per cent, was involved in the establishments situated in the western provinces.

It is to be observed that the financial statistics suffer somewhat in accuracy because of the variation in the systems of accounting maintained by the firms presenting the returns. With this reservation in mind an attempt is made to show the relationship of the data which have been compiled. The operating ratio determined by computing the percentage of the aggregate expenditure to the total value of the production was 90·9 per cent, which may be considered as about normal for an industry of this description. The turnover in 1920 obtained by computing the percentage of the gross production to the working assets was about 64·5 per cent.

Table 127.—Capital Invested in the Agricultural Implement Group in the Year 1920.

Industry.	Establishments.	Total Capital.	Capital Represented by			
			Lands, Buildings and Fixtures.	Machinery and Tools.	Materials on Hand, Stocks in Process.	Cash Accounts and Bills Receivable.
Canada.	No.	$	$	$	$	$
All plants	99	110,868,713	19,729,048	13,173,208	42,419,393	35,547,064
Agricultural implements, n.e.s	80	101,107,516	18,347,067	12,007,793	39,019,587	31,733,069
Cream separators	8	6,672,750	676,668	767,907	2,320,777	2,907,398
Pumps and windmills	11	3,088,447	705,313	397,508	1,079,029	906,597
Maritime Provinces.						
All plants	3	56,512	11,506	4,500	15,000	25,506
Quebec.						
All plants	18	4,347,565	597,052	403,327	1,065,641	2,281,545
Ontario.						
All plants	62	104,783,526	18,769,391	12,542,142	40,712,503	32,759,490
Agricultural implements, n.e.s	49	95,603,876	17,494,928	11,502,330	37,461,908	29,144,710
Cream separators	8	6,672,750	676,668	767,907	2,320,777	2,907,398
Pumps and windmills	5	2,506,900	597,795	271,905	929,818	707,382
Manitoba.						
Agricultural implements, n.e.s.	7	1,182,264	304,172	131,007	471,771	275,314
Saskatchewan.						
Agricultural implements, n.e.s.	3	281,115	20,984	22,987	74,260	162,884
Alberta and British Columbia.						
All plants	6	217,731	25,943	69,245	80,218	42,325
Agricultural implements, n.e.s.	3	181,015	25,043	50,324	72,293	33,355
Pumps and windmills	3	36,716	900	18,921	7,925	8,970

Table 128.—Miscellaneous Expenses Disbursed by the Agricultural Implement Group in 1920.

Classification.	Total for all Plants.	Industry.		
		Agricultural Implements, n.e.s.	Cream Separators.	Pumps and Windmills.
	$	$	$	$
Total	5,133,036	3,887,544	872,210	373,282
Rent of offices, works and machinery	26,033	10,687	2,538	12,808
Rent of power	172,061	155,900	5,225	10,936
Insurance	222,402	172,502	23,526	26,374
Taxes—				
Excise	298,724	292,430	1,539	4,755
Excess profits tax	126,378	110,397	15,054	927
Provincial and municipal	320,688	297,584	11,506	11,598
Royalties and use of patents	45,771	25,894	5,839	14,038
Advertising expenses	293,795	196,864	64,224	32,707
Travelling expenses	552,464	450,643	52,103	49,718
Repairs to buildings and machinery	543,634	473,885	43,496	26,253
All other sundry expenses excepting fuel, materials, salaries and wages	2,531,086	1,700,758	647,160	183,168

Table 129.—Financial Summary of the Agricultural Implement Group in the Year 1920.

	Capital.	Salaries and Wages.	Cost of Fuel.	Cost of Materials.	Miscellaneous Expenses.	Total Expenditures.	Value of Products.
Canada.	$	$	$	$	$	$	$
All plants	110,868,713	16,941,987	1,062,337	22,588,390	5,133,036	45,725,750	50,301,302
Agricultural implements	101,107,516	14,953,170	993,666	20,474,379	3,887,544	40,308,759	44,073,847
Cream separators	6,672,750	1,184,050	33,865	919,442	872,210	3,009,567	3,330,031
Pumps and windmills	3,088,447	804,767	34,806	1,194,569	373,282	2,407,424	2,897,424
Maritime Provinces.							
All plants	56,512	13,033	851	12,968	2,412	29,264	42,957
Quebec.							
All plants	4,347,565	684,158	41,645	753,653	479,134	1,958,590	2,210,601
Ontario.							
All plants	104,783,526	15,729,596	1,001,713	21,325,958	4,489,563	42,546,830	46,783,206
Agricultural implements	95,603,876	13,867,781	934,772	19,321,169	3,297,960	37,421,682	40,872,862
Cream separators	6,672,750	1,184,050	33,865	919,442	872,210	3,009,567	3,330,031
Pumps and windmills	2,506,900	677,765	33,076	1,085,347	319,393	2,115,581	2,580,313
Manitoba.							
Agricultural implements	1,182,264	346,806	12,095	379,156	103,491	841,548	840,067
Saskatchewan.							
Agricultural implements	281,115	58,605	2,602	61,877	31,382	154,466	207,353
Alberta and British Columbia.							
All plants	217,731	109,789	3,431	54,778	27,054	195,052	217,118
Agricultural implements	181,015	42,407	2,513	18,558	7,266	70,744	78,444
Pumps and windmills	36,716	67,382	918	36,220	19,788	124,308	138,674

Provincial Distribution.—The group was largely concentrated in the province of Ontario. The eight cream separator plants, five out of eleven plants manufacturing pumps and windmills, and 49 out of a total of 80 agricultural implement plants of a general nature, were situated in the province. It follows that of the 99 establishments of the group, 62 were in Ontario. The other principal statistics indicated that a majority of the larger plants were located in the province in question, resulting in a greater degree of concentration than would be inferred by the proportion of establishments. The average number of wage-earners employed in all plants in Ontario was 10,172, or 91·4 per cent of the average number of wage-earners in the group throughout the country. The salaried employees in Ontario numbered 1,524, while 192 only were employed in the other provinces. The capital investment for the 62 plants in Ontario was $104,783,526, or 94·5 per cent of the total investment in Canadian establishments. The production of the Ontario plants was valued at $46,783,206, or about 93 per cent of the total production.

Eighteen establishments of which 16 were engaged in the manufacture of agricultural implements proper and two in the manufacture of pumps and windmills, were situated in the province of Quebec. The employees numbered 748, of whom 614 were wage-earners. The salaries and wages accounted for $684,158, of which $511,535 was paid to wage-earners. The capital investment was $4,347,565, or nearly 4 per cent of the capital involved in the plants of the group throughout the country. The value of the production is reported as $2,210,601, or 4·3 per cent of the total production.

Three plants were located in the Maritime Provinces; one pump and windmill establishment was reported for Nova Scotia and two plants manufacturing agricultural implements were situated in Prince Edward Island. The average employment was 15 persons who received $13,033 in salaries and wages. The value of production was $25,506 or about ·08 per cent of the total for Canada.

Seven agricultural implement plants were located in Manitoba and three of the same class in Saskatchewan. One pump and windmill establishment was reported from Alberta and two from British Columbia. There were also three agricultural implement concerns in Alberta.

The average employment in the western provinces was 378, of whom 310 were wage-earners. The total production of the four provinces was valued at $1,264,538, or about 2·3 per cent of the total output throughout the country.

CHAPTER SIX

MACHINERY

The group includes establishments engaged in the manufacture of machinery. Thirteen plants were engaged in the making of household machinery including sewing machines, washing machines and wringers, 21 plants were employed in the manufacture of business machinery including typewriters, computing machines and scales, and 122 establishments were engaged in the manufacture of industrial machinery and elevators.

The total production of $40,535,474 was divided among the six classes as follows: sewing machines, 7·2 per cent; washing machines and wringers, 5·2 per cent; office machinery, 14·2 per cent; scales, 3·8 per cent; industrial machinery, 65·1 per cent; and elevators, 4·5 per cent. The cost of materials was $13,605,268, leaving a value added by manufacture of $26,930,206. The net output computed in a similar way for the industrial machinery industry was $17,741,194. It will be observed by reference to Table 131 that the value of the production for the industry was $26,380,284, while the cost of materials was $8,639,090.

The maximum employment for the year was in May when 9,842 wage-earners were engaged. The year opened with a pay-roll of 9,006 and noteworthy increases were recorded until May. A declining trend was suffered until the end of the year when 8,822 wage-earners were reported.

The total securities issued by the incorporated companies in the group were $39,932,143, of which 45·9 per cent was held in United States, 50·2 per cent was owned in Canada and 3·9 per cent was held in other countries. The par value of the securities in question were used in this compilation.

Table 130.—Character and Distribution of Ownership of the Machinery Group in the Year 1920.

—	Industry.						Total.
	Sewing Machines.	Washing Machines and Wringers.	Office Machinery.	Scales.	Industrial Machinery.	Elevators.	
Number of Establishments	3	10	9	12	116	6	156
" Manufacturing concerns	3	10	9	12	113	6	153
" Partnerships and individual concerns	1	4	3	6	34	2	50
" Incorporated companies	2	6	6	6	79	4	103
	$	$	$	$	$	$	$
Issued Securities at Par Value:							
Canada	100	1,092,550	885,900	753,850	17,296,688	24,600	20,053,688
Great Britain	422,500	.....	.....	.....	267,750	.....	690,250
United States	2,841,615	1,069,000	2,932,900	1,170,700	10,129,755	193,400	18,337,370
Other Countries	235,785	.....	.....	.....	615,050	.....	850,835
Total	3,500,000	2,161,550	3,818,800	1,924,550	28,309,243	218,000	39,932,143

Table 131.—Principal Statistics of the Machinery Group in the Year 1920.

Classification.	Number of Establishments.	Average Number Wage Earners.	Wages.	Capital.	Cost of Materials.	Value of Products.
			$	$	$	$
Canada—						
All plants	156	9,438	11,710,591	52,066,936	13,605,268	40,535,474
Sewing machines	3	1,142	1,115,529	3,718,657	1,316,546	2,937,073
Washing machines and wringers	10	425	445,457	2,337,208	1,059,503	2,088,592
Office machinery	9	512	594,166	5,348,583	1,225,125	5,768,102
Scales	12	382	474,630	1,587,202	386,401	1,550,642
Industrial machinery	116	6,582	8,515,804	36,757,166	8,639,090	26,380,284
Elevators	6	395	565,005	2,318,120	978,603	1,810,781
Maritime Provinces—						
All plants	3	46	52,951	293,460	59,659	162,689
Quebec—						
All plants	30	3,388	4,056,088	14,876,201	4,493,825	11,901,201
Scales	4	190	221,608	565,298	147,165	447,044
Industrial machinery	22	1,991	2,669,331	11,024,447	3,123,610	8,600,582
All other plants	4	1,207	1,165,149	3,286,456	1,223,050	2,853,575
Ontario—						
All plants	110	5,833	7,335,002	36,083,528	8,495,972	27,299,458
Washing machines and wringers	9	419	440,521	2,304,356	1,056,823	2,079,918
Office machinery	7	335	426,889	4,777,206	1,168,060	5,476,408
Scales	8	192	253,022	1,021,904	239,236	1,103,598
Industrial machinery	82	4,429	5,625,542	24,702,963	5,083,734	16,773,344
All other plants	4	458	589,028	3,277,099	948,119	1,866,190
Western Provinces—						
All plants	13	471	266,550	813,747	555,812	1,172,126
Industrial machinery	10	130	186,595	760,881	395,081	901,858
All other plants	3	41	79,955	52,866	160,731	267,268

Commodity Statistics.—The production of machinery exclusive of agricultural implements in the year 1920 was valued at upwards of $32,780,736. The imports were worth $46,176,832 and the valuation of the machinery made available for the Canadian market was $78,957,568.

The mining and metallurgical machinery produced by the establishments in the group under review was worth $1,000,539. The production in other groups was $191,336, resulting in a total of $1,191,875. The imports were worth $1,550,403 and the mining and metallurgical machinery made available was worth approximately $2,742,278.

The total production of saw and shingle mill machinery was worth $1,175,031 and the imports were valued at $310,809. The total value of this class of machinery made available was $1,485,840. A total production of woodworking machinery valued at $1,305,896 should be noted in this connection. The 68 lathes manufactured in Canada in 1920 were valued at $479,476 and the importation was worth $848,800. It is estimated that the quantity imported was about 120. If this assumption is correct 188 lathes valued at $1,328,276 were made available for addition to the industrial equipment of the country.

The total output of pulp and paper machinery was valued at $4,739,763, of which a large proportion, valued at $3,902,248, was manufactured by the machinery group. The imports of paper-mill machinery was $1,550,476 and pulp-mill machinery was imported to the value of $308,681. The total value

of pulp and paper machinery made available was $6,598,920. According to the returns no printing machinery was fabricated in Canada, but the imports were valued at $3,470,529. Of this amount $1,182,942 was the value of the typecasting and typesetting machinery. Linotypes to the value of $98,086 were re-exported.

The textile machinery output was limited to a value of $91,655, of which $37,285 was the value of the machines for knitting mills and $54,370 was the valuation of the output of woollen mill machinery. The importation was valued at $5,745,802 and the value of the aggregate made available was $5,837,457.

The production of road making machinery in the group under review was valued at $380,169 and the total production in all groups was $856,288. The import reports give a valuation of $121,667 for railway and road scrapers and a value of $520,077 for steam and electric shovels. The items of the import classification include equipment for excavation as well as for highway construction. The value of typewriters and parts manufactured in Canada was $138,781, while 16,500 typewriters valued at $1,125,775 were imported. The value of the typewriters and parts made available was $1,264,556.

Turning now to the household machinery the returns disclose that 72,949 sewing machines valued at $2,353,072, as well as parts worth $494,064, were manufactured in Canada in 1920. The imports were 14,502 machines worth $577,694, and parts and attachments valued at $723,995. The sewing machines made available were 87,451 only, worth $2,930,766 in addition to the parts valued at $1,218,059. The washing machine output was 67,901, valued at $1,661,079, and the importation was 11,336, worth $677,211. The resulting machines made available were 79,237, worth $2,336,260. In addition 93,765 wringers were manufactured at a value of $352,029, and the imports were worth $71,113.

Table 132.—Materials Used in the Machinery Group in the Year 1920.

Commodity.	Unit of measure.	Quantity.	Cost.
			$
Iron—			
Pig and scrap	Tons	18,049	1,014,418
Bar and sheet	"	1,142	145,206
Black and galvanized	"	381	61,185
Malleable and wrought	"	2,022	125,138
Castings, all kinds	"	347,774	1,692,960
Steel—			
Sheet, plate and tool	"	4,481	805,006
Bars, billets and other shapes	"	817,938	524,083
Castings, all kinds	"	4,819	477,154
Brass—			
Sheet and bar	"	129	119,818
Castings	"	745	199,861
Bronze castings	"	78	57,318
Castings, all other			67,630
Other metals			328,718
Wire	Tons	421	82,480
Lumber, all kinds	M ft.	6,505	526,807
Bolts, nuts, rivets, etc.			164,920
Saws, knives, etc., for machines			78,730
Paints, oils, varnishes, etc.			88,182
Leather, rubber, etc.			102,747
Iron pipes and fittings			591,349
Articles used for further manufacture, n.e.s.			808,570
All other materials specified			420,680
All other, n.s.			5,122,308

Table 133.—Products of the Machinery Group in the Year 1920.

Commodity.	Unit of measure.	Quantity.	Value.
			$
Barn and stable equipment			373,304
Castings—			
Grey and malleable iron		819	208,459
All other			25,025
Dies, taps and moulds			125,662
Fire extinguishers and accessories	No.	19,011	274,540
Forgings			210,300
Elevators, freight	No.	543	1,101,979
Machinery—			
Agricultural machines and implements			383,748
Baker's	No.	33	794,180
Boot and shoe			836,938
Butcher's			133,088
Creamery			75,200
Concrete			647,067
Hoisting			498,846
Ice making			149,891
Flour mill			547,087
Laundry			491,652
Metal working machinery—			
Boring machines	No.	12	110,206
Grinding machines	"	3,520	114,714
All other m.w. machinery			545,362
Lathes	No.	68	479,476
Pipe cutting and threading machinery	"	62	72,312
Amount received for custom work and machinery repairs			1,074,234
Milling machines			78,743
Pulp and paper mill machinery			3,902,248
Mining and engineering machinery			1,000,539
Road making machinery			380,169
Saw and shingle mill machinery			941,765
Special machinery			1,613,002
Transmission machinery			1,105,111
Woodworking machinery			1,295,596
All other machinery, n.e.s			1,469,027
Pneumatic tools			302,253
Sprinklers and attachments	No.	58,582	652,285
Scales		16,731	1,312,056
Elevator parts			484,902
Sewing machine heads	No.	30,000	60,115
Sewing machine parts			433,949
Sewing machines	No.	72,949	2,353,072
Washing machines	"	57,669	779,970
Washing machines (power)	"	10,232	881,079
Gears, gear casts and shafts			153,300
Interlocking and signal materials			107,835
Iron and wood pulleys			114,000
Water wheel and water power equipment			234,796
Pumping and steel barrels			343,979
Wrought iron washers	Tons	536	85,760
Screw machine products			726,381
All other products			10,410,272
Total			40,535,474

Table 133a.—Total Production of Principal Items of Machinery in Canada in the Year 1920.

	Total Production in Canada.		Production by firms in the Machinery Group.	
	Number.	Value.	Number.	Value.
		$		$
Machinery—				
Bakers'	33	794,180	33	794,180
Boot and shoe		836,938		836,938
Butchers'		113,088		113,088
Concrete		647,067		647,067
Hoisting		682,762		498,840
Icemaking		149,891		149,891
Flour mill		550,087		547,087
Laundry		492,652		491,652
Metal working—				
Boring and turning	12	110,206	12	110,206
Grinding	3,520	114,714	3,520	114,714
Other		890,440		545,362
Lathes	68	479,476	68	479,476
Pulp and paper		4,739,763		3,902,248
Mining and engineering		1,191,336		1,000,539
Road making		856,288		380,169
Saw and shingle mill		1,175,031		941,765
Special		1,948,258		1,613,002
Transmission		1,542,466		1,105,111
Wood working, n.e.s.		1,305,896		1,295,596
Scales	22,489	1,739,468	16,731	1,312,056
Sewing machines	72,949	2,353,072	72,949	2,353,072
Wringers	93,765	332,029		
Washing machines	67,901	1,661,049	67,901	1,661,049
Typewriters and parts		138,781		138,781
Grain cleaning machinery		104,571		104,571
Other products—				
Elevators, freight	542	1,101,385	542	1,101,385
Extinguishers, fire	24,344	336,910	19,011	274,540
Total value		26,387,804		22,512,391

Table 134.—Principal Imports of Machinery During 1920 and 1921.

Commodity	Unit of Measurement.	Calendar Year 1920			Calendar Year 1921.		
		Quantity.	Value.	Rate per unit.	Quantity.	Value.	Rate per unit.
			$	$		$	$
Scrapers, railway and road	No.		121,667			40,598	
Steam shovels and electric shovels	"	*35	520,077	14,859.34	*37	332,697	8,991·81
Carpet sweepers and hand vacuum cleaners	"	12,270	199,271	16.24	8,061	175,776	21.81
Sewing machines	"	14,502	577,694	39.83	5,108	288,033	56.39
Sewing machine attachments and parts			723,995			547,834	
Washing machines, domestic	No.	11,336	677,211	59.74	4,733	355,433	75.10
Mining and metallurgical machinery			1,550,403			1,488,386	
Adding and calculating machines	No.	2,665	1,125,924	422.48	1,737	344,008	198.05
Cash registers and parts			346,469			223,522	
Typewriting machines	No.	16,500	1,125,775	68.23	10,574	672,288	63.53
Typecasting and typesetting machines and parts adapted for use in printing offices			1,182,942			975,255	
Other printing and bookbinding machinery			2,287,587			1,566,773	
Air compressing machines			320,008			220,772	
Coal handling machines			146,747			182,428	
Cranes and derricks	No.	115	966,957	8,408.32	68	509,563	7,493.57
Cyclometers, pedometers, speedometers	No.		220,872			116,202	
Fire extinguishing machines, including sprinklers for fire protection			197,418			46,786	
Lathes, power			848,800			162,249	
Machine drills			1,274,993			324,897	
Paper mill machines			1,550,476			1,993,222	
Pulp mill machines			308,681			242,469	
Rolling mill machinery			721,044			260,802	
Saw mill machinery			310,809			148,049	
Textile machinery			5,745,802			3,366,850	
All other machinery			2,315,210			12,385,370	

* Incomplete.

Employment.—Each of the 156 establishments on the average worked full time 277·5 days, operated part time 13·6 days and was idle 12·9 days. The year consisted of 304 working days. The average shift or day was 9 hours and the average week consisted of 50 hours.

The average employment during the year was 11,230, of whom 4 per cent were officers, managers and superintendents, 12 per cent were clerical employees, and 84 per cent were wage-earners. The pay-roll of $14,958,987 was distributed, 9·7 per cent to the 446 officers, managers and superintendents, 12 per cent to the 1,346 clerical employees, and 78·3 per cent to the 9,438 wage-earners.

The classified weekly wage rates given in Table 138 indicate that 334 or 3·7 per cent of the employees engaged on December 15 or nearest representative date received less than $10 per week, 1,806, or 20 per cent, were paid $10 and less than $20, 3,951, or 43·8 per cent, received $20 and less than $30 per week and 2,938, or 32·5 per cent, received a weekly remuneration of $30 or over.

Table 135.—Averages of Working Time in the Machinery Group in the Year 1920.

Industry.	No. of Establishments.	Working Time.				
		Hours.		Days in Operation.		
		Per shift or per day.	Per week.	On Full time.	On Part time.	Idle.
All plants	156	9	50	277·6	13·6	12·9
Sewing machines	3	9	51	263	33	8
Washing machines and wringers	10	9	48	260	3	41
Office machinery	9	9	51	294·3	4·4	5·2
Scales	12	9	52	245	49	10
Industrial machinery	116	8·7	50·3	281	11	12
Elevators	6	9	50	286	9	9

Table 136.—Number of Employees, with Salaries and Wages Paid in the Machinery Group, 1920.

Classification.	Number of Employees.	Males.	Females.	Salaries and Wages.
	No.	No.	No.	$
All Plants—Totals	11,230	10,479	751	14,958,987
Officers, managers and superintendents	446	439	7	1,453,709
Clerks, stenographers and other salaried employees	1,346	915	431	1,794,687
Wage-earners	9,438	9,125	313	11,710,591
Sewing Machines—Totals	1,254	1,073	181	1,280,617
Officers, managers and superintendents	41	41		82,067
Clerks, stenographers and other salaried employees	71	51	20	83,021
Wage-earners	1,142	981	161	1,115,529
Washing Machines and Wringers—Totals	522	481	41	587,418
Officers, managers and superintendents	26	26		69,606
Clerks, stenographers and other salaried employees	71	40	31	72,355
Wage-earners	425	415	10	445,457
Office Machinery—Totals	670	580	90	859,090
Officers, managers and superintendents	24	24		113,139
Clerks, stenographers and other salaried employees	134	70	64	151,785
Wage-earners	512	486	26	594,166
Scales—Totals	447	421	26	594,260
Officers, managers and superintendents	20	20		69,310
Clerks, stenographers and other salaried employees	45	30	15	50,320
Wage-earners	382	371	11	474,630
Industrial Machinery—Totals	7,852	7,463	389	10,871,589
Officers, managers and superintendents	308	301	7	1,043,614
Clerks, stenographers and other salaried employees	962	680	282	1,312,171
Wage-earners	6,582	6,482	100	8,515,804
Elevators—Totals	485	461	24	766,013
Officers, managers and superintendents	27	27		75,973
Clerks, stenographers and other salaried employees	63	44	19	125,035
Wage-earners	395	390	5	565,005

Table 137.—Average Number of Wage-Earners Employed in the Machinery Group by Months During the Year 1920.

Months.	All Plants.			Sewing Machines.		Washing Machines and Wringers.	
	Total.	Male.	Female.	Male.	Female.	Male.	Female.
	No.	No.	No.	No.	No.	No.	No.
Monthly average	9,438	9,125	313	981	161	415	10
January	9,006	8,689	317	1,042	163	355	7
February	9,229	8,920	309	1,067	152	384	7
March	9,475	9,160	315	1,042	155	411	7
April	9,576	9,248	328	994	163	405	6
May	9,842	9,514	328	966	162	411	6
June	9,612	9,297	315	918	148	406	6
July	9,615	9,323	292	923	152	432	6
August	9,495	9,211	284	863	147	451	6
September	9,613	9,305	308	915	151	481	12
October	9,604	9,269	335	957	169	492	21
November	9,375	9,041	334	1,059	184	408	20
December	8,822	8,526	296	1,034	184	339	20

Months.	Office Machinery.		Scales.		Industrial Machinery.		Elevators.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
	No.	No.	No.	No.	No.	No.	No.	No.
Monthly average	486	26	371	11	6,482	100	390	5
January	508	22	341	11	6,109	110	334	4
February	509	29	373	12	6,264	105	323	4
March	535	28	370	12	6,452	108	350	5
April	521	30	383	11	6,587	113	358	5
May	550	35	373	11	6,834	109	380	5
June	475	29	392	10	6,717	117	389	5
July	475	25	379	9	6,696	95	418	5
August	458	24	377	12	6,619	90	443	5
September	505	22	418	12	6,529	106	457	5
October	444	25	411	11	6,555	104	410	5
November	431	23	306	15	6,419	87	418	5
December	421	20	323	9	6,005	58	404	5

Table 138.—Number of Employees in the Machinery Group by Age and by Sex, Classified According to their Weekly Rate of Pay.

	Total.	Over 16 Years of Age.		Under 16 Years of Age.	
		Male.	Female.	Male.	Female.
	No.	No.	No.	No.	No.
Totals	9,029	8,632	291	92	14
Under $5 per week	19	13	.....	6	.....
$5 but under $10	315	224	42	41	8
$10 but under $15	626	440	147	34	5
$15 but under $20	1,180	1,093	76	10	1
$20 but under $24	1,564	1,544	20	.....	.....
$24 but under $28	1,813	1,807	5	1	.....
$28 but under $30	574	574	.....	.....	.....
$30 and over per week	2,938	2,937	1	.....	.....

Power and Fuel.—In the machinery industry as in many other industries in which the motive equipment includes many light machines, the power mostly used is electricity. A large number of motors averaging one horse-power each in capacity characterized the installations reported in 1920. Although in the aggregate,

the rating of the motors amounted to 18,423 horse-power, the actual power used totalled only 10,392 H.P. owing largely to the fact that the motors were attached to machines, many of which were not used continuously.

Table 139.—Power Employed in the Machinery Group in 1920, by Industries.

Industry		Boilers	Engines		Hydraulic Turbines and Water Wheels	Electric Motors	Power not Specified
			Steam	Internal Combustion			
Sewing Machines	No.	11	5	.....	.....	100	.....
	Rated H.P.	2,075	1,810	.....	.....	2,178	.....
	H.P. Used	1,000	1,405	.....	.....	1,255	.....
Washing Machines and Wringers	No.	1	1	.....	.....	35	.....
	Rated H.P.	100	75	.....	.....	670	.....
	H.P. Used	50	50	.....	.....	643	.....
Office Machinery	No.	.....	.....	.....	.....	56	.....
	Rated H.P.	.....	.....	.....	.....	325	.....
	H.P. Used	.....	.....	.....	.....	294	.....
Scales	No.	.....	.....	2	.....	32	.....
	Rated H.P.	.....	.....	5	.....	558	.....
	H.P. Used	.....	.....	5	.....	333	.....
Industrial Machinery	No.	47	17	4	16	17,739	.....
	Rated H.P.	3,935	1,497	42	390	13,791	.....
	H.P. Used	2,306	737	23	287	7,500	.....
Elevators	No.	5	3	.....	.....	52	.....
	Rated H.P.	625	350	.....	.....	895	.....
	H.P. Used	375	175	.....	.....	367	.....
Total Machinery	No.	64	26	6	16	18,014	9
	Rated H.P.	6,735	3,732	47	390	18,423	1,798
	H.P. Used	3,731	2,367	28	287	10,392	48

Table 140.—Fuel Consumed in the Machinery Group in the Year 1920.

Classification.	Unit of Measure.	Total.		Sewing Machines.		Washing Machines and Wringers.	
		Quantity.	Cost.	Quantity.	Cost.	Quantity.	Cost.
			$		$		$
Total	.....	.....	746,344	.....	80,560	.....	8,583
Bituminous coal	Short Tons.	29,080	439,876	1,500	12,758	677	6,835
Anthracite coal	"	5,401	130,951	3,327	52,186	27	458
Lignite coal	"	427	1,601	.....	.....	.....	.....
Coke	"	7,932	116,139	994	15,035	.....	.....
Gasoline	Gals.	35,366	15,089	.....	.....	.....	.....
Oil (fuel)	"	219,592	28,797	.....	.....	2,154	453
Wood	Cord.	572	4,015	15	165	103	692
Gas	M. Cu. Ft.	73,463	7,735	252	416	144	145
Other fuel	.....	.....	2,141	.....	.....	.....	.....

Classification.	Unit of Measure.	Office Machinery.		Scales.	
		Quantity.	Cost.	Quantity.	Cost.
			$		$
Total	.....	.....	20,838	.....	22,146
Bituminous coal	Short Tons.	1,867	16,220	1,169	11,305
Anthracite coal	"	204	3,178	102	1,725
Coke	"	.....	.....	430	7,793
Gasoline	Gals.	.....	.....	1,830	640
Wood	Cord.	11	52	30	175
Gas	M. Cu. Ft.	1,678	1,388	1,015	508

Table 140.—Fuel Consumed in the Machinery Group in the Year 1920—Concluded.

Classification.	Unit of Measure.	Industrial Machinery.		Elevators.	
		Quantity.	Cost.	Quantity.	Cost.
			$		$
Total	.....	.....	576,404	.....	37,813
Bituminous coal	Short Tons.	21,394	372,358	2,473	20,400
Anthracite coal	"	1,443	71,616	298	1,788
Lignite coal	"	427	1,601	.....	.....
Coke	"	6,148	86,751	410	6,560
Gasoline	Gal.	26,895	12,002	4,487	1,994
Oil (fuel)	"	162,434	21,939	57,158	6,858
Wood	Cord.	413	2,931	.....	.....
Gas	M. Cu. Ft.	70,367	5,269	7	9
Other fuel	.....	.....	1,937	.....	204

Financial Statistics.—The capital investment was $52,066,936, of which $23,694,528, or 45·5 per cent, was fixed capital and $28,372,408, or 54·4 per cent, comprised the working assets. The chief industry in the group as far as capital was concerned was the manufacture of industrial machinery, involving an investment of $36,757,166, or 70·6 per cent of the total capital. The office machinery industry was next in order with an investment of $5,348,583, or 10·3 per cent. The turnover, being the percentage of the output to the working assets, was 142·9 per cent. The operating ratio for the group consisting of the ratio of $36,061,995 to $40,535,474 was 89 per cent.

Table 141.—Capital Invested in the Machinery Group in the Year 1920.

