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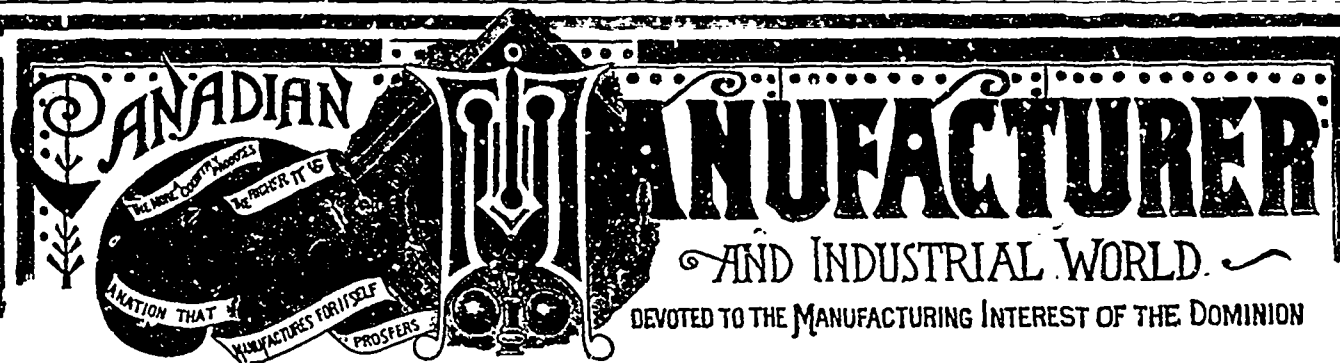
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Vol. 49.

TORONTO, SEPTEMBER 2, 1904.

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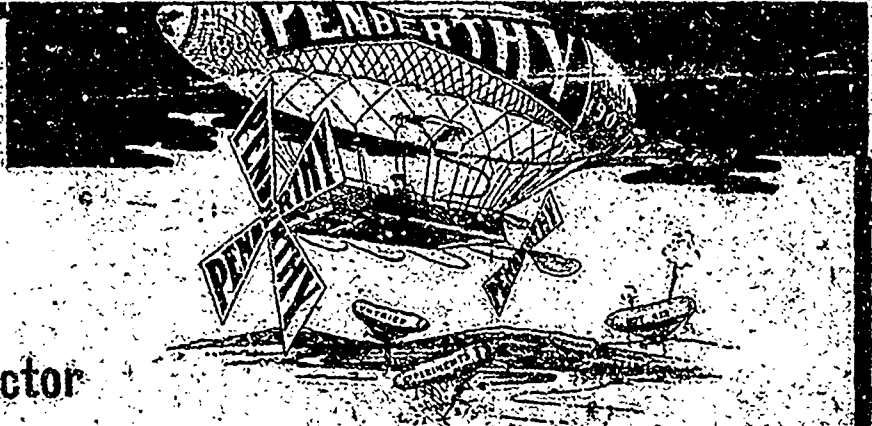
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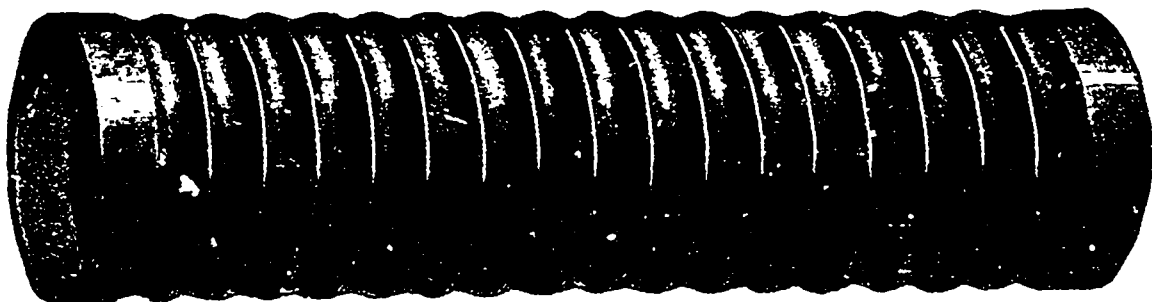


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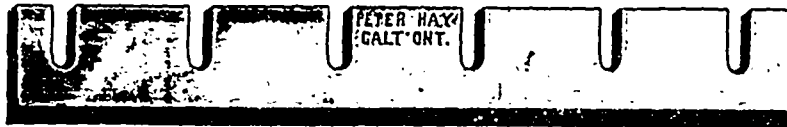
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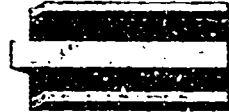
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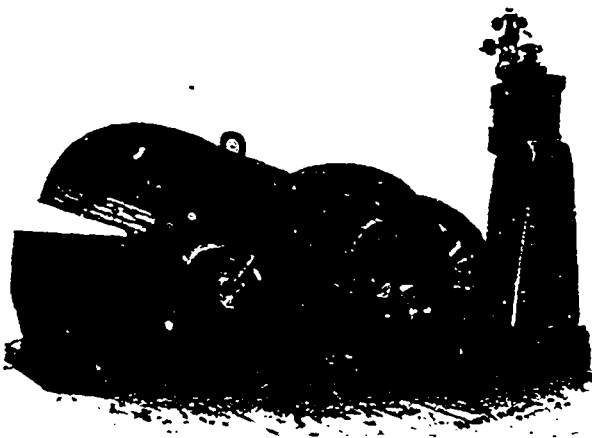
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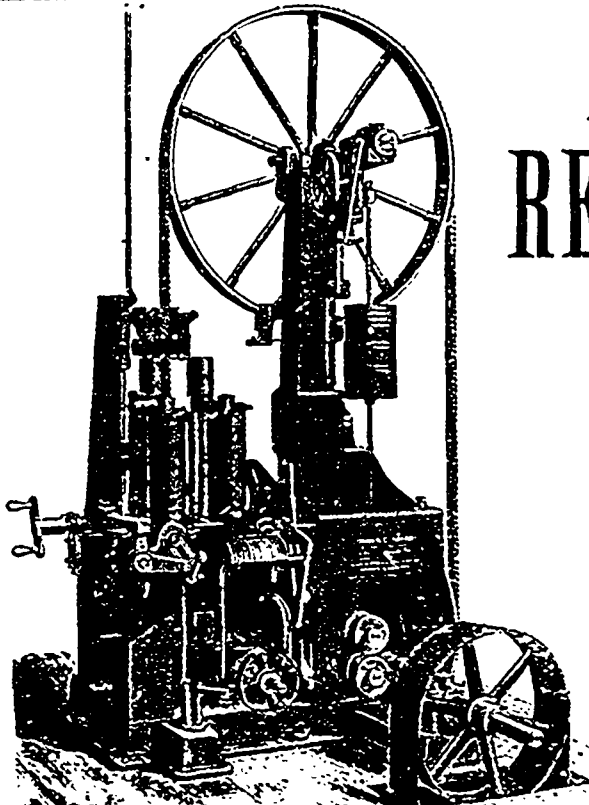
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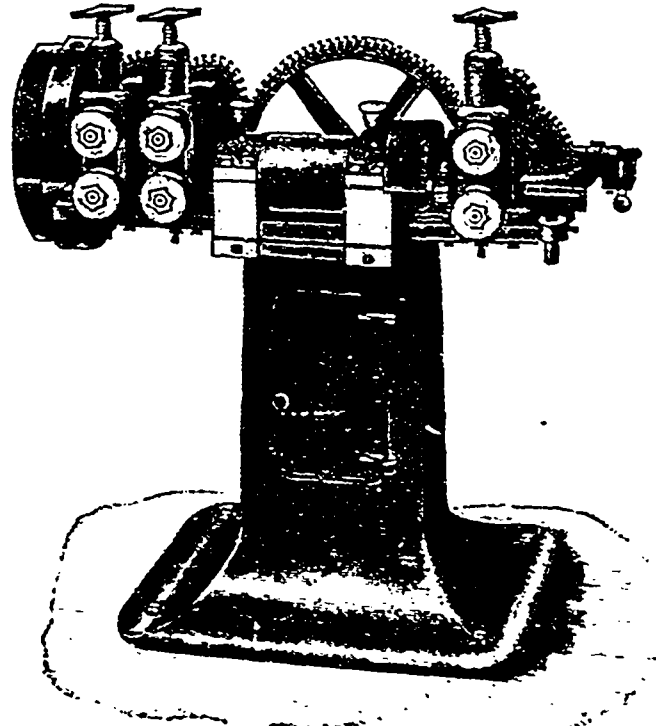
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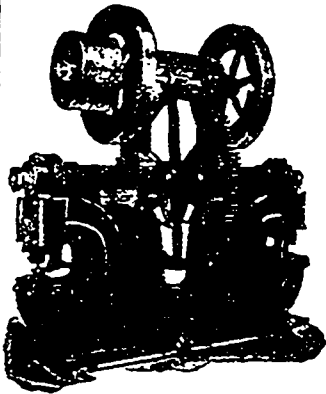
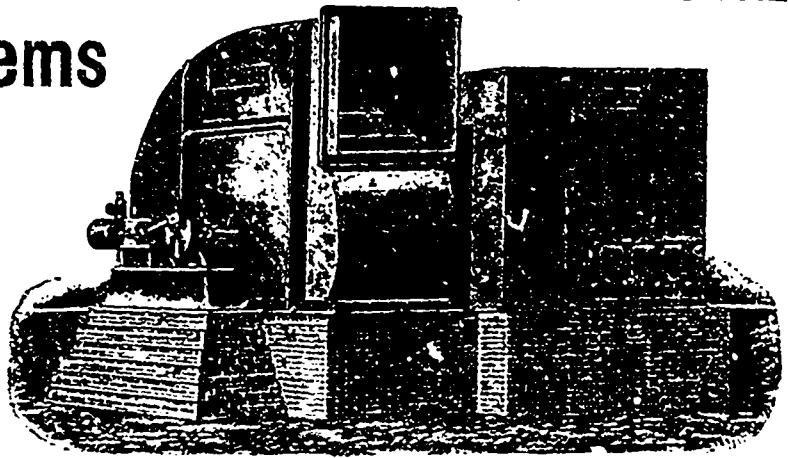
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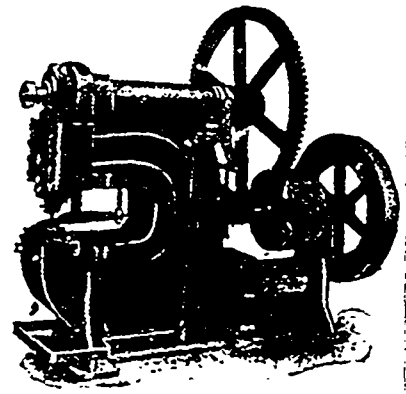
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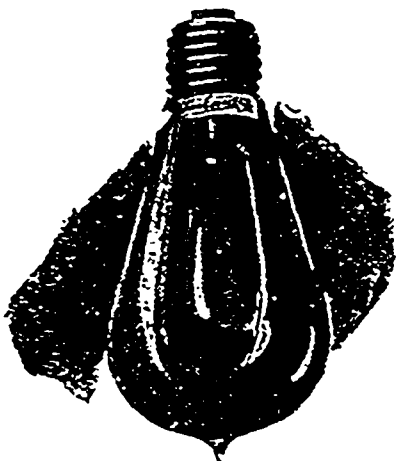
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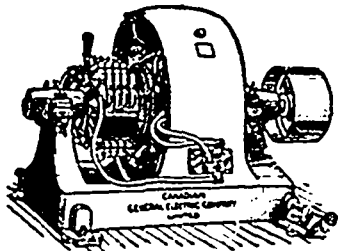
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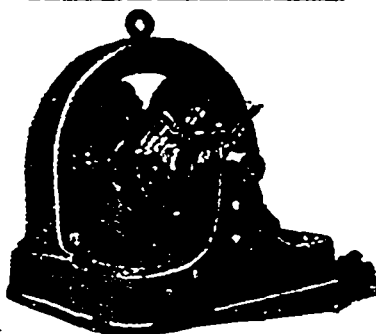
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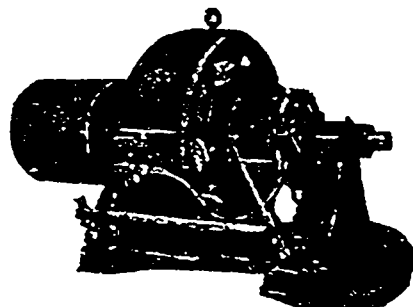
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J. J. CASSIDY, Editor and Manager

Classified IndexPage 42

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DUTY ON STEEL RAILS.

On Saturday, August 24, 1904, an order-in-council imposed a duty on steel rails as follows:

Whereas section 1 of chapter 15 of the Acts of 1903, enacts as follows:

The Governor-in-Council may, by order-in-council, direct that a duty of seven dollars per ton shall be imposed under schedule A to the Customs Tariff, 1897, on all iron and steel railway bars or rails, in any form for railways, imported into Canada; and from and after the publication of such order in the Canada Gazette, such duty shall be levied, collected, and paid on all such rails; and thereafter item 238 in the said schedule, and item 385 in schedule B to the said Act shall be repealed: Provided, however, that such order shall not be passed until the Governor-in-Council is satisfied that steel rails of the best quality, suitable for the use of Canadian railways, are being manufactured in Canada, from steel made in Canada, in sufficient quantity to meet the ordinary requirements of the market.

The Governor-General-in-Council being satisfied that steel rails of the best quality, suitable for the use of Canadian railways, are being manufactured in Canada from steel made in Canada in sufficient quantity to meet the ordinary requirements of the market, is pleased to declare that the conditions expressed in the proviso in the said section have been satisfied, and to direct that a duty of seven dollars per ton shall be imposed under schedule A to the Customs Tariff, 1897, on all iron and steel railway bars, or rails in any form for railways, imported into Canada, and that this order-in-council be forthwith published in the Canada Gazette.

CANADIAN TRADE IN 1904.

The Customs Department have issued a statement relating to the imports into Canada of foreign merchandise for consumption, and the exports of Canadian products to other countries during the fiscal year ending with June 1904. The value of imports was as follows:

		Per cent.
Dutiable goods.....	\$148,002,381	61.12
Non dutiable	94,684,043	38.88
Total	\$242,686,424	100.00
Duty collected.....	\$40,952,810	
Average rate of duty		43.25
Imports of coin and bullion.....	\$7,874,313	
Grand total of imports.....	\$251,460,737	

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The classification of these imports of free goods were as under:

Products of the mine	\$13,554,082
.. .. fisheries	850,945
.. .. forest	6,925,897
.. .. animals	10,553,797
.. .. agriculture.....	11,193,267
.. .. manufactures.....	35,754,944
Miscellaneous.....	15,851,111
Total.....	\$94,684,043
Coin and bullion.....	7,874,313
Grand Total.....	\$102,558,356

In addition to these free goods entered for consumption, the imports of free goods in transit were valued at \$548,954, making the grand total of free imports \$103,106,950.

The total exports from Canada in 1904 were valued as follows:

	Domestic.	Foreign.
Products of the mine.....	\$33,626,739	\$202,123
.. .. fisheries.....	10,759,029	14,168
.. .. forest.....	33,091,922	276,859
.. .. animals.....	63,812,117	548,323
.. .. agriculture.....	57,138,875	8,483,110
.. .. manufactures.....	19,864,049	2,575,870
Miscellaneous.....	121,708	540,786
Total merchandise.....	\$198,414,439	\$12,641,239
Coin and bullion.....		2,465,557
Grand total exports.....	\$198,414,439	\$15,106,796

The following shows the total value by countries of all goods exported from Canada, both domestic and foreign, during the fiscal year 1904:

	Canadian.	Foreign.	Total.
Great Britain	\$110,120,892	\$7,470,484	\$117,591,376
British possessions	11,074,912	286,000	11,360,912
Total	\$121,195,804	\$7,757,474	\$128,953,278
United States.....	\$66,856,885	\$6,316,664	\$73,173,549
All other countries	10,351,849	1,032,658	11,384,507
Total foreign	\$77,208,734	\$7,349,322	\$84,558,056
Grand total	\$198,414,439	\$15,106,796	\$213,521,235

Proportion of exports of Canadian products in 1904 were:

To Great Britain ..	55.50 per cent.
" British possessions.....	5.50 "
" United States ..	34.00 "
" All other countries.....	5.00 "
	100.00 "

VALUE OF IMPORTS INTO CANADA, DUTIABLE AND FREE, ENTERED FOR CONSUMPTION IN 1904.

COUNTRIES.	DUTIABLE GOODS.				Free Goods.	Total Dutiable and Free.
	Imports.	General Tariff.	Preferential Tariff.	Surtax Tariff.		
Great Britain	\$45,161,022	\$5,774,100	\$38,475,505	\$68,023	\$16,837,745	\$61,770,379
All other British possessions	7,378,450	382,242	6,280,748	2,730	4,436,840	11,111,572
Total	\$52,539,478	\$6,156,348	\$44,765,253	\$85,759	\$21,274,591	\$72,881,951
United States	\$82,980,909	\$77,390,807	.....	\$152,973	\$73,282,735	\$150,826,515
France	5,142,736	5,016,078	.....	40,225	1,150,222	6,206,525
Germany	6,054,200	2,183,582	.....	1,041,823	1,950,199	8,175,604
All other foreign countries	9,383,935	\$,413,793	.....	3,055,830	5,807,009	13,366,542
Total	103,561,780	93,024,170	.....	4,290,851	\$1,280,165	178,575,186
Grand total	\$156,101,258	\$99,160,518	\$44,765,253	\$4,976,610	\$102,554,756	\$251,457,137

UNITED STATES TRADE IN 1904.