Industry.	Establishments.	Total Capital Employed.	Capital Employed Represented by			
			Lands, Buildings and Fixtures.	Machinery and Tools.	Materials on Hand, Stocks in Process.	Cash Accounts and Bills Receivable.
Canada.	No.	$	$	$	$	$
All plants	156	52,066,936	10,981,876	12,712,652	17,596,082	10,776,326
Sewing machines	3	3,718,657	471,807	743,452	2,226,023	277,375
Washing machines and wringers	10	2,337,208	439,167	666,988	887,284	343,769
Office machinery	9	5,348,583	734,846	519,391	1,892,071	2,202,275
Scales	12	1,587,202	497,436	320,816	498,737	270,213
Industrial machinery	116	36,757,166	8,056,721	9,782,169	11,369,865	7,548,411
Elevators	6	2,318,120	781,899	679,836	722,102	134,283
Maritime Provinces.						
All plants	3	293,460	113,919	95,869	62,342	21,330
Quebec.						
All plants	30	14,876,201	3,185,564	3,842,218	6,208,746	1,639,673
Scales	4	565,298	161,253	123,390	247,491	33,164
Industrial machinery	22	11,024,447	2,500,724	2,931,817	4,093,991	1,497,915
All other plants	4	3,286,456	523,587	787,011	1,867,264	108,594
Ontario.						
All plants	110	36,083,528	7,591,906	8,585,187	10,982,258	8,924,177
Washing machines and wringers	9	2,304,356	432,667	642,349	885,884	343,456
Office machinery	7	4,777,206	545,259	333,255	1,765,737	2,132,955
Scales	8	1,021,904	336,183	197,426	251,246	237,049
Industrial machinery	82	24,702,963	5,372,593	6,599,964	6,878,328	5,852,078
All other plants	4	3,277,099	905,204	812,193	1,201,063	358,639
Alberta, Manitoba and British Columbia.						
All plants	13	813,747	90,487	189,378	342,736	191,146
Industrial machinery	10	760,881	71,987	160,225	338,836	189,833
All other plants	3	52,866	18,500	29,153	3,900	1,313

Table 142.—Miscellaneous Expenses Disbursed by the Machinery Group, 1920.

Classification.	All Plants.	Sewing Machines.	Washing Machines and Wringers.	Office Machinery.
	$	$	$	$
Total	6,751,396	83,326	381,576	2,087,044
Rent of offices, works and machinery	195,328	660	5,460	19,338
Cost of purchased power	176,448	563	10,829	2,479
Insurance	224,323	18,337	19,253	6,686
Taxes:—				
Excise	111,953		5,349	14,286
Excess profits tax	216,640		1,130	32,920
Provincial and municipal	219,606	3,334	7,280	13,221
Royalties, use of patents, etc	289,575		433	219,000
Advertising expenses	444,926	4,346	69,278	125,335
Travelling expenses	475,816	15,384	58,320	38,896
Repairs to buildings and machinery	595,007	15,691	12,624	15,502
All other sundry expenses excepting fuel, materials, salaries and wages	3,801,774	25,011	191,620	1,599,381

Classification.	Scales.	Industrial Machinery.	Elevators.
	$	$	$
Total	204,406	3,864,707	130,337
Rent of offices, works and machinery	10,348	145,141	14,381
Cost of purchased power	7,368	150,503	4,706
Insurance	7,958	163,740	8,349
Taxes:—			
Excise	2,387	88,838	1,093
Excess profits tax	2,683	17,941	496
Provincial and municipal	9,894	177,275	8,602
Royalties, use of patents, etc		70,142	
Advertising expenses	6,415	258,314	1,238
Travelling expenses	7,637	351,970	3,609
Repairs to buildings and machinery	11,880	485,359	53,951
All other sundry expenses excepting fuel, materials, salaries and wages	137,836	1,814,014	33,912

Table 143.—Financial Summary of the Machinery Group in the Year 1920.

Classification.	Number of establishments.	Capital.	Salaries and wages.	Cost of fuel.	Cost of materials.	Miscellaneous expenses.	Total expenditure.	Value of products.
		$	$	$	$	$	$	$
Canada—								
All plants	156	52,066,936	14,958,987	746,344	13,605,268	6,751,396	36,061,995	40,535,474
Sewing machines	3	3,718,657	1,280,617	80,560	1,316,546	83,326	2,761,049	2,937,073
Washing machines and wringers	10	2,337,208	587,418	8,583	1,059,503	381,576	2,037,080	2,088,592
Office machinery	9	5,348,583	859,090	20,838	1,225,125	2,087,044	4,192,097	5,768,102
Scales	12	1,587,202	594,260	22,146	386,401	204,406	1,207,213	1,550,642
Industrial machinery	116	36,757,166	10,871,589	576,404	8,639,090	3,864,707	23,951,790	26,380,284
Elevators	6	2,318,120	766,013	37,813	978,603	130,337	1,912,766	1,810,781
Maritime Provinces—								
All plants	3	293,460	71,826	5,125	59,659	20,193	156,803	162,689
Quebec—								
All plants	30	14,876,201	5,032,366	226,808	4,493,825	1,300,285	11,053,284	11,901,201
Scales	4	565,298	247,286	14,228	147,165	26,268	434,947	447,044
Industrial machinery	22	11,024,447	3,467,214	135,255	3,123,610	1,236,410	7,962,489	8,600,582
All other plants	4	3,286,456	1,317,866	77,325	1,223,050	37,607	2,655,848	2,853,575
Ontario—								
All plants	110	36,083,528	9,517,108	507,122	8,495,972	5,294,819	23,815,021	27,299,458
Washing machines and wringers	9	2,304,356	582,482	8,553	1,056,823	381,417	2,029,275	2,079,918
Office machinery	7	4,777,206	664,755	6,992	1,168,060	2,084,330	3,924,137	5,476,408
Scales	8	1,021,904	346,974	7,918	239,236	178,138	772,266	1,103,598
Industrial machinery	82	24,702,963	7,108,922	429,455	5,083,734	2,481,757	15,103,868	16,773,344
All other plnats	4	3,277,099	813,975	54,204	948,119	169,177	1,985,475	1,886,190
Alberta, Manitoba and British Columbia—								
All plants	13	813,747	337,687	7,289	555,812	266,859	1,167,647	1,172,126
Industrial machinery	10	760,881	250,542	7,032	395,081	130,919	783,574	904,858
All other plants	3	52,866	87,145	257	160,731	5,180	384,073	267,268

Profincial Distribution.—The distribution of the establishments throughout the country is presented in the following table:—

Table No. 144—Distribution of Establishments in the Machinery Group, 1920.

—	Canada.	Nova Scotia.	New Brunswick.	Quebec.	Ontario.	Manitoba.	Alberta.	British Columbia.
All plants	156	1	2	30	110	4	2	7
Sewing machines	3	.....	.....	2	1	.....	.....	.....
Washing machines and wringers	10	.....	.....	.....	9	1	.....	.....
Office machinery	9	.....	.....	1	7	.....	1	.....
Scales	12	.....	.....	4	8	.....	.....	.....
Industrial machinery	116	1	1	22	82	3	.....	7
Elevators	6	.....	1	1	3	.....	1	.....

The capital investment in machinery plants in Ontario was $36,083,528, or 69·3 per cent of the total capital given as $52,066,936. The province next in order was Quebec with a capital of $14,876,201, or 28·6 per cent of the total investment.

The average number of wage-earners for the whole country was 9,439, of whom 47, or 0·5 per cent, were engaged in the Maritime Provinces; 3,388, or 35·9 per cent, in Quebec; 5,833, or 61·8 per cent, in Ontario; and 171, or 1·8 per cent, in the western provinces. The total production was $46,535,474, of which Ontario produced $27,299,458, or 69·3 per cent, and Quebec reported an output of $11,901,201 or 29·4 per cent.

CHAPTER SEVEN

MOTORS AND CYCLES

The group includes the establishments engaged in the manufacture of automobiles, automobile accessories and bicycles. For the convenience of those who are interested in the auxiliary industries, the statistics of the automobile and bicycle repair shops are also presented. The group is divided into two sections, the first dealing with the automobile manufacturing and repair, and the second with similar phases of the bicycle industry. Following are the principal statistics for the group including the repair shops:

Table 145.—Principal Statistics of the Motor and Cycle Group in the Years 1919 and 1920.

Classification.	Number or Amount.	
	1919	1920
Establishments	1,430	2,750
Capital investment $	59,620,984	92,725,194
Salaried employees	1,576	1,812
Salaries $	2,434,906	4,172,926
Average number of wage-earners	11,111	15,326
Cost of fuel $	428,882	1,125,933
Cost of materials $	62,163,701	85,717,875
Value of products $	103,224,658	140,252,013
Value added by manufacture $	41,060,957	54,534,138

I. The Automobile Industry

The statistics presented on the automobile industry in Canada for the calendar year 1920 include the plants manufacturing (a) automobiles, (b) automobile supplies and accessories, and (c) repairs to automobiles. A table extracted from the census of the rubber goods industry is added to show the manufacture of automobile casings, tubes and solid tires during the year 1920, as the information is of particular interest in connection with the automobile industry.

The rapid expansion of the automobile industry continued during the year 1920, and in each of the three branches considerable increase in production was shown. The value of production by classes of plants is given comparatively for the calendar years 1919 and 1920 in the following table—

Table 146—Table Showing the Value of Production in the Automobile Industry in the Years 1919 and 1920.

Branch of Industry.	1919	1920	Increase over 1919.
	$	$	$
Automobile manufacturing	80,619,846	101,465,846	20,846,000
Automobile supplies and accessories	8,571,890	19,361,882	10,789,992
Automobile repairs	12,004,970	16,592,623	4,587,653
Totals	101,196,706	137,420,351	36,223,645

In Table 148, the principal statistics of the industry are shown for Canada and the provinces for each of the three classes of plants. In Table 149, the principal information for Canada by classes of plants is shown comparatively for the years 1919 and 1920. This table permits a rapid survey of the situation and renders possible comparison of the increases in the different items shown as between the years 1919 and 1920, whilst showing the relative importance of the three branches of the industry. At the same time, the total column shows the combined information for comparison of the two years, so that the total increase in number of plants; capital investment; employees, salaries and wages; cost of materials and value of products can be readily seen.

Table 150 shows for 1919-20 for Canada and the provinces the number of plants operated in the various branches of the automobile industry. The number of automobile manufacturing plants increased from 11 to 17 and manufacturing started in two plants in the province of Quebec. In Ontario were found the remainder of the plants, 15 in number, an increase of four over 1919. In automobile supply plants the increase was 20 over 1919, the largest increase being in Ontario where 14 additional plants were operated during the year 1920.

Table 151 shows comparatively, under the various items, the capital investment in the three classes of plants, and Table 152 shows the same information for Canada and the provinces. The investment in automobile manufacturing in 1920 was reported as $53,906,506, an increase of $18,956,767 over the capital investment of 1919, which was reported as being $34,949,739.

In Table 153 comparisons of the number of employees, and the amounts paid in salaries and wages for the years 1919 and 1920, are shown separately for the different classes of plants. In automobile manufacturing plants alone, the amount paid in salaries and wages was $13,331,084, as against $9,712,788 in 1919, an increase of $3,618,296.

Table 154 shows, by months, the wage-earners engaged in the automobile industry in 1920 by classes of plants and for all plants. For all plants, the month of highest employment was June with 16,509 male and 566 female employees. In manufacturing plants, the peak of the year was reached in April with 8,492 males and 282 females. In plants devoted to the manufacture of supplies and accessories, July, with 382 males and 297 females, was the month of highest employment. In automobile repair plants July again appeared to be the busiest month with 5,466 employees.

Table 155 shows wage-earners classified according to the weekly rate of pay received. In automobile manufacturing plants, out of a total of 4,111 males over 16 years of age, 3,470 received $30 per week and over and only nine employees received less than $15 per week. In automobile supply and accessory plants, 644 out of a total of 1,136 male employees over 16 years of age received $30 or more per week, while 67 were reported as receiving under $15 per week. In automobile repair plants, the two largest groups of employees were shown as 830 receiving $20 to $24 per week, and 1,286 receiving $30 or more.

Table 156 shows for Canada, the quantity and value of the various kinds of fuel consumed during the years 1919 and 1920. The largest consumption was in the automobile manufacturing plants, where the cost of fuel amounted to $703,736 during 1920.

Miscellaneous expenses by classes of plants in Canada for the year 1920 are shown in Table 158. For all plants, the total of expenses other than the cost of fuel, salaries and wages, and cost of materials amounted to $15,216,900. Of this sum, $11,539,079 was chargeable to manufacturing plants; $2,029,778 to supply and accessory plants and $1,648,043 to repair plants.

Table 159 classifies by kinds of plants for Canada and the provinces, the cost of materials used in the automobile industry during the year 1920. The total was reported as $84,432,444 for all plants, an increase of nearly $24,000,000 over 1919. Of this amount $67,157,045 was used in manufacturing plants; $10,603,632 in supply and accessory plants and $6,671,767 in repair plants.

Table 160 shows in detail the various materials entering into the manufacture of automobiles and automobile supplies and accessories, as well as the various materials used in automobile repairs. The information furnished under "finished parts and accessories" in that section of the table dealing with automobile manufacturing shows that a very large part of the materials used were already the finished products of other plants. This was accounted for by the high degree of specialization which has characterized automobile construction in recent years, and by the fact that many plants were devoted entirely to the production of one part or section of an automobile. Though by far the greater number of cars manufactured during the year 1920 were electrically equipped upon leaving the factory, not a single Canadian automobile factory produced any of its electrical equipment. The same statement, to a very large degree, is applicable to the manufacture of wheels, springs, lamps and other particular sections of the finished automobile.

In Table 161 the distribution of the value of production by classes of plants is given for Canada and the provinces. By far the greatest amount was credited to the province of Ontario, where the production amounted to $126,557,157 out of a grand total of $137,420,351.

Table 162 shows the principal items of production for the various branches of the industry. It will be noted that in automobile manufacturing plants the large sum of $12,700,075 is reported as the value of automobile parts. In automobile supply and accessory plants, the largest amount reported is found under "motors," with a total value of $2,308,030. Out of a total of $16,592,623 reported in automobile repairs plants, $13,523,701 is covered by the general heading "repairs and over-hauling." Tire repairs are given as $1,438,478.

In Table 163, the manufacture of automobiles is shown for Canada and the provinces. It will be seen that all passenger cars were manufactured in the province of Ontario, and that, in its first year of production, Quebec only reported commercial automobiles and chassis. The largest item of production, which was more than 50 per cent of the total value was shown under "open, four to five passenger automobiles," generally called touring cars, the totals being 64,351 cars for a value of $59,430,558. Under the classification "commercial, trucks," those of one to under five tons capacity are credited with the largest number, being reported at 9,613 of a total value of $7,491,471.

Table 164 compares the commercial and passenger automobiles for 1919 and 1920. A change in the schedule used for collecting the information was made, and for this reason, the classification of 1919 is shown as well as that of 1920. For the first time, automobile plants manufacturing engines were asked to give information as to the type and horse-power of motors manufactured. This information is shown in Table 165.

Table 166 gives information as to pneumatic casings and tubes, and solid rubber tires manufactured in Canada during the year 1920. The total value is given as $40,177,119. This information is an extract from the data published on the rubber goods industry under date of January, 1922.

The rapid increase in the use of automobiles can be seen in Table 167 where the number of licensed cars for Canada and the provinces appears for the series of years, 1915-1921. Registrations for Canada in these years increased from 89,944

in 1915 to 465,378 in 1921. The three provinces with highest registration were Ontario with 206,521 in 1921, Saskatchewan with 61,184 and Quebec with 54,670.

Imports and exports of automobiles, automobile parts and engines are shown in Table 168 for the years 1919 and 1920. The table will make it apparent that the higher priced automobiles have been imported and the lower priced ones exported from Canada.

It will also be noted that automobile engines are not exported from Canada, whilst 37,206 valued at $6,982,658 were imported during the year 1919, as against 30,526 valued at $7,627,386 during the year 1920. The increase of $4\frac{1}{4}$ million dollars in the value of exports indicates that this phase of the automobile industry is progressing favourably, whilst the value of imports which totalled $35,539,804 in 1920 leaves no doubt as to the room for expansion existing for the industry in Canada. The automobile branch of Canadian industry can look forward, not only to an increased demand for domestic use and for export, but also to development which will enable them to fill, at home, requirements at present being satisfied through imports. In the manufacture of engines alone nearly one-third of the Canadian manufacturing requirements are supplied by imports.

The number of automobiles scrapped annually has been a question often arising in the consideration of probable trade. An attempt has been made to show the approximate number of cars withdrawn from use during the years 1919 and 1920. The basis used, as shown in the table below, is to credit on the one hand the cars licensed during the previous year and manufactured and imported during the year in question, and to deduct from this amount the cars exported and licensed during the same year. From these figures it would appear that of a total of 332,854 cars operated during 1919, the number removed from use was 7,873. The comparison for 1920 shows that of 396,913, a total of 15,675 were discarded. The number of cars to be replaced must necessarily increase each year as more cars are brought into use. In the calculations made, variation in the normal stocks in dealers' and manufacturers' hands from year to year has not been considered.

Following is a comparative statement showing the approximate number of automobiles withdrawn from use in Canada during the years 1919 and 1920:—

Table 147.—Table Showing the Number of Automobiles withdrawn from use in Canada during 1919–1920.

	1919		1920.	
	Year.	No.	Year	No.
Cars to be accounted for:				
Automobile licenses	1918	264,422	1919	332,854
Manufactured	1919	87,835	1920	94,144
Imported	1919	11,750	1920	9,144
Total		364,007		436,142
Cars accounted for:				
Automobile licenses	1919	332,854	1920	396,913
Exported	1919	22,949	1920	23,012
Re-exports	1919	331	1920	542
Total		356,134		420,467
Cars withdrawn from use	1919	7,873	1920	15,675

Table 148.—Principal Statistics of the Automobile Industry by Classes of Plants for Canada and the Provinces, 1920.

Items.	Automobile Plants.			Automobile Supply Plants.						
	Canada.	Ontario.	Quebec.	Canada.	Alberta.	British Columbia	Manitoba	Ontario.	Quebec.	Saskatchewan.
Number of establishments	17	15	2	62	3	8	5	40	4	2
Capital $	53,906,506	53,597,244	309,262	15,332,887	15,909	130,536	52,115	14,982,276	145,135	6,916
Employees on salaries—										
Males No.	829	816	13	264	1	17	7	231	8	.....
Females "	260	258	2	74	1	1	1	70	1	.....
Salaries paid $	2,642,427	2,611,219	31,208	1,022,847	427	46,922	10,204	945,459	19,835	.....
Employees on wages—										
Males No.	6,974	6,937	37	2,525	6	56	22	2,418	20	3
Females "	218	218	.....	239	1	1	6	224	7	.....
Wages paid $	10,688,657	10,643,343	45,314	3,747,149	11,439	86,303	32,770	3,585,487	28,070	3,080
Fuel employed $	703,736	701,433	2,303	143,027	940	3,445	1,919	136,491	232	.....
Power—										
Units No.	685	682	3	869	2	8	3	853	3	.....
Total H.P.	28,146	28,096	50	12,744	4	66	4	12,648	22	.....
Used H.P.	17,628	17,578	50	7,785	3	65	4	7,691	22	.....
Miscellaneous expenses $	11,539,079	11,483,829	55,250	2,029,778	4,479	48,217	18,755	1,943,999	13,748	580
Cost of materials $	67,157,045	66,934,309	222,736	10,603,632	23,313	129,933	72,912	10,325,296	50,533	1,645
Value of products $	101,465,846	101,147,891	317,955	19,361,882	45,456	332,530	160,536	18,701,486	115,204	6,670

Items.	Automobile Repairs.									
	Canada.	Alberta.	British Columbia.	Manitoba.	New Brunswick	Nova Scotia.	Ontario.	Prince Edward Island.	Quebec.	Saskatchewan.
Number of establishments	2,503	315	202	160	70	75	1,048	12	202	419
Capital $	19,943,913	2,710,464	1,679,013	1,918,643	370,514	743,935	7,408,110	28,839	2,214,650	2,869,745
Employees and salaries—										
Males No.	299	19	30	23	9	12	115	3	66	22
Females "	41	3	1	2	2	.....	26	.....	7	.....
Salaries paid $	444,351	34,832	52,744	30,978	6,018	12,060	172,011	2,696	101,057	31,955
Employees on wages—										
Males No.	4,688	540	467	346	110	185	1,945	14	512	568
Females "	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wages paid $	4,932,203	603,667	511,818	359,284	103,530	189,992	2,039,681	12,651	503,375	608,205
Fuel employed $	232,860	30,408	14,812	25,447	4,475	5,059	83,982	621	28,630	39,426
Power—										
Units No.	1,693	251	137	139	65	40	635	8	138	280
Total H.P.	6,920	1,113	510	630	190	149	2,476	15	705	1,132
Used H.P.	6,038	985	492	561	179	146	2,148	13	509	1,005
Miscellaneous expenses $	1,648,043	220,977	183,352	128,332	32,052	39,681	628,061	4,714	203,630	207,244
Cost of materials $	6,671,767	945,897	654,219	377,620	110,749	213,945	2,682,268	12,035	827,842	847,142
Value of products $	16,592,623	2,108,938	1,723,058	1,094,511	314,554	528,520	6,707,780	37,913	1,959,585	2,126,664

Table 149.—Principal Statistics of the Automobile Industry in Canada Compared for the Calendar Years 1919-20.

Items.	Year.	Automobile Manufacturing.	Automobile Supplies.	Automobile Repairs.	Total.
Number of plants	1919	11	42	1,236	1,289
	1920	17	62	2,503	2,582
Capital $	1919	34,949,739	8,364,901	13,628,288	56,943,018
	1920	53,906,506	15,332,987	19,943,913	89,183,306
Salaried employees No.	1919	937	355	236	1,528
	1920	1,089	338	340	1,767
Salaries paid $	1919	1,560,633	486,297	336,609	2,383,539
	1920	2,642,427	1,022,847	444,351	4,109,625
Wage-earners No.	1919	5,839	1,378	3,375	10,592
	1920	7,192	2,764	4,688	14,644
Wages paid $	1919	8,152,153	1,462,144	3,389,794	13,004,093
	1920	10,688,657	3,747,149	4,932,203	19,368,009
Cost of materials $	1919	51,690,715	5,221,439	4,368,810	61,280,964
	1920	67,157,045	10,603,632	6,671,767	84,432,444
Value of products $	1919	80,619,846	8,571,890	12,004,970	101,196,706
	1920	101,465,846	19,361,882	16,592,623	137,420,351

Table 150.—Number of Establishments in the Automobile Industry for Canada and the Provinces, Compared for the Years 1919-1920.

Provinces.	Automobile Manufacturing.		Automobile Supplies.		Automobile Repairs.	
	1919	1920	1919	1920	1919	1920
CANADA	11	17	42	62	1,236	2,503
Alberta	.....	.....	2	3	96	315
British Columbia	.....	.....	6	8	78	202
Manitoba	.....	.....	3	5	81	160
New Brunswick	.....	.....	.....	.....	34	70
Nova Scotia	.....	.....	.....	.....	49	75
Ontario	11	15	26	40	600	1,048
Prince Edward Island	.....	.....	.....	.....	2	12
Quebec	.....	2	3	4	162	202
Saskatchewan	.....	.....	2	2	134	419

Table 151.—Capital invested in the Automobile Industry by Classes of Plants for Canada, 1920.

Plants.	Land, Buildings and Fixtures.	Machinery and Tools.	Materials on Hand, Stocks in Process, etc.	Cash, Trading and Operating Accounts, etc.	Total.
	$	$	$	$	$
Totals	20,096,929	14,858,025	32,451,784	21,776,568	89,183,306
Automobile manufacturing	10,143,742	7,455,440	22,840,396	13,466,928	53,906,506
Automobile supplies	3,456,449	4,133,377	4,777,641	2,965,420	15,332,887
Automobile repairs	6,496,738	3,269,208	4,833,747	5,344,220	19,943,913

Table 152.—Total Capital Invested in the Automobile Industry by Classes of Plants for Canada and the Provinces, 1920.

Provinces.	Automobile Manufacturing.	Automobile Supplies.	Automobile Repairs.	Totals.
	$	$	$	$
CANADA	53,906,506	15,332,887	19,943,913	89,183,306
Alberta	.....	15,909	2,710,464	2,726,373
British Columbia	.....	130,536	1,679,013	1,809,549
Manitoba	.....	52,115	1,918,643	1,970,758
New Brunswick	.....	.....	370,514	370,514
Nova Scotia	.....	.....	743,935	743,935
Ontario	53,597,244	14,982,276	7,408,110	75,987,630
Prince Edward Island	.....	.....	28,839	28,839
Quebec	309,262	145,135	2,214,650	2,669,047
Saskatchewan	.....	6,916	2,869,745	2,876,661

Table 153.—Employees, Salaries and Wages, by Classes of Plants, Compared for 1919-1920.

	1920			1919		
	Employees		Salaries and Wages.	Employees		Salaries and Wages.
	Male.	Female.		Male.	Female.	
In Automobile Plants—	No.	No.	$	No.	No.	$
Officers, superintendents and managers	157	1	954,215	124	1	606,067
Clerks, stenographers, etc.	672	259	1,688,212	585	227	954,566
Wage-earners, average number	6,974	218	10,688,657	5,577	257	8,152,155
Totals	7,803	478	13,331,084	6,286	485	9,712,788
In Automobile Supply Plants—						
Officers, superintendents and managers	125	6	475,478	81	1	288,521
Clerks, stenographers, etc.	139	68	547,369	193	80	197,776
Wage-earners, average number	2,525	239	3,747,149	1,187	191	1,462,144
Totals	2,789	313	4,770,021	1,461	272	1,948,441
In Automobile Repair Plants—						
Officers, superintendents and managers	191	3	319,884	95	2	174,426
Clerks, stenographers, etc	108	38	124,467	100	39	162,183
Wage-earners, average number	4,688	.....	4,932,203	3,372	3	3,389,794
Totals	4,987	41	5,376,554	3,567	44	3,726,403
All Plants—						
Officers, superintendents and managers	473	10	1,749,577	300	4	1,069,014
Clerks, stenographers, etc	919	365	2,360,048	878	346	1,314,525
Wage-earners, average number	14,187	457	19,368,009	10,136	451	13,004,093
Totals	15,579	832	23,477,634	11,314	801	15,387,632

Table 154.—Average Number of Wage-Earners Engaged in the Automobile Industry by Months, for Canada in the Year 1920.

	Automobile Manufacturing.		Automobile Supplies.		Automobile Repairs.		All Plants.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
	No.	No.	No.	No.	No.	No.	No.	No.
January	7,374	253	2,181	210	3,708		13,263	465
February	7,743	266	2,424	212	3,773		13,940	478
March	8,143	290	2,836	259	4,082		15,061	549
April	8,492	282	3,015	301	4,616		16,123	583
May	8,174	258	3,026	293	5,213		16,413	551
June	8,115	277	3,009	289	5,385		16,509	566
July	7,572	219	3,082	297	5,466		16,120	516
August	6,670	204	3,073	270	5,411		15,154	474
September	6,796	203	2,835	236	5,142		14,773	439
October	5,820	165	2,341	215	4,892		13,053	380
November	4,693	111	1,430	164	4,481		10,604	275
December	4,092	85	1,049	127	4,084		9,225	212
Averages	6,974	218	2,525	239	4,688		14,187	457

Table 155.—Number of Employees in the Automobile Industry—by age, and by sex, and classified according to their weekly rates of pay—each industrial group for Canada in 1920.

Groups of Classified Weekly Wages.	Over 16 years.		Under 16 years.	Total Employees.
	Male.	Female.	Male.	
	No.	No.	No.	No.
In Automobile Plants—				
Under $5 per week	1			1
$5 to under $10 per week	1		1	2
$10 to under $15 per week	7	14		21
$15 to under $20 per week	73	6		79
$20 to under $24 per week	127			127
$24 to under $28 per week	251			251
$28 to under $30 per week	181	60		241
$30 per week and over	3,470	5		3,475
Totals	4,111	85	1	4,197
In Automobile Supply Plants—				
Under $5 per week				
$5 to under $10 per week	17	12		29
$10 to under $15 per week	50	40	3	93
$15 to under $20 per week	71	74	1	146
$20 to under $24 per week	135	17		152
$24 to under $28 per week	155	8		163
$28 to under $30 per week	64	5		69
$30 per week and over	644	4		648
Totals	1,136	160	4	1,300
Automobile Repair Plants—				
Under $5 per week	152		4	156
$5 to under $10 per week	437		7	444
$10 to under $15 per week	606		8	614
$15 to under $20 per week	803		2	805
$20 to under $24 per week	830		3	833
$24 to under $28 per week	632		5	637
$28 to under $30 per week	195		2	197
$30 per week and over	1,286		2	1,288
Totals	4,941		33	4,974
Grand Totals	10,188	245	38	10,471

Table 156.—Fuel Consumed in the Automobile Industry by Classes of Plants for Canada, Compared for the Years 1919 and 1920.

	Unit of Measure.	1920.		1919.	
		Quantity.	Total Cost.	Quantity.	Total Cost.
			$		$
In Automobile Plants—					
Bituminous coal	Tons	11,978	103,302	56,056	372,981
Anthracite coal	"	47,682	556,064		
Coke	"	564	1,187	15	150
Gasoline	Gals.	39,896	14,223	30,000	9,244
Fuel oil	"	182,669	18,043	169,383	11,967
Gas	M Cu. Ft.	18,276	10,775	3,858	3,669
Other fuel			142		
Total cost			703,736		398,011
In Automobile Supply Plants—					
Bituminous coal	Tons	11,007	101,189	3,734	26,810
Anthracite coal	"	305	5,466	136	1,508
Lignite coal	"			4	52
Coke	"	75	1,447	20	260
Gasoline	Gals.	5,128	2,432	7,680	2,554
Fuel oil	"	297,652	27,325	7,090	473
Gas	M Cu. Ft.	11,798	4,272	11,918	13,033
Other fuel			896		1,346
Total cost			143,027		46,036
In Automobile Repair Plants—					
Bituminous coal	Tons	6,178	65,368	1,716	16,466
Anthracite coal	"	3,555	52,564	653	7,766
Lignite coal	"	2,026	18,062	832	6,765
Coke	"	241	2,938	53	371
Gasoline	Gals.	96,143	44,822	35,627	12,591
Fuel oil	"	41,049	4,724	4,193	919
Gas	M Cu. Ft.	42,798	20,232	18,202	9,106
Other fuel			24,150		5,440
Total cost			232,860		59,424

Table 157.—Power Employed in the Automobile Industry, 1920.

	Automobile Manufacturing	Automobile Accessories Manufacturing	Total
Boilers—			
No.	27	16	43
Rated H. P.	5,844	2,868	8,712
H. P. Used	3,804	2,471	6,275
Steam Engines—			
No.	20	9	29
Rated H. P.	5,920	2,290	8,210
H. P. Used	4,450	1,595	6,045
Internal Combustion—			
No.	4		4
Rated H. P.	4,450		4,450
H. P. Used	3,150		3,150
Electric Motors—			
No.	623	839	1,462
Rated H. P.	8,957	7,211	16,168
H. P. Used	3,849	3,469	7,318
Other Power—			
No.	11	5	16
Rated H. P.	2,975	375	3,350
H. P. Used	2,375	250	2,625

Table 158.—Miscellaneous Expenses Incurred in the Automobile Industry, by Classes of Plants in Canada for the Year 1920.

Items.	Automobile Manufacturing.	Automobile Supplies.	Automobile Repairs.	Totals.
	$	$	$	$
Total	11,539,079	2,029,778	1,648,043	15,216,900
Rent of offices, works and machinery	35,595	51,578	528,425	615,598
Cost of purchased power	91,505	74,191	72,859	238,555
Insurance, premiums only	191,180	63,145	143,704	398,029
Taxes (municipal, provincial and federal)	2,369,698	154,724	136,009	2,660,431
Royalties, use of patents	55,639	19,195	632	75,466
Advertising expenses	674,444	44,586	113,994	833,024
Travelling expenses	619,090	62,741	19,422	701,259
Repairs to buildings and machinery	1,208,873	224,015	162,306	1,595,194
All other sundry expenses	6,293,049	1,335,603	470,692	8,099,344

Table 159.—Total Cost of Materials Used in the Automobile Industry by Classes of Plants for Canada and the Provinces, 1920.

Provinces.	Automobile Manufacturing	Automobile Supplies.	Automobile Repairs.	Totals.
	$	$	$	$
Canada	67,157,045	10,603,632	6,671,767	84,432,444
Alberta		23,313	945,897	969,210
British Columbia		129,933	654,219	784,152
Manitoba		72,912	377,620	450,532
New Brunswick			110,749	110,749
Nova Scotia			213,945	213,945
Ontario	66,934,309	10,325,296	2,682,268	79,941,873
Prince Edward Island			12,085	12,085
Quebec	222,736	50,533	827,842	1,101,111
Saskatchewan		1,645	847,142	848,787

Table 160.—Value of all Materials Used in the Automobile Industry by Classes of Plants for Canada during the Year 1920.

(a) Automobiles, Manufacturing.

Kind.	Total Cost.	Kind.	Total Cost.
	$		$
Raw Materials—		Finished Parts and Accessories—	
Steel	1,006,848	Chassis	6,611,467
Iron	33,903	Bodies	12,972,801
Malleable iron	560,014	Tops	3,601,964
Copper	64,557	Engines	8,810,486
Brass	609,117	Springs	985,528
Aluminum	26,963	Wheels	2,867,983
Other metals	28,891	Motor parts	545,639
Iron castings	1,763,852	Speedometer and other instrument board equipment	605,323
Steel castings	1,875,358	Body and chassis parts	2,762,701
Other metal castings	15,060	Batteries	1,058,403
Tubes and piping	860,354	Generators	159,526
Bolts, nuts, rivets and screws	668,158	Magnetos	7,602
Glass	41,312	Carburetors	265,823
Lumber, all kinds	625,372	Radiators	923,321
Leather and other materials for upholstering, tops and curtains	2,250,635	Coils	325,439
Paints, oils and varnishes	266,871	Lamps	497,590
Other raw materials	30,012	Tires, pneumatic, casing	4,305,482
		" " tubes	2,754,706
		" solid	164,356
		Jacks, pumps, wrenches and other tools	319,847
		Other finished parts and accessories	5,883,781
		Total	67,157,045

Table 160.—Value of all Materials Used in the Automobile Industry by Classes of Plants for Canada during the Year 1920—Concluded.

(b) Automobile Supply Plants.

Kind.	Total Cost.	Kind.	Total Cost.
	$		$
Metals—			
Iron and steel	4,407,003	Hardware (nails, clips, fasteners, tacks, buttons, etc.)	208,612
Brass	253,877	Glass	365,983
Copper	167,358	Finished parts of all kinds	652,537
Aluminum	208,371	All other material	2,143,045
All other metals	232,554		
Lumber and timber	854,864	Total	10,603,632
Covering materials (leather, imitation fabrics, cloths, etc.)	1,309,428		

(c) Automobile Repair Plants.

Kind.	Total Cost.	Kind.	Total Cost.
	$		$
Automobile parts	5,721,493	Rubber and gum	212,200
Bicycle parts	29,168	Cement	46,019
Threads, sections, etc.	85,194	All other material	430,945
Fabrics	146,748	Total	6,671,767

Table 161.—Value of Products of the Automobile Industry by Classes of Plants, for Canada and the Provinces during the Year 1920.

Provinces.	Automobile Manufacturing	Automobile Supplies.	Automobile Repairs.	Totals.
	$	$	$	$
Canada	101,465,846	19,361,882	16,592,623	137,420,351
Alberta		45,456	2,108,938	2,154,394
British Columbia		332,530	1,723,058	2,055,588
Manitoba		160,536	1,094,511	1,255,047
New Brunswick			314,554	314,554
Nova Scotia			528,520	528,520
Ontario	101,147,891	18,701,486	6,707,780	126,557,157
Prince Edward Island			37,913	37,913
Quebec	317,955	115,204	1,950,685	2,383,844
Saskatchewan		6,670	2,126,664	2,133,334

Table 162.—Value of Products of the Automobile Industry by Classes of Plants for Canada during the Year 1920.

Automobile Manufacturing—		
Automobiles, pleasure	$ 78,075,778	
" commercial	8,153,517	
" chassis	2,407,206	
" special	75,220	
" parts	12,700,075	
Repair work	54,050	
Total		$101,465,84

Table 162.—Value of Products of the Automobile Industry by Classes of Plants for Canada during the Year 1920—Concluded.

Automobile Accessories—		
Bodies	$ 1,746,984	
Motors	2,308,030	
Tops	2,167,776	
Wheels	2,024,300	
Windshields	839,856	
Springs	583,531	
Rims	325,039	
Lamps	372,577	
Covers	174,170	
All other	8,819,619	
Total		$ 19,361,882
Automobile Repairs—		
Repairs and overhauling	13,523,701	
Repairs to bicycles	322,635	
Tire repairs	1,438,478	
Other work	1,307,809	
Total		$ 16,592,623
Grand total		$137,420,351

Table 163.—Quantity and Value of Products of the Automobile Manufacturing Plants for Canada and the Provinces, 1920.

Products.	Canada.		Ontario.		Quebec.	
	Quantity.	Total Value.	Quantity.	Total Value.	Quantity.	Total Value.
	No.	$	No.	$	No.	$
Automobiles, pleasure—						
Open, 2-3 passenger	3,759	3,270,319	3,759	3,270,319	.....	.....
Open, 4-5 passenger	64,351	59,430,558	64,351	59,430,558	.....	.....
Open, 7 passenger	2,968	5,653,654	2,968	5,653,654	.....	.....
Closed, 2-3 passenger	3,276	3,762,151	3,276	3,762,151	.....	.....
Closed, 4-5 passenger	4,589	5,644,403	4,589	5,644,403	.....	.....
Closed, 7 passenger	92	314,693	92	314,693	.....	.....
Automobiles, commercial—						
Under 1 ton capacity	546	535,732	546	535,732	.....	.....
1 ton and under 5 tons	9,613	7,491,471	9,578	7,348,124	35	143,347
5 tons and over	15	126,314	.....	.....	15	126,314
Automobile chassis	4,601	2,407,206	4,588	2,363,299	13	43,907
Automobile, special	334	75,220	334	75,220	.....	.....
Amount received for custom and repair work	.....	54,050	.....	52,177	.....	1,873
All other products (including parts)	.....	12,700,075	.....	12,697,561	.....	2,514
Totals	.....	101,465,846	.....	101,147,891	.....	317,955

Table 164.—Quantity and Value of All Automobiles Manufactured in Canada Compared for the Years 1919-1920.

Classification.		1920.		1919.	
1920.	1919.	No.	Value.	No.	Value.
			$		$
Open, 2-3 passenger	Runabouts	3,759	3,270,319	3,026	2,104,518
Open, 4-7 passenger	Touring	67,319	65,084,212	61,257	52,576,524
Closed	Closed	7,957	9,721,247	4,125	3,985,264
Chassis	Chassis	4,601	2,407,206	11,528	5,053,862
Trucks, under one ton	Delivery wagons	546	535,732	372	270,254
Trucks, over one ton	Trucks	9,628	7,617,785	7,527	4,849,398
Special		334	75,220	.....	.....
Totals		94,144	88,711,721	87,835	68,929,820

Table 165.—Type and Horsepower of All Engines Manufactured in Automobile Plants during 1920.

	No.	Total H.P.	Average H.P.
Type of Engine—			
4 cylinders	54,121	1,192,610	22·02
6 cylinders	4,904	266,000	54·24
Totals	59,025	1,458,610	
Engine Power—			
Under 25 horsepower	54,121	1,192,610	22·02
25 h.p. to under 40 h.p.	226	9,000	39·82
40 h.p. and over	4,678	257,000	54,94
Totals	59,025	1,458,610	

Table 166.—Automobile Pneumatic Casings and Tubes, and Solid Rubber Tires Manufactured in Canada during 1920.

Kinds and Sizes.	Quantity.	Value.
	No.	$
Pneumatic Tires and Tubes—		
Casings—		
Sizes 30 x 3 to 32 x 3½	853,404	14,953,709
" 31 x 4 to 34 x 4	307,271	8,036,303
" 32 x 4½ to 37 x 4½	102,687	3,819,355
" 34 x 5 to 37 x 5	20,766	1,040,962
All other inch sizes	30,562	1,395,427
Millimetre sizes	247,284	5,930,045
Total, Casings	1,561,974	35,175,801
Tubes—		
Sizes 30 x 3 to 32 x 3½	892,356	2,071,437
" 31 x 4 to 34 x 4	272,739	916,323
" 32 x 4½ x to 37 x 4½	98,130	469,898
" 34 x 5 to 37 x 5	24,640	148,637
All other inch sizes	63,094	400,467
Millimetre sizes	76,587	264,699
Total, Tubes	1,427,546	4,271,461
Auto Truck Rubber Tires, solid—		
Sizes 32 x 3½ to 36 x 3½	9,487	226,382
" 32 x 4 to 36 x 4	4,982	156,591
" 34 x 5 to 40 x 5	4,213	177,468
" 34 x 6 to 40 x 6	1,288	63,724
" 34 x 7 to 40 x 12	707	78,042
All other inch sizes	243	9,720
Millimetre sizes	524	17,930
Total, Solid Tires	21,444	729,857

RECAPITULATION.

Pneumatic casings	$ 35,175,801
Pneumatic tubes	4,271,461
Solid auto tires	729,857
Total value	$ 40,177,119

Table 167.—Number of Motor Vehicles Registered in Canada by Provinces, 1915-1921.

Provinces.	1915.	1916.	1917.	1918.	1919.	1920.	1921.
CANADA	89,944	123,464	197,799	275,746	341,316	407,064	465,378
Alberta	5,832	9,516	20,624	29,300	34,000	38,015	40,235
British Columbia	8,360	9,457	11,645	15,370	22,420	28,000	32,900
Manitoba	9,225	12,765	17,507	24,012	30,118	36,455	40,215
New Brunswick	1,900	2,965	2,251	6,434	8,306	11,196	13,615
Nova Scotia	1,841	3,012	5,350	8,100	10,210	12,450	14,205
Ontario	42,346	54,375	83,308	114,376	144,804	177,561	206,521
Prince Edward Island	34	50	303	639	967	1,419	1,751
Quebec	10,112	15,335	21,213	26,897	33,547	41,562	54,670
Saskatchewan	10,225	15,900	32,505	50,531	56,855	60,325	61,184
Yukon Territory	69	89	93	87	89	81	82

Table 168.—Number and Value of Automobiles, Freight and Passenger, and the Value of Automobile Parts (a) Imported into Canada during the Calendar Years 1919 and 1920, and (b) Exported from Canada during the same years.

Items.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
	No.	$	No.	$
1919.				
Automobiles, freight and passenger	11,750	12,741,699	22,949	13,253,516
Automobile engines	37,206	6,982,658	.....	.....
Automobile parts	.....	9,944,641	.....	3,490,577
Total value 1919	.....	29,668,398	.....	16,744,093
1920.				
Automobiles, freight and passenger	9,144	13,860,600	23,012	16,635,235
Automobile engines	30,526	7,627,386	.....	.....
Automobile parts	.....	14,912,818	.....	4,276,027
Total value 1920	.....	35,539,804	.....	20,911,262

II. Bicycles

The second section of the motor and cycle group includes the establishments employed in the manufacture and repair of bicycles and motor-cycles. The output of bicycles increased from 30,145, valued at $1,210,992, in 1919, to 34,418, worth $1,484,822, in 1920. No motor-cycles were produced in 1919 while in 1920 the output was 34, worth $4,150. The bicycle and tire repair was valued at $551,147 in 1919 and $449,581 in 1920.

The average employment per month for all plants in 1919 was 519 wage-earners, while 682 were engaged in 1920. The maximum monthly employment in 1919 was January with a pay-roll of 550 and the minimum of 483 was recorded for November. The maximum in 1920 was reported for June when 786 were employed and the minimum was January when the pay-rolls carried 560 wage-earners. The increase in the bicycle employment occurred in the manufacturing plants as the average reported for the repair plants decreased from 198 to 183.

The five manufacturing plants were located in Ontario and the distribution of the establishments is shown by the following table:—

Table 169.—Character and Distribution of ownership in the Bicycle Industry in the Year 1920.

——	All Plants.	Bicycle Mfg.	Bicycle Repair.
Establishments.....No.	168	5	163
Manufacturing concerns..... "	168	5	163
Partnerships, and individual owners..... "	162	2	160
Incorporated companies..... "	6	3	3
Par value of securities issued by the incorporated companies:—			
Total owned entirely in Canada.....	$1,792,736	$1,680,150	$112,586

Table 170.—Principal Statistics of the Bicycle Industry in the Year 1920.

Distribution.	Number of Establishments.	Average Number Wage-Earners.	Wages.	Capital.	Cost of Materials.	Value of Products.
			$	$	$	$
CANADA.						
All plants.....	168	682	758,592	3,541,888	1,285,431	2,831,662
Bicycle mfg.....	5	499	611,933	3,013,035	1,079,463	2,320,478
Bicycle repairs.....	163	183	146,659	528,853	205,968	511,184

Table 171.—Historical Summary of the Bicycle Industry from 1890-1919.

All Plants. Year.	Number of Establishments.	Average Number Wage-Earners.	Wages.	Capital.	Cost of Materials.	Value of Products.
			$	$	$	$
1919.....	141	519	547,557	2,677,966	882,737	2,027,952
1918.....	4	469	444,044	1,890,968	691,375	1,601,262
1917.....	13	540	453,230	1,212,331	702,514	1,457,994
1915.....	3	21	13,593	112,874	98,517	147,266
1910.....	4	35	18,825	68,000	30,060	72,179
1905.....	5	206	98,733	1,036,836	.....	335,425
1900.....	16	413	163,596	1,052,700	299,753	550,606
1890.....	5	88	26,675	78,800	43,270	97,550

Commodity Statistics.—The production of bicycles was 34,418, worth $1,484,822, and the imports were 1,471 only valued at $38,477. Deducting the exports of 285, worth $17,821, the bicycles made available for use in Canada during the year were 35,604 only, worth $1,505,478. The output of motor-cycles was 34, worth $4,150. The import item includes small motor vehicles in addition to motor-cycles, rendering the number of 1,270 and value of $345 934 excessive for the purpose of computing the visible supply of motor-cycles. The importation of tricycles was 11,690, worth $51,983, and none were manufactured in Canada.

Table 172.—Materials Used in the Bicycle Industry in the Year 1920.

Commodity.	Unit of Measure.	Quantity.	Cost at Works.	Commodity.	Unit of Measure.	Quantity.	Cost at Works.
			$				$
Total	...	...	1,285,431	Other metal parts	...	...	84,779
				Chains	Feet.	159,555	51,150
Steel	Tons.	1,215	222,359	Leather, including belting	Lbs.	93,508	47,128
Iron	"	36	22,335	Lumber	M. ft.	6,172	59,289
Other metals	Lbs.	97,156	32,362	Tires and tubes	No.	60,844	152,941
Tubing	Feet.	1,130,250	126,839	All other materials	...	...	307,891
Bicycle parts	...	...	178,358				

Table 173.—Products of the Bicycle Industry in the Year 1920.

Commodity.	Unit of Measure.	Quantity.	Value at Works.	Commodity.	Unit of Measure.	Quantity.	Value at Works.
			$				$
Total	...	...	2,831,662	Bicycle repairs	...	...	413,590
				Tire repairs	...	...	35,991
Bicycles, men's	No.	27,284	1,184,393	Other products including parts	...	...	804,565
Bicycles, women's	"	6,228	265,289				
Bicycles, children's	"	906	35,140	Other custom work and repairs	...	...	88,544
Motor-cycles	"	34	4,150				

Table 174.—Principal Imports of Bicycles and Motor-Cycles in 1920-1921.

Commodity.	Unit of Measure.	Calendar Year 1920.			Calendar Year 1921.		
		Quantity.	Value.	Rate per Unit.	Quantity.	Value.	Rate per Unit.
			$	$		$	$
Bicycles, n.o.p.	No.	1,471	38,477	26	1,144	46,575	41·
Bicycle and tricycle parts, including nickel and electro-plated parts for the mfg. of bicycles	...	...	222,795	...	...	77,430	...
Tricycles, n.o.p.	No.	11,690	51,983	4·45	5,473	28,475	5·20
Motorcycles and motor vehicles of all kinds, n.o.p.	"	1,270	345,934	272	651	241,225	371·
Motorcycles and motor vehicle parts, n.o.p.	...	...	139,045	...	...	69,574	...

Table 175.—Exports of Bicycles and Parts in 1920 and 1921.

Commodity.	Unit of Measure.	Calendar Year 1920.			Calendar Year 1921.		
		Quantity.	Value.	Rate per Unit.	Quantity.	Value.	Rate per Unit.
			$	$		$	$
Bicycles	No.	285	17,821	62	80	3,652	46
Bicycles, parts of	...	...	222,166	...	...	40,828	...

Employment.—The average number of employees in 1920 was 727, of whom 19 were officers, managers and superintendents, 26 clerical staff and 682, wage-earners. The wage and salary cost was $821,893, of which the wage-earners received $758,592. Of the 643 wage-earners employed on December 15 or nearest representative date 7·9 per cent received less than $10 per week, 32·7 per cent were paid from $10 to $20 per week, 35·4 per cent received a wage of from $20 to $30, and 24 per cent received a weekly remuneration of $30 and over.

Table 176.—Average Working Time in the Bicycle Industry in the Year 1920.

Classification.	Establishments.	Average Working Time		Average Days in Operation.		
		Hours per day.	Hours per week.	Full time.	Part time.	Idle time.
All plants	168	9	50	259	12	33
Bicycle manufacturing	5	9	49	282	21	1
Bicycle repairs	163	9	50	258	12	34

Table 177.—Number of Employees, with Salaries and Wages Paid in the Bicycle Industry in the Years 1919 and 1920.

Classification.	Year.	Number of Employees.	Male.	Female.	Salaries and Wages.
					$
All plants—Total employees	1919	567	552	15	599,014
	1920	727	667	60	821,893
Officers, managers and superintendents	1919	18	18		29,317
	1920	19	19		42,578
Clerical employees	1919	30	16	14	21,646
	1920	26	15	11	20,723
Wage earners	1919	519	518	1	547,557
	1920	682	633	49	758,592

Table 178.—Average Number of Wage-Earners Employed in the Bicycle Industry in 1919 and 1920.

Month.	All Plants.		Bicycle Mfg.		Bicycle Repairs.	
	1919.	1920.	1919.	1920.	1919.	1920.
Average	519	682	321	499	198	183
January	550	560	380	406	170	154
February	518	603	345	444	173	159
March	518	684	335	517	183	167
April	536	731	323	541	213	190
May	518	766	296	566	222	200
June	496	786	273	582	223	204
July	532	777	305	572	227	205
August	520	747	299	543	221	204
September	520	677	309	484	211	193
October	492	627	304	445	188	182
November	483	621	308	448	175	173
December	548	608	371	441	177	167

Table 179.—Number of Employees in the Bicycle Industry in Canada, 1919 and 1920, Classified by Age and Sex and According to their Weekly Rates of Pay.

——	Year.	Total Number of Wage-Earners.	Over 16 Years of Age.		Under 16 Years of Age.	
			Male.	Female.	Male.	Female.
		No.	No.	No.	No.	No.
All plants	1919	609	567	35	6	1
	1920	643	563	38	39	1
Under $5 per week	1919	3	3	.....	.....	.....
	1920	17	15	.....	2	.....
$5 but under $10	1919	44	35	5	4	.....
	1920	34	27	1	5	1
$10 but under $15	1919	93	71	21	1	.....
	1920	109	65	19	23	2
$15 but under $20	1919	138	131	5	1	1
	1920	101	79	13	9	.....
$20 but under $24	1919	110	108	2	.....	.....
	1920	127	124	3	.....	.....
$24 but under $28	1919	103	101	2	.....	.....
	1920	72	71	1	.....	.....
$28 but under $30	1919	17	17	.....	.....	.....
	1920	29	28	1	.....	.....
$30 and over	1919	101	101	.....	.....	.....
	1920	154	154	.....	.....	.....

Power and Fuel.—The power used was principally electricity; details of the equipment installed are given in the following table. The fuel cost for 1920 was $46,310, of which the 2,446 tons of soft coal were worth $24,600 and the 78,498 gallons of fuel oil were valued at $15,746.

Table 180.—Power Employed in the Bicycle and Motorcycle Industry, 1920.

——	Bicycle Manufacturing	Bicycle Repairs	Total
Boilers—			
No.	2	4	6
Rated H. P.	300	25	325
H. P. Used	300	25	325
Steam Engines—			
No.	3	.....	3
Rated H. P.	85	.....	85
H. P. Used	85	.....	85
Internal Combustion—			
No.	.....	7	7
Rated H. P.	.....	13	13
H. P. Used	.....	13	13
Electric Motors—			
No.	31	76	107
Rated H. P.	866	135	1,001
H. P. Used	563	123	686
Other Power—			
No.	.....	2	2
Rated H. P.	.....	2	2
H. P. Used	.....	2	2

Table 181.—Fuel Consumed in the Bicycle Industry in the Year 1920.

Kind.	Unit of Measure.	Quantity.	Value.
			$
All plants, total			46,310
Bituminous coal	Short tons	2,446	24,600
Anthracite coal	"	213	3,103
Lignite	"	77	695
Coke	"	4	40
Gasoline	Gals.	1,239	509
Fuel oil	"	78,498	15,746
Wood	Cord	39	323
Gas	M cu. ft.	1,214	1,144
All other fuel			150

Financial Statistics.—The capital invested in the bicycle industry in 1920 was $3,541,888, as compared with $2,677,966 in the previous year. The five manufacturing plants in 1920 involved an investment of $3,013,035, or 85·1 per cent of the total capital. The value of production in all plants in 1920 was $2,831,662, of which 45·4 per cent was paid for materials, 29 per cent was paid as salaries and wages and 1·6 per cent was paid for fuel.

Table 182.—Capital Employed in the Bicycle Industry in the Years 1919-1920.

Classification.	Year.	Establishments.	Total Capital Employed.	Capital Employed Represented By			
				Lands, Buildings, and Fixtures.	Machinery and Tools.	Materials on Hand and Stocks in Process.	Cash Accounts and Bills Receivable.
		No.	$	$	$	$	$
All plants	1919	141	2,677,966	457,548	465,504	1,276,182	478,732
	1920	168	3,541,888	394,753	305,367	1,972,273	869,495
Bicycle manufacturing	1919	5	2,150,427	336,022	370,476	1,054,962	388,967
	1920	5	3,013,035	267,069	195,288	1,786,144	764,534
Bicycle repairs	1919	136	527,539	121,526	95,028	221,220	89,765
	1920	163	528,853	127,684	110,079	186,129	104,961

Table 183.—Miscellaneous Expenses Disbursed by the Bicycle Industry in the Year 1920.

Classification.	All Plants.	Bicycle Manufacturing.	Bicycle Repairs.
	$	$	$
Total	162,771	103,192	59,579
Rent of offices, works and machinery	37,732	7,675	30,057
Cost of purchased power	15,646	12,686	2,960
Insurance	5,834	2,225	3,609
Taxes	7,197	3,809	3,388
Excise	210	.....	210
Excess profits tax	682	327	355
Provincial and municipal	6,305	3,482	2,823
Royalties, use of patents, etc	29	.....	29
Advertising expenses	8,518	1,113	7,405
Travelling expenses	1,553	979	574
Repairs to buildings and machinery	25,514	22,204	3,310
All other sundry expenses (not including fuel costs, materials used, salaries or wages)	60,748	52,501	8,247

Table 184.—Financial Summary of the Bicycle Industry in the Years 1919 and 1920.

Classification	Year.	Establishments.	Capital.	Salaries and Wages.	Cost and Fuel.	Cost of Materials	Miscellaneous Expenses	Total Expenditure.	Value of Products.
		No.	$	$	$	$	$	$	$
All plants	1919	141	2,677,966	599,014	25,411	882,737	181,162	1,688,324	2,027,952
	1920	168	3,541,888	821,893	46,310	1,285,431	162,771	2,316,405	2,831,662
Bicycle manufacturing	1919	5	2,150,427	424,833	23,437	726,387	91,544	1,266,201	1,493,628
	1920	5	3,013,035	670,133	40,203	1,079,463	103,192	1,892,991	2,320,478
Bicycle repairs	1919	136	527,539	174,181	1,974	156,350	89,618	422,123	534,324
	1920	163	528,853	151,760	6,107	205,968	59,579	423,414	511,184

CHAPTER EIGHT

CARS AND CAR REPAIR

The car group, including the manufacture of railway cars and parts as well as the repair shops, enjoyed satisfactory progress during 1920. The value of production and repair work was in excess of $135,590,000, of which the steam railway car repair shops was credited with $70,568,913, or 52 per cent. The electric car repairs were valued at $4,661,706, or 3·4 per cent. The output of the 11 car works was $53,313,260, the car wheels and parts industry, comprising seven plants, produced $6,535,009, and the three firms chiefly engaged in the manufacture of brakes and brakeshoes reported a production of $511,251.

The increase in the value of repair work in steam cars over the record of 1919 was 45·1 per cent, and the production of the brakes and brakeshoes industry increased by 39 per cent. The output of the car works, on the other hand, decreased by $6,649,059, or 11·08 per cent from the production of 1919 reported as $59,962,319.

The employment records for the car group indicated that activity increased in trend throughout the year. The pay-rolls in January which proved to be the minimum month, carried 41,254 wage-earners. An improving tendency was maintained until November when the peak was reached with 46,190 wage-earners. The year closed with 43,870 under employment as compared with a monthly average of 43,395.

Table 185.—Principal Statistics of the Car and Car Repair Group for the Year 1920.

Classification.	Establishments.	Average Number of Employees	Salaries.	Wages.	Cost of Materials.	Value of Work.
	No.	No.	$	$	$	$
All plants	236	46,177	5,646,662	62,101,706	61,354,022	135,590,139
Steam car repair	157	28,155	3,355,483	40,554,394	62,682,339	70,568,913
Electric car repair	58	2,291	286,785	2,712,990	1,661,931	4,661,706
Car works	11	14,722	1,798,153	17,638,445	28,736,470	53,313,260
Car wheels and parts	7	944	193,577	1,133,885	3,922,316	6,535,009
Brakes and brakeshoes	3	65	12,664	61,992	350,966	511,251

Table 186.—Principal Statistics of the Car and Car Repair Group in the Year 1919.

Classification.	Establish-	Average Number of Employees	Salaries.	Wages.	Cost of Materials.	Value of Work.
	No.	No.	$	$	$	$
All plants	165	37,412	4,129,080	46,860,202	51,187,441	112,575,610
Steam car repairs	152	23,231	2,631,474	28,995,212	18,806,667	52,245,570
Car works	10	14,131	1,492,156	17,822,535	32,138,412	59,962,319
Brakes and brakeshoes	3	50	5,450	42,455	242,362	367,721

Table 187.—Number of Employees, Salaries and Wages for the Railway Rolling Stock Group in 1920.

Classification	Employees.	Male.	Female.	Salaries and Wages.
	No.	No.	No.	$
Totals	46,177	45,918	259	67,748,368
Officers, managers and superintendents	557	557	.....	1,548,296
Clerical staff	2,225	2,017	208	4,098,366
Total salaried employees	2,782	2,574	208	5,646,662
Wage-earners	43,395	43,344	51	62,101,706

The provincial distribution of the plants included in the group compilation is presented in the following table:—

Table 188.—Provincial Distribution of the Plants Included in the Car and Car Repair Industry.

Industry.	Canada.	Nova Scotia.	Prince Edward Island.	New Brunswick.	Quebec.	Ontario.	Manitoba.	Saskatchewan.	Alberta.	British Columbia.
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
All plants	236	12	1	7	27	83	17	37	27	25
Car works	11	2	.....	1	4	3	1	.....	.....	.....
Car wheels and parts	7	1	.....	.....	1	4	1	.....	.....	.....
Brakes and brakeshoes	3	.....	.....	.....	.....	3	.....	.....	.....	.....
Steam car repair shops	157	5	1	5	13	40	12	34	24	23
Electric car and repair shops	58	4	.....	1	9	33	3	3	3	2

The statistics for the repair shops from the nature of the case are not so complete as the data furnished in regard to manufacturing plants. Under the circumstances, the report of the group is presented in three sections. The first treats with the manufacturing plants, the second is confined to a consideration of the electric car repair shops, and the third presents the statistics of the steam car repair shops.

I. The Manufacturing Plants

The manufacturing section of the group includes eleven car shops, seven plants engaged in the production of wheels and other car parts and three establishments manufacturing brakes and brakeshoes. The value of the production in 1920 was $60,359,520, of which $27,349,520 was the value added by manufacture, computed by deducting the cost of materials from the value of the output. The average employment was 14,722 wage-earners. The month of maximum pay-rolls was November, when 16,295 were employed, as compared with 12,819 wage-earners comprising the employment of January.

The par value of the issued securities given in Table 191 includes only the capitalisation of the companies engaged principally in the manufacture of cars and parts. The securities issued for the operation of the establishments owned by railway companies are not included in the compilation.

The historical summary given in Table 193, shows that the value of the output of the car shops has been decreasing in trend since 1917. The following statement presents the extent of the decline:—

Table 189.— Value added by Manufacturing in Car Shops from 1917-1920.

—	1917	1918	1919	1920
	$	$	$	$
Value of products	78,504,527	66,068,705	59,962,319	53,313,260
Cost of materials	38,680,450	40,951,923	32,138,412	28,736,470
Value added by manufacturing	39,884,077	25,116,782	27,823,907	24,576,790

Table 190.—Average Number of Wage-Earners Employed in the Car and Car Repair Group in 1920.

Month.	Total.	Male.	Female.	Month	Total.	Male.	Female.
	No.	No.	No.		No.	No.	No.
January	41,254	41,195	59	July	43,189	43,144	45
February	42,352	42,293	59	August	42,645	42,596	49
March	42,063	42,013	50	September	43,599	43,551	48
April	44,319	44,266	53	October	45,557	45,505	52
May	42,380	42,332	48	November	46,190	46,137	53
June	43,317	43,267	50	December	43,870	43,816	54
Monthly Average	...	...	...	...	43,395	43,344	51

Table 191.—Character and Distribution of Ownership of the Car Group, Exclusive of the Car Repair Shops, in 1920.

—	Car Works.	Car Wheels and Parts.	Brakes and Brakeshoes.	All Plants.
Number of Establishments	11	7	3	21
" Manufacturing concerns	6	5	3	14
" Partnerships and individual concerns	1	...	...	1
" Incorporated companies	5	5	3	13
Issued securities at par value held by residents of:—	$	$	$	$
Canada	3,627,050	689,900	300	4,317,250
Great Britain	48,437	...	...	48,437
United States	132,279	1,000,000	519,700	1,651,979
Other Countries	46,784	...	...	46,784
Total	3,854,550	1,689,900	520,000	6,064,450

Table 192.—Principal Statistics of the Car Group, Exclusive of the Car Repair Shops, in 1920.