The total value of imports for consumption into the United States, free and dutiable, for the fiscal year ending with June, 1904, were as follows :

	Per cent.
Articles of food and animals	23.65
Articles in a crude condition which enter into the various processes of domestic industry	32.44
Articles wholly or partially manufactured for use as materials in the manufactures and mechanic arts	13.78
Articles manufactured ready for consumption	16.79
Articles of voluntary use, luxuries, etc.	13.34
Total imports of merchandise	100.00
Per cent. of free	45.82
" " dutiable	54.18

The classified values of imports free of duty in 1904, were as follows :

	Per cent.
Articles of food and animals	25.04
Articles in a crude condition which enter into the various processes of domestic industry	54.84
Articles wholly or partially manufactured for use as material in the manufactures and mechanic arts	13.93
Articles manufactured ready for consumption	3.90
Articles of voluntary use, luxuries, etc.	2.20
Total free of duty	100.00

The classified values of imports of dutiable goods in 1904 were as follows :

	Per cent.
Articles of food and animals	22.47
Articles in a crude condition which enter into the various processes of domestic industry	13.49
Articles wholly or partially manufactured for use as materials in the manufactures and mechanic arts	13.66
Articles manufactured ready for consumption	27.69
Articles of voluntary use, luxuries, etc.	22.60
Total dutiable	100.00

The classified values of exports of domestic products from the United States in 1904 were as follows :

	Per cent.
Products of agriculture	59.48
" manufactures	31.52
" mining	3.20
" forest	4.80
" fisheries . . . . .	.60
Miscellaneous . . . . .	.40
Total domestic	100.00

In addition to these exports of domestic products, in the year under consideration, there were exported from the United States (in transit) foreign merchandise in value as follows

	Per cent.
Free of duty	52.26
Dutiable	47.74
Total foreign	100.00

Grand total, exports \$1,460,868,185

Included in the exports of foreign merchandise from the United States, in 1904, were those received from Canada, destined for other countries, including animals, breadstuffs, cotton goods, grain, provisions, vegetables, wood manufactures, etc., valued at \$18,688,644.

BRITISH TRADE IN 1903.

A study of the official returns of the foreign commerce of the United Kingdom, recently published, discloses why that country hesitates to accept Mr. Chamberlain's idea of reciprocal or preferential trade within the Empire. The following abstracts from the returns show the character and direction of the imports and exports of Great Britain in the year 1903.

IMPORTS.

Class 1—Food, drink and tobacco	\$1,161,425,730
" 2—Raw materials	867,550,185
" 3—Manufactures	672,831,775
" 4—Miscellaneous	11,203,775
Total	\$2,713,001,445

SOURCES OF IMPORTS.

	Foreign Countries.	British Possessions.
Class 1	\$908,384,505	\$253,041,225
" 2	624,983,980	242,566,205
" 3	602,222,605	70,599,150
" 4	9,036,395	2,147,380
Total	\$2,144,647,485	\$568,353,960
Percentages	80.00 p. c.	20.00 p. c.

Exports from Great Britain, 1903.

BRITISH PRODUCTION.*

Class 1	\$81,886,020
" 2	176,894,145
" 3	1,173,939,295
" 4	21,281,080
Total	\$1,454,000,540

Destination of British made Exports.

	Foreign Countries.	British Possessions.
Class 1	\$39,382,410	\$42,503,610
" 2	161,927,330	14,966,815
" 3	684,852,005	489,087,290
" 4	12,104,475	9,176,605
Total	\$898,266,220	\$555,734,320
Percentages	62.00 p. c.	38.00 p. c.

Destination of Exports of Foreign and Colonial Goods.

	Foreign Countries.	British Possessions.
Class 1	\$37,430,120	\$13,725,115
" 2	196,347,540	5,522,305
" 3	71,915,365	22,268,240
" 4	482,170	170,965
Total	\$306,181,195	\$41,686,625
Percentages	88.00 p. c.	12.00 p. c.

RECAPITULATION.

Imports into Great Britain in 1903.	
From Foreign Countries	\$2,144,647.485
From British Possessions	558,353.960
Total	\$2,713,001.445
Percentage—Foreign	80.00 per cent.
“ British	20.00 “
Exports from Great Britain in 1903 of British made goods.	
To Foreign Countries	\$868,266.220
To British Possessions	555,734.320
Total	\$1,424,000.540
Percentage—Foreign	62.00 per cent.
“ British	38.00 “
Exports from Great Britain in 1903 of Foreign and Colonial goods.	
To Foreign Countries	\$306,181.195
To British Possessions	41,686.625
Total	\$347,867.820
Percentage—Foreign	88.00 per cent.
“ British	12.00 “
Total exports from Great Britain in 1903, both British made and Foreign and Colonial.	
To Foreign Countries	\$1,194,447.415
To British Possessions	597,420.945
Total	\$1,791,868.360
Percentage—Foreign	61.00 per cent.
“ British	39.00 “
Total imports	\$2,713,001.445
Total exports	1,791,868.360
Excess of imports over exports	\$921,133.085

CANADIAN PIG IRON STATISTICS.

The American Iron and Steel Association have received direct from the manufacturers the statistics of the production of pig iron in Canada in the first six months of 1904. The figures show a decrease as compared with either of the two halves of 1903, as will be seen by the following table, which gives the production by fuels, in gross tons, in half-yearly periods.

Fuel used—Gross tons.	First half of 1903.	Second half of 1903.	First half of 1904.
Coke	123,500	124,405	111,840
Charcoal	9,430	8,083	8,803
Total	132,930	132,488	120,643

The decrease in production in the first half of 1904 as compared with the first half of 1903 was 12,287 tons, or a little over 9 per cent., and as compared with the second half of 1903 it was 11,845 tons, or a little less than 9 per cent. Of the total production in the first half of 1904 35,291 tons were basic pig iron, against 69,325 tons in the first half of 1903, and 57,567 tons in the second half of that year. A small quantity of Bessemer pig iron was produced in the second half of 1903, but no Bessemer pig iron was made in the first half of 1903 or the first half of 1904.

The unsold pig iron held by Canadian manufacturers on June 30, 1904, none of which was intended for their own consumption, amounted to 36,868 gross tons, as compared with 19,168 tons on December 31, 1903, and 13,585 tons

on June 30, 1903. Of the unsold stocks on June 30, 1904, a little less than 4,000 tons were made with charcoal, the remainder being coke iron.

On June 30, 1904, Canada had 15 completed blast furnaces, of which six were in blast and nine were idle. Of this total 11 were equipped to use coke and four to use charcoal. In addition one coke furnace was being built on June 30, 1904, and one coke and one charcoal furnace were partly erected but work was suspended.

During the first half of 1904 the total number of furnaces in Canada actually in blast for the whole or a part of the period was 10, of which seven used coke and three used charcoal. The number of furnaces idle during the whole period was five, of which four used coke when last in blast and one used charcoal.

The Dominion Iron & Steel Co., Limited, Sydney, N.S., had three of its four furnaces running during the first six months of 1904, although all four were idle on June 30. It expected to blow in two of its idle furnaces on August 15.

The Londonderry Iron & Mining Co., Limited, Londonderry, N.S., had one of its two furnaces in blast on June 30.

The Nova Scotia Steel & Coal Co., Limited, New Glasgow, N.S., operated its Ferrona furnace, at Ferrona, N.S. for 180 days during the first six months of 1904. The furnace was idle on June 30 and will not be blown in for some time. The new furnace which the company is erecting at Sydney Mines, Cape Breton county, N.S., will probably be completed soon. It will be known as the Sydney Mines Furnace and will have an annual capacity of about 75,000 tons of foundry and basic pig iron.

The Canada Iron Furnace Co., Limited, operated its charcoal furnaces at Radnor Forges, Que., for 143 days during the first half of 1904. Its Midland Furnace, at Midland, Ont., which uses coke for fuel, ran for 142 days. Both furnaces were running on June 30.

Messrs. John McDougall & Co., Montreal, had one of their two charcoal furnaces at Drummondville, Que., in operation during the whole of the first half of 1904. The idle furnace was blown in on July 1.

The Hamilton Steel & Iron Co., Limited, Hamilton, Ont., operated its coke furnace for 151 days during the first half of 1904 and was running it on June 30.

The Deseronto Iron Co., Limited, Deseronto, Ont., operated its charcoal furnace during the whole of the first half of 1904.

NEW METHOD OF MANUFACTURING STEEL.

Successful experiments have been made by the Iron, Steel & Metals Mfg. Co., at Melbourne, Australia, for the purpose of proving the value of certain patent rights for the direct production of wrought iron and steel without first producing pig iron. Only a rough idea of the process may at present be had, though trial runs with New Zealand magnetic iron sand are being made on a somewhat larger scale than hitherto. The sand is first separated from its gangue by electro-magnetic separators, this treatment leaving a pure magnetic iron oxide. The sand is then fed from a bin into the furnace, which

is entirely novel in its features, being chiefly mechanical and automatic in its operation.