—	Establishments.	Average Number of Wage-Earners.	Wages.	Capital.	Cost of Materials.	Value of Products.
	No.		$	$	$	$
Canada.						
All plants	21	14,722	18,834,322	66,951,866	33,009,752	60,359,520
Car shops	11	13,801	17,638,445	61,883,898	28,736,470	53,313,260
Car wheels and parts	7	863	1,133,885	4,733,097	3,922,316	6,535,009
Brakes and brakeshoes	3	58	61,992	334,871	350,966	511,251
Maritime Provinces.						
All plants	4	2,987	4,176,880	15,494,777	9,436,644	15,282,370
Quebec.						
All plants	5	8,420	10,555,485	27,027,981	18,500,260	33,255,139
Ontario and Manitoba.						
All plants	12	3,315	4,101,957	23,829,108	5,072,848	11,822,011
Car shops	4	2,481	3,033,139	19,869,477	2,175,351	6,437,196
Car wheels and parts	5	776	1,006,826	3,624,760	2,546,531	4,873,564
Brakes and brakeshoes	3	58	61,992	334,871	350,966	511,251

Table 193.—Summary of the Development of the Car Shops during the Period 1870 to 1920.

Industry.	Year.	Establishments.	Average No. of Wage Earners.	Wages.	Capital.	Cost of Material.	Value of Products.
		No.		$	$	$	$
Car works	1870	5	175	61,000	108,000	293,000	512,000
	1880	17	3,154	1,295,841	1,630,598	2,333,897	3,956,361
	1890	19	5,018	2,235,524	2,592,984	4,640,043	9,460,525
	1900	7	3,082	1,226,135	2,475,602	2,252,339	3,954,172
	1905	9	7,363	3,400,983	14,248,654	.....	14,430,190
	1910	15	6,541	3,357,430	22,366,123	8,691,484	16,630,634
	1915	13	14,290	7,045,526	60,248,636	12,643,922	24,951,922
	1917	13	19,093	17,697,654	98,274,585	38,680,450	78,564,527
	1918	8	11,071	12,207,423	52,217,295	40,951,925	66,068,705
	1919	10	13,182	17,822,535	59,070,604	32,138,412	59,962,319
	1920	11	13,801	17,638,445	61,883,898	28,736,470	53,313,260

Commodity Statistics.—The 5,084 cars manufactured in the car shops were worth $21,803,616, and the value of the 40 new cars built in the steam railway repair shops was $143,559. The imports, neglecting items "tram or horse railway cars" and "railway cars not otherwise provided for," were 223 only, worth $438,925. The value of the exports of railway cars, coaches and parts manufactured in Canada was $696,220. The 35 cars re-exported were worth $82,024. The number of cars rendered available was approximately 5,150, valued at $21,607,856.

The production of locomotives was 219 only, valued at $12,147,077. The imports were 70 only, worth $628,076, and the exports including the re-exports were 121 only. The number rendered available for addition to the rolling stock of the country was 168.

Table 194.—Materials Used in the Car Group, Exclusive of the Repair Shops, in 1920.

Commodity.	Unit of Measure.	Quantity.	Cost.
			$
Used in locomotive department			3,383,545
Used in car department			25,352,925
Tires, rough		742,144	909,451
Pig and scrap iron	Net ton	25,714	2,595,306
Centres		951	126,116
Moulding and other sands			35,274
Pig and scrap iron	Net ton	2,765	93,546
Steel, sheet, plate and tool	Net ton	1,641	196,864
Bars and billets (steel)	Net ton	837	68,954
Castings (iron) all kinds	Net ton	367	79,713
All other materials			168,058
Total			33,009,752

Table 195.—Products of the Car Group Exclusive of the Repair Shops in 1920.

Commodity.	Unit of Measure.	Quantity.	Cost.
			$
Repairs on locomotives			7,038,356
Locomotives, new	No.	21	1,383,580
Repairs on passenger cars			5,616,985
Repairs on freight cars			7,325,763
Repairs on other cars			7,108,476
Cars, new	No.	5,084	21,803,616
Other repairs in car shops			3,036,484
Brakes and brakeshoes	No.	10,458	712,752
Car wheels	No.	48,048	3,715,310
Grey and malleable iron castings	Tons	23,171	1,004,193
Custom work			142,450
Cast iron pipe		3,035	307,190
Steel tires		16,217	839,803
All other products			324,562
Totals			60,359,520

Table 196.—Principal Imports of Cars, Locomotives and Parts during 1920 and 1921.

Commodity.	Unit.	Calendar Year 1920.			Calendar Year 1921.		
		Quantity.	Value.	Rate per Unit.	Quantity.	Value.	Rate per Unit.
			$	$		$	$
Cars, railway, box or flat	No.	107	139,527	1,304	84	108,059	1,286
Cars, railway, passenger	No.	6	38,265	6,377	17	35,836	2,108
Cars, railway, tank	No.	110	261,133	2,374	2	3,094	1,547
Cars, railway, tram or horse	No.	15	26,572	1,771	11	13,532	1,230
Cars, railway, n.o.p.	No.	1,545	691,150	447	937	317,328	339
Cars, railway, parts of			981,546			459,476	
Locomotives for railways, electric	No.	10	53,333	5,333	12	48,348	4,029
Locomotives for railways, n.o.p.	No.	60	574,743	9,579	25	162,054	6,486
Locomotive parts			64,130			72,467	
Locomotive and car wheel tires of steel in the rough	Cwt.	261,417	1,646,803	6	164,610	1,082,980	7

Table 197.—Principal Exports of Cars and Parts during 1920 and 1921.

Commodity.	Unit.	Calendar Year, 1920.		Calendar Year, 1921.	
		Quantity.	Value.	Quantity.	Value.
			$		$
Cars and coaches, railway and parts of			696,220		2,903,976
Locomotives or parts of	No.	77	3,463,914	46*	1,948,233

*Locomotives only.

Employment.—In a year of 304 working days, on the average, each of the 21 plants worked full time 276 days, worked part time 4 days and was idle 24 days. The average working day was 8·9 hours and the average week constituted 50·6 hours. Out of a total pay-roll of 15,730 employees who received in salaries and wages $20,838,716, 93·6 per cent were wage-earners receiving 90·4 per cent of the salary and wage fund. The following table summarizes the classified weekly remuneration of the wage-earners employed in the manufacturing plants on December 15 or nearest representative day:—

Table 198.—Number of Employees Classified according to their Weekly Rates of Pay in the Car Manufacturing Plants.

Totals		Under $10 per week.		$10 and under $20 per week.		$20 and under $30 per week.		$30 and over per week.	
Number.	Per-centage.	Number.	Per-centage.	Number.	Per-centage.	Number.	Per-centage.	Number.	Per-centage.
15,378	100	152	1·0	1,640	10·7	5,585	36	8,001	52

Table 199.—Number of Days in Operation and Average Number of Hours Normally Worked by Wage-Earners per Day and per Week in 1920.

——	Number of Establishments.	Average Working Time.				
		Average Hours.		Average Days in Operation.		
		Per day.	Per week.	Full time.	Part time.	Idle.
All Plants	21	8·9	50·6	276	4	24
Car shops	11	8·6	47·1	261	12	31
Car wheels and parts	7	9·3	55·7	274		30
Brakes and brakeshoes	3	9	51·3	293		11

Table 200.—Number of Employees, Salaries and Wages Reported for the Car Group Exclusive of the Car Repair Shops, 1920.

Classification.	Totals	Number of Employees.		Salaries and Wages.
		Males.	Females.	
(A) By Industries		No.	No.	$
Car Shops—				
Totals	14,722	14,603	119	19,436,598
Officers, managers and superintendents	150	150		455,501
Clerks, stenographers and other salaried employees	771	676	95	1,342,652
Wage earners	13,801	13,777	24	17,638,445
Car Wheels and Parts—				
Totals	944	933	11	1,327,462
Officers, managers and superintendents	28	28		104,629
Clerks, stenographers and other salaried employees	53	42	11	88,948
Wage earners	863	863		1,133,885
Brakes and Brakeshoes—				
Totals	64	63	1	74,656
Officers, managers and superintendents	3	3		7,407
Clerks, stenographers and other salaried employees	3	3		5,257
Wage earners	58	57	1	61,992
(B) By Provinces				
Maritime Provinces—				
Totals	3,135	3,101	34	4,437,028
Officers, managers and superintendents	21	21		63,007
Clerks, stenographers and other salaried employees	127	102	25	197,141
Wage earners	2,987	2,978	9	4,176,880
Quebec—				
Totals	9,024	8,956	68	11,748,302
Officers, managers and superintendents	53	53		184,596
Clerks, stenographers and other salaried employees	551	498	53	1,008,221
Wage earners	8,420	8,405	15	10,555,485
Ontario and Manitoba—				
Totals	3,571	3,542	29	4,653,386
Officers, managers and superintendents	107	107		319,934
Clerks, stenographers and other salaried employees	149	121	28	231,495
Wage earners	3,315	3,314	1	4,101,957
Canada				
All Plants in the Group—				
Totals	15,730	15,599	131	20,838,716
Officers, managers and superintendents	181	181		567,537
Clerks, stenographers and other salaried employees	827	721	106	1,436,857
Wage earners	14,722	14,697	25	18,834,322

Table 201.—Average Number of Wage-Earners Employed in the Car Group Exclusive of the Car Repair Shops, 1920.

—	All Plants.			Car Shops.		Car Wheels and Parts.		Brakes and Brakeshoes.	
	Total.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Monthly average	14,722	14,697	25	13,777	24	863	.....	57	1
January	12,819	12,801	18	12,071	17	688	.....	42	1
February	13,998	13,980	18	13,230	17	706	.....	44	1
March	14,076	14,055	21	13,192	20	808	.....	55	1
April	15,191	15,168	23	14,287	22	828	.....	53	1
May	14,444	14,421	23	13,457	22	903	.....	61	1
June	14,218	14,190	28	13,214	27	919	.....	57	1
July	15,277	15,245	22	14,294	21	894	.....	57	1
August	13,721	13,693	28	12,718	27	918	.....	57	1
September	15,478	15,451	27	14,497	26	901	.....	53	1
October	15,783	15,752	31	14,776	30	921	.....	55	1
November	16,295	16,263	32	15,243	31	946	.....	74	1
December	15,378	15,347	31	14,347	30	928	.....	72	1

Table 202.—Number of Employees in the Car Group Exclusive of the Repair Shops during 1920, Classified According to their Weekly Rates of Pay.

—	Totals.	Weekly Rates of Pay.							
		Under $5 per week.	$5 and under $10.	$10 and under $15.	$15 and under $20.	$20 and under $24.	$24 and under $28.	$28 and under $30.	$30 and over.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
All Plants—									
Totals	15,378	54	98	236	1,404	1,788	2,676	1,121	8,001
Over 16 years of age—									
Male	15,276	43	69	202	1,398	1,781	2,661	1,121	8,001
Female	31	1	.....	13	2	.....	15	.....	.....
Under 16 years of age—									
Male	71	10	29	22	4	7	.....	.....	.....
Car Shops—									
Over 16 years of age—									
Male	14,280	43	67	190	1,382	1,720	2,410	932	7,536
Female	30	.....	.....	13	2	.....	15	.....	.....
Under 16 years of age—									
Male	67	10	29	20	2	6	.....	.....	.....
Car Wheels and Parts—									
Over 16 years of age—									
Male	924	.....	1	11	15	56	206	187	448
Female	.....	.....	.....	.....	.....	.....	.....	.....	.....
Under 16 years of age—									
Male	4	.....	.....	1	2	1	.....	.....	.....
Brakes and Brakeshoes—									
Over 16 years of age—									
Male	72	.....	1	1	1	5	45	2	17
Female	1	1	.....	.....	.....	.....	.....	.....	.....

Power and Fuel.—The power statistics are given in Table 203. The bituminous coal cost $730,829, constituting 51·7 per cent of the total expenditure for fuel. The 26,455 tons of coke formed 27·3 per cent and the 1,622,792 gallons of fuel oil made up 19·4 per cent.

Table 203.—Power Employed in the Car Group Exclusive of the Car Repair Shops in 1920.

—		Industry			Total
		Car Works	Car Wheels and Parts	Brakes and Brake-shoes	
Boilers	Number	38	3	.....	41
	Rated H.P.	9,200	300	.....	9,500
	Used H.P.	7,800	85	.....	7,885
Engines, Steam	Number	20	.....	.....	20
	Rated H.P.	7,144	.....	.....	7,144
	Used H.P.	5,894	.....	.....	5,894
" Internal combustion	Number	2	.....	.....	2
	Rated H.P.	450	.....	.....	450
	Used H.P.	450	.....	.....	450
Electric motors	Number	1,376	209	7	1,592
	Rated H.P.	23,614	2,741	135	26,490
	Used H.P.	12,445	1,620	135	14,200

Table 204.—Fuel Used in the Car Group Exclusive of the Repair Shops for 1920.

Classification.	Unit.	All Plants.		Car Shops.		Car Wheels and Parts.		Brakes and Brake-shoes.	
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
			$		$		$		$
Total	.....	.....	1,413,969	.....	1,052,113	.....	352,464	.....	9,392
Coal—	Short								
Bituminous	Tons	104,253	730,829	102,869	713,952	1,320	16,305	64	572
Anthracite	"	590	7,774	335	3,477	255	4,297	.....	.....
Coke	"	26,455	386,346	2,612	51,160	23,310	327,441	533	7,745
Gasoline	Gallons.	2,585	1,017	2,115	820	470	197	.....	.....
Oil (fuel)	"	1,622,792	274,599	1,616,196	273,139	1,843	385	4,753	1,075
Wood	Cord	149,859	13,404	148,995	9,565	864	3,839	.....	.....

Financial Statistics.—The capital investment of $66,951,866 was divided into 51·2 per cent of fixed assets and 48·8 per cent of current assets. The investment in the eleven car shops comprised 92·4 per cent of the total capital. The total expenditure constituted 97·1 per cent of the value of the products and the turnover, computed by taking the percentage of the value of the output to the liquid assets, was 184·8 per cent.

Table 205.—Capital Invested in the Car Group Exclusive of the Repair Shops in 1920.

Distribution.	Establishments.	Total Capital.	Capital as Represented by			
			Lands, Buildings and Fixtures.	Machinery and Tools.	Materials on hand and Stocks in Process.	Cash Accounts and Bills Receivable.
Canada—	No.	$	$	$	$	$
All plants	21	66,951,866	21,526,908	12,757,334	20,696,412	11,971,212
Car shops	11	61,883,898	20,189,071	11,552,673	19,559,613	10,582,541
Car wheels and parts	7	4,733,097	1,316,175	1,183,840	1,090,671	1,142,411
Brakes and brakeshoes	3	334,871	21,662	20,821	146,128	146,260
Maritime Provinces—						
All plants	4	15,494,777	6,567,261	3,461,625	3,069,481	2,396,410
Quebec—						
All plants	5	27,627,981	8,447,141	4,193,546	9,688,041	5,299,253
Ontario and Manitoba—						
All plants	12	23,829,108	6,512,506	5,102,163	7,938,890	4,275,549
Car shops	4	19,869,477	5,315,746	3,993,010	6,944,104	3,616,617
Car wheels and parts	5	3,624,760	1,175,098	1,088,332	948,658	412,672
Brakes and brakeshoes	3	334,871	21,662	20,821	146,128	146,260

Table 206.—Miscellaneous Expenses Incurred by the Car Group Exclusive of the Repair Shops in the Year 1920.

Classification.	All Plants	Industry.		
		Car Shops.	Car Wheels and Parts.	Brakes and Brake-shoes.
	$	$	$	$
Rent of offices, works and machinery	323,071	308,484	12,737	1,850
Rent of power	142,528	93,770	46,664	2,094
Insurance	230,294	194,708	34,723	863
Taxes—				
Excise	312,638	303,617	9,021	.....
Excess profits tax	2,798	.....	2,798	.....
Provincial and municipal	122,476	105,823	16,059	594
Royalties, use of patents	6,626	.....	6,498	128
Advertising expenses	8,989	7,529	1,137	323
Travelling expenses	94,401	73,382	20,949	70
Repairs to buildings and machinery	836,814	598,756	233,566	4,492
All other sundry expenses exclusive of fuel, materials, salaries and wages	1,242,951	976,369	234,062	32,520
Total	3,323,586	2,662,438	618,214	42,934

Table 207.—Financial Statistics of the Car Group Exclusive of the Repair Shops in 1920.

	Establishments.	Capital.	Salaries and Wages.	Cost of Fuel.	Cost of Materials.	Miscellaneous Expenses.	Total Expenditure.	Value of Products.
Canada—		$	$	$	$	$	$	$
All plants	21	66,951,866	20,838,716	1,413,969	33,009,752	3,323,586	58,586,023	60,359,520
Car shops	11	61,883,898	19,436,598	1,052,113	28,736,470	2,662,438	51,887,619	53,313,260
Car wheels and parts	7	4,733,097	1,327,462	352,464	3,922,316	618,214	6,220,456	6,535,009
Brakes and brake-shoes	3	334,871	74,656	9,392	350,966	42,934	477,948	511,251
Maritime Provinces—								
All plants	4	15,494,777	4,437,028	550,169	9,436,644	677,054	15,100,895	15,282,370
Quebec—								
All plants	5	27,627,981	11,748,302	395,541	18,500,260	1,570,900	32,215,003	33,255,139
Ontario and Manitoba.								
All plants	12	23,829,108	4,653,386	468,259	5,072,848	1,075,632	11,270,125	11,822,011
Car shops	4	19,869,477	3,410,850	143,179	2,175,351	509,806	6,239,186	6,437,196
Car wheels and parts	5	3,624,760	1,167,880	315,688	2,546,531	522,892	4,552,991	4,873,564
Brakes and brake-shoes	3	334,871	74,656	9,392	350,966	42,934	477,948	511,251

Provincial Distribution.—Four car plants and one establishment engaged in the manufacture of car wheels were located in Quebec, which is the province chiefly interested in the industry. The capital invested in the province was $27,627,981, or 41·3 per cent of the total capital. The pay-rolls included 9,024 employees as compared with an average employment for the whole country of 15,730.

The salaries and wages paid in the province were $11,748,302, or 36·4 per cent of the pay-roll account disbursed by the entire section under review. The production in Quebec was valued at $33,255,139, or 55·1 per cent of the total output for the country.

Two plants manufacturing cars and one producing car wheels were located in Nova Scotia. The production in the Maritime Provinces was second among the three divisions into which the country was divided for purposes of presentation. The output was $15,282,370, comprising an excess of $3,460,359, or 29·2 per cent over the production of Ontario and Manitoba.

II. The Electric Car Repair Shops

The distinct nature of the electric car repair shops justifies separate treatment. However, from the fact that data has been collected by the Bureau only for the year under review, comparisons with previous years are prevented.

The fifty-eight plants employed an average of 2,123 wage-earners and the pay-rolls were substantially uniform throughout the year. The month of December with an employment of 2,190 was the maximum month. The only months when less than 2,100 were employed were January and July. The total number of employees was 2,289 of whom 166 were salaried employees. The wage-earners received 90·4 per cent of the entire salary and wage cost.

Table 209 presents the number of employees, the average number of hours worked per week and the average hourly wage for nine occupations. For example 260 motor mechanics were reported by seven shops. The average week for the occupation in question was 54·4 hours and the hourly wage rate was 64·4 cents.

Table 208.—Number of Employees, Salaries and Wages for the Electric Car Repair Shops, 1920.

——	Number of Employees.	Male.	Female.	Salaries and Wages.
		No.	No.	$
Canada:—				
Totals	2,289	2,279	10	2,999,775
Officers, managers, superintendents	106	106		212,259
Clerical staff	60	50	10	74,526
Wage earners	2,123	2,123		2,712,990
Nova Scotia and New Brunswick:—				
Totals	126	126		180,554
Officers, managers, superintendents	5	5		10,227
Clerical staff	5	5		7,500
Wage earners	116	116		171,827
Quebec:—				
Totals	995	990	5	1,084,454
Officers, managers, superintendents	39	39		80,215
Clerical staff	25	20	5	25,084
Wage earners	931	931		979,155
Ontario:—				
Totals	521	518	3	755,261
Officers, managers, superintendents	42	42		76,040
Clerical staff	14	11	3	17,017
Wage earners	465	465		662,204
Manitoba:—				
Totals	246	246		337,778
Officers, managers, superintendents	8	8		19,180
Clerical staff	2	2		3,000
Wage earners	236	236		315,598
Saskatchewan:—				
Totals	47	46	1	81,519
Officers, managers, superintendents	4	4		8,080
Clerical staff	4	3	1	7,140
Wage earners	39	39		66,299
Alberta and British Columbia:—				
Totals	354	353	1	551,209
Officers, managers, superintendents	8	8		18,517
Clerical staff	10	9	1	14,785
Wage earners	336	336		517,907

Table 209.—Occupational Employment and Wages in the Electric Car Repair Shops in 1920.

Occupation.	Number of Shops Reporting Employees with Designation in Question.	Number of Employees.	Average Number of Hours Worked per Week.	Average Rate of Pay per Hour.
				Cents.
Shopmen,—				
Air brake repairers and fitters	8	187	55	60·5
Carpenters	8	180	53·7	71
Blacksmiths	8	95	53·2	67·1
Electricians	7	111	54·2	66·9
Glaziers	5	8	57·2	67·6
Machinists	8	161	52·2	70·1
Motor mechanics	7	260	54·4	64·4
Painters	8	114	52	67·4
Other shopmen	8	846	54·6	51·2

Table 210.—Average Number of Wage-Earners Employed in the Electric Car Shops in 1920.

Month.	Canada.	Nova Scotia and New Brunswick.	Quebec.	Ontario.	Manitoba.	Saskatchewan.	Alberta and British Columbia.
	No.	No.	No.	No.	No.	No.	No.
Monthly Average	2,123	116	931	465	236	39	336
January	2,099	126	943	454	217	43	316
February	2,102	117	940	449	220	43	333
March	2,112	119	935	454	219	44	341
April	2,152	142	948	462	215	44	341
May	2,113	132	920	456	220	39	346
June	2,122	130	931	458	220	38	345
July	2,079	108	914	461	226	38	332
August	2,124	116	923	454	260	35	336
September	2,104	103	897	473	255	35	341
October	2,137	103	933	474	358	34	335
November	2,163	101	938	486	261	39	338
December	2,190	100	955	499	265	38	333

Financial Statistics.—The value assigned to repairs on cars was $4,661,706 of which 58·2 per cent was paid in wages, 35·6 per cent was expended in the purchase of materials and 6·2 per cent was paid as salaries.

Table 211.—Financial Statistics of the Electric Car Repair Shops in 1920.

Distribution.	Salaries.	Wages.	Cost of Materials.	Value of Repairs to Cars.
	$	$	$	$
CANADA.	286,785	2,712,990	1,061,931	4,661,706
Nova Scotia and New Brunswick	17,727	171,827	57,001	246,555
Quebec	105,299	979,155	652,991	1,737,445
Ontario	93,057	662,204	623,835	1,379,096
Manitoba	22,180	315,598	21,554	359,332
Saskatchewan	15,220	66,299	33,772	115,291
Alberta and British Columbia	33,302	517,907	272,778	823,987

Provincial Distribution.—Returns were received from shops in all the provinces with the exception of Prince Edward Island. Thirty-three shops were located in Ontario and nine in Quebec. The repairs in Quebec were valued at $1,737,445, while the valuation for Ontario was $1,379,096. The employment in Quebec was 995, of whom 931 were wage-earners. The pay-rolls of Ontario carried 521 employees of whom 465 were wage-earners. The provincial distribution is given in detail in Tables 208, 210 and 211.

III. Steam Railway Car Repair Shops

For purposes of comparison, the statistics for 1919 are included in the tables descriptive of the railway repair shops. A study of the data confirms the general improvement of railway transportation in 1920 over the conditions of the previous year. The total value of repairs and other work in the shops in 1920 was $70,568,913 as compared with $52,245,570 in 1919, constituting an increase of 45·1 per cent.

Table 212.—Materials Used in the Steam Railway Car Repair Shops for the Years 1919 and 1920.

Provinces.	Total.		Locomotive Dept.		Car Department.	
	1920.	1919.	1920.	1919.	1920.	1919.
	$	$	$	$	$	$
CANADA	26,082,339	18,806,667	11,720,399	9,771,701	14,961,940	9,034,966
Nova Scotia	808,729	785,609	383,241	328,519	425,488	457,090
New Brunswick and Prince Edward Island	723,406	483,668	372,045	254,528	351,361	229,140
Quebec	5,434,036	5,662,886	2,770,649	3,721,928	2,663,387	1,940,958
Ontario	7,674,157	5,330,670	3,355,446	2,770,268	4,318,711	2,560,402
Manitoba	5,540,171	2,741,502	2,186,765	1,069,192	3,353,406	1,672,310
Saskatchewan	1,742,953	874,094	762,696	324,983	980,257	549,111
Alberta	2,833,315	1,807,141	989,357	746,950	1,843,958	1,060,191
British Columbia	1,925,572	1,121,097	900,200	555,333	1,025,372	565,764

Table 213.—Value of Work performed in the Steam Railway Repair Shops, 1919-1920.

Provinces.	Year.	Total.	Motive Power Department		
			Repairs on Locomotives.	New Locomotives.	Repairs to Passenger Cars.
		$	$	$	$
CANADA	1919	52,245,570	21,732,379	631,284	5,660,667
	1920	70,568,913	29,953,994	561,634	8,409,278
Nova Scotia	1919	1,199,045	345,689	.....	216,049
	1920	2,195,252	809,313	.....	302,924
New Brunswick and Prince Edward Island	1919	1,250,682	587,989	.....	63,306
	1920	1,933,709	878,875	.....	97,761
Quebec	1919	11,585,552	3,870,193	613,573	1,703,440
	1920	14,311,726	5,494,183	561,634	2,055,266
Ontario	1919	17,244,083	8,873,800	17,711	1,106,655
	1920	21,538,406	9,814,254	.....	1,584,796
Manitoba	1919	8,902,465	3,300,442	.....	1,582,416
	1920	13,050,865	5,183,286	.....	2,886,291
Saskatchewan	1919	3,636,138	1,214,445	.....	217,929
	1920	5,406,749	2,708,545	.....	298,284
Alberta	1919	5,181,539	2,076,020	.....	428,778
	1920	7,469,290	2,763,395	.....	609,129
British Columbia	1919	3,246,066	1,463,801	.....	342,094
	1920	4,662,916	2,302,143	.....	574,827

	Year.	Car Department.			Other Repairs.
		Repairs to Freight Cars.	Repairs to Other Cars.	New Cars.	
		$	$	$	$
CANADA	1919	21,422,714	1,681,604	498,206	618,716
	1920	24,981,760	2,676,466	143,559	3,842,222
Nova Scotia	1919	620,505	8,895	4,755	3,152
	1920	523,536	43,256	.....	516,223
New Brunswick and Prince Edward Island	1919	577,879	21,097	.....	411
	1920	522,395	31,832	.....	402,846
Quebec	1919	4,823,510	516,012	.....	58,824
	1920	4,187,474	375,833	37,174	1,600,162
Ontario	1919	6,221,231	572,217	17,131	435,338
	1920	7,833,819	975,287	7,259	1,322,991
Manitoba	1919	3,271,025	192,350	476,320	79,912
	1920	4,467,665	414,497	99,126	.....
Saskatchewan	1919	2,094,229	95,140	.....	14,395
	1920	2,200,008	199,912	.....	.....
Alberta	1919	2,504,041	163,303	.....	9,397
	1920	3,756,355	340,411	.....	.....
British Columbia	1919	1,310,294	112,590	.....	17,287
	1920	1,490,508	295,438	.....	.....

Employment.—The average monthly employment was 26,549 wage-earners while pay-rolls carried 21,741 in 1919. The maximum month in 1919 was December and in 1920 the peak was reached in November when 27,732 wage-earners were employed. The salaried employees numbered 1,490 in 1919 and 1,608 in 1920. The salaries also increased from $2,631,474 in 1919 to $3,355,483 in the following year.

Table 214.—Average Number of Days in Operation in the Steam Railway Car Repair Shops and the Number of Hours Worked per Day and per Week in 1919 and 1920.

—	Number of Establishments.	Average Working Time.		Average Days in Operation		
		Hours per week	Hours per day.	Full time.	Part time.	Idle time.
Car Repair Shops—1919	152	8	46·6	314	1	1
1920	157	8	45·9	314	3	2

Table 215.—Number of Employees, Salaries and Wages in the Steam Railway Car Repair Shops in 1919 and 1920.

Classification.	Year.	Total	Number of Employees.		Salaries and Wages
			Male.	Female.	
		No.	No.	$
Canada—					
Totals	1919	23,231	23,196	35	31,626,686
	1920	28,155	28,037	118	43,909,877
Officers, managers and superintendents	1919	573	573		1,306,826
	1920	270	270		768,500
Clerical staff	1919	917	882	35	1,324,648
	1920	1,338	1,246	92	2,586,983
Wage-earners	1919	21,741	21,741		28,995,212
	1920	26,547	26,521	26	40,554,394
Nova Scotia—					
Totals	1919	283	283		405,408
	1920	805	805		1,384,710
Officers, managers and superintendents	1919	9	9		19,486
	1920	18	18		44,162
Clerical staff	1919	14	14		21,288
	1920	49	49		88,644
Wage-earners	1919	260	260		364,634
	1920	738	738		1,251,904
New Brunswick and Prince Edward Island—					
Totals	1919	522	522		790,230
	1920	728	728		1,210,303
Officers, managers and superintendents	1919	10	10		27,768
	1920	8	8		28,472
Clerical staff	1919	16	16		55,606
	1920	33	33		68,350
Wage-earners	1919	496	496		706,856
	1920	687	687		1,113,481
Quebec—					
Totals	1919	4,200	4,200		5,641,961
	1920	5,550	5,517	33	8,484,710
Officers, managers and superintendents	1919	51	51		117,117
	1920	21	21		69,156
Clerical staff	1919	166	166		236,392
	1920	253	235	18	433,296
Wage-earners	1919	3,983	3,983		5,288,452
	1920	5,276	5,261	15	7,982,258
Ontario—					
Totals	1919	7,686	7,666	20	11,243,174
	1920	8,406	8,355	51	13,642,085
Officers, managers and superintendents	1919	146	146		338,366
	1920	96	96		279,162
Clerical staff	1919	321	301	20	470,057
	1920	400	358	42	739,827
Wage-earners	1919	7,219	7,219		10,434,751
	1920	7,910	7,901	9	12,623,096

Table 215.—Number of Employees, Salaries and Wages in the Steam Railway Car Repair Shops in 1919 and 1920—Concluded.