The ore drops from the bin into a slowly revolving cylinder placed at such an angle that the ore travels forward continuously in it. As it does so it is heated to a dull red by the waste gases from subsequent operations. From this cylinder the ore drops into a second revolving cylinder, where the fine particles are subjected to the action of reducing gases which reduce the magnetic oxide of iron to the metallic form, at the same time permitting the particles to retain their individuality. From this second cylinder the reduced ore drops into a smelting bath at the bottom of the revolving cylinders, and the molten steel or malleable iron, as the case may be, is tapped from this whenever that operation is necessary. It will thus be realized that the process is one of great simplicity and yet of much ingenuity. Not the least interesting part of it is the use of fuel oil for heating purposes. This is employed to secure concentration of heat and direct application in the furnace work. It is found that the fuel oil possesses many advantages over producer gas as used in existing smelting practice. The work done so far has demonstrated that not only is oil a cheap fuel, quite irrespective of the capital outlay that would be required if it was decided to utilize producer gas, but it is so thoroughly under control as to insure the best service.

The temperature at which iron ore melts is given variously at from 1,500° to 2,000° C., according to its purity.

The accurate gauging of temperature in the furnaces plays a very important part in the company's work, and accordingly an installation of thermoelectric thermometers has been made at the company's works. The apparatus consists of a "couple" consisting of a platinum-iridium junction inclosed in a metal tube three feet long, which is placed in the centre of the furnace, and the temperature is then recorded on the dial of a special form of voltmeter, each division on which represents 25° C. This voltmeter reads up to 1,600° and is placed at any convenient distance from the furnaces. The various thermometers are connected with a switch board, which is again connected with the "couples" or tubes in the furnace. In the installation under notice four "couples" are used, inserted in different parts of the furnace, and separately connected with the board, so that the reading of any thermometer can be taken and any discrepancy in the heat of different points of the furnace can be quickly remedied. It is interesting to notice that the voltmeter is so extremely sensitive that variations of heat down to 0.5 of a degree were easily noticeable in the trial test. The greatest temperature recorded was 1,300° C., equal to 2,340° F.

EDITORIAL NOTES.

An order-in-council has been passed providing that the drawback of customs duty shall not be paid in respect of any material used and brought into or attached to any article manufactured in Canada and exported therefrom, if a bounty be authorized to be paid by the Dominion Gov-

ernment on said article when manufactured in Canada. To illustrate this, it may be explained that steel billets are made in Canada from imported pig iron. There being a bounty on steel billets manufactured in Canada, no drawback will be allowed on the pig iron brought in.

The Department of Trade and Commerce has been requested to send an inspector to Bannockburn, Ont. It seems that a company at that point proposes to take advantage of the lead bounty act passed at the last session. A smelter has been erected at Bannockburn and a considerable quantity of lead is at the station awaiting the report of a Government inspector so the company may claim the Government bounty upon it. This will hardly be agreeable news to the British Columbia lead producers, who induced the Government to grant the bounty. The British Columbia lead has held the eastern market, though it has long been known that large deposits of lead existed in Ontario and Quebec. These could not be worked in competition with the British Columbia deposits, as they contained only lead, while the Western ore carries a percentage of gold and silver. It appears that the Government bounty will offset the precious alloy of the Western lead and enable owners of Eastern deposits to enter the field of competition. The first step has been taken at Bannockburn.

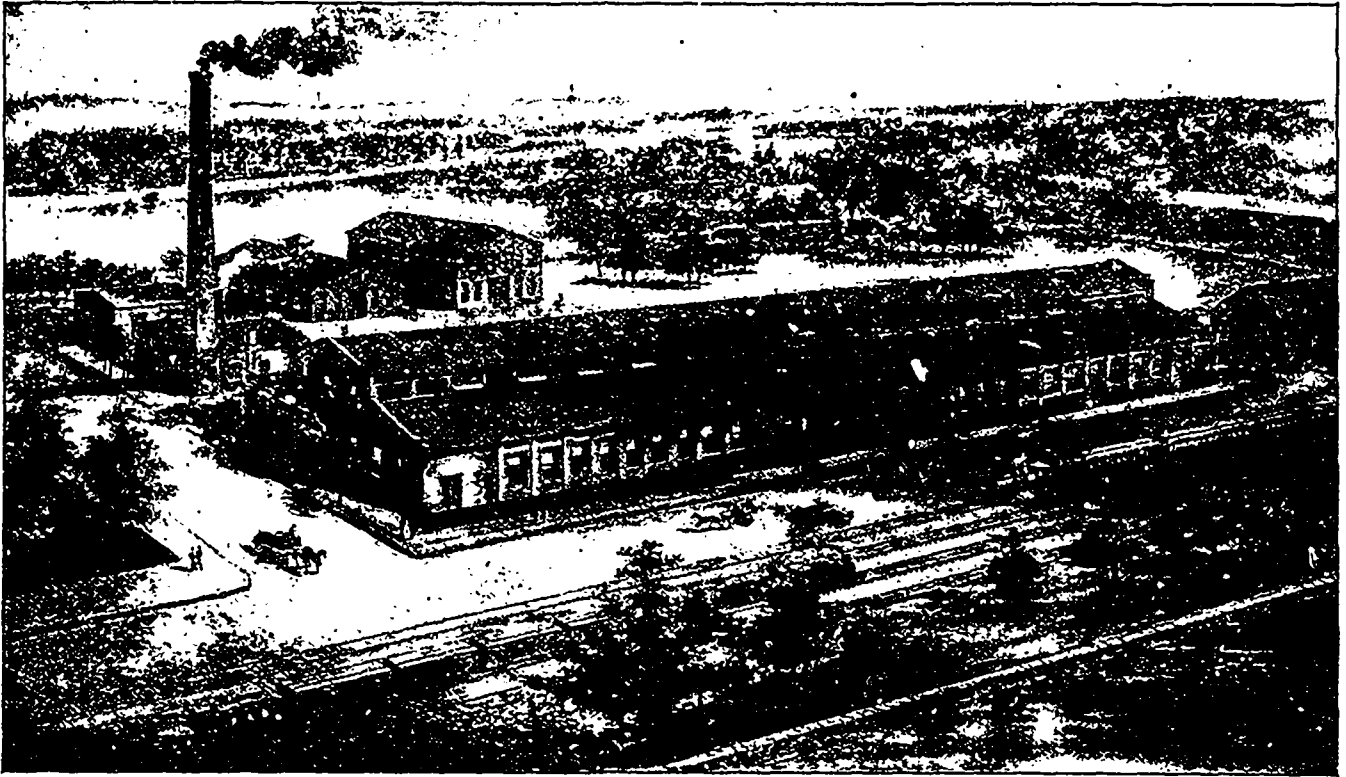
We acknowledge the courtesy of an invitation of the Montreal branch of the Canadian Manufacturers' Association to visit their city upon the occasion of the thirty-third annual convention of the Association to be held in Montreal on September 20, 21 and 22 inst. Messrs. C. C. Ballantine is chairman, J. J. McGill, vice-chairman, and E. H. Cooper, secretary of the invitation committee.

The executive council of the Canadian Manufacturers' Association, under the chairmanship of Mr. George E. Drummond, the president of the association, at its recent meeting in Toronto arranged the programme for the annual convention which is to be held in Montreal September 21, 22 and 23 inst. As respects the tariff, it is probable that the association will not depart from the policy laid down at the Halifax meeting three years ago. At that meeting a resolution was passed to the effect that the manufacturers considered a general revision of the tariff necessary, always favoring a preferential tariff, but providing that the first care should be to protect Canadian industries. At the last meeting of the association there was a resolution passed that the Government should take the tariff out of politics and appoint a permanent tariff commission, consisting of experts who shall deal with all tariff matters. This will be brought up again at the coming meeting.

It is ubiquitous. The following letter explains itself: The Jenckes Machine Co., Sherbrooke, Que., Gentlemen,—I would be pleased to receive your illustrated price list relating to vertical and horizontal steam engines in sizes of from 1½ to 4 h.p. Do you make a compound non-condensing engine? Water is not too plentiful in this part of the globe. Our nearest sea port is Durban. I saw your advertisement in THE CANADIAN MANUFACTURER. Yours truly, D. J. Raymond, Amersfoort P.O., Transvaal, South Africa.

THE CANADIAN RAND DRILL CO'S PLANT

SHERBROOKE, QUEBEC.