Classification.	Year.	Total	Number of Employees.		Salaries and Wages.
			Male.	Female.	
Manitoba—		No.	No.		$
Totals	1919	4,540	4,526	14	5,692,998
	1920	5,215	5,190	25	8,151,389
Officers, managers and superintendents	1919	114	114		252,331
	1920	21	21		64,878
Clerical staff	1919	230	216	14	296,945
	1920	285	260	25	566,559
Wage-earners	1919	4,196	4,196		5,143,722
	1920	4,909	4,909		7,519,952
Saskatchewan—					
Totals	1919	1,894	1,894		2,620,816
	1920	2,315	2,314	1	3,663,813
Officers, managers and superintendents	1919	83	83		192,039
	1920	33	33		85,268
Clerical staff	1919	61	61		82,974
	1920	109	108		241,430
Wage-earners	1919	1,750	1,750		2,345,803
	1920	2,173	2,173		3,337,115
Alberta—					
Totals	1919	2,613	2,612	1	3,232,780
	1920	3,396	3,390	6	4,635,525
Officers, managers and superintendents	1919	112	112		253,932
	1920	73	73		197,402
Clerical staff	1919	68	67	1	87,060
	1920	118	113	5	221,848
Wage-earners	1919	2,433	2,433		2,891,788
	1920	3,205	3,204	1	4,216,275
British Columbia—					
Totals	1919	1,493	1,493		1,999,319
	1920	1,740	1,738	2	2,737,342
Officers, managers and superintendents	1919	48	48		105,787
	1920				
Clerical staff	1919	41	41		74,326
	1920	91	90	1	227,029
Wage-earners	1919	1,404	1,404		1,819,206
	1920	1,649	1,648	1	2,510,313

Table 216.—Average Number of Wage-Earners Employed in the Steam Railway Car Repair Shops, 1920.

Months.	Canada.				Nova Scotia.	New Brunswick and P.E.I.	Quebec	
	Totals.		Male.	Female.	Male.	Male.	Male.	Female.
	1919.	1920.						
	No.	No.	No.	No.	No.	No.	No.	No.
Monthly average	21,741	26,547	26,521	26	738	687	5,261	15
January	21,354	26,336	26,295	41	739	693	5,189	24
February	21,336	26,252	26,211	41	738	667	5,183	24
March	21,345	25,875	25,846	29	744	707	5,046	12
April	21,498	26,976	26,946	30	750	608	5,219	13
May	21,278	25,823	25,798	25	743	698	5,276	13
June	19,504	26,977	26,955	22	764	672	5,362	13
July	21,783	25,843	25,820	23	748	673	5,367	14
August	21,801	26,800	26,779	21	722	676	5,261	13
September	22,062	26,017	25,996	21	723	681	5,288	14
October	22,414	27,637	27,616	21	729	691	5,355	14
November	23,055	27,732	27,711	21	729	713	5,458	14
December	23,462	26,302	26,279	23	730	674	5,123	16

Table 216.—Average Number of Wage-Earners Employed in the Steam Railway Car Repair Shops, 1920.—Concluded.

Months.	Ontario.		Manitoba.	Saskatchewan.	Alberta.		British Columbia.	
	Male.	Female.	Male.	Male.	Male.	Female.	Male.	Female.
	No.	No.	No.	No.	No.	No.	No.	No.
Monthly average	7,901	9	4,909	2,173	3,204	1	1,648	1
January	7,988	15	4,802	2,169	3,144	1	1,571	1
February	7,847	15	4,858	2,187	3,130	1	1,601	1
March	8,097	15	4,863	1,551	3,209	1	1,629	1
April	8,004	15	4,766	2,705	3,168	1	1,646	1
May	8,006	10	4,767	1,585	3,030	1	1,693	1
June	8,015	7	4,795	2,565	3,098	1	1,684	1
July	7,825	7	4,801	1,543	3,198	1	1,665	1
August	7,790	6	4,901	2,574	3,174	1	1,681	1
September	7,879	5	4,877	1,644	3,245	1	1,659	1
October	7,918	5	5,068	2,795	3,379	1	1,681	1
November	8,095	5	5,216	2,424	3,418	1	1,658	1
December	7,352	5	5,199	2,332	3,259	1	1,610	1

Table 217.—Number of Wage-Earners in the Steam Railway Car Repair Shops in 1919 and 1920, Classified by Age and Sex and According to their Weekly Rates of Pay.

—		Totals	Weekly Rate of Pay							
			Under $5 per week.	$5 and under $10.	$10 and under $15.	$15 and under $20.	$20 and under $24.	$24 and under $28.	$28 and under $30.	$30 and over.
		No.	No.	No.	No.	No.	No.	No.	No.	No.
Totals	1919	23,463	1	60	626	3,636	5,107	3,401	2,112	8,520
	1920	26,300	5	30	92	1,215	2,842	3,416	2,396	16,304
Over 16 years of age—										
Male	1919	23,436	1	60	600	3,635	5,107	3,401	2,112	8,520
	1920	26,199	.....	16	52	1,188	2,837	3,406	2,396	16,304
Female	1919	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1920	23	.....	1	1	10	5	6	.....	.....
Under 16 years of age—										
Male	1919	27	.....	.....	26	1	.....	.....	.....	.....
	1920	78	5	13	39	17	.....	4	.....	.....

Provincial Distribution.—The value of the work performed in the shops of Ontario was worth $21,538,406, and the average number of employees was 8,406. Quebec attained second rank with an output of $14,311,726 and an employment of 5,550. The provincial distribution in detail is presented in Tables 212, 213 and 215.

CHAPTER NINE

THE HEATING AND VENTILATING APPLIANCE GROUP

The group is composed of three classes comprising the manufactures of stoves and furnaces, radiators and ventilating appliances. In the year under review 55 establishments were engaged principally in the manufacturing of these products. Forty-two plants were engaged in the founding of stoves and furnaces, ten establishments were making radiators principally, and three were employed in the manufacture of ventilating appliances.

The output of the 55 plants was valued at $23,125,680, of which $15,299,609, or 66·2 per cent, was the production of the stove and furnace foundries and $7,441,178, or 32·1 per cent, was the output of the radiator plants and $384,893, or 1·7 per cent, was the production of the ventilating appliance establishments.

The average employment throughout the year was 5,708 wage-earners, as compared with the maximum pay-roll of 6,009 in March and a minimum of 5,179 wage-earners in December. Increases were recorded during the first quarter while decided declines were reported during the second. Increases were again enjoyed from July till October, while during the last two months of the year serious declines developed.

The par value of the issued securities was $14,616,330, of which $9,956,553, or 68·1 per cent, was owned in Canada, $4,382,667, or 30 per cent, was held in United States, and $227,110, or 1·9 per cent, was allotted to Great Britain. In view of the alteration in classification, the statistics of the stove and furnace industry for 1920 are not comparable with the data for the years 1917 to 1919 given in Table 220.

Table 218.—Character and Distribution of Ownership of the Heating and Ventilating Appliance Group in 1920.

Distribution.	Stoves and Furnaces.	Radiators.	Ventilating Appliances.	All Plants.
Number of Establishments	42	10	3	55
" Manufacturing concerns	40	9	3	52
" Partnership and individual owners	7	.....	2	9
" Incorporated companies	33	9	1	43
Issued securities at par value held by residents of—	$	$	$	$
Canada	6,578,412	3,377,941	200	9,956,553
Great Britain	10,000	267,110	.....	277,110
United States	1,704,300	2,628,567	49,800	4,382,667
Total	8,292,712	6,273,618	50,000	14,616,330

Table 219.—Principal Statistics of the Heating and Ventilating Appliance Group in 1920.

Distribution.	Establishments.	Average Number of Wage Earners.	Wages	Capital Investment.	Cost of Materials	Value of Products.
	No.		$	$	$	$
Canada—						
All plants	55	5,708	6,649,956	28,910,344	7,767,631	23,125,080
Stoves and furnaces	42	3,978	4,415,047	19,773,222	5,597,706	15,299,609
Radiators	10	1,662	2,164,626	8,857,457	2,079,427	7,441,178
Ventilating appliances	3	68	70,283	279,656	90,498	384,893
New Brunswick and Quebec—						
All plants	12	436	409,700	2,806,709	582,392	1,428,858
Ontario—						
All plants	40	5,237	6,208,841	26,004,846	7,157,316	21,594,141
Stoves and furnaces	29	3,539	4,009,489	17,082,423	5,151,771	14,071,441
Radiators and ventilating appliances	11	1,698	2,199,352	8,922,423	2,005,545	7,522,700
British Columbia—						
Stoves and furnaces	3	35	31,415	98,789	27,923	102,081

Table 220.—Summary Showing the Development of the Stoves and Hot Air Furnaces Industry, 1917-1919.

Industry.	Year.	Establishments.	Average Number of Wage Earners.	Wages.	Capital.	Cost of Material	Value of Products.
		No.		$	$	$	$
Stoves and hot air furnaces	1919	9	162	143,856	606,404	195,846	454,211
	1918	9	152	110,781	699,237	175,519	425,244
	1917	8	119	95,948	635,470	97,532	306,363

Commodity Statistics.—The products manufactured by the group are presented in Table 223. A considerable quantity of heating and ventilating equipment was produced by firms classified under other industrial groups. The total production as compiled from the returns received by the Bureau is detailed below:—

Table 221.—Total Production of Heating and Ventilating Equipment, in Canada, 1920.

Item.	Unit.	Quantity.	Value.	Item.	Unit.	Quantity.	Value.
			$				$
Stoves, oil	No.	59,442	834,783	Radiators and parts	tons	13,678	3,289,723
" coal	No.	117,421	4,564,314	Stove parts	tons	1,912	643,279
" gas	No.	39,189	1,041,342	Furnace parts	tons	34,561	454,440
" electric	No.	9,371	709,438	Hot air registers and grills	No.	102,064	294,784
" wood	No.	34,278	1,165,612	Grate bars	tons	817	118,912
Furnaces, hot air	No.	16,520	1,650,787	Ventilating appliances	.....	.....	760,905
" hot water	No.	15,513	1,852,349				
				Total	.....	.....	17,380,668

The output of stoves of all kinds aside from electric was 250,230, valued at $7,606,050, and the rate for the aggregate was about $30 each. The imports of stoves of all kinds for coal, wood, oil, spirits or gas during 1920 were valued at $417,052, while the exports were worth $175,271. Assuming that the rate of $30 each was applicable, the approximate quantity available for consumption was 258,330 stoves valued at $7,847,831.

The imports of stoves in 1921 were worth $304,265 while the exports were valued at $61,386.

Table 222.—Materials Used in the Heating and Ventilating Appliance Group in 1920.

Commodity.	Quantity.	Cost at Foundry or Works.	Commodity.	Cost at Foundry or Works.
	Net tons.	$		$
Iron—				
Pig and scrap	63,871	2,546,121	Lumber, all kinds	248,412
Bar and sheet	7,317	877,634	Moulding and other sands	74,966
Malleable and wrought	283	87,532	Bolts, nuts, rivets, screws and nails	191,246
Castings, all kinds	1,782	269,071	Switches, plugs, anodes, wire	84,062
Steel—			Stove mountings and fittings	211,153
Sheet, plate and tool	3,536	559,871	Foundry facings	26,312
Bars, billets and shapes	2,142	90,226	Paints, oils, varnishes	135,273
Castings, all kinds	282	50,569	Plating and polishing supplies	65,771
Brass—			Leather and rubber	20,478
Sheet and bar	68	45,235	Iron pipe and fittings	226,648
Castings	102	77,615	Other manufactured articles	260,085
Solder	50	27,236	All other miscellaneous materials	977,628
Tin, pig and sheet	34,361	182,941		
Copper	383	231,861	Total	7,767,631
Wire	1,107	114,013		
Zinc	202	26,386		
Other metals	167	59,286		

Table 223.—Products of the Heating and Ventilating Appliance Group in 1920.

Commodity.	Unit.	Quantity.	Value.	Commodity	Unit.	Quantity.	Value.
			$				$
Heating and ventilation—				Knitting mill machinery			20,000
Stoves, oil	No.	59,442	834,783	Pulp and paper mill machinery			75,000
Stoves, coal	No.	111,115	4,384,179	Castings, grey and malleable iron	Tons	6,060	894,853
Stoves, gas	No.	39,189	1,041,342	Castings, all other			50,000
Stoves, electric	No.	9,371	709,438	Enamelware	Pcs.	2,572,845	821,651
Stoves, wood	No.	33,958	1,151,012	Hollow-ware	Pcs.	17,068	18,448
Furnaces, hot air	No.	1,,033	1,608,991	Tinware	Pcs.	4,710,689	1,426,113
Furnaces, hot water	No.	12,972	1,472,299	Gauges	Pcs.	10,894	108,940
Radiators and parts	No.	13,028	3,071,342	Hardware builders'			125,100
Stove parts	Tons	1,365	537,421	Hardware, miscellaneous			280,783
Furnace parts		33,266	263,887	Lawn mowers	No.	50,400	104,866
Hot air registers and grills	No.	34,550	93,067	Ornamental ironwork	Tons	454	51,320
Heaters and parts	No.	334	90,460	Plumbers' goods and unions, etc			317,309
Heaters	No.	2,000	28,000	Galvanized iron			60,724
Gas water heaters			192,831	Fans	No.	271	94,426
Car heating apparatus			278,929	Steam boilers			118,033
Blowers			21,963	Iron pipe	Tons	261	156,560
Oil burning systems	No.	21	53,3352	Tools			70,480
Ventilating appliances	No.	104,915	530,083	Scales			85,603
Boilers and engines			305,290	Valves	No.	140,915	638,634
Forges and blowers			151,414	Custom and repair work			106,287
				Misc. products			680,484
				Total			23,125,680

Employment.—In a year of 304 days each of the 55 establishments on the average operated full time 274 days, worked part time 8 days and was idle 22 days. The average day was 9 hours and 51 hours made up the average week.

The average number of employees was 6,627, of whom 179, or 2·7 per cent, were officers, managers and superintendents, 740, or 11·2 per cent, constituted the clerical staff and 5,708, or 86·1 per cent, were wage-earners. The total pay-roll was $8,226,598, of which $1,576,642, or 19·2 per cent, was paid to the salaried employees and $6,649,956, or 80·8 per cent, was paid to the wage-earners.

Of the 5,172 wage-earners engaged on December 15th or the nearest representative date, 99, or 1·9 per cent, received less than $10 per week, 879, or 17 per cent, were paid more than $10 and less than $20 per week, 2,596, or

50·2 per cent, were paid more than $20 and less than $30 per week and 1,598, or 30·9 per cent, received a weekly remuneration of $30 or over.

Table 224.—Averages of Working Time in the Heating and Ventilating Appliance Group 1920.

Classification.	No. of Establishments.	Average Working Time		Average Days in Operation		
		Hrs. per day.	Hrs. per week.	Full time.	Part time.	Idle time.
All plants	55	9	51	274	8	22
Stoves and furnaces	42	9	51	271	6	27
Radiators	10	8	50	279	17	8
Ventilating systems	3	9	51	303	.....	1

Table 225.—Number of Employees, Salaries and Wages Paid by the Heating and Ventilating Group, 1920.

Classification	Average Number of Employees.	Male.	Female.	Salaries and Wages.
(A) By Industries		No.	No.	$
Stoves and Furnaces—				
Totals	4,618	4,363	255	5,450,680
Officers, managers and superintendents	135	133	2	410,971
Clerical staff	505	345	160	624,662
Wage earners	3,978	3,885	93	4,415,047
Radiators—				
Totals	1,931	1,870	61	2,683,407
Officers, managers and superintendents	41	39	2	161,807
Clerical staff	228	182	46	356,974
Wage earners	1,662	1,649	13	2,164,626
Ventilating appliances—				
Totals	78	74	4	92,511
Officers, managers and superintendents	3	3	–	15,083
Clerical staff	7	3	4	7,145
Wage earners	68	68	.....	70,283
(B) By Provinces				
New Brunswick and Quebec—				
Totals	486	473	13	501,392
Officers, managers and superintendents	22	21	1	51,342
Clerical staff	28	19	9	40,350
Wage earners	436	433	3	409,700
Ontario—				
Totals	6,097	5,792	305	7,681,612
Officers, managers and superintendents	152	149	3	527,879
Clerical staff	708	509	199	944,892
Wage earners	5,237	5,134	103	6,208,841
British Columbia—				
Totals	44	42	2	43,594
Officers, managers and superintendents	5	5	.....	8,640
Clerical staff	4	2	2	3,539
Wage earners	35	35	.....	31,415
Canada				
All plants in Group—				
Totals	6,627	6,307	320	8,226,598
Officers, managers and superintendents	179	175	4	587,861
Clerical staff	740	530	210	988,781
Wage earners	5,708	5,602	106	6,649,956

Table 226.—Average Number of Wage-Earners Employed in the Heating and Ventilating Appliance Group, 1920.

Month.	All plants.			Stoves and Furnaces.		Radiators.		Ventilating Appliances.
	Total.	Male.	Female.	Male.	Female.	Male.	Female.	Male.
	No.	No.	No.	No.	No.	No.	No.	No.
Monthly Average...	5,708	5,602	106	3,885	93	1,649	13	68
January.....	5,776	5,693	83	3,961	75	1,658	8	74
February.....	5,858	5,771	87	4,051	79	1,665	8	55
March.....	6,009	5,922	87	4,116	73	1,747	14	59
April.....	5,989	5,883	106	4,094	88	1,732	18	57
May.....	5,706	5,589	117	3,964	103	1,570	14	55
June.....	5,425	5,321	104	3,682	90	1,567	14	72
July.....	5,539	5,436	103	3,648	86	1,715	17	73
August.....	5,753	5,615	138	3,884	124	1,655	14	76
September.....	5,777	5,643	134	3,932	121	1,636	13	75
October.....	5,849	5,713	136	3,930	123	1,702	13	81
November.....	5,631	5,536	95	3,795	83	1,665	12	76
December.....	5,179	5,105	74	3,564	66	1,479	8	62

Table 227.—Number of Wage-Earners in the Heating and Ventilating Appliance Group in 1920 Classified by Age and Sex and According to their Weekly Rates of Pay.

Classification.	Totals	Weekly Rates of Pay.							
		Under $5 per week.	$5 and under $10	$10 and under $15	$15 and under $20	$20 and under $24	$24 and under $28	$28 and under $30	$30 and over.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
All Plants.									
Totals.....	5,172	12	87	321	558	999	1,209	388	1,598
Over 16 years of age—									
Male.....	5,082	12	69	286	535	986	1,208	388	1,598
Female.....	71	.....	11	26	21	12	1	.....	.....
Under 16 years of age—									
Male.....	19	.....	7	9	2	1	.....	.....	.....
Stoves and Furnaces.									
Totals.....	3,621	11	82	303	518	753	651	193	1,110
Over 16 years of age—									
Male.....	3,552	11	67	281	499	740	651	193	1,110
Female.....	63	.....	11	22	18	12	.....	.....	.....
Under 16 years of age—									
Male.....	6	.....	4	.....	1	1	.....	.....	.....
Radiators.									
Totals.....	1,491	1	5	18	36	215	545	191	480
Over 16 years of age—									
Male.....	1,470	1	2	5	32	215	544	191	480
Female.....	8	.....	.....	4	3	.....	1	.....	.....
Under 16 years of age—									
Male.....	13	.....	3	9	1	.....	.....	.....	.....
Heating Appliances.									
Over 16 years of age—									
Males.....	60	.....	.....	.....	4	31	13	4	8

Power and Fuel.—Power statistics are given in Table 228.

The 20,325 tons of coke valued at $311,823 was the principal fuel from the view point of cost, involving 53·4 per cent of the total expenditure of $583,877. The $184,273 paid for 22,530 tons of bituminous coal, constituted 31·6 per cent of the fuel cost.

Table 228.—Power Used in the Heating and Ventilating Appliance Group, 1920.

—		Industry			Total
		Stoves and Furnaces	Radiators	Ventilating Systems	
Boilers	Number	34	7	1	42
	Rated H.P.	2,922	871	100	3,893
	Used H.P.	1,425	715	.....	2,140
Engines, Steam	Number	23	8	.....	31
	Rated H.P.	2,436	605	.....	3,041
	Used H.P.	890	385	.....	1,275
" Internal combustion	Number	2	3	.....	5
	Rated H.P.	72	104	.....	176
	Used H.P.	12	19	.....	31
Water Wheels	Number	.....	1	.....	1
	Rated H.P.	.....	90	.....	90
	Used H.P.	.....	75	.....	75
Electric Motors	Number	270	110	5	385
	Rated H.P.	5,173	2,513	57	7,743
	Used H.P.	3,543	1,609	47	5,199
Other Power	Number	1	1	.....	2
	Rated H.P.	7	110	.....	117
	Used H.P.	5	110	.....	115

Table 229.—Fuel Used in the Heating and Ventilating Appliance Group in 1920.

Classification.	Unit of Measure	All Plants.		Stoves and Furnaces	
		Quantity.	Value.	Quantity.	Value.
			$		$
Total values	.....	.....	583,877	.....	386,007
Bituminous coal	Net ton	22,530	184,273	17,066	136,163
Anthracite coal	"	958	10,580	790	7,976
Coke	"	20,325	311,823	11,461	173,836
Gasoline	Gallon	25,482	10,814	19,439	8,409
Oil (fuel)	"	410,048	51,652	384,965	47,483
Wood	Cord	434	3,633	306	2,549
Gas	M cu. ft.	12,614	10,866	11,545	9,355
Other fuel	.....	.....	236	.....	236

	Unit of Measure	Radiators.		Ventilating Appliances.	
		Quantity.	Value.	Quantity.	Value.
			$		$
Total values	.....	.....	196,816	.....	1,054
Bituminous coal	Net ton	3,864	47,210	100	900
Anthracite coal	"	161	2,489	7	115
Coke	"	8,864	137,987	.....	.....
Gasoline	Gallon	6,043	2,405	.....	.....
Oil (fuel)	"	25,083	4,169	.....	.....
Wood	Cord	128	1,084	.....	.....
Gas	M cu. ft.	1,039	1,472	30	39

Financial Statistics.—The capital invested in the 55 establishments was $28,910,344, of which $13,267,992, or 45·9 per cent, was fixed capital and $15,642,352, or 54·1 per cent, was working assets. The percentage of the value of production of the working assets, ordinarily called the turnover, was 147·8 per cent. The operating ratio, being the percentage of the total expenditure to the output, was 87·3 per cent. The value added by manufacture for the whole group was $15,358,049, of which $9,701,903, or 63·2 per cent, was the net output for the stove and furnace plants, $5,361,751, or 34·9 per cent, was the value added in the radiator industry and $294,395, or 1·9 per cent, was the net production of the ventilating appliance establishments.

Table 230.—Capital Invested in the Heating and Ventilating Appliance Group, 1920.

Classification.	Establishments.	Total Capital Investment.	Lands, Buildings and Fixtures.	Machinery and Tools	Materials on hand and Stocks in Process.	Cash Accounts and Bills Receivable.
	No.	$	$	$	$	$
Canada.						
All plants	55	28,910,344	7,686,905	5,581,087	9,847,545	5,794,807
Stoves and furnaces	42	19,773,222	5,324,763	3,084,063	7,065,855	4,298,541
Radiators	10	8,857,457	2,344,938	2,467,119	2,689,062	1,356,338
Ventilating appliances	3	279,665	17,204	29,905	92,628	139,928
New Brunswick and Quebec.						
All plants	12	2,806,709	1,304,019	467,917	656,566	378,207
Ontario.						
All plants	40	26,004,846	6,344,542	5,100,253	9,157,886	5,402,165
Stoves and furnaces	29	17,082,423	3,982,650	2,630,737	6,450,372	4,018,664
Radiators and ventilating appliances	11	8,922,423	2,361,892	2,469,516	2,707,514	1,383,501
British Columbia.						
Stoves and furnaces	3	98,789	38,344	12,917	33,093	14,435

Table 231.—Miscellaneous Expenses Incurred by the Heating and Ventilating Appliance Group, 1920.

Classification.	All Plants	Stoves and Furnaces.	Radiators.	Ventilating Appliances.
	$	$	$	$
Rent of offices, works and machinery	23,254	17,380	4,131	1,743
Cost of purchased power	98,367	67,586	29,954	827
Insurance	144,126	103,960	39,929	237
Taxes—				
Excise	61,901	40,562	15,674	5,665
Excess profits tax	26,069	15,279	10,713	77
Provincial and municipal	187,858	140,689	46,685	484
Royalties, use of patents	24,194	23,309	705	180
Advertising expenses	243,334	201,033	40,530	1,771
Travelling expenses	299,445	236,361	59,140	3,944
Repairs to buildings and machinery	412,697	284,614	124,485	3,598
All other sundry expenses, excepting fuel, materials, salaries and wages	2,092,589	1,228,779	855,785	8,025
Total	3,613,834	2,359,552	1,227,731	26,551

Table 233.—Financial Summary of the Heating and Ventilating Appliance Group in 1920.

Classification.	Establishments.	Capital.	Salaries and Wages.	Cost of Fuel.	Cost of Materials.	Miscellaneous Expenses.	Total Expenditure.	Value of Products.
	No.	$	$	$	$	$	$	$
Canada—								
All plants	55	28,910,344	8,226,598	583,877	7,767,631	3,613,834	20,191,940	23,125,680
Stoves and furnaces	42	19,772,222	5,450,680	386,007	5,597,706	2,359,552	13,793,945	15,299,609
Radiators	10	8,857,457	2,683,407	190,816	2,079,427	1,227,731	6,187,381	7,441,178
Ventilating appliances	3	279,665	92,511	1,054	90,498	26,551	210,614	384,893
New Brunswick and Quebec—								
All plants	12	2,806,709	501,392	47,031	582,392	174,107	1,304,922	1,428,858
Ontario—								
All plants	40	26,004,846	7,681,612	534,442	7,157,316	3,426,476	18,799,846	21,594,141
Stoves and furnaces	29	17,082,423	4,961,137	336,905	5,151,771	2,213,815	12,663,628	14,071,441
Radiators and ventilating appliances	11	8,922,423	2,720,475	197,537	2,005,545	1,212,661	6,136,218	7,522,700
British Columbia—								
Stoves and furnaces	3	98,789	43,594	2,404	27,923	13,251	87,172	102,681

Provincial Distribution.—The following statement gives the provincial distribution of the establishments of the group:—

Table 234.—Provincial Distribution of Plants in the Heating and Ventilating Appliance Group.

Industry.	New Brunswick.	Quebec.	Ontario.	British Columbia	Canada.
Stoves and furnaces	2	8	29	3	42
Radiators	.....	1	9	.....	10
Ventilating appliances	.....	1	2	.....	3
Total	2	10	40	3	55

The capital investment in New Brunswick and Quebec was $2,806,709, or 9·7 per cent, in Ontario the capital was $26,004,846, or 90.0 per cent, and in British Columbia the capital involved in three establishments was $98,789, or 0·34 per cent. Ontario was also far in advance of the other provinces in production and employment. Of a total production of $23,125,680 the contribution of Ontario was $21,594,141, or 93·4 per cent. New Brunswick and Quebec followed with a combined production of $1,428,858, or 6·2 per cent, and British Columbia had an output of $102,681, or 0·4 per cent. The employment in Ontario was 6,097, or 92 per cent. in New Brunswick and Quebec 486 or 7·3 per cent, and in British Columbia 44, or 0·7 per cent of the average number of employees engaged in the entire group.

CHAPTER TEN

WIRE AND WIRE GOODS

The group includes plants engaged in the drawing of wire from wire rods and the manufacture of various wire products. The group is divided for purposes of analysis into three industries. Twenty plants owned by 17 concerns were engaged in the drawing of wire and the manufacture of wire rope and nails. Three of the plants were situated in New Brunswick, six in Quebec, ten in Ontario and one in British Columbia. In addition several plants reported as steel furnaces and rolling mills had departments devoted to the drawing of wire and manufacture of wire nails. The second industry consists in the weaving of wire fencing. Eight establishments were devoted to this work of which was one situated in New Brunswick and the remainder were located in Ontario. The manufacture of miscellaneous wire products was undertaken by 17 firms. Three plants were located in Quebec, 11 in Ontario, one in Manitoba and two in British Columbia.

During 1920 the average number of wage-earners engaged in the wire group was 3,420. The maximum month of employment was March when 3,530 wage-earners were engaged. More than 3,500 were employed in each of the months, Macrh, April, June and July. The year closed with a pay-roll of 3,203, the lowest during the twelve months.

The value of production for the group during 1920 was $30,254,349, of which $25,160,988, or about 83 per cent, is credited to the wire, wire rope and nail industry. As the cost of materials was $10,753,788, the net output for the industry was $14,407,200. The net output for the wire fencing industry was $1,303,785, computed by deducting the cost of materials, $3,111,167, from the value of the products reported at $4,414,952. The latter value was about 14 per cent of the total output for the wire group. The total production of the firms manufacturing miscellaneous wire goods was $678,409, or about 3 per cent of the total production for the group. The cost of materials was $354,383 and the net output $324,026. The following presents an analysis of the production of the wire group in tabular form:—

Table 235.—Analysis of Production of the Wire Group, 1920.

—	All Plants.	Wire, Wire Rope and Nails.	Wire Fencing.	Wire Goods, n.e.s.
	$	$	$	$
Value of production	30,254,349	25,160,988	4,414,952	678,409
Cost of materials	14,219,338	10,753,788	3,111,167	354,383
Value added by manufacturing	16,035,011	14,407,200	1,303,785	324,026

Referring to Table 236, it will be observed that 6 plants were owned by an even number of partnerships and individuals and 39 plants were owned by 36 incorporated companies. Eighty per cent of the issued securities was owned in Canada, 10 per cent in the United States, about 1·6 per cent in Great Britain

and the remainder constituting about 0·4 per cent, was held in other countries. The total par value of outstanding stocks and bonds is reported as $7,423,083.

The historical summary of the development of the industrial group from 1880 to 1919 is presented in Table 237. As the reclassification of a number of firms has placed the industries on a slightly different basis, the statistics for 1920 are not comparable. The principal statistics for the year in question distributed by provinces and by classes of industry are given in Table 238.

Table 236.—Character and Distribution of Ownership of the Wire Group in 1920.

—	Wire, Wire Rope and Nails.	Wire Fencing.	Wire Goods, n.e.s.	All Plants.
Number of establishments	20	8	17	45
Number of manufacturing concerns	17	8	17	42
Number of partnerships and individual concerns	1	1	4	6
Number of incorporated companies	16	7	13	36
Issued securities at par value held by residents of	$	$	$	$
Canada	2,586,650	3,872,100	78,133	6,536,883
Great Britain	118,200	2,300	.....	120,500
United States	483,300	264,100	.....	747,400
Other countries	27,600	700	.....	28,300
Total	3,205,750	4,139,200	78,133	7,423,083

Table 237.—Summary Showing the Development of the Wire Group from 1880 to 1919.

Industry.	Year.	Number of Establishments.	Average Number of Wage Earners.	Wages.	Capital.	Cost of Materials.	Value of Products.
				$	$	$	$
Wire	1880	6	66	21,000	90,000	154,500	213,000
	1890	50	871	331,473	1,138,815	958,355	1,973,660
	1900	15	551	181,778	1,599,118	1,060,011	1,693,995
	1905	18	1,083	417,645	3,981,192	.....	3,934,484
	1910	13	950	466,372	2,815,888	1,657,910	2,882,166
	1915	25	979	505,603	3,810,924	2,028,157	3,510,494
	1917	20	868	623,788	4,353,351	3,407,028	6,187,145
	1918	26	1,187	1,031,290	6,921,002	5,015,819	9,050,831
	1919	28	1,501	1,370,022	11,466,745	5,347,224	10,023,430
Wire Fencing	1880	1	3	1,200	3,000	4,000	12,000
	1900	14	154	59,362	225,950	199,801	336,470
	1905	20	276	128,736	871,113	.....	1,286,549
	1910	19	369	215,719	2,059,679	1,593,974	2,608,907
	1915	17	353	255,936	2,175,458	2,048,626	3,022,615
	1917	19	580	516,111	3,668,343	3,337,304	5,473,667
	1918	18	489	478,204	3,351,249	3,550,927	5,163,477
	1919	19	549	564,019	3,422,999	3,589,849	5,205,481
Total	1880	7	69	22,200	93,000	158,500	225,000
	1890	50	871	331,473	1,138,815	958,355	1,973,660
	1900	29	705	244,140	1,825,068	1,259,812	2,030,465
	1905	38	1,359	546,381	4,852,305	.....	5,221,033
	1910	32	1,319	682,091	4,875,567	3,251,884	5,491,073
	1915	42	1,332	761,539	5,986,382	4,076,783	6,533,109
	1917	39	1,448	1,139,899	8,021,694	6,744,332	11,660,812
	1918	44	1,676	1,509,494	10,272,251	8,566,746	14,214,308
	1919	47	2,050	1,934,041	14,889,744	8,937,073	15,228,911

Table 238.—Principal Statistics of the Wire Group for 1920.

—	Establishments.	Average Number of Wage Earners.	Wages.	Capital.	Cost of Materials.	Value of Products.
	No.		$	$	$	$
Canada—						
All plants	45	3,420	4,020,256	18,339,020	14,219,338	30,254,349
Wire, wire rope and nails	20	2,869	3,254,598	14,904,988	10,753,788	25,160,988
Wire fencing	8	423	659,286	2,963,775	3,111,167	4,414,952
Wire goods, n.e.s.	17	128	106,372	470,257	354,383	678,409
New Brunswick—						
All plants	4	240	297,089	1,900,087	1,391,201	2,118,283
Quebec—						
All plants	9	1,093	1,227,089	6,553,912	4,932,185	13,660,881
Wire, wire rope and nails	6	1,068	1,211,259	6,533,955	4,912,645	13,611,502
Wire goods, n.e.s.	3	25	15,830	19,957	19,540	49,379
Ontario—						
All plants	28	2,072	2,476,868	9,597,066	7,861,590	14,401,727
Wire, wire rope and nails	10	1,563	1,746,994	6,308,241	4,535,543	9,535,852
Wire fencing	7	413	647,786	2,863,035	2,999,297	4,264,952
Wire goods, n.e.s.	11	96	82,088	425,790	326,750	600,923
Manitoba and British Columbia—						
All plants	4	15	19,210	287,955	34,362	73,458

Commodity Statistics.—The products given in Table 240 are divided into two classes according as to whether they may be characterized as wire and wire products or otherwise. The first class is valued at $26,967,628, comprising the wire and wire goods produced by all plants in the group. According to the returns received at the Bureau, 216,172 tons of wire rods, valued at $12,480,-120, were rolled in Canada during 1920. The importation was 34,067 tons, worth $1,926,103. The export classification does not provide a separate item for wire rods but it is considered that the exportation was not an important factor. The amount available for consumption and for addition to stocks was therefore about 250,000 tons. The portion used as a material in the wire group is given as 168,040 tons, valued at $10,914,156.

The production of spikes, nails, tacks and staples in the wire group was reported as 151,429 tons, worth $7,626,385. The output of the wire departments of steel mills comprising 31,033 tons valued at $3,241,161, should be included in this connection. The total production in Canada was 185,566 tons worth $11,307,523. The importation was 2,166 tons, worth $260,035, and the exports were 44,431 tons, valued at $5,584,178. The spikes, nails tacks and staples made available for consumption were, therefore, more than 140,000 tons.

The production of wire and wire rope, principally iron and steel, by the wire group was 110,919 tons, worth $11,464,788. The amount produced in steel mills was 40,889 tons, of which 23,374 tons were intended for sale. The total value of the wire produced in steel mills was given as $3,362,637. The total production in the iron and steel industries was 138,630 tons, worth $12,-477,524. Brass and copper wire and cable valued at $14,208,228 were produced in the electrical supply industry. As a number of items listed in the External Trade reports are given by value only, the import and export tonnages cannot be determined. In 1920 the value of the importation was $7,700,879 and the exports were worth $2,607,402. The wire used in the wire group was 9,221 tons, worth $961,687.

The commodity statistics including data regarding materials, output, imports and exports are given in Tables 239, 240 and 241.

Table 239.—Materials Used by the Wire Group in 1920.

Materials.	Unit of Measure.	Industry.							
		Total.		Wire, Wire Rope and Nails.		Wire Fencing.		Wire Goods, N.E.S.	
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
			$		$		$		$
Materials principally of iron and steel—									
Wire rods	Tons	168,040	10,914,156	134,815	8,132,817	33,225	2,781,339		
Wire	"	9,221	961,687	7,447	814,251			1,774	147,436
Steel hoops	No.	328,637	164,737	328,637	164,737				
Iron, n.s	Tons	931	101,863	495	61,875	351	30,529	85	9,459
Manufactured supplies			90,000		90,000				
Tack plate	Tons	952	89,417	952	89,417				
Machinery supplies			70,359		70,359				
Steel sheet	Tons	504	65,762	504	65,762				
Screen cloth			63,010						63,010
Steel, n.s	Tons	698	55,235	387	28,390	305	24,789	6	2,056
Hoop steel	"	524	41,918	524	41,918				
Iron pipe			23,200				23,200		
Rope fittings	Tons	25	10,000	25	10,000				
Chain fittings	"	10	5,000	10	5,000				
Materials of metals other than iron and steel—									
Sheet zinc	Tons	100	20,000	100	20,000				
Spelter	"	2,034	400,313	1,439	291,398	595	108,915		
Pig tin	"	45	53,736	45	53,736				
Lead	"	138	16,817	53	8,676	83	7,846	2	295
Burr metal	"	52	11,617	52	11,617				
Tin	"	9	9,027			9	9,027		
Electric supplies			7,000		7,000				
Brass sheet	Tons	6	4,598	6	4,598				
Miscellaneous materials—									
Acid	Tons	6,774	205,532	5,690	171,938	1,083	33,534	1	60
Paints, oils and varnishes			29,368		26,744		1,346		1,278
Lumber	M. ft. B.M.	3,100	172,717	3,056	152,879	1	120	43	19,718
Fibre and fibrous materials			52,500		52,500				
Thread and cotton binding			37,078						37,078
Containers			197,346		179,372		1,879		16,095
All other miscellaneous materials			345,345		198,804		97,670		48,871
Total			14,219,338		10,753,788		3,120,194		345,356

Table 240.—Products of the Wire Group during 1920.

Commodity.	Quantity.	Value.	Commodity.	Quantity.	Value.
		$			$
I. Wire and Wire Products:—			*II. Products other than wire:—*		
Nails and staples.....Tons	150,147	7,161,150	Screws.....Tons	10,157	1,218,887
Wire..... "	107,129	10,654,961	Bolts, nuts and rivets... "	9,573	1,125,315
Wire fencing..... "	14,064	2,804,794	Iron work..... "	150	79,525
Wire rope..... "	3,790	1,809,827	Bright goods.....Gross	93,093	68,324
Wire bale ties and hoops "	6,791	875,326	Steel hoops.....Tons	436	65,939
Wire cloth..... "	2,450	872,174	Boot and shoe goods.....	.....	51,464
Fence rods.....Gross	1,426,446	646,101	Bank cages.....Tons	83	17,422
Tacks.....Tons	1,102	422,020	Jack chain.....Doz. yds.	22,837	10,847
Cotter pins.....M.	254,735	356,629	Sheet and perforated metal.....Tons	130	60,539
Poultry netting.....	.....	302,832	Containers.....	.....	190,769
Wire guards.....No.	117,971	238,200	Amt. received for repairs....	.....	326,255
Fence gates..... "	31,792	206,216	Miscellaneous products.....	.....	71,435
Wire work.....Tons	46	151,148			
Wire springs..... "	523	125,209			
Garment hangers.....No.	544,845	50,827	Total Aggregate output of group—.....	.....	3,286,721
Horseshoe nails.....Tons	180	43,215			
Wire chain.....	.....	41,893			
Wire screens.....No.	12,293	24,945			
Wire baskets..... "	10,138	15,001			
Stove rods and wires...Tons	51	11,206			
Wire lamp shades.....No.	15,100	10,070			
Wire frames..... "	4,710	4,896			
Misc. wire goods.....	.....	138,988			
Total.....	.....	26,967,628			

Table 241.—Principal Imports into Canada of Wire and Wire Goods in 1920.

Commodity.	Quantity.	Value.	Commodity.	Quantity.	Value.
		$			$
Total iron and steel wire and goods.....	.....	8,224,233	Brass wire, plain.....lbs.	259,957	90,987
Barbed wire of iron and steel.....cwt.	482,344	2,223,395	Wire of brass, n.o.p.....	.....	485,198
Steel wire, Bessemer..... "	33,181	164,042	Copper wire, plain.....lbs.	461,609	169,820
Steel wire flat..... "	7,646	133,044	Copper wire cloth.....	.....	21,962
Wire crucible cast steel....lbs.	675,426	195,134	Copper wire.....	.....	205,189
Wire curved or not.....cwt.	332,038	1,235,340	Nails and spikes composition and sheathing nails lbs.	30,963	2,280
Wire single or several.....	.....	217,971	Nails and spikes, cut.....cwt.	589	2,798
Wire steel valued etc.....cwt.	111,964	1,284,344	Nails, brads, spikes and tacks.....lbs.	231,735	50,672
Wire of iron and steel, all kinds, n.o.p.....lbs.	12,636,791	856,871	Nails, wire of all kinds, n.o.p.....cwt.	29,619	157,673
Wire rope for rigging of vessels.....cwt.	994	14,111	Railway spikes..... "	10,461	46,067
Wire rope stranded.....	.....	1,376,627	Tacks, shoe.....lbs.	2,103	545
Wire cloth and woven.....	.....	389,771	Nails and tacks, brass and copper.....	.....	9,050
Wire screens.....	.....	33,463			

Employment.—The average number of employees paid by the wire concerns in 1920 was 3,813, comprising 393 salaried employees and 3,420 wage-earners. Of the total number of employees, the officers, managers and superintendents constituted 3 per cent, the clerical staff, 7 per cent, and the wage-earners 90 per cent. The female employees numbered 427, or about 11 per cent of the average pay-roll.

The maximum working time during the year was 304 days. On the average, each plant in the wire group worked full time 265 days, worked part time 17·4 days and was idle 21·6 days. The average shift consisted of 9·1 hours and the average time worked per week 51·8 hours. The results for each of the industries in the group are presented in Table number 242.

Table 242.—Number of Days in Operation and Average Number of Hours Normally Worked by Wage-Earners per Day and per Week in the Wire Group, 1920.

Classification.	Number of Establishments.	Working Time.		Average Days in Operation.		
		Per Shift or per Day.	Per Week.	Full Time.	Part Time.	Idle Time.
		Hours.	Hours.			
All plants	45	9·1	51·8	265	17·4	21·6
Wire, wire rope and nails	20	9·3	52	258·7	9·9	35·4
Wire fencing	8	9·6	54	273·4	8·1	22·5
Wire goods, n.e.s.	17	8·7	51	268·3	30·7	5

Table 243.—Employees, Salaries and Wages in the Wire Group during 1920.

Classification.	Number of Employees.			Salaries and Wages.
	Total.	Male.	Female.	
	No.	No.	No.	$
All plants—				
Totals	3,813	3,386	427	4,731,717
Officers	120	118	2	338,855
Clerical employees	273	182	91	372,606
Wage earners	3,420	3,086	334	4,020,256
Wire, wire rope and nails—				
Totals	3,119	2,777	342	3,700,188
Officers	69	68	1	200,701
Clerical employees	181	132	49	244,884
Wage earners	2,869	2,577	292	3,254,598
Wire Fencing—				
Totals	528	486	42	867,330
Officers	35	35	.....	110,090
Clerical employees	70	42	28	107,954
Wage earners	423	409	14	659,286
Wire goods, n.e.s.—				
Totals	166	123	43	154,204
Officers	16	15	1	28,064
Clerical employees	22	8	14	19,768
Wage earners	128	100	28	106,372

Table 244.—Salaries, Wages and Number of Employees Engaged in the Wire Group by Provinces in 1920.

Province and Classification of Employees	Number of Employees.			Salaries and Wages.
	Total.	Male.	Females.	
Canada.	No.	No.	No.	$
Totals	3,813	3,387	426	4,731,717
Officers, managers and superintendents	120	118	2	338,855
Clerical employees	273	182	91	372,606
Wage earners	3,420	3,087	333	4,020,256
New Brunswick.				
Totals	284	259	25	385,619
Officers, managers and superintendents	16	15	1	62,750
Clerical employees	28	16	12	25,780
Wage earners	240	228	12	297,089
Quebec.				
Totals	1,177	1,088	89	1,390,846
Officers, managers and superintendents	39	38	1	109,014
Clerical employees	45	41	4	54,743
Wage earners	1,093	1,009	84	1,227,089
Ontario.				
Totals	2,332	2,021	311	2,929,500
Officers, managers and superintendents	61	61	.....	160,654
Clerical employees	199	125	74	291,978
Wage earners	2,072	1,835	237	2,476,868
British Columbia and Manitoba.				
Totals	20	19	1	25,752
Officers, managers and superintendents	4	4	.....	6,437
Clerical employees	1	.....	1	105
Wage earners	15	15	.....	19,210

Table 245.—Average Number of Wage-Earners Employed in the Wire Industry by Months, 1920.

	Total for the Wire Group.			Industries.					
				Wire, Wire Rope and Nails.		Wire Fencing.		Wire Goods, N.E.S.	
	Total.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Monthly average	3,420	3,087	333	2,577	292	409	14	100	28
January	3,338	3,018	320	2,541	287	385	6	92	27
February	3,443	3,137	306	2,617	278	418	6	102	22
March	3,530	3,192	338	2,653	286	439	24	100	28
April	3,503	3,169	334	2,635	290	430	24	104	20
May	3,453	3,098	355	2,585	300	403	25	110	30
June	3,505	3,155	350	2,591	289	454	32	110	29
July	3,502	3,173	329	2,600	280	457	22	116	27
August	3,357	3,039	318	2,511	290	419	6	109	22
September	3,300	2,986	314	2,489	280	399	6	98	28
October	3,460	3,115	345	2,639	310	381	6	95	29
November	3,443	3,089	354	2,643	314	363	6	83	34
December	3,203	2,865	338	2,425	296	356	6	84	36

Table 246.—Number of Wage-Earners in the Wire Industry, 1920, Classified by Age and Sex and According to their Weekly Rates of Pay.

	Total No. of Wage-Earners	Weekly Rate of Pay.							
		Under $5	$5 but under $10	$10 but under $15	$15 but under $20	$20 but under $24	$24 but under $28	$28 but under $30	$30 and over.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
All Plants, totals	3,386	24	209	549	555	536	808	160	545
Over 16 years of age—									
Male	2,938	10	84	293	506	534	806	160	545
Female	320	4	74	192	46	2	2	.....	.....
Under 16 years of age—									
Male	105	6	41	55	3	.....	.....	.....	.....
Female	23	4	10	9	.....	.....	.....	.....	.....
Wire Wire Rope and Nails	2,893	24	188	510	497	483	685	122	384
Over 16 years of age—									
Male	2,497	10	72	279	464	483	683	122	384
Female	271	4	65	170	30	.....	2	.....	.....
Under 16 years of age—									
Male	102	6	41	52	3	.....	.....	.....	.....
Female	23	4	10	9	.....	.....	.....	.....	.....
Wire Fencing	364	.....	1	7	25	31	110	36	154
Over 16 years of age—									
Male	355	.....	1	4	21	29	110	36	154
Female	6	.....	.....	.....	4	2	.....	.....	.....
Under 16 years of age—									
Male	3	.....	.....	3	.....	.....	.....	.....	.....
Wire Goods, N.E.S.	129	.....	20	32	33	22	13	2	7
Over 16 years of age—									
Male	86	.....	11	10	21	22	13	2	7
Female	43	.....	9	22	12	.....	.....	.....	.....

Power and Fuel.—The bituminous coal used by the group was worth $341,398, as compared with a total fuel expenditure of $490,387. The coke was valued at $73,371 and fuel oil at $42,356.

Table 247 shows the total horse-power used by the group and includes the power furnished by steam and internal combustion engines owned by the establishments using them and also the power of electric motors run by purchased current and the steam power rented from outside concerns whether supplied by direct shafting or belting transmission. The power and fuel statistics are given in detail in Tables 247 and 248.

Table 247.—Power Used in the Wire Group in 1920.

—		Wire, Wire Rope and Nails	Wire Fencing	Wire Goods, N.E.S.	Total
Boilers	Number	17	4	1	22
	Rated H.P.	1,950	300	40	2,290
	Used H.P.	1,781	50	10	1,841
Engines, Steam	Number	13	.....	.....	13
	Rated H.P.	1,982	.....	.....	1,982
	Used H.P.	1,641	.....	.....	1,641
" Internal combustion	Number	.....	3	2	5
	Rated H.P.	.....	145	7	152
	Used H.P.	.....	80	7	87
Electric Motors	Number	200	77	25	302
	Rated H.P.	6,266	1,173	84	7,523
	Used H.P.	5,041	1,110	65	6,216
Other Power	Number	47	1	.....	48
	Rated H.P.	1,136	110	.....	1,246
	Used H.P.	731	110	.....	841

Table 248.—Fuel Consumed by the Wire Group in 1920 by Classes of Industry and by Kinds of Fuel.

		Total.		Industry.					
				Wire, Wire Rope and Nails.		Wire Fencing.		Wire Goods, N.E.S.	
		Quantity.	Cost.	Quantity.	Cost.	Quantity.	Cost.	Quantity.	Cost.
			$		$		$		$
Bituminous coal—									
Canadian	"	7,687	68,132	7,680	68,035	.....	.....	7	97
Foreign	"	29,215	273,266	24,621	230,471	4,489	41,331	105	1,464
Anthracite coal, foreign	"	3,352	26,523	3,282	25,339	2	24	68	1,160
Coke—									
Canadian	"	2,849	27,419	2,843	27,357	6	62	.....	.....
Foreign	"	2,614	45,952	1,405	24,190	1,209	21,762	.....	.....
Gasoline	Gals.	5,668	2,476	2,927	1,608	2,731	864	10	4
Oil fuel	"	262,779	42,356	262,779	42,356	.....	.....	.....	.....
Wood	Cord.	39	317	20	200	1	5	18	112
Gas	1,000 c. ft.	3,206	2,690	1,008	709	1,473	831	725	1,090
Other		.....	1,256	.....	.....	.....	1,256	.....	.....
Total		.....	490,387	.....	420,325	.....	66,135	.....	3,927

Financial Statistics.—The capital investment in the wire group was $18,339,020, of which the fixed capital comprised $10,005,059, or 54·5 per cent. The working assets were $8,333,961, or 45·5 per cent, of the total investment. The capital of the group was divided in the following proportions among the three classes of plants, wire, wire rope and nails, 81·3 per cent, wire fencing 116·2 per cent, and other wire goods 2·5 per cent. The operating ratio, obtained by computing the percentage of the aggregate expenditure to the annual production, was nearly 72 per cent. The ratio of the gross output to the current assets, known as the turnover, was approximately 363 per cent. The gross earnings amounting to $8,597,548 were in excess of the par value of the stock and bond issues reported as $7,423,083. The financial statistics are presented in Tables 249 to 251.

Table 249.—Capital Invested in the Wire Group by Form and by Class of Industry, 1920

Classification.	Total Capital.	Capital Represented by			
		Lands Buildings and Fixtures.	Machinery and Tools.	Materials on hand, Stocks in process.	Cash Accounts and Bills Receivable.
Canada.	$	$	$	$	$
All plants	18,339,020	4,283,903	5,721,156	5,049,169	3,284,792
Wire, wire rope and nails	14,904,988	3,576,036	5,141,868	3,805,373	2,381,711
Wire fencing	2,963,775	601,473	504,444	1,030,651	827,207
Wire goods, n.e.s.	470,257	106,394	74,844	213,145	75,874
New Brunswick.					
Total	1,900,087	511,486	366,202	444,883	577,516
Quebec.					
Total	6,553,912	1,789,771	2,359,831	1,744,776	659,534
Wire, wire rope and nails	6,533,955	1,787,371	2,354,689	1,735,247	656,648
Wire goods, n.e.c.	19,957	2,400	5,142	9,529	2,886
Ontario.					
Total	9,597,066	1,927,014	2,919,278	2,710,813	2,039,961
Wire, wire rope and nails	6,308,241	1,235,997	2,354,172	1,527,086	1,190,986
Wire fencing	2,863,035	594,973	498,944	986,911	782,207
Wire goods, n.e.c.	425,790	96,044	66,162	196,816	66,768
Manitoba and British Columbia.					
Total	287,955	55,032	75,845	148,097	7,781

Table 250.—Miscellaneous Expenses Disbursed by the Wire Group Distributed by Accounts and Classes of Industry, 1920.

	Industry.			
	Total.	Wire, Wire Rope and Nails.	Wire Fencing.	Wire Goods, N.E.S.
	$	$	$	$
Rent of offices, works and machinery	120,286	105,509	5,291	9,486
Cost of purchased power	164,598	143,346	19,191	2,061
Insurance	114,579	97,671	14,811	2,097
Taxes:—				
Excise	45,238	24,121	18,866	2,251
Excess profits tax	116,482	95,556	20,835	91
Provincial and municipal	66,569	59,033	6,128	1,408
Royalties, use of patents	10,089	9,427		662
Advertising expenses	67,115	26,083	35,823	5,209
Travelling expenses	72,067	37,880	30,374	3,813
Repairs to buildings and machinery	411,485	369,192	29,112	13,181
All other sundry expenses (fuel, materials, salaries and wages excepted)	1,026,851	719,824	259,051	47,976
Total	2,215,359	1,687,642	439,482	88,235

Table 251.—Financial Summary of the Wire Group in 1920.

	Capital.	Salaries and Wages.	Cost of Fuel.	Cost of Materials.	Miscellaneous Expenses.	Total Expenditure.	Value of Products.
	$	$	$	$	$	$	$
Canada.							
Total	18,339,020	4,731,717	490,387	14,219,338	2,215,359	21,656,801	30,254,349
Wire, wire rope and nails	14,904,988	3,700,183	420,325	10,753,788	1,687,642	16,561,938	25,160,988
Wire fencing	2,963,775	877,330	66,135	3,111,167	439,482	4,494,114	4,414,952
Wire, goods, n.e.s	470,257	154,204	3,927	354,383	88,235	600,749	678,409
New Brunswick.							
Total	1,900,087	385,619	69,452	1,391,201	248,448	2,094,720	2,118,283
Wire, wire rope and nails	1,799,347	367,019	69,092	1,279,331	243,735	1,959,177	1,968,283
Wire fencing	100,740	18,600	360	111,870	4,713	135,543	150,000
Quebec.							
Total	6,553,912	1,390,846	220,702	4,932,185	518,739	7,062,472	13,660,881
Wire, wire rope and nails	6,533,955	1,371,356	220,057	4,912,645	511,479	7,015,537	13,611,502
Wire goods, n.e.c.	19,957	19,490	645	19,540	7,260	46,935	49,379
Ontario.							
Total	9,597,066	2,929,500	199,913	7,861,590	1,436,461	12,427,464	14,401,737
Wire, wire rope and nails	6,308,241	1,950,112	131,064	4,535,543	924,078	7,540,797	9,535,852
Wire fencing	2,863,035	858,730	65,775	2,999,297	434,769	4,358,571	4,264,952
Wire goods, n.e.c.	425,790	120,658	3,074	326,750	77,614	528,096	600,923
Manitoba and British Columbia.							
Total	287,955	25,752	320	34,362	11,711	72,145	63,458

Provincial Distribution.—The capital invested in Ontario comprised $9,597,066, or 52·3 per cent of the total. Quebec was next in order with an investment of $6,553,912, or 35·7 per cent. The capital invested in New Brunswick was 10·4 per cent and the percentage for the western provinces of Manitoba and British Columbia was 1·6.

Of the average employment in the group reported as 3,813, about 61·2 per cent were engaged in Ontario. The remaining divisions were Quebec with 30·9 per cent, New Brunswick with 7·4 per cent and Manitoba and British Columbia, with a percentage of 0·5.

In production, Ontario also led slightly with a percentage of 47·6 and an absolute valuation of $14,401,737. Quebec was a close second with an output of $13,660,881, or 45·1 per cent. The gross production of New Brunswick was about 7 per cent and Manitoba and British Columbia contributed 0·3 per cent.

CHAPTER ELEVEN

SHEET METAL PRODUCTS

The group included 122 establishments engaged in the manufacture of goods from sheet metal. Twenty plants were employed in the manufacture of enamelware and tinware, 7 in the making of metal dress fasteners, 10 establishments were engaged in the manufacture of metallic roofing, siding and flooring, and 85 plants were employed in the production of other sheet metal products.

The value of production during 1920 was $37,369,576, of which $19,823,986, or 53 per cent, was the output of plants engaged in the manufacture of sheet metal products not otherwise classified, and $16,360,723, or 43·8 per cent, was the output of the enamelware and tinware establishments. The value added by manufacture in all plants was $17,108,756, of which the net output in the enamelware and tinware industry was $7,641,946, or 44·7 per cent; the net output in the metal dress fastener industry was $225,741, or 1·5 per cent. The net production of the metal roofing, siding and flooring industry was $251,617, or 1·5 per cent, and the net output of the establishments engaged in the manufacture of other sheet metal products was $8,959,452, or 52·3 per cent.

The employment increased from 6,366 wage-earners in January to 6,659 in April. The decreases after July, when 6,610 were employed, were steady with the exception of October, when the employment of 6,374 equalled that of September. The year ended with a pay-roll of 5,818, as compared with 6,366, the average for the year.

The par value of the securities issued by the group was $15,341,140, of which $12,320,660, or 80·3 per cent, was held in Canada and $2,653,130, or 17·3 per cent, was owned in the United States.

Table 252.—Character and Distribution of Ownership of the Sheet Metal Goods Group, 1920.

Distribution.	Enamelware and Tinware.	Metal Dress Fasteners.	Metallic Roofing, Siding and Flooring.	Sheet Metal Products.	All Plants.
Number of Establishments	20	7	10	85	122
" Manufacturing concerns	17	7	10	79	113
" Partnerships and individual concerns	3	2	7	45	57
" Incorporated companies	14	5	3	34	56
Issued securities at par value held by residents of—	$	$	$	$	$
Canada	5,216,895	66,000	118,700	6,918,465	12,320,660
Great Britain	134,150	.....	.....	224,000	358,150
United States	1,368,180	169,500	.....	1,115,450	2,653,130
Other Countries	9,200	.....	.....	.....	9,200
Total	6,728,425	235,500	118,700	8,257,915	15,341,140

Table 253.—Principal Statistics of the Sheet Metal Goods Group in 1920.

	Establishments.	Average Number of Wage Earners.	Wages.	Capital Invested.	Cost of Materials.	Value of Products.
	No.		$	$	$	$
Canada.						
Total	122	6,366	6,809,846	27,589,735	20,260,820	37,369,576
Enamelware and tinware	20	3,228	3,405,839	12,662,369	8,718,777	16,360,723
Metal dress fasteners	7	94	78,221	431,988	210,105	465,846
Metallic roofing, siding and flooring	10	92	108,981	436,017	467,404	719,021
Sheet metal products, n.e.s.	85	2,952	3,216,805	14,059,361	10,864,534	19,823,986
Nova Scotia.						
Sheet metal products, n.e.s.	4	53	60,456	206,113	222,117	342,062
Prince Edward Island and New Brunswick.						
Total	3	38	28,070	190,257	96,126	234,672
Quebec.						
Total	17	1,529	1,455,724	5,642,394	3,521,703	6,817,993
Enamelware and tinware	4	1,151	1,085,156	4,692,501	2,752,490	5,032,282
Sheet metal	9	352	349,271	882,698	687,288	1,600,464
Remaining plants	4	26	21,297	67,195	81,925	185,247
Ontario.						
Total	72	4,242	4,700,674	19,054,711	14,833,087	26,225,308
Enamelware	14	2,049	2,303,461	7,863,088	5,890,535	11,164,292
Sheet metal products	45	2,035	2,231,308	10,390,813	8,346,968	14,061,396
Remaining plants	13	159	165,905	800,810	595,584	999,620
Manitoba.						
Sheet metal products, n.e.s.	13	388	399,261	1,924,669	1,238,888	2,970,775
Saskatchewan and Alberta.						
Sheet metal products, n.e.s.	9	91	129,832	490,836	278,047	641,820
British Columbia.						
Sheet metal products, n.e.s.	4	24	35,829	80,755	70,852	136,946

Table 254.—Summary Showing the Development of the Sheet Metal Products Industry.

Industry.	Year.	Establishments.	Average Number of Wage Earners.	Wages.	Capital.	Cost of Materials.	Value of Products.
		No.		$	$	$	$
Enamelware	1910	3	227	140,459	322,000	.....	364,822
	1917	3	364	305,072	1,965,594	380,659	1,213,000
	1918	16	273	263,159	2,246,690	292,968	1,182,862
Metallic roofing, siding and flooring	1900	4	139	50,530	385,119	275,028	495,500
	1915	14	825	431,094	3,535,992	2,359,290	3,431,226
	1918	20	1,058	993,746	4,715,038	3,475,056	6,362,780

Commodity Statistics.—The production of sheet metal products by the firms classified to the group is given in Table 255. In addition to the output in the sheet metal products group, enamelware to the value of $874,160 and hollow-ware to the value of $19,448, were manufactured by other industrial groups. The total production of enamelware in Canada was worth $3,331,328. The imports of "ware, agate, granite, or enamelled iron or steel ware" were valued at $145,166. The exports were not separately reported and neglecting this factor, which was probably insignificant, the enamelware made available for consumption was worth in the neighbourhood of $3,476,494. The total production of hollow-ware according to the returns was valued at $1,446,437. The imports listed under item "ware—iron and steel hollow-ware, n.o.p.", were valued at $74,135. Disregarding the exports which were unlisted, the valuation of the hollow-ware made available for consumption was approximately $1,520,572. The production of cans in this group was valued at $10,387,277, the tinsmithing industry produced cans worth $3,991,297, and the imports of cans were worth $885,602. The value of the cans, made available for consumption was approximately $15,264,176.

Table 255.—Products of the Sheet Metal Goods Group in 1920.

Commodity.	Unit.	Quantity.	Value.
			$
Total selling value			37,369,576
Sheet metal works			12,413,261
Cans			10,387,277
Enamelware			2,457,168
Galvanized sheets	Net ton	10,782	1,581,714
Roofing tin or galvanized iron			1,533,622
Hollow-ware			1,426,989
Dairy utensils			1,248,730
Culvert, pipe			486,248
Stove pipes	Joints	1,634,890	365,381
Furnace pipes	No.	453,691	203,663
Corset clasps, steels, etc			261,500
Plumbers goods			170,000
Road making machinery			114,053
Auto stampings			96,468
Eavestroughing	Ft.	873,999	93,548
Tin caps for bottles			86,151
Cast iron	Net ton.	376	75,274
Culverts			70,887
Cornice work			70,885
Etched metal goods			47,992
Tape	Gross yards	1,543	40,482
Hooks, eyes, etc	Gross	29,818	36,218
Press buttons	"	4,572	34,979
Boilers, feed			33,441
Safety pins	Gross	55,048	30,827
Corrugated culverts and water tanks			28,909
Metal stamping			26,188
Chocolate moulds	No.	14,794	22,192
Auto parts			21,658
Hair pins	Gross	2,155	21,558
Dampers	Net ton	101	17,711
Brass stamping and washers	"	592	10,954
Switch boxes	No.	10,251	10,068
Receipts from custom and repair works			765,410
All other miscellaneous products			3,078,170

Table 256.—Materials Used in the Sheet Metal Group in 1920.