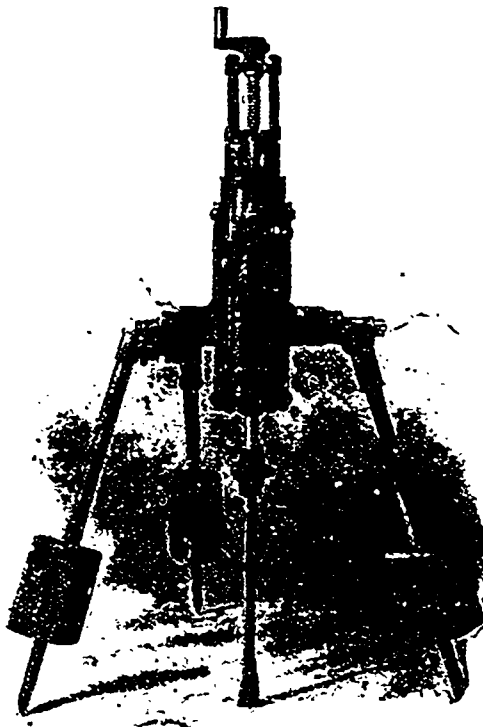
View of Canadian Rand Drill Co's Plant at Sherbrooke, Que.

In presenting to our readers a sketch of the Canadian Rand Drill Co's plant, we feel that it is a subject of interest to manufacturers from Newfoundland to the Pacific Coast. The company was formed about fifteen years ago and their growth has been phenomenal.

In a space of 60x40 feet, rented from the Jenckes Machine Co., Limited, at Sherbrooke, Que., the company started to manufacture their well known lines, and to-day they occupy and own, one of the most modern and up-to-date plants in Canada. The shops are located on the south side of the Magog River, at Sherbrooke, on the main line of the Canadian Pacific Railway, with a spur running to the shops. These shops were occupied about the end of 1899, the main shop being 200x84 feet. This at the time was thought to be sufficient for a long time to come, but only last year it was found necessary to add another hundred feet to the length of the building. All this space is now fully occupied, and it is only a question of time, when it will be found necessary to still further enlarge the buildings. The plant is equipped with all facilities for handling work expeditiously and cheaply.

The plan of arrangement has not been to place similar machines together, but, knowing the work to be done, the machines have been placed in reference to this, so that the rough casting may be started at one machine, passed to another, and so on, each machine doing its particular work, till the piece arrives at the erecting floor, having been moved around the shop no more than is

necessary. The shop is equipped with two large travelling cranes, for the main erecting floor and with a smaller crane for the small machine erecting floor.



Little Giant Rock Drill.

The arrangement is, that the right side of the shop is devoted to the manufacture of rock drills, coal cutters and air hoists, with their erecting departments at the end of the aisle, while the left side of the shop is where the compressors are built. The main aisle is used for erecting the larger machines, and has wheel pits and a concrete floor, so that the machines only require to be lined side ways, being set up on "I" beams.

Standardization is a necessary feature of the drill department, consequently, every part has its own special jig.

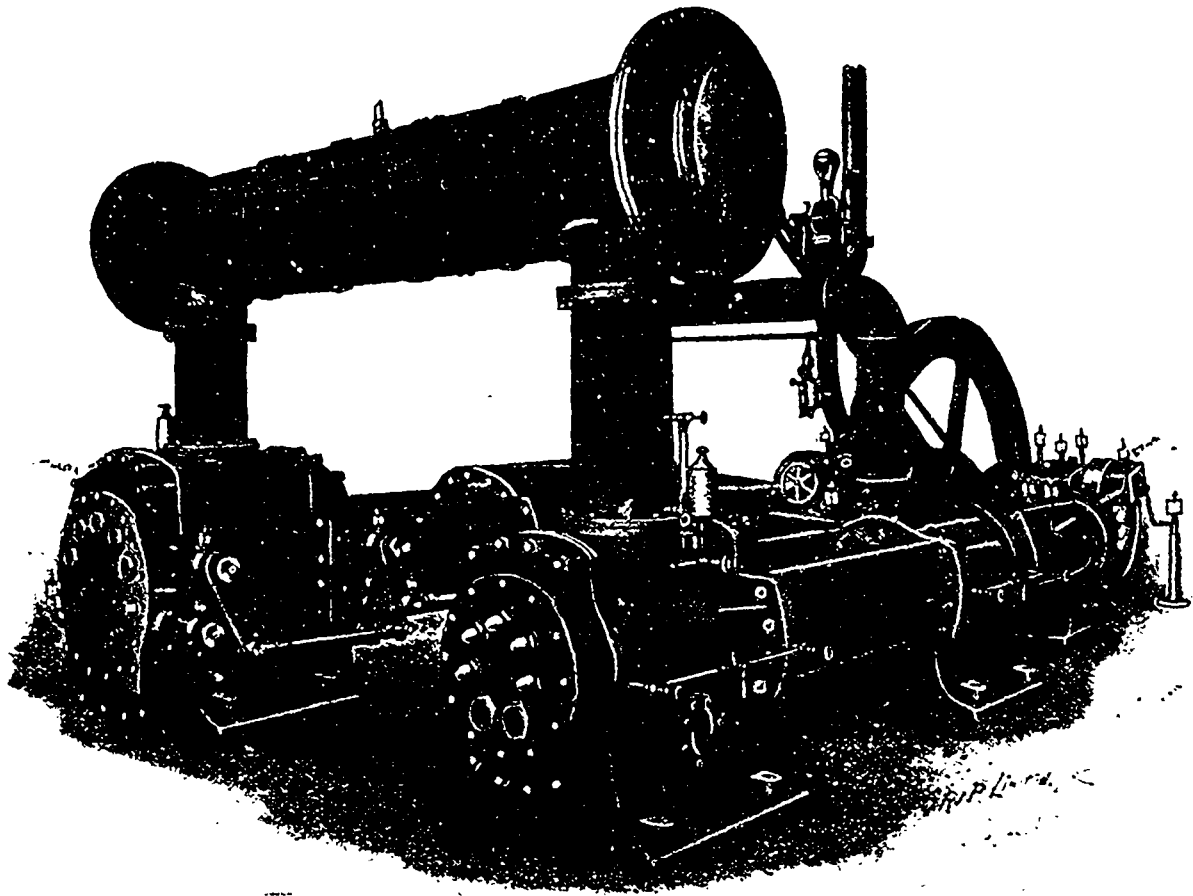
Records of tools and jigs are kept by the check system, each man carrying a ring of brass checks with his number stamped on it.

About the middle of the building, separated by wire fencing, is the shipping and stores department and here is kept all finished drill and compressor parts.

Almost opposite the stores, on the left side of the building, is the smithy, equipped with power hammer, forges and case hardening furnaces. The smithy is equipped with blowers and exhausters and is free from the usual dense smoke seen in such places.

Naturally, compressed air plays a very important part in the shops, being used for testing rock drills, cleaning castings, pneumatic tools, hoists, cranes, etc.

To the left of the building is located the engine room, equipped with a Jenckes-Corliss, 90 h. p. engine and a Rand "B₃" compressor. Here also is located a centrifugal pump, with its independent engine, used to circulate the water in the heating system. The Evans Admiral hot water system is used for heating the buildings, and is done by exhaust steam from the engine, after it comes from the feed water heater, heating the water in a large exhaust heater, similar to a feed water heater, circulating through some 10,000 feet of 1½ inch pipe. The piping extends all



Hand Class "B-3" Air Compressor (Rear View). Cross-Compound "Meyer" Steam End, Cross-Compound Corliss Air End, Watertube Intercooler.

around the sides and overhead on the cross beams. By referring to the temperature recorder it will be seen that the shops are always warm, although the thermometer has often been as low as 35° below zero. The boilers are the manufacture of the Jenckes Machine Co., and all pipes are covered by asbestos packing.

Besides the main building there are separate

buildings for the pattern shop, which is equipped with all the latest wood working machines, and there also are pattern sheds and storage sheds.

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The entire plant is equipped with the Walworth Sprinkler System, about five hundred sprinklers being arranged to cover every part of the plant.

The supply of water is furnished from two

sources; one from the city mains and the other from a 500 gallon fire pump, located in a separate pump-house, and taking its supply from the Magog River. Besides this, there are four 2½ inch streams available from the city mains, arranged to be reached from any of the four doors of the building.

Perhaps the first thing that strikes a visitor on entering the shops is the absolute cleanliness to be seen everywhere. This is accounted for by having men who do nothing else but keep the shops in order. Besides this, each foreman is held responsible for the neat and orderly appearance of his special department; and each Saturday there is a certain time devoted to general cleaning up of machines, etc.

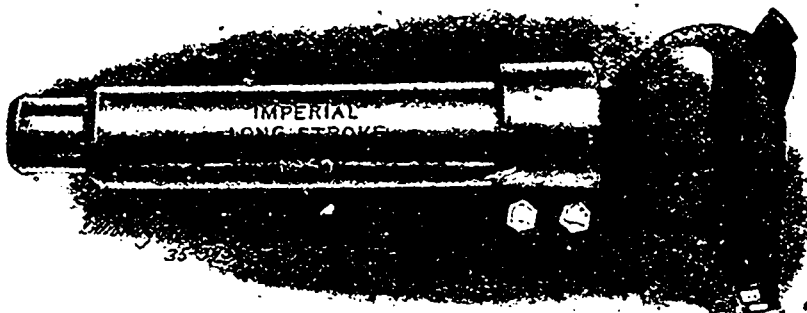
The men's comfort has not been lost sight

of, and they have splendid lavatories, fitted up with hot and cold water, to enable them to wash up before leaving the works. All the leading scientific papers are taken, and are at the disposal of the men.

At the front of the building is located the general manager's office as well as the general and shop offices. Upstairs, above the general office, is the draughting room and chief engineer's office. The superintendent's office is just off the shop office and commands a view of the shops.

In front of the building is a lawn, with flower beds kept in perfect order, which adds greatly to the appearance of the buildings.

It would not be out of place to add that should any of the readers of THE CANADIAN MANUFACTURER be in the vicinity of these works they are cordially invited to call and inspect the plant, and they will always find one of the staff at their disposal.



The Imperial Riveter

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The men's comfort has not been lost sight

The Provincial Government of Ontario recently approved of regulations which will be inserted in future in all agreements with companies building railways through the newer districts of Ontario, to effectually safeguard the forests of the province from fires. Lines of railway being constructed through forest lands, whether covered by license or not, must be guarded at the expense of the company by a staff of fire rangers for the protection of the timber.

The Department of Railways and Canals, will shortly call for tenders for the erection of a 2,000,000 bushel grain elevator at Port Colborne, Ont. Mr. J. A. Jamieson, architect, Montreal, has prepared the plans.

ROBERTSON'S POWER HACK SAW.

The accompanying illustration is of Robertson's No. 3 Power Hack Saw, manufactured by the Robertson Mfg. Co., 1848 Niagara St., Buffalo, N. Y. The photograph was taken while the machine was making a cut down the arm of a gas engine crank shaft. The opening between arms of the cranks being 1/2 inch too narrow, this method was employed instead of turning it out in a lathe. The machine completed eleven of these cranks, taking off 1/4 inch off each side, 22 cuts, 3 inches deep x 2 1/4 inches wide and cut off at the bottom by holding the crank upright in the vise, in 12 1/2 hours with one blade, while to do the same work on a lathe would take at least 28 hours. This is only one of the many special jobs that can be done on these machines. Many concerns purchase machines to do some special job, claiming that the machine paid for itself in a few cuts. The fact of the Robertson machines being sold in every country on the globe is evidence of their

true 1/64 inch thick have been taken off a 2 1/2 inch bar.

In addition to this type of saw they also manufacture circular metal saws, emery grinders, gas and gasoline, stationary and marine engines, etc.

The company are establishing a branch works at Bridgeburg, Ont., to meet the demands of the Canadian trade.

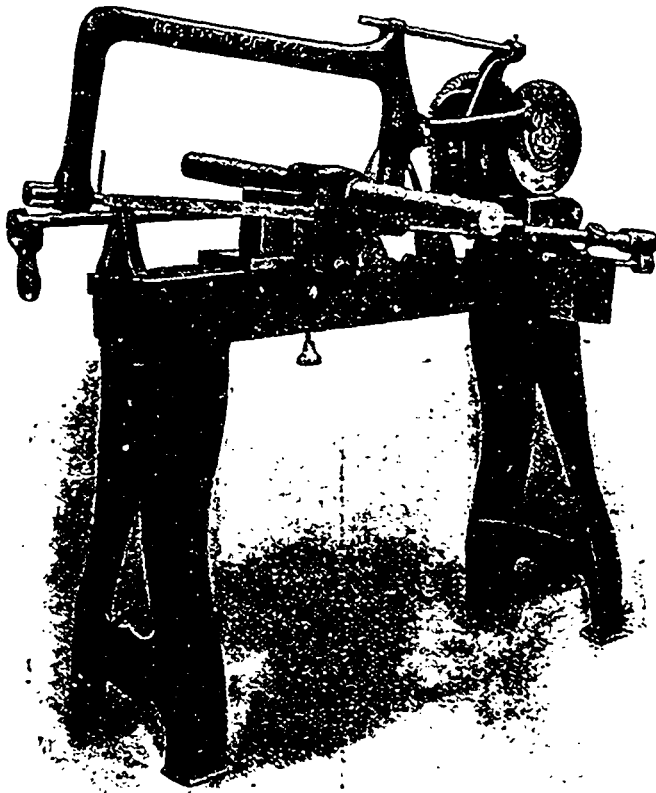
For further information, catalogues, price lists, etc., address the company at Buffalo.

ELECTRICAL SUPERVISION.

The Electrical Supervision Society Toronto, advise us that their system of Electrical engineering has been received very favorably throughout Ontario. A number of prominent men who were consulted on the subject before the society was formed, expressed a doubt as to whether the idea would be successful, but now that the scheme is in practical operation, the results have shown that the field for the

very much higher than it should have been for a first-class equipment. Now the object of that man was to save money—but he failed. Why?

"If people would only look at the matter from a common sense standpoint, they would understand. If one has some legal work to do, would he attempt to attend to it himself? Of course not! That is the lawyer's work. This company's work is engineering, and they do not profess to know anything concerning law, and therefore they put their legal matters into the hands of a lawyer who has the ability to dispatch them properly. But electrical



Robertson Power Hack Saw No. 3.

real merit and economy. They are manufactured in four sizes from 4x4 to 8x15 inches. The No. 1 and 2 machines are belt driven direct on the crank shaft. No. 1 has vise stationary on the bed; while No. 2 has a moveable vise, arranged to swivel for angle or bevel cutting. No. 4 is similar to No. 3 except its capacity is up to 8x15 inches, designed for I beam cutting, etc., and is mounted on low legs. All four sizes of machines are fitted with gravity hold up lever with automatic stop and quick acting starting clutch. The feed is gravity, which can be varied by moving the weight forward or back.

A very prominent and important feature on this construction is the relief on the return stroke. The action of the crank lifts the blade, thus avoiding drag and unnecessary wear on the teeth. The blade is secured in the centre of the frame in true line with the crank and connecting rod, as also is the sliding bars, thus insuring a perfect true stroke, while the blade is cutting. Discs perfectly

new work is not only very broad, but also that this branch of consulting engineering has not heretofore received the attention it requires.

Mr. K. L. Aitken, chief engineer of the Society, remarked in a recent interview, "The buyers of electrical apparatus in Canada have not yet been educated to the point where they appreciate the fact that a little knowledge, especially if it pertain to engineering, is a very dangerous thing. The average man who thinks he knows a great deal about the subject generally knows but little, and when you meet a man of this sort, it is usually a delicate matter to endeavor to convince him of his ignorance. In The Electrical Age is an article entitled, Costly Amateur Electric Engineering, which hits the nail right on the head. It is the story of a man who thought he knew, and who went ahead and bought things, the immediate result being that he got a plant which contained a lot of scrap machinery which cost an immense amount to operate and maintain, and the first cost of which was



Mr. K. L. AITKEN.

Chief Engineer, The Electrical Supervision Society, Toronto.

engineering is frequently considered a simple subject, though it is not.

"In the United States, even the biggest manufacturers of goods other than electrical, when they are about to purchase as much as a small motor, will call in expert advice, get an opinion, have the engineer direct the purchase, and last but not least, see that they get what they have bought. But in Canada? Every Tom, Dick and Harry, who has wired up a burglar alarm, thinks that he is quite capable of buying motors or generators, and also, that if it came to a pinch, he could make a very fair job of laying out a long distance transmission. What could be more simple than a row of poles, each containing cross-arms, pins, and insulators, and supporting a few wires? Ask any transmission engineer and he will tell you that his troubles are more numerous than the sands of the sea shore. He is right. In the long distance line, there are problems of which the layman never dreams, and the existence of which he cannot appreciate.

"It is to be sincerely hoped that this sort of thing will soon disappear, and that in time the conditions will change for the better."

Figures have been given out at Ottawa showing that the use of acetylene gas as an illuminant for gas buoys and automatic lights was cheaper than gas or coal oil. The former gave over six times the light that gas did for the same money. The power of penetration was also more than double. It was the intention of the department to gradually substitute acetylene gas for the present illuminants.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

ANTI-DUMPING TARIFF REGULATIONS.

The Dominion Customs Department has, after careful deliberation, promulgated regulations giving effect to what is popularly known as the "anti-dumping clause," and has handed to the press the following explanation of the regulations:—

In view of the facts that the new law has an important bearing upon the trade and commerce of the country, and that it is the adoption of an entirely new and striking idea in tariff-making, it is considered that it would be beneficial to the business community to give a full explanation of the principal features of the legislation and the regulations thereunder.