Commodity.	Unit.	Quantity.	Cost at Works.
			$
Total cost			20,260,820
Iron and steel:—			
Iron bar and sheet	Net ton	417	38,484
Black and galvanized iron	"	14,751	3,098,314
Iron, malleable and wrought	"	25	8,000
Iron bolts			27,994
Iron pipe	Ft.	1,016,608	15,890
Iron, other			1,609,223
Steel, sheet	Net ton	2,770	279,705
Steel, castings	"	8½	2,366
Steel and wire	"	252	70,000
Steel plates	"	250	14,250
Steel sheet	"	8,691	971,702
Steel tubing, flexible			1,750
Wire and wire rods			56,201
Other metals:—			
Aluminium	Net ton	10	5,032
Brass sheet	"	19	11,325
Brass fittings			99,601
Brass, zinc and corset trimmings	Net ton	22	19,000
Lead pipe	"	110	19,341
Solder	"	186	178,809
Tin plate	"	258,527	6,204,131
Terne plate	"	3,141	62,156
Spelter	"	1,142	258,217
Chemicals			80,070
Paints			35,866
Boxes, paper			15,775
Salammoniac	Lbs.	87,591	13,494
Acid	Gals.	14,310	22,462
Cullets			15,444
Lumber	M. Ft. B.M.	1,237	60,234
Furnaces and parts			56,500
Packing	Net ton	11	56,198
Radiators			9,459
Unions, elbows, etc			7,520
Foundry facings			5,811
Coppered steel oilers			8,045
Plating supplies			3,600
Gasoline	Gals.	17,487	7,638
All other materials			6,811,213

Table 257.—Principal Imports of Sheet Metal Goods in the Years 1920 and 1921.

Commodity.	Calendar Year 1920.	Calendar Year 1921.
	Value.	Value.
	$	$
Tin cans and containers	885,602	674,114
Baths, sinks, laundry tubs, etc	93,428	95,574
Ware—agate, granite or enamelled iron or steel ware	145,166	86,436
Ware, iron or steel hollow-ware, n.o.p	74,135	73,309
Ware, tin, japanned or not	708,619	481,087

Table 258.—Number of Employees, Salaries and Wages Paid in the Sheet Metal Products Group, 1920.

Classification.		Number of Employees.	Male	Female.	Salaries and Wages.
			No.	No.	$
(a) By Industries.					
Enamelware and Tinware	Totals	3,574	2,988	586	4,019,086
Officers, managers, superintendents, etc.		71	71		234,014
Clerical staff		275	204	71	379,233
Wage-earners		3,228	2,713	515	3,405,839
Metal Dress Fasteners	Totals	118	52	66	121,274
Officers, managers, superintendents, etc.		9	9		20,623
Clerical staff		15	7	8	22,430
Wage-earners		94	36	58	78,221
Metallic Roofing, Siding and Flooring	Totals	117	112	5	146,878
Officers, managers, superintendents, etc.		11	11		18,556
Clerical staff		14	9	5	19,341
Wage-earners		92	92		108,981
Sheet Metal Products, n.e.s.	Totals	3,517	3,251	266	4,208,600
Officers, managers, superintendents, etc.		160	158	2	490,488
Clerical staff		405	309	96	591,307
Wage-earners		2,952	2,784	168	3,216,805
(b) By Provinces.					
Nova Scotia	Totals	61	58	3	77,632
Officers, managers and superintendents		3	3		8,000
Clerical staff		5	2	3	9,176
Wage-earners		53	53		60,456
Prince Edward Island and New Brunswick	Totals	48	37	11	39,820
Officers, managers, superintendents, etc.		3	3		5,400
Clerical staff		7	5	2	6,350
Wage-earners		38	29	9	28,070
Quebec	Totals	1,708	1,406	302	1,804,005
Officers, managers, superintendents, etc.		51	50	1	151,146
Clerical staff		128	103	25	197,135
Wage-earners		1,529	1,253	276	1,455,724
Ontario	Totals	4,886	4,307	579	5,798,144
Officers, managers, superintendents, etc.		157	156	1	492,943
Clerical staff		486	364	122	604,527
Wage-earners		4,243	3,787	456	4,700,674
Manitoba	Totals	488	464	24	575,716
Officers, managers, superintendents, etc.		25	25		80,218
Clerical staff		75	51	24	96,237
Wage-earners		388	388		399,261
Saskatchewan and Alberta	Totals	108	104	4	158,658
Officers, managers and superintendents, etc.		11	11		22,974
Clerical staff		6	2	4	5,852
Wage-earners		91	91		129,832
British Columbia	Totals	27	27		41,863
Officers, managers, superintendents, etc.		1	1		3,000
Clerical staff		2	2		3,034
Wage-earners		24	24		35,829
Canada.					
All Plants	Totals	7,326	6,403	923	8,495,838
Officers, managers, superintendents, etc.		251	249	2	763,681
Clerical staff		709	529	180	922,311
Wage-earners		6,366	5,625	741	6,809,846

Employment.—The average employment during the year was 7,326, of whom 251, or 3·4 per cent, were officers, managers and superintendents, 709, or 9·7 per cent, constituted the clerical staff, and 6,366, or 86·9 per cent, were wage-earners. The wage-earners were paid $6,809,846, or 80·1 per cent of the total sum disbursed in salaries and wages. The clerical staff received $922,-311, or 10·9 per cent, and the officers, managers and superintendents were paid $763,681, or 9 per cent of the salary and wage account.

Each of the 122 plants on the average worked full time 278 days, operated part time 14 days and was idle 12 days. The average day was 8·5 hours and the average week was reported as 48·8 hours.

It will be observed from Table 263 that of the 5,795 wage-earners employed on December 15 or the nearest representative date, 410, or 7·1 per cent, received less than $10 per week, 1,722, or 29·7 per cent, were paid between $10 and $20 per week, and 2,201, or 38 per cent, received more than $20 and less than $30 per week and 1,462, or 25·2 per cent, received a weekly remuneration of $30 or over.

Table 259.—Average Number of Days in Operation and the Hours Worked per Day and per Week in the Sheet Metal Products Group during 1920.

Classification.	No. of Establishments	Average Working Time.		Average Days in Operation.		
		Hours per day.	Hours per week.	Full time.	Part time.	Idle time.
Total	122	8·5	48·8	278	14	12
Enamelware and tinware	20	8·8	49·9	278	19	7
Metal dress fasteners	7	8·4	50·3	265	24	15
Metal roofing, siding and flooring	10	9	51	272	29	3
Sheet metal products, n.e.s.	85	8·4	48·1	281	13	10

Table 260.—Average Number of Wage-Earners Employed in the Sheet Metal Products Group, 1920.

Month	Total for All Plants.			Industry.							
				Enamelware and Tinware.		Metal Dress Fasteners.		Metal Roofing, Siding and Flooring.		Sheet Metal Goods, N.E.S.	
	Total	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Monthly average	6,366	5,625	741	2,713	515	36	58	92	.....	2,784	168
January	6,162	5,385	777	2,663	529	31	73	80	.....	2,611	175
February	6,267	5,497	770	2,777	518	39	80	77	.....	2,604	172
March	6,444	5,682	762	29,00	525	38	79	80	.....	2,664	158
April	6,659	5,897	762	2,859	546	36	52	82	.....	2,920	164
May	6,423	5,663	760	2,758	542	35	43	87	.....	2,783	175
June	6,470	5,716	754	2,775	559	38	46	92	.....	2,811	149
July	6,610	5,810	800	2,790	595	48	55	95	.....	2,877	150
August	6,476	5,708	768	2,756	566	44	51	93	.....	2,815	151
September	6,374	5,634	740	2,669	536	40	41	101	.....	2,824	163
October	6,374	5,648	726	2,677	500	35	50	101	.....	2,835	176
November	6,311	5,650	661	2,594	408	29	52	106	.....	2,921	201
December	5,818	5,203	615	2,340	356	20	74	107	.....	2,736	185

Table 261.—Number of Wage-Earners in the Sheet Metal Products Group in 1920, Classified by Age and Sex, and According to their Weekly Rates of Pay.

Classification.	Totals	Weekly Rates of Pay.							
		Under $5 per week.	$5 and under $10	$10 and under $15	$15 and under $20	$20 and under $24	$24 and under $28	$28 and under $30	$30 and over.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
All Plants.									
Totals	5,795	59	351	734	988	992	924	285	1,462
Over 16 years of age—									
Male	5,057	16	142	426	839	975	914	283	1,462
Female	591	4	152	267	139	17	10	2	.....
Under 16 years of age—									
Male	87	11	29	39	8	.....	.....	.....	.....
Female	60	28	28	2	2	.....	.....	.....	.....
Enamelware and Tinware.									
Totals	2,684	19	216	427	578	322	369	141	612
Over 16 years of age—									
Male	2,265	4	83	254	491	317	365	139	612
Female	344	1	89	158	85	5	4	2	.....
Under 16 years of age—									
Male	50	11	26	13	.....	.....	.....	.....	.....
Female	25	3	18	2	2	.....	.....	.....	.....
Metal Dress Fasteners.									
Totals	122	27	31	27	9	9	5	.....	14
Over 16 years of age—									
Male	40	1	5	2	5	8	5	.....	14
Female	47	1	17	24	4	1	.....	.....	.....
Under 16 years of age—									
Male	26	.....	25	1	.....	.....	.....	.....	.....
Female	9	.....	9	.....	.....	.....	.....	.....	.....
Metallic Roofing, Siding and Flooring.									
Totals	100	2	1	2	8	26	23	2	36
Over 16 years of age—									
Male	98	2	.....	1	8	26	23	2	36
Under 16 years of age—									
Male	2	.....	1	1	.....	.....	.....	.....	.....
Sheet Metal Products, n.e.s.									
Totals	2,889	11	103	278	393	635	527	142	800
Over 16 years of age—									
Male	2,654	9	54	169	335	624	521	142	800
Female	199	2	46	84	50	11	6	.....	.....
Under 16 years of age—									
Male	35	.....	2	25	8	.....	.....	.....	.....
Female	1	.....	1	.....	.....	.....	.....	.....	.....

Power and Fuel.—Power and fuel statistics are given in Tables 262 and 263. The power plants of this group included 30 boilers with a rating of 3,968 horse-power. The 38,677 tons of bituminous coal used in the group were valued at $285,218, or 50·4 per cent of the total expenditure for fuel. The fuel oil was worth $151,383, or 26·7 per cent of the fuel account.

Table 262.—Power Used in the Sheet Metal Products Group, 1920.

		Enamelware and Tinware	Metal Dress Fasteners	Metallic Roofing and Siding, etc.	Sheet Metal N.E.S.	Total
Boilers	Number	18		1	11	30
	Rated H.P.	2,340		25	1,603	3,968
	Used H.P.	1,615		25	870	2,510
Engines, Steam	Number	13		1	5	19
	Rated H.P.	1,400		25	625	2,050
	Used H.P.	990		20	605	1,615
" Internal combustion	Number				2	2
	Rated H.P.				19	19
	Used H.P.				19	19
Water Wheels	Number	3			1	4
	Rated H.P.	450			30	480
	Used H.P.	450			30	480
Electric Motors	Number	367	12	1	255	635
	Rated H.P.	4,225	99	7	9,819	14,150
	Used H.P.	2,946	97	7	9,501	12,551
Other Power	Number	4			2	6
	Rated H.P.	270			22	292
	Used H.P.	205			22	227

Table 263.—Fuel Used in the Sheet Metal Products Group in the Year 1920.

Classification.	Unit of Measure.	Total.		Industry.			
				Enamelware and Tinware.		Metal Dress Fasteners.	
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
			$		$		$
Bituminous coal	Net tons	38,677	285,218	27,303	189,103	130	1,431
Anthracite coal	"	1,436	20,019	455	7,382	41	501
Lignite coal	"	27	215				
Coke	"	3,392	52,918	2,937	44,566		
Gasoline	Gals.	26,689	11,350	886	390		
Oil (fuel)	"	995,427	151,383	556,207	92,933	1,499	231
Wood	Cord.	717	7,030	80	1,000		
Gas	1,000 cu. ft.	33,685	36,886	23,017	25,132		
Other fuel			1,400		16		24
Total values			566,419		360,522		2,187

Classification.	Unit of Measure.	Industry.			
		Metallic Siding, Roofing and Flooring.		Sheet Metal Products, N.E.S.	
		Quantity.	Value.	Quantity.	Value.
			$		$
Bituminous coal	Net tons.	400	3,219	10,844	91,465
Anthracite coal	"	31	492	909	11,644
Lignite	"			27	215
Coke	"			455	8,352
Gasoline	Gallons	800	366	25,003	10,594
Oil (fuel)	"			437,721	58,219
Wood	Cord	1	15	636	6,015
Gas	1,000 cu. ft.	338	222	10,330	11,532
Other fuel			134		1,220
Total values			4,448		199,262

Financial Statistics.—The capital invested in the group was $27,589,735, of which $13,441,316, or 48·7 per cent, was fixed capital and $14,148,419, or 51·3 per cent, was working assets. The capital of the enamelware industry was $12,662,369, or 45·9 per cent of the total investment of the group. The 85 establishments engaged in the manufacture of sheet metal products not elsewhere classified had a capital of $14,059,361, or 50·9 per cent of the group investment. The operating ratio, or the proportion of the manufacturing costs to the value of production, was 87 per cent. The turnover, computed by taking the ratio of output to the working assets, was 264 per cent. The cost of materials was 54 per cent of the output, while the salaries and wages were 22·7 per cent of the value of production.

Table 264.—Capital Invested in the Sheet Metal Products Group in 1920.

Classification.	Establishments.	Total Capital Invested.	Capital Represented by			
			Land, Buildings and Fixtures.	Machinery and Tools.	Materials on Hand and Stocks in Process.	Cash Accounts and Bills Receivable.
	No.	$	$	$	$	$
Canada.						
All plants	122	27,589,735	7,430,713	6,010,603	8,294,649	5,853,770
Enamelware and tinware	20	12,662,369	3,678,275	3,144,460	4,198,263	1,641,371
Metal dress fasteners	7	431,988	104,450	99,821	169,678	58,039
Metallic roofing, siding and flooring	10	436,017	55,807	41,014	99,726	239,470
Sheet metal products, n.e.s.	85	14,059,361	3,592,181	2,725,308	3,826,982	3,914,890
Nova Scotia.						
Sheet metal products	4	206,113	38,472	7,450	95,391	64,800
Prince Edward Island and New Brunswick.						
Total	3	190,257	87,504	19,982	43,980	38,791
Quebec.						
Total	17	5,642,394	1,531,802	1,303,610	1,583,242	1,223,740
Enamelware	4	4,692,501	1,328,974	1,149,127	1,349,056	865,344
Sheet metal products	9	882,698	201,942	138,108	195,645	347,003
Remaining plants	4	67,195	886	16,375	38,541	11,393
Ontario.						
Total	72	19,054,711	5,071,096	4,366,551	5,775,017	3,842,047
Enamelware	14	7,863,088	2,282,301	1,975,833	2,839,747	765,207
Sheet metal products, n.e.s.	45	10,390,813	2,629,424	2,266,258	2,704,407	2,790,724
Remaining plants	13	800,810	159,371	124,460	230,863	286,116
Manitoba.						
Sheet metal products	13	1,924,069	595,048	233,232	635,199	461,190
Saskatchewan and Alberta.						
Sheet metal products, n.e.s.	9	490,836	89,488	47,567	150,530	203,251
British Columbia.						
Sheet metal products, n.e.s.	4	80,755	17,303	32,211	11,290	19,951

Table 265.—Miscellaneous Expenses Incurred in the Sheet Metal Products Group in 1920.

Classification.	Total.	Industry.			
		Enamelware and Tinware.	Metal Dress Fasteners.	Metallic Roofing, Siding and Flooring.	Sheet Metal Products, N.E.S.
	$	$	$	$	$
Total	3,175,551	1,433,469	58,651	55,876	1,627,555
Rent of offices, works and machinery	86,088	18,449	4,674	800	62,165
Cost of purchased power	101,903	65,876	1,371	500	34,156
Insurance	126,311	45,312	2,153	1,436	77,410
Taxes—					
Excise	72,478	17,856	757	7,200	46,665
Excess profits tax	103,155	60,468	4,555	588	37,544
Provincial and municipal	98,366	44,132	775	1,808	51,651
Royalties, use of patents	18,533	5,347	.....	.....	13,186
Advertising expenses	116,980	27,566	3,502	2,639	83,273
Travelling expenses	258,228	80,154	12,902	10,601	154,571
Repairs to buildings and machinery	695,420	413,045	5,442	1,755	275,178
All other sundry expenses (excepting fuel, material, salaries and wages)	1,498,089	655,264	22,520	28,549	791,756

Table 266.—Financial Summary of the Sheet Metal Products Group in 1920.

Classification.	Establishments.	Capital.	Salaries and Wages.	Cost of Fuel.	Cost of Materials.	Miscellaneous Expenses.	Total Expenditure.	Value of Products.
	No.	$	$	$	$	$	$	$
Canada.								
All plants	122	27,589,735	8,495,838	566,419	20,260,820	3,175,551	32,498,628	37,369,576
Enamelware and tinware	20	12,662,369	4,019,086	360,522	8,718,777	1,433,469	14,531,854	16,360,723
Metal dress fasteners	7	431,988	121,274	2,187	210,105	58,651	392,217	465,846
Metal roofing	10	436,017	146,878	4,448	467,404	55,876	674,606	719,021
Sheet metal	85	14,059,361	4,208,600	199,262	10,864,534	1,627,555	16,899,951	19,823,986
Nova Scotia.								
Sheet metal products, n.e.s.	4	206,113	77,632	4,023	222,117	32,863	336,635	342,062
Prince Edward Island and New Brunswick.								
Total	3	190,257	39,820	1,056	96,126	29,217	166,219	234,672
Quebec.								
Total	17	5,642,394	1,804,005	125,381	3,521,703	572,368	6,023,457	6,817,993
Enamelware and tinware	4	4,692,501	1,297,095	116,263	2,752,490	413,361	4,579,209	5,032,282
Sheet metal	9	882,698	474,232	9,118	687,288	137,245	1,307,883	1,600,464
Remaining plants	4	67,195	32,678	.....	81,925	21,762	136,365	185,247
Ontario.								
Total	72	19,054,711	5,708,144	410,276	14,833,087	2,142,114	23,183,621	26,225,308
Enamelware	14	7,863,088	2,701,719	243,203	5,890,535	1,012,926	9,848,383	11,164,292
Sheet metal products	45	10,390,813	2,860,951	160,438	8,346,968	1,036,423	8,734,197	14,061,396
Remaining plants	13	800,810	235,474	6,635	595,584	92,765	930,458	999,620
Manitoba.								
Sheet metal products, n.e.s.	13	1,924,669	575,716	22,313	1,238,888	302,358	2,139,275	2,970,775
Saskatchewan and Alberta.								
Sheet metal products, n.e.s.	9	490,836	158,658	3,010	278,047	89,110	528,825	W 641,820
British Columbia.								
Sheet metal products, n.e.s.	4	80,755	41,863	360	70,852	7,521	120,596	136,946

Provincial Distribution.—The distribution of the establishments classified under the sheet metal group is shown in the following statement:—

Table 267.—Distribution of Establishments of the Sheet Metal Products Group, 1920.

Industry.	Canada.	N.S.	P.E.I.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Totals	122	4	1	2	17	72	13	2	7	4
Enamelware and tinware	20	....	1	1	4	14	.....	.....	.....	.....
Metal dress fasteners	7	.....	.....	.....	3	4	.....	.....	.....	.....
Metallic roofing, siding and flooring	10	....	.....	.....	1	9	.....	.....	.....	.....
Sheet metal products, n.e.s	85	4	.....	1	9	45	13	2	7	4

The group was located chiefly in the province of Ontario. The precedence was marked in number of establishments, capital investment, employment and production. Fifty-nine per cent of the plants were situated in the province. Out of a total capital of $27,589,735 the investment in Ontario was $19,054,711, or 69·1 per cent. The number of employees in Ontario was 4,885, compared with a total pay-roll of 7,326. The value of the output in Ontario was $26,225,-308, or 70·2 per cent of the total production in Canada reported as $37,369,576.

Quebec was second in order with reference to the output of sheet metal products. It was reported that $5,642,394, or 20·4 per cent of the total investment was the capital involved in Quebec establishments. The number of employees was 1,708, or 23·3 per cent of the total employment. The Quebec output was valued at $6,817,993, or 18·2 per cent of the total production.

Aside from Manitoba where the production of $2,622,308 was reported, the industrial group was unimportant in the other provinces. The details are given in tables numbered 258, 264 and 266.

CHAPTER TWELVE

HARDWARE AND TOOLS

The group includes establishments engaged chiefly in the manufacure of needles and pins, screws, skates, tools, building and other hardware. The value of the output was $22,556,316, of which 27·6 per cent was the production of the edge tool and cutlery industry, which attained first rank in this respect. The value added by manufacture, obtained by deducting the cost of materials from the value of the products, was $15,356,314 for the group, of which 30·1 per cent was the net output of the edge tool and cutlery industry. The relative importance of the industries included in the group as far as production is concerned is shown in the following table:—

Table 268.—Production of the Several Industries Included in the Hardware and Tools Group, 1920.

Industry.	Cost of Materials.		Value of Products.		Value added by Manufacture.	
	Amount.	Per cent.	Amount.	Per cent.	Amount.	Per cent.
Total	7,200,002	100·0	22,556,316	100·0	15,356,314	100·0
Edge tools and cutlery	1,614,010	22·0	6,232,123	27·6	4,618,113	30·1
Tools and implements	1,654,796	23·0	4,496,214	19·9	2,841,418	18·5
Builders' hardware	1,412,993	19·6	4,190,809	18·6	2,777,816	18·1
Screws	1,071,372	14·9	2,511,710	11·1	1,440,338	9·4
Saws	639,646	8·0	2,183,240	9·7	1,543,594	10·0
Dies and taps	363,012	5·0	1,417,564	6·3	1,054,552	6·9
Needles and pins	187,925	2·6	728,337	3·2	540,412	3·5
Hardware, n.e.s.	236,282	3·3	717,276	3·2	480,991	3·1
Skates	19,966	0·3	79,046	0·4	59,080	0·4

The average monthly employment during 1920 was 5,557 wage-earners. The year opened with a pay-roll of 5,640 and a rising trend was enjoyed until April, which was the maximum month with an engagement of 5,749 wage-earners. Declines which became serious in the last quarter were recorded during the remainder of the year with the exception of July and August, when a contrary tendency appeared. Only 5,003 wage-earners were employed in December, being a decrease of more than 300 from the number engaged in any other month of the year.

The 152 establishments were owned by an even number of manufacturing concerns of whom 81 were partnerships and individual owners and 71 were incorporated companies. The par value of the issued securities was $20,552,905, of which 68·8 per cent was owned in United States and 28·8 per cent was held in Canada.

The principal statistics of the group for 1920 are given in Table 270 and the historical data on a somewhat different basis is presented in Table 271.

Table 269.—Character and Distribution of Ownership of the Hardware and Tools Group for 1920.

Distribution.	Builders' Hardware.	Hardware, n.o.p.	Needles and Pins	Screws.	Skates
Number of Establishments	60	5	4	5	4
" Manufacturing concerns	60	5	4	5	4
" Partnerships and individual concerns	36	3	1	1	4
" Incorporated companies	24	2	3	4	.....
Issued securities at par value held by residents of—	$	$	$	$	
Canada	872,550	174,900	26,000	1,410,000	.....
Great Britain	86,800	.....	.....	.....	.....
United States	708,300	100	244,700	20,300	.....
Other Countries	.....	.....	.....	.....	.....
Total	1,667,650	17,503	270,700	1,430,300	.....

Distribution.	Edge Tools and Cutlery	Dies and Taps.	Saws.	Tools and Implements	All Plants.
Number of Establishments	31	13	12	18	152
" Manufacturing concerns	31	13	12	18	152
" Partnerships and individual concerns	13	5	5	13	81
" Incorporated companies	18	8	7	5	71
Issued securities at par value held by residents of—	$	$	$	$	$
Canada	1,488,600	435,700	394,400	1,114,475	5,916,625
Great Britain	175,000	.....	9,700	217,045	488,545
United States	5,530,200	4,417,160	799,900	2,424,075	14,144,735
Other countries	3,000	.....	.....	.....	3,000
Total	7,196,800	4,852,860	1,204,000	3,755,595	20,552,905

Table 270.—Principal Statistics of the Hardware and Tools Group in 1920.

Distribution.	Number of Establishments.	Average No. of Wage Earners.	Wages.	Capital Invested.	Cost of Materials.	Value of Products.
			$	$	$	$
Canada.						
All plants	152	5,557	5,031,604	32,798,513	7,200,002	22,556,316
Builders' hardware	60	1,189	1,231,433	3,577,459	1,412,993	4,190,809
Hardware, n.o.p.	5	232	226,477	622,937	236,282	717,273
Needles and pins	4	322	227,310	485,485	187,925	728,337
Screws	5	682	814,831	3,053,686	1,071,372	2,511,710
Skates	4	24	25,185	59,350	19,966	79,046
Edge tools and cutlery	31	1,268	1,360,804	14,082,622	1,614,010	6,232,123
Dies and taps	13	463	510,484	3,193,176	363,012	1,417,564
Saws	12	399	476,057	2,744,474	639,646	2,183,240
Tools and implements	18	978	159,023	4,979,318	1,654,796	4,496,214
Nova Scotia and New Brunswick.						
Total	7	60	57,710	258,557	71,844	241,609

Table 270.—Principal Statistics of the Hardware and Tools Group in 1920—Continued.

Distribution	Number of Establishments.	Average No. of Wage Earners.	Wages.	Capital Invested.	Cost of Materials.	Value of Products.
Quebec.						
Total	29	1,534	1,466,029	14,588,358	2,124,886	7,035,330
Builders' hardware	7	31	44,009	119,074	48,277	117,955
Edge tools and cutlery	8	547	467,935	10,176,892	1,164,253	3,729,153
Dies and taps	5	268	292,721	1,715,395	157,322	693,211
Saws	3	160	198,945	1,057,916	263,814	1,076,756
Remaining plants	6	528	462,419	1,519,081	591,220	1,418,255
Ontario.						
Total	92	3,914	3,458,520	17,843,349	4,945,956	15,109,020
Builders' hardware	34	1,133	1,164,112	3,425,228	1,349,359	3,998,277
Screws	4	428	544,780	2,022,857	698,779	1,806,742
Edge tools and cutlery	21	693	861,400	3,756,820	507,123	2,373,906
Dies and taps	7	191	215,108	1,475,449	203,230	714,867
Saws	6	231	267,644	1,662,013	351,816	1,061,023
Tools and implements	12	919	109,041	4,770,686	1,590,805	4,301,720
Remaining plants	8	319	296,443	730,296	244,844	852,485
Manitoba.						
Total	8	19	21,117	40,828	16,932	65,109
Saskatchewan.						
Total	3	3	3,325	4,250	874	8,653
Alberta.						
Total	4	4	2,862	8,819	2,936	11,999
British Columbia.						
Total	9	23	22,033	54,352	36,574	84,596
Builders' hardware	6	6	2,810	5,420	2,694	12,110
Remaining plants	3	17	19,223	48,932	33,880	72,486

Table 271.—Summary Showing the Development of the Hardware and Tools Industry.

	Year	Establishments.	Average No. of Wage Earners	Wages.	Capital.	Cost of Materials.	Value of Products.
		No.		$	$	$	$
Builders' hardware	1917	4	56	37,179	148,140	136,527	225,128
	1918	12	843	842,077	2,327,076	1,094,086	3,328,848
	1919	13	700	680,966	3,035,989	772,586	2,782,621
Hardware, carriage, and saddlery	1870	7	163	51,000	89,850	97,860	238,812
	1900	6	471	128,292	418,381	164,774	401,281
	1910	4	813	442,440	638,500	255,000	952,050
	1917	5	1,425	1,271,852	2,232,349	858,806	3,424,090
	1918	4	1,166	1,435,724	1,676,549	1,018,862	3,860,327
	1919	3	661	717,773	1,542,179	544,289	1,941,826
Castors	1917	3	26	10,613	78,650	24,758	50,147
	1918	3	22	10,247	120,373	28,486	62,385
	1919	3	35	23,419	112,354	43,182	88,965

Table 271.—Summary Showing the Development of the Hardware and Tools Industry—Concluded.

	Year	Establishments.	Average No. of Wage Earners	Wages	Capital.	Cost of Materials.	Value of Products.
		No.		$	$	$	$
Screws	1880	1	66	13,700	200,000	20,809	50,960
	1890	3	171	65,580	513,189	51,350	199,200
	1900	4	242	90,246	714,586	198,025	385,810
Skates	1915	6	29	16,130	49,674	7,805	41,923
	1918	3	7	7,349	33,100	2,606	18,366
	1919	4	15	16,935	40,391	10,262	43,274
Cutlery and edge tools	1870	47	387	148,254	180,015	137,305	430,295
	1880	35	613	250,252	655,435	304,798	757,364
	1890	52	801	345,769	1,178,897	425,568	1,035,904
	1900	7	280	114,998	316,325	82,710	257,275
	1917	19	491	350,562	2,149,527	623,534	1,895,616
	1918	21	508	340,208	2,903,208	909,398	2,993,276
	1919	20	854	786,836	8,565,003	1,363,609	5,075,597
Dies and moulds	1890	3	6	4,250	3,700	2,000	10,100
	1900	3	21	8,052	16,000	9,930	33,600
	1915	7	141	79,435	358,494	28,622	193,715
	1917	10	343	266,407	845,453	135,717	637,933
	1918	10	371	311,428	1,829,811	271,734	903,831
	1919	9	366	357,448	1,846,360	223,909	802,288
Saws	1870	11	172	62,465	127,512	133,445	276,523
	1880	21	362	106,930	470,150	347,360	859,360
	1890	18	333	140,232	455,100	237,441	537,680
	1915	13	264	187,058	1,595,937	299,107	729,109
	1917	13	395	337,073	2,312,285	738,878	2,008,385
	1918	13	362	381,706	2,936,726	603,367	2,031,706
	1919	12	422	401,310	2,459,281	531,436	1,639,153
Tools and implements	1917	24	588	416,211	3,073,079	888,708	2,270,401
	1918	21	1,713	1,840,133	8,106,273	1,890,836	6,761,886
	1919	30	1,142	1,283,174	9,906,419	1,639,249	4,655,460
Totals	1870	65	722	261,719	397,377	368,610	945,630
	1880	57	1,041	370,882	1,325,585	672,967	1,667,684
	1890	76	1,311	555,831	2,150,886	716,359	1,782,884
	1900	20	1,014	341,588	1,465,292	307,439	1,077,966
	1910	4	815	442,440	638,500	255,000	952,050
	1915	26	434	282,623	2,004,105	335,534	964,747
	1917	78	3,324	2,689,897	10,839,483	3,406,928	10,511,700
	1918	87	4,992	5,138,872	19,933,110	5,819,375	19,960,625
	1919	94	4,195	4,267,861	27,507,976	5,128,522	17,029,184

Commodity Statistics.—The total production of screws in all groups was 13,182 tons, worth $2,505,508. The imports were valued at $199,903 and the exports were worth $111,841. The value of the screws made available for consumption during the year was $2,593,570. According to the returns, 44,338 pairs of skates at a stated value of $74,220 were produced in the group under review. The exports, not being separately reported, were evidently not an important factor, and the imports were valued at $45,686. The value of the visible supply was $119,906.