For a proper understanding of the matter, it is necessary at the outset to state that the Customs law of Canada, now and for many years past in force, provides, in effect, that the value for Customs duty purposes of any imported article subject to an ad valorem duty shall be the fair market value of such article as sold for home consumption in the principal markets of the country of export, at the time of export, in the ordinary course of trade, and on the usual terms of credit in like quantity and condition.

Heretofore, therefore, although a manufacturer or merchant in any other country might sell goods (subject to an ad valorem duty) to Canada at lower prices than he sold similar goods for home consumption in his own country, the Canadian Customs law required payment of Customs duty, not upon the special price for export, but upon the basis of the home consumption value in country of export.

As will be remembered, the Canadian Parliament has provided that in any case where imported dutiable goods of a class or kind manufactured or produced in Canada (whether subject to specific or ad valorem duties) are sold to Canada at a price below the fair market value of such goods, as sold for home consumption in the open market of the country of export, in the usual and ordinary way, and on the usual credit terms, at the time of export, there shall be levied thereon, in addition to the ordinary duty established by the Customs laws, a special duty equal to the difference between the selling prices to Canada and the said fair market value for home consumption in the country of export, provided, however, that such special duty shall not exceed one-half ordinary duty provided by law.

The rate and extent of the special duty is, however, varied in respect of articles upon which bounties are paid when manufactured in Canada, viz., iron in pigs, iron kentledge, and cast scrap iron, iron or steel ingots, clogged ingots, blooms, slabs, billets, 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; rolled iron or steel angles, toes, beams, channels, joists, girders, zees, stars or other rolled shapes, or trough bridge, building or structural rolled sections or shapes, not punched, drilled or further manufactured than rolled, n.e.s. and flat-eye, bar blanks not punched or drilled; rolled iron or steel plates not less than thirty inches in width, and not less than one-quarter of an inch in thickness, n.o.p.; round rolled wire rods not over $\frac{3}{4}$ of an inch in diameter.

As regards the latter articles, the law is that the special duty (which is in addition to the ordinary duty) shall be the amount of the difference between the selling price to Canada and the fair market value for home consump-

tion in the country of export, but that such special duty shall not exceed 15 per cent. of such market value.

To illustrate the working of the clause the following supposititious instances are cited:

(No. 1). Take the case of a piece of machinery sold from another country to Canada at, say, \$90, but which is usually sold for home consumption in the country of export at \$100; the calculation under such circumstances would be as follows:

First, ordinary duty at 25 per cent. on the fair market value for home consumption, viz., \$100—\$25.

Second, add for special duty the difference between the selling price and the fair market value, viz., \$10. Total duty, \$35.

Note—If the difference between the selling price and the fair market value, as aforesaid, had been \$12.50 or more, the maximum special duty would be imposed, viz., \$12.50, or one-half the ordinary duty charges based upon the fair market value.

(No. 2). Take the case of bar steel sold from abroad to Canada at, say, \$23 per ton, but which are usually sold for home consumption in the country of export at, say, \$27 per ton. The rate of duty is \$7 per ton. The calculation would be as follows:

First, ordinary duty at \$7 per ton—\$7.

Second, add for special duty one-half the ordinary duty, or \$3.50, the difference between the selling price and the fair market value in the country of export, being equal to and in excess of that amount, viz., \$3.50. Total duty, \$10.50.

It is provided in the law that exemption from the special duty may be allowed in respect to any article which is rated for duty in the tariff at 50 per cent. ad valorem or upwards, or at specific rates of duty, equal to 50 per cent. ad valorem or upwards based upon the fair market value for home consumption in the country of export.

For instance, take the case of certain soap which is dutiable at two cents per pound under the tariff. If the fair market value of such soap for home consumption in the country of export is four cents per pound or under, the equivalent ad valorem duty would be 50 per cent. or upwards, and the exemption referred to in this paragraph would, therefore, apply.

Provision has also been made for exemption from the special duty when the difference between the fair market value as aforesaid and the selling price to Canada amounts to only a small percentage of such market value. With regard to this provision, it has been determined, on the advice of the Board of Customs, that the special duty shall not be applicable when the difference between the fair market value and the selling price of the goods to Canada does not exceed 5 per cent. of such fair market value, the whole difference, however, when exceeding 5 per cent., to be taken into account for the purpose of imposing special duty.

The special duty clause does not apply to articles of a class which are subject to excise duty in Canada. It should be particularly observed, also, that the law does not apply to articles of a kind or class which are not made or produced in Canada.

It is declared in the regulations that when the value of goods for duty purposes is determined by the Minister of Customs under the provisions of the Customs Act, by reason of the goods being exported or imported under unusual conditions, the value so determined

shall be held to be the fair market value thereof within the meaning of that term as used for duty purposes.

The regulations required in the first place that invoices in duplicate, properly certified to, shall be delivered to the Customs House with the bills of entry for all imported goods. Heretofore the regulations only required one copy of each invoice to be produced and left with the Customs. Such copy was filed at the port of entry, and was not forwarded to the department at Ottawa unless when called for. The idea of the department in requiring invoices to be produced and delivered in duplicate is that one copy shall be filed as usual at the ports, and that the other shall be sent with a copy of the entry to a special checking branch at headquarters in Ottawa. This is a very important reform, and will undoubtedly be of much benefit, inasmuch as it will tend greatly to ensure uniform collection of the revenue in accordance with the law. It is the intention to have all invoices closely scrutinized and compared at the checking branch at headquarters by a competent staff. It may be noted here that the United States Customs authorities require two copies of each invoice to be presented and left with them.

The regulations further provide that each invoice shall show in one column the actual price at which the articles have been sold to the importer in Canada, and in a separate column the face market value of each article as sold for home consumption in the country of export. Under the old regulations the exporter was required to note the face market value in the margin of the invoices only where there was a difference of market value in selling price, and the practice was to make a very brief notation, which very often only referred to the total cost, and not to the cost of each article. The new requirement will, it is believed, impress more firmly upon the minds of exporters the importance of the information as to the home value, and will probably result in more accurate information in that respect being given.

The department has prepared and approved a form of invoice, and it is intended that such form shall be adopted by all exporters to Canada as soon as possible. Specimen copies of such forms for the information and convenience of importers and exporters will be furnished at the various Customs houses.

An important change has been made in the form of certification of invoices. The certificate known as form "J," which heretofore has been required on all invoices of goods except for entry under the British preferential tariff, has been abolished, and a new and more comprehensive one substituted. Form "J," which is abolished, reads as follows:

"This invoice is true and correct, and where there is a difference between any of the prices shown therein and the ordinary credit prices at which the same articles are now sold bona-fide by the exporter in like quantity and condition at this place for consumption in this country, the latter prices are shown on the margin or elsewhere on such invoice."

The new certificate reads as follows:

"That the said invoice contains a true and full statement showing the price actually paid or to be paid for the said goods, the actual quantity thereof and all charges thereof.

"That the said invoice also exhibits the fair market value of the said goods at the time and place of their direct exportation to Canada, and as when sold at the same time and place in like quantity and condition for home

consumption in the principal markets of the country whence exported directly to Canada without any discount or deduction for cash, or on account of any drawback or bounty or on account of any royalty actually payable thereon or payable thereon when sold for home consumption but not payable when exported, or on account of the exportation thereof or for any special consideration whatever.

"That no different invoice of the goods mentioned in said invoice has been or will be furnished to anyone, and that no arrangement or understanding affecting the purchase price of the said goods has been or will be made or entered into between the said exporter and purchaser or by anyone on behalf of either of them, either by way of discount, rebate, salary, compensation, or in any other manner whatsoever other than as shown in the said invoice."

A comparison of these two forms will show the improvement now effected. The new certificate gives a succinct statement of the law in regard to the value of duty, and the value of the certificate as therefor enhanced. The clause referring to secret arrangements or rebates affecting the price is worthy of careful attention. It was phrased with the object of providing as far as certificate can against evasion of the special duty.

This certificate is to be written, printed or stamped on all invoices of imported goods, including invoices of goods for entry under the British preferential tariff.

The special form of certificate under such preferential tariff which has heretofore been furnished is continued, and is to be furnished in future on invoices in addition to the above certificate.

The German surtax certificates are also to be provided hereafter as in the past.

Changes necessitated by the dumping clause have also been made in the form of oaths to be taken by importers when making entry of goods, and also in the form of declaration required to be made by foreign officers of goods shipped to Canada on consignment without sale by exporter prior to shipment.

With regard to the oaths, the principal and indeed only important change is the addition of a clause as to arrangements or understandings affecting the purchase price, but which are not disclosed on the invoice. This clause is practically the same as that in the certificate form "M" quoted above.