The production of pins was valued at $253,155 and the output of needles was not separately listed. The imports of needles and pins were worth $683,896, and the exports were $131,500. The resulting visible supply was worth $807,551. The value of razors made available for the wholesale trade was about $1,154,725, consisting of an output of 28,383 only, worth $959,434, and an importation valued at $195,291.

The axes produced in Canada were 56,000 dozen, valued at $920,961, and the imports were 230 dozen, worth $4,366. The visible supply was 56,230 dozen, worth $925,327. The imports of files and rasps were worth $226,769,

while 34,526 dozen, worth $2,393,183, were manufactured in the country. The value of the files and rasps made available was approximately $2,619,952. The manufactures of saws were 34,526 dozen, worth $2,393,183 and the imports were $201,172. The valuation of the visible supply was $2,594,355.

Turning to a consideration of implements, the number of forks made available was 455,381, worth $292,300. The production was 441,356, worth $281,610, while the imports were 14,025, valued at $10,690. The total production of spades and shovels was reported as 146,818 dozen, worth $1,075,943. The imports were 1,471 dozen, worth $17,164, the exports were valued at $234,942, and the visible supply was therefore worth about $858,165.

The production of locks was reported as worth $438,909 and the imports were valued at $742,287. The resulting visible supply was approximately worth $1,181,196. The output of builders' hardware so reported in all groups was $2,696,689. The External Trade reports show this item in combination with other kinds of hardware, but it is considered that the visible supply was somewhat in excess of the production.

Table 272.—Materials Used in the Hardware and Tools Group in 1920.

Commodity.	Unit.	Quantity.	Cost at Foundry or Works.	Commodity.	Quantity.	Cost at Foundry or Works.
			$			$
Tool steel	Tons	2,987	78,603	Bolts, nuts, rivets		45,036
Other steel	"	13,982	2,330,428	Handles		359,281
Iron, cast and malleable	"	7,172	632,856	Tool parts		324,767
Brass	"	386	214,352	Saws and knives for machines		112,211
Brass and bronze castings	"	50	15,237			
Other metals	"		22,963	Other mfd. supplies purchased		103,284
Wood and lumber	M. ft.	3,094	243,963	Paints, oils and varnishes		42,381
				Boxes, labels, etc.		203,150
				All other miscellaneous materials		2,471,490
				Total		7,200,002

Table 273.—Products of the Hardware and Tools Group in 1920.

Commodity.	Unit of Measure.	Quantity.	Value.	Commodity.	Unit of Measure.	Quantity.	Value.
			$				$
Harvesting tools	Doz.	34,116	821,166	Steel pins	Lbs.	202,000	105,810
Spades, shovels and scoops	"	138,320	1,051,773	Safety pins	"	265,400	149,345
Axes, all kinds	"	56,000	920,961	Builders' hardware			2,655,852
Files and rasps	"	373,410	726,894	Hardware, miscellaneous			247,010
Saws:—				Saddlery hardware			383,293
Circular	"	3,920	676,245	Night latches	No.	88,644	185,104
Band	"	5,636	675,812	Padlocks	"	344,736	230,347
Cross-cut	"	7,242	397,695	Hangers and couplings			204,996
Hand	"	3,951	128,915	Screws			1,286,621
Wood	"	953	25,494	Furnaces, hot air	No.	1,115	100,311
Carpenters' and joiners' tools	"	52,801	763,741	Machine tools			344,010
Lumbermen's tools	"	14,322	447,737	Razors	Doz.	28,383	959,434
Engineer's tools:—				Razor blades	"	3,046,304	1,697,555
Stocks, dies, etc.	"	81	117,711	Forks, stable	No.	115,440	94,000
Drills, all kinds	"	1,590	19,800	Forks, hay	"	305,256	168,163
Wrenches	"	8,353	334,908	Received for custom work and repair			348,925
All other			49,810	All other products			4,615,415
Dies, taps and moulds			882,724				
Miscellaneous foundry supplies			341,822	Total			22,556,316
Latch needles			396,887				

Table 274.—Principal Imports of Hardware and Tools in 1920 and 1921.

Commodity.	Calendar Year 1920.		Calendar Year 1921.	
	Quantity.	Value.	Quantity.	Value.
		$		$
Knives and forks of steel, plated or not, n.o.p.		720,932		474,643
Pen knives, jack-knives and pocket knives of all kinds		730,521		508,617
All other cutlery, n.o.p.		1,071,100		706,062
Hardware, viz.: builders', cabinetmakers', upholsterers', harnessmakers', saddlers', and carriage hardware		865,343		452,479
Locks of all kinds		742,287		388,267
Butts and hinges, n.o.p.		217,745		96,460
Needles of any material or kind, n.o.p.		470,624		286,938
Pins, n.o.p.		213,272		124,553
All other hardware, n.o.p.		194,143		113,613
Screws		111,841		31,193
Skates		45,666		30,866
Razors		195,291		132,224
Forks, pronged . . . . . No.	14,025	10,690	4,383	3,629
Spades and shovels . . . . . Dozen	1,471	17,164	1,999	15,107
Tools, hand, of all kinds, n.o.p.		2,005,126		1,025,171
Screws, lag or coach		94,506		53,256
Screws, wood		105,397		47,027
Tools and implements, adzes, cleavers, hatchets, wedges, sledges, hammers, crowbars, cant dogs and track tools, picks, mattocks and eyes or poles for the same		85,913		18,788
Anvils and vices		166,938		78,331
Axes . . . . . Dozen	230	4,366	607	8,964
Files and rasps		226,769		132,060
Saws		201,172		78,857

Table 275.—Principal Exports of Hardware and Tools in 1920 and 1921.

	Value. 1920.	Value. 1921.
	$	$
Cutlery	2,091,562	749,097
Hardware, n.o.p.	847,231	192,074
Needles and pins of all kinds	131,500	40,926
Tools, hand or machine, n.o.p.	536,280	368,457
Spades and shovels	234,942	206,855

Employment Statistics.—In a year of 304 working days, each of the establishments on the average operated full time 282 days, worked part time 12 days, and was closed down 10 days. The average working time per day was 9 hours and the average per week was 49 hours.

The average number of employees engaged in the manufacture of hardware and tools was 6,413, of whom 5,557, or 86·7 per cent, were cage-earners. Of the average number of employees 5,330, or 83·1 per cent, were males and 1,083, or 16·9 per cent, were females. The total amount paid in salaries and wages was $6,559,328, of which $5,031,604, or 76·7 per cent, was the remuneration of the wage-earners.

The number of wage-earners employed on December 15, or the nearest representative date was 5,098. Slightly over 7·1 per cent of these received less than $10 per week, 1,935, or 37·9 per cent, were paid from $10 to $20 per week, 1,895, or 37·2 per cent, were paid from $20 to $30, and 906, or 17·8 per cent, received a weekly remuneration of $30 and over.

Table 276.—Average Number of Days in Operation and of Hours Worked per Day and per Week in the Hardware and Tool Group, 1920.

Classification.	Number of Establishments.	Average Working Time.		Average Days in Operation.		
		Hours per day.	Hours per week.	Full time.	Part time.	Idle time.
Totals	152	9	49	282	12	10
Builders' hardware	60	9	51	294	5	5
Hardware, n.o.p.	5	9	54	280	20	4
Needles and pins	4	9	53	272	29	3
Screws	5	9	54	242	18	44
Skates	4	9	52	276	13	15
Edge tools and cutlery	31	9	40	274	16	14
Dies and taps	13	9	52	265	20	19
Saws	12	9	51	290	14	.....
Tools and implements	18	9	49	276	13	15

Table 277.—Showing Employees and Wages Paid in the Hardware and Tool Group, 1920.

Classification.	Number of Employees.	Male.	Females.	Salaries and Wages.
		No.	No.	$
Builders' hardware—Totals	1,319	1,136	183	1,467,346
Officers, managers and superintendents	54	53	1	151,958
Clerical staff	76	37	39	83,955
Wage earners	1,189	1,046	143	1,231,432
Hardware, n.o.p.—Totals	251	219	32	260,015
Officers, managers and superintendents	9	9	.....	17,052
Clerical staff	10	4	6	16,486
Wage earners	232	206	26	226,477
Needles and pins—Totals	342	157	185	279,316
Officers, managers and superintendents	13	13	.....	44,980
Clerical staff	7	1	6	7,026
Wage earners	322	143	179	227,310
Screws—Totals	750	616	134	938,543
Officers, managers and superintendents	9	9	.....	41,508
Clerical staff	59	36	23	82,204
Wage earners	682	571	111	814,831
Skates—Totals	30	28	2	32,141
Officers, managers and superintendents	4	4	.....	5,751
Clerical staff	2	.....	2	1,205
Wage earners	24	24	.....	25,185
Edge tools and cutlery—Totals	1,540	1,216	324	1,851,416
Officers, managers and superintendents	68	68	.....	202,248
Clerical staff	204	125	79	288,364
Wage earners	1,268	1,023	245	1,360,804
Dies and taps—Totals	570	484	86	641,529
Officers, managers and superintendents	22	22	.....	57,476
Clerical staff	85	39	46	73,569
Wage earners	463	423	40	510,484

Table 277.—Showing Employees and Wages Paid in Hardware and Tool Group, 1920—Concluded.

Classification.	Number of Employees.	Male.	Female.	Salaries and Wages.
		No.	No.	$
Saws—Totals	512	456	56	663,388
Officers, managers and superintendents	24	24	.....	78,913
Clerical staff	89	60	29	108,418
Wage earners	399	372	27	476,057
Tools and implements—Totals	1,099	1,018	81	425,634
Officers, managers and superintendents	36	36	.....	153,665
Clerical staff	85	48	37	112,946
Wage earners	978	934	44	159,023
All plants—Totals	6,413	5,330	1,083	6,559,328
Officers, managers and superintendents	239	238	1	753,551
Clerical staff	617	350	267	774,173
Wage earners	5,557	4,742	815	5,031,604

Table 278.—Average Number of Wage-Earners Employed in the Hardware and Tools Group in 1920.

Month.	Total for All Plants.			Industry.			
				Builders' Hardware.		Hardware, N.O.P.	
	Total.	Male.	Female.	Male.	Female.	Male.	Female.
	No.	No.	No.	No.	No.	No.	No.
Monthly Average	5,557	4,742	815	1,046	143	176	24
January	5,640	4,696	944	1,054	155	210	24
February	5,700	4,732	968	1,047	146	223	27
March	5,644	4,760	884	1,068	147	233	28
April	5,749	4,929	820	1,055	150	220	29
May	5,619	4,793	826	1,000	149	212	27
June	5,607	4,790	817	1,028	136	206	27
July	5,668	4,877	791	1,103	143	203	26
August	5,676	4,854	822	1,082	142	200	29
September	5,533	4,732	801	1,045	140	197	25
October	5,516	4,719	797	1,003	139	200	26
November	5,334	4,635	699	1,023	137	194	26
December	5,003	4,384	619	989	129	178	26

Month.	Industry.						
	Needles and Pins.		Screws.		Skates.	Edge Tools and Cutlery.	
	Male.	Female.	Male.	Female.	Male.	Male.	Female.
	No.	No.	No.	No.	No.	No.	No.
Monthly Average	143	179	571	111	24	1,023	245
January	156	181	565	114	19	1,076	366
February	154	186	553	113	14	1,099	386
March	155	191	585	117	14	1,060	295
April	148	185	614	117	19	1,067	229
May	144	183	600	114	19	1,051	233
June	140	187	597	110	23	1,054	236
July	143	163	564	109	25	1,062	235
August	141	188	577	113	27	1,071	241
September	142	185	573	111	28	1,020	229
October	136	179	587	115	32	952	225
November	131	168	557	106	35	919	152
December	129	151	476	92	37	839	116

Table 278.—Average Number of Wage-Earners Employed in the Hardware and Tools Group in 1920—Concluded

Month.	Industry.					
	Dies and Taps.		Saws.		Tools and Implements.	
	Male.	Female.	Male.	Female.	Male.	Female.
	No.	No.	No.	No.	No.	No.
Monthly Average	423	40	371	28	934	44
January	428	43	360	19	828	42
February	421	43	371	24	850	43
March	412	41	379	24	854	41
April	443	42	380	25	983	43
May	416	39	364	28	987	53
June	415	42	366	32	961	47
July	435	38	368	28	974	49
August	418	39	370	25	968	45
September	419	39	333	27	975	45
October	414	36	380	35	955	42
November	424	37	394	33	958	40
December	431	35	394	33	911	37

Table 279.—Number of Wage-Earners in the Hardware and Tools Group in 1920, Classified by Age and Sex and According to their Weekly Rates of Pay.

Classification.	Weekly Rate of Pay.								
	Totals	Under $5 per week.	$5 and under $10	$10 and under $15	$15 and under $20	$20 and under $24	$24 and under $28	$28 and under $30	$30 and over.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
All Plants—									
Totals	5,098	49	312	837	1,098	884	786	223	906
Over 16 years of age—									
Male	4,406	29	168	437	989	871	783	224	905
Female	621	17	129	369	99	7	.....	.....	.....
Under 16 years of age—									
Male	62	3	11	27	10	6	3	1	1
Female	9	.....	4	4	.....	.....	.....	.....	.....
Builders' Hardware—									
Totals	1,125	13	109	220	188	170	137	58	230
Over 16 years of age—									
Male	974	7	65	155	153	169	137	58	230
Female	128	5	38	54	30	1	.....	.....	.....
Under 16 years of age—									
Male	18	1	2	10	5	.....	.....	.....	.....
Female	5	.....	4	1	.....	.....	.....	.....	.....
Hardware, n.o.p.—									
Totals	206	.....	13	29	40	57	44	15	8
Over 16 years of age—									
Male	177	.....	13	9	31	57	44	15	8
Female	24	.....	.....	15	9	.....	.....	.....	.....
Under 16 years of age—									
Male	3	.....	.....	3	.....	.....	.....	.....	.....
Female	2	.....	.....	2	.....	.....	.....	.....	.....
Needles and Pins—									
Totals	288	6	77	87	49	22	19	3	25
Over 16 years of age—									
Male	132	.....	11	15	38	21	19	3	25
Female	157	6	65	70	11	1	.....	.....	.....
Under 16 years of age—									
Male	1	.....	.....	1	.....	.....	.....	.....	.....
Female	2	.....	1	1	.....	.....	.....	.....	.....

Table 279.—Number of Wage-Earners in the Hardware and Tools Group in 1920, Classified by Age and Sex and According to their Weekly Rates of Pay—Concluded.

Classification.	Weekly Rate of Pay.								
	Totals.	Under $5 per week.	$5 and under $10	$10 and under $15	$15 and under $20	$20 and under $24	$24 and under $28	$28 and under $30	$30 and over.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Screws—									
Totals	568	7	20	127	175	82	79	17	61
Over 16 years of age—									
Male	474		10	56	170	81	79	17	61
Female	92	5	10	71	5	1			
Under 16 years of age—									
Male	2	2							
Skates—									
Totals	37		4	2	4	11	4	3	9
Over 16 years of age—									
Male	37		4	2	4	11	4	3	9
Edge Tools and Cutlery—									
Totals	1,000		14	161	228	196	179	42	180
Over 16 years of age—									
Male	866		9	58	213	190	176	41	179
Female	112		2	99	11				
Under 16 years of age—									
Male	22		3	4	4	6	3	1	1
Dies and Taps—									
Totals	476	3	19	52	110	83	65	29	115
Over 16 years of age—									
Male	428	3	12	28	93	83	65	29	115
Female	36		4	16	16				
Under 16 years of age—									
Male	12		3	8	1				
Saws—									
Totals	430	4	23	66	71	90	63	16	97
Over 16 years of age—									
Male	391	4	15	43	64	89	63	16	97
Female	36		5	23	7	1			
Under 16 years of age—									
Male	3		3						
Tools and Implements—									
Totals	968	16	34	93	233	173	196	42	181
Over 16 years of age—									
Male	927	15	29	71	223	170	196	42	181
Female	40	1	5	21	10	3			
Under 16 years of age—									
Male	1			1					

Power and Fuel.—The power capacity for all plants was 12,353 rated horse-power, of which 3,747 horse-power constituted the capacity of the tool and implement industry. The cost to the group for bituminous coal was $168,093 and the value of the fuel oil was $155,253. The total cost to the industrial group for fuel was $430,726.

Table 280.—Power Used in the Hardware and Tools Group in 1920.

Industry		Boilers	Engines		Hydraulic Turbines and Water Wheels	Electric Motors	Power not specified
			Steam	Internal Combustion			
Builders Hardware	Number	6	.....	2	.....	105	9
	Rated H.P.	360	.....	5	.....	1,448	130
	Used H.P.	210	.....	3	.....	1,086	130
Needles and Pins	Number	1	2	.....	1	5	.....
	Rated H.P.	100	225	.....	75	101	.....
	Used H.P.	75	150	.....	75	98	.....
Screws	Number	4	1	.....	.....	52	.....
	Rated H.P.	315	200	.....	.....	1,105	.....
	Used H.P.	.....	.....	.....	.....	908	.....
Skates	Number	.....	.....	.....	.....	11	.....
	Rated H.P.	.....	.....	.....	.....	39	.....
	Used H.P.	.....	.....	.....	.....	35	.....
Edgetools and Cutlery	Number	5	2	2	1	172	.....
	Rated H.P.	370	65	42	156	2,563	.....
	Used H.P.	290	65	42	84	2,477	.....
Dies and Taps	Number	1	.....	1	.....	41	1
	Rated H.P.	125	.....	4	.....	519	3
	Used H.P.	125	.....	4	.....	411	3
Saws	Number	1	.....	.....	.....	69	.....
	Rated H.P.	150	.....	.....	.....	2,313	.....
	Used H.P.	75	.....	.....	.....	1,092	.....
Tools and Implements	Number	7	2	.....	12	138	.....
	Rated H.P.	645	110	.....	1,190	2,547	.....
	Used H.P.	530	100	.....	1,070	1,780	.....
Hardware, n.o.p.	Number	.....	1	.....	.....	15	2
	Rated H.P.	.....	75	.....	.....	169	89
	Used H.P.	.....	75	.....	.....	162	89
Total	Number	25	8	5	14	608	12
	Rated H.P.	2,065	675	51	1,421	10,804	222
	Used H.P.	1,305	390	49	1,229	8,049	222

Table 281.—Fuel Used in the Hardware and Tools Group in 1920.

Classification.	Unit of Measure.	Industry.					
		Builders' Hardware.		Hardware, N.O.P.		Needles and Pins.	
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
			$		$		$
Bituminous coal	Net tons	2,998	27,508	867	8,796	310	6,144
Anthracite coal	"	476	5,964	582	8,435	363	4,015
Lignite coal	"	4	31	.....	.....	.....	.....
Coke	"	1,077	17,946	167	3,059	.....	.....
Gasoline	Imp. gal.	408	189	.....	.....	1,645	710
Oil (fuel)	"	46,092	5,993	.....	.....	3,934	585
Wood	Cord	310	496	14	72	.....	.....
Gas	1,000 cu. ft.	1,722	1,008	.....	.....	.....	.....
Other fuel	.....	.....	54	10	8	.....	.....
Total values	.....	.....	59,189	.....	20,370	.....	11,454

Table 281.—Fuel Used in the Hardware and Tools Group in 1920—Concluded.

Classification.	Unit of Measure.	Industry.					
		Screws.		Skates.		Edgetools and Cutlery.	
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
			$		$		$
Bituminous coal	Net tons	1,030	13,202	25	372	2,625	26,666
Anthracite coal	"	129	2,149	19	333	891	8,743
Lignite coal	"	.....	.....	5	67	4	36
Coke	"	90	1,530	.....	.....	911	14,550
Gasoline	Gals.	.....	.....	10	4	8,285	3,399
Oil (fuel)	"	24,700	3,714	39	5	155,227	22,762
Wood	Cord	.....	.....	.....	.....	28	392
Gas	1,000cu.ft.	265	318	1,295	1,406	1,431	489
Other fuel	.....	.....	.....	.....	.....	.....	118
Total values	.....	.....	20,913	.....	2,187	.....	77,155

Classification.	Unit of Measure.	Industry.						Total.	
		Dies and Taps.		Saws.		Tools and Implements.			
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
			$		$		$		$
Bituminous coal	Short ton	1,666	16,578	1,425	13,460	5,856	55,367	16,802	168,093
Anthracite coal	"	35	583	1,473	13,490	155	2,985	4,123	46,697
Lignite coal	"	.....	.....	.....	.....	14	231	27	305
Coke	"	.....	.....	5	65	385	4,045	2,635	41,195
Gasoline	Gal.	1,160	478	.....	.....	50	15	11,558	4,795
Oil (fuel)	"	50,267	7,420	17,605	15,874	721,163	98,900	1,019,027	155,253
Wood	Cord	1	5	93	567	118	544	564	2,076
Gas	1,000cu.ft.	517	291	38	50	19,657	8,510	24,935	12,080
Other fuel	.....	.....	.....	.....	.....	.....	.....	24	172
Total values	.....	.....	25,355	.....	43,506	.....	170,597	.....	430,726

Financial Statistics.—The capital invested in the group was $32,798,513, comprising fixed assets of $11,243,056 and liquid assets of $21,555,457. The edge tools and cutlery industry had the largest investment, consisting of $14,082,622. The value of production was $22,556,316, of which 31·9 per cent was expended for materials, 29·1 per cent was disbursed as salaries and wages and 1·9 per cent was the fuel cost.

Table 282.—Capital Invested in the Hardware and Tools Group in 1920.

	Establishments.	Total Capital	Capital represented by			
			Lands, Buildings and Fixtures.	Machinery and Tools.	Materials on Hand and Stocks in Process.	Cash Account and Bills Receivable.
	No.	$	$	$	$	$
Canada.						
Total	152	32,798,513	4,761,507	6,481,549	9,093,170	12,462,287
Builders' hardware	60	3,577,459	707,918	885,287	1,210,518	773,736
Hardware, n.o.p.	5	622,937	118,248	126,324	189,011	189,354
Needles and pins	4	485,485	114,516	148,018	98,587	124,364
Screws	5	3,053,636	552,668	874,033	1,306,067	320,918
Skates	4	59,356	16,525	23,100	7,524	12,207
Edge tools and cutlery	31	14,082,622	1,215,896	2,169,983	2,460,655	8,236,088
Dies and taps	13	3,193,176	551,814	1,018,545	1,292,036	330,781
Saws	12	2,744,474	474,813	358,956	1,081,501	829,204
Tools and implements	18	4,979,318	1,009,109	877,303	1,447,271	1,645,635
Nova Scotia and New Brunswick.						
Total	7	258,557	72,827	77,403	66,297	42,030
Quebec.						
Total	29	14,588,358	1,536,484	2,176,743	2,573,976	8,301,155
Builders' hardware	7	119,074	37,713	36,238	32,129	12,994
Edge tools and cutlery	8	10,176,892	672,381	832,495	962,577	7,709,439
Dies and taps	5	1,715,395	302,723	714,486	645,057	53,129
Saws	3	1,057,916	185,047	109,901	443,042	319,926
Remaining plants	6	1,519,081	338,620	483,623	491,171	205,667
Ontario.						
Total	92	17,843,349	3,127,256	4,185,633	6,424,913	4,105,547
Builders' hardware	34	3,425,228	669,755	830,943	1,170,550	753,980
Screws	4	2,022,857	340,746	525,352	913,063	243,696
Edge tools and cutlery	21	3,756,820	495,153	1,286,248	1,467,430	507,989
Dies and taps	7	475,449	249,001	303,017	645,779	277,652
Saws	6	1,662,013	282,566	237,795	635,294	506,358
Tools and implements	12	4,770,686	948,584	829,439	1,384,104	1,608,559
Remaining plants	8	730,296	141,451	172,839	208,693	207,313
Manitoba.						
Total	8	40,828	10,000	13,845	9,820	7,163
Saskatchewan.						
Total	3	4,250	150	2,800	600	700
Alberta.						
Total	4	8,819	.....	5,133	2,214	1,472
British Columbia.						
Total	9	54,352	14,790	19,992	15,350	4,220
Builders' hardware	6	5,420	.....	3,150	2,150	120
Remaining plants	3	48,932	14,790	16,842	13,200	4,100

Table 283.—Miscellaneous Expenses Incurred by the Hardware and Tools Group in 1920.

Classification.	Total	Industry			
		Builders' Hardware.	Hardware, N.O.P.	Needles and Pins.	Screws.
	$	$	$	$	$
Total	4,196,740	571,842	49,985	102,476	336,456
Rent of offices, works and machinery	48,531	15,200	360	481	330
Cost of purchased power	180,429	26,577	4,109	3,843	29,003
Insurance	142,531	26,166	5,163	1,304	23,349
Taxes:					
Excise	14,308	7,554		274	2,501
Excess profits tax	383,048	38,814	8,722	36,087	33,815
Provincial and municipal	108,213	20,412	4,951	3,320	13,279
Royalties, use of patents	17,991	13,104	3,355		
Advertising expenses	775,701	34,678	3,166	1,074	13,901
Travelling expenses	297,797	75,476	6,670	11,916	17,711
Repairs to buildings and machinery	499,198	53,736	3,126	21,646	30,162
All other sundry expenses excepting fuel, materials, salaries and wages	1,728,990	260,125	10,303	22,531	172,405

Classification.	Industry				
	Skates.	Edgetools and Cutlery.	Dies and Taps.	Saws.	Tools and Implements.
	$	$	$	$	$
Total	17,791	1,665,841	247,456	582,888	622,005
Rent of office, works and machinery	2,040	16,984	4,149	3,587	5,400
Cost of purchased power	724	50,762	14,223	21,930	29,198
Insurance	645	41,311	10,023	10,119	24,451
Taxes:					
Excise	5	1,787	411		1,776
Excess profits tax	88	67,607		166,111	31,804
Provincial and municipal	1,043	26,545	5,958	13,153	19,552
Royalties, use of patents		487	558		490
Advertising expenses	1,680	669,833	7,301	27,227	16,841
Travelling expenses	1,310	48,084	52,860	66,194	17,576
Repairs to buildings and machinery	1,837	165,634	29,461	44,799	148,797
All other sundry expenses excepting fuel, materials, salaries and wages	8,419	576,807	122,512	229,768	326,120

Table 28a.—Financial Summary of the Hardware and Tools Group in 1920.

Classification.	Establishments.	Capital.	Salaries and Wages.	Cost of Fuel.	Cost of Materials.	Miscellaneous Expenses.	Total Expenditure	Value of Products.
	No.	$	$	$	$	$	$	$
Canada Total	152	32,798,513	6,559,328	430,726	7,200,002	4,196,740	18,386,796	22,556,316
Builders' hardware	60	3,577,459	1,467,346	59,189	1,412,993	571,842	3,511,370	4,190,809
Hardware, n.op.	5	622,937	260,015	20,370	236,282	49,985	566,652	717,273
Needles and pins	4	485,485	279,316	11,454	187,925	102,476	581,171	728,337
Screws	5	3,053,686	938,543	20,913	1,071,372	336,456	2,367,284	2,511,710
Skates	4	59,356	32,141	2,187	19,966	17,791	72,085	79,046
Edge tools and cutlery	31	14,082,622	1,851,416	77,155	1,614,010	1,665,841	5,208,422	6,232,123
Dies and taps	13	3,193,176	641,529	25,355	363,012	247,456	1,277,352	1,417,564
Saws	12	2,744,474	663,388	43,506	639,646	582,888	1,929,428	2,183,240
Tools and implements	18	4,979,318	425,634	170,597	1,654,796	622,005	2,873,032	4,496,214
Nova Scotia and New Brunswick Total	7	258,557	74,733	14,605	71,844	17,091	178,273	241,609
Quebec Total	29	14,588,358	1,956,774	82,609	2,124,886	1,712,006	5,876,275	7,035,330
Builders' hardware	7	119,074	51,729	2,026	48,277	9,182	111,214	117,955
Edge tools and cutlery	8	10,176,892	706,029	31,090	1,064,253	1,039,347	2,840,719	3,729,153
Dies and taps	5	1,715,395	339,130	15,498	157,322	95,281	607,231	693,211
Saws	3	1,057,916	287,677	18,458	263,814	351,923	921,872	1,076,756
Remaining plants	6	1,519,081	572,209	15,537	591,220	216,273	1,395,239	1,418,255
Ontario Total	92	17,843,349	4,461,984	330,718	4,945,956	2,447,679	12,186,337	15,109,020
Builders' hardware	34	3,425,228	1,386,515	56,620	1,349,359	550,640	3,343,134	3,998,277
Screws	4	2,022,857	613,082	15,601	698,779	222,090	1,550,152	1,806,742
Edge tools and cutlery	21	3,756,820	1,102,231	36,244	507,123	617,722	2,263,320	2,373,906
Dies and taps	7	1,475,449	298,174	9,857	203,230	150,648	661,909	714,867
Saws	6	1,662,013	361,143	24,654	351,816	227,401	965,014	1,061,023
Tools and implements	12	4,770,686	359,576	164,489	1,590,805	607,951	2,722,821	4,301,720
Remaining plants	8	730,296	340,663	23,253	244,844	71,227	679,987	852,485
Manitoba Total	8	40,828	29,077	1,435	16,932	6,960	54,404	65,109
Saskatchewan Total	3	4,250	3,995	105	874	1,851	6,825	8,653
Alberta Total	4	8,819	2,802	158	2,936	2,800	8,756	11,999
British Columbia Total	9	54,352	29,903	1,096	36,574	8,353	75,926	84,596

Provincial Distribution.—The distribution of the capital investment in eight provinces is presented in Table 282. The 92 plants in Ontario involved an investment of $17,843,349, while the 29 establishments in Quebec were valued at $14,588,358. The production in Ontario was $15,109,020, leading Quebec by $8,073,690 or 53·4 per cent. The total amount paid in salaries and wages in the industrial group was $6,559,328, of which 68 per cent was disbursed in Ontario and 29·8 per cent was paid in Quebec. The following table shows the provincial distribution of establishments:—

Table 285.—Provincial Distribution of Plants in the Hardware and Tools Group, 1920.

Classification.	Canada.	Nova Scotia.	New Brunswick.	Quebec.	Ontario.	Manitoba.	Saskatchewan.	Alberta.	British Columbia.
Total	No. 152	No. 2	No. 5	No. 29	No. 92	No. 8	No. 3	No. 4	No. 9
Builders' hardware	60	.....	2	7	34	4	3	4	6
Hardware, n.e.s.	5	.....	.....	1	4	.....	.....	.....	.....
Needles and pins	4	.....	.....	2	2	.....	.....	.....	.....
Screws	5	.....	.....	1	4	.....	.....	.....	.....
Skates	4	.....	.....	.....	2	2	.....	.....	.....
Edge tools and cutlery	31	1	1	8	21	.....	.....	.....	.....
Dies and taps	13	.....	.....	5	7	.....	.....	.....	1
Saws	12	.....	1	3	6	1	.....	.....	1
Tools and implements	18	1	1	2	12	1	.....	.....	1