The regulations including the new forms of oaths and certificate are to take effect on October 1. Recognizing, however, that it takes time to disseminate information among exporters in foreign countries in such matters, and that it may, therefore, be some considerable time before the regulations can be complied with entirely, Collectors of Customs are being instructed that they may for a temporary period after October 1, but not later than December 31, accept entries on invoices bearing the old certificate "J," instead of the new form "M." Duplicate invoices, however, are required to be delivered with bills of entry after October 1, in all cases, but to enable importers to comply with the regulations in this respect collectors may permit them to make an additional copy of the original certified invoice, such copy to be compared and initialed as a true copy by the Customs Officer.

The department has also matured plans for assuring full information as to foreign market values. In this connection, officers have been and are being, assigned to make investigations in other countries.

CAPTAINS OF INDUSTRY.

The following items of information, which are classified under the title "Captains of Industry," relate to matters that are of special interest to every advertiser on these pages, and to every concern in Canada interested in any manufacturing industry whatever, this interest extending to supply houses also.

If a new manufacturing enterprise of any kind is being started, or an electric lighting plant instituted, or an electric railroad, or a telephone, or a telegraph line is being constructed; or a saw mill, a woolen, cotton, or knitting mill; or if any industrial establishment has been destroyed by fire with a probability of its being rebuilt, our friends should understand that possibly there may be something in the event for them. Do you catch on to the idea?

The starting of any such concern means a demand for some sort of machines, machinery, or supplies, such as steam engines and boilers, shafting, pulleys, bolting, lubricants, machinery supplies, wood or iron working machinery, ventilating and drying apparatus; pumps, valves, packing, dynamos, motors, wire, arc and incandescent lamps, and an infinite variety of electrical supplies, chemicals, acids, alkalis, etc. It is well worth the while of every reader of the Canadian Manufacturer to closely inspect all items under the head of Captains of Industry.

The United Cigar Stores, Limited, Toronto, have been incorporated with a capital of \$25,000, to manufacture cigars, tobaccos, etc. The provisional directors include R. Callum, A. Lang and F. Gerow, Toronto.

The Western Cordage Co., London, Ont., have been incorporated with a capital of \$300,000, to manufacture binder twine, yarn, cordage, etc. The provisional directors include D. J. Cowan, T. H. Purdom and Alex. Stuart, London.

The Canada Rolling Stock Co., Toronto, have been incorporated with a capital of \$250,000, to manufacture locomotives and cars. The provisional directors include N. Curry, N. A. Rhodes and Hon. Thos. R. Black, Amherst, N.S.

The Trussed Concrete Steel Co., Detroit, Mich., have been licensed to manufacture concrete steel in Ontario with a capital of \$40,000. A. R. Bartlet, Windsor, Ont., is their attorney.

The Godson Contracting Co., Toronto, have been incorporated with a capital of \$100,000, to carry on the business of constructors and contractors, etc. The provisional directors include M. Godson, F. W. Godson and A. F. Godson, Toronto.

The Robertson Mfg. Co., Buffalo, N.Y., manufacturers of rapid cut power saws, Hero emery grinders, gas and gasoline stationary and marine engines, hardware specialties, etc., are establishing a branch of their works at Bridgeburg, Ont., for the better accommodation of their fast growing Canadian trade.

What has heretofore been known as the Cramp Steel Co., with extensive works at Collingwood, Ont., have been reorganized under the name of the Northern Iron & Steel Co., of which Major J. A. Currie is president and Duncan Donald, secretary, with head office in Toronto. It is stated that the works will go into active operation at an early day.

The Campbell Milling Co., Toronto Junction, Ont., have acquired the Queen City Mills and will increase their capacity to 1,000 barrels per day; and will also commence the manufacture of cereals, etc.

Mr. E. Borland, Tillsonburg, Ont., manager of the Stratford Carriage Co., Stratford, Ont., has completed arrangements for the erection of the company's new carriage factory at that place. It will be of brick, three stories high. The main building will be 125x65 feet and the wing 62x52 feet. There will also be boiler room, blacksmith shop and drying kiln. The

factory will be fitted with the most modern equipment and will be ready to commence operations in December.

A by-law has been passed at Lanark, Ont., granting \$2,100 for the construction of a new bridge over the River Clyde.

The Windsor Boiler Works will erect a cement block building at Windsor, Ont.

The Hamilton Silicate Brick Co., Hamilton, Ont., have been incorporated with a capital of \$40,000, to manufacture brick, plaster, etc. The provisional directors include W. F. Robertson, F. L. Hooper and H. D. Petrie, Hamilton.

Messrs. Brown Bros.' stationery factory, Toronto, was destroyed by fire August 21. Loss about \$75,000.

Messrs. W. Moore & Sons, Meaford, Ont., are installing a water power plant near that town.

The ratepayers of Meaford, Ont., have voted favorably on a bylaw granting a loan of \$20,000 to the Meaford Wheelbarrow Co. for the purpose of enlarging their plant. The company will employ about 100 men.

Contracts have been awarded for the Byron Bridge as follows:—Concrete work, Patterson, Ellis & Whelan & Co., St. Mary's, Ont., \$8,140; steel superstructure, Hamilton, Ont., Bridge Co., \$7,880; cutting, grading and gravelling, Wm. Weir, Byron, Ont., \$1,800.

The Department of Public Works have let contracts for the enlargement of the Dairy School at Kingston, Ont., to McKelvey & Birch of that city for \$6,900, and to enlarge the Registry offices at North Bay, Ont., to W. A. Martyn for \$2,000.

The Department of Railways and Canals, Ottawa, have awarded the contract to J. C. Johnstone, Cornwall, Ont., for the machine shop, 92x47 feet, to be erected at the foot of the Cornwall canal, for the purpose of repairing and replacing any of the machinery of the locks, etc.

The Government diamond drill has been taken to Loon Lake, in the township of McTavish, near Port Arthur, Ont., where it will be used by Wiley & Co., to prospect an iron ore property. Discoveries of very large deposits of good hematite ore have been made in that neighborhood, and active exploration work is being carried on.

The Diamond Glass Co., with works at Montreal and Toronto, will establish a glass factory at Hamilton, Ont.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

Messrs. Fox Bros. Co.'s pork packing plant at Brantford, Ont., was destroyed by fire August 23. Loss about \$70,000.

The Stromberg-Carlson Co., of Rochester, N.Y. and Chicago, Ill., manufacturers of supplies for independent telephone companies will probably erect a factory at Brantford, Ont., to supply the Canadian trade.

The Andrews & Johnson Co., Limited, a United States incorporation, have been licensed to operate a machine shop and to manufacture iron, etc., in Ontario with a capital of \$60,000. F. Armstrong, Toronto, is their attorney.

The Breckon Fire Escape Co., Toronto, have been incorporated with a capital of \$40,000, to manufacture fire escapes, elevators, wire fencing, etc. The provisional directors include J. A. Breckon, Geo. Crompton and J. F. Hayes, Toronto.

The Anglo-Canadian Cold Storage Exchange, Limited, Toronto, have been incorporated with a capital of \$1,500,000, to carry on a cold storage and warehousing business. The provisional directors include Wm. Griffith, L. Sterne and Jas. McGregor, London, England.

The Whaley Automatic Smoke Preventer & Fuel Saver, Limited, Toronto, have been incorporated with a capital of \$125,000, to manufacture smoke consumers, castings, etc. The provisional directors include J. T. Eastwood, N. W. Tovell and F. Hodgson, Toronto.

The Peterborough Cement Roofing Co., Peterborough, Ont., have been incorporated with a capital of \$40,000, to manufacture fire-proof cement roofing, roofing materials, etc. The provisional directors include Jas. Thompson, Havelock, Ont., A. Cunningham, Norwood, Ont., and Wm. Shea, Peterborough.

The Ontario Pipe Line Co., St. Catharines, Ont., have made application to the city of Hamilton, Ont., for a franchise to supply that city with natural gas. They propose to charge at the rate of 55 cents per 1,000 feet for heat and light, and a lower rate for power purposes.

Wm. Mustard's saw and planing mill at Bayfield, Ont., was destroyed by fire August 26.

Official announcement is made that the Canadian Pacific Railway Co. have purchased 60,000 tons of steel rails at \$20 to \$21 a ton. The rails have been sold by the United States Steel Corporation, and the Pennsylvania Steel Co.

The Department of Railways and Canals, Ottawa, are inviting tenders for a wall adjoining No. 1 and No. 2 locks and No. 1 basin of the Lachine canal. The work will cost about \$49,000.

Messrs. Cockburn & Rea, Toronto, have been incorporated with a capital of \$150,000, to manufacture dry goods, millinery, etc. The provisional directors include W. A. Cockburn, T. W. Rea and C. A. Cockburn, Toronto.

The Imperial Paper Mills at Sturgeon Falls, Ont., were partially destroyed by fire August 24.

A bylaw will be submitted to the people of Kingston, Ont., for the expenditure of \$100,000 for the improvements to the lighting plant.

The Union Stock Yards Co., Toronto Junction, Ont., will erect a large hotel at a cost of \$60,000.

A House of Refuge will be erected at Lindsay, Ont., at a cost of about \$40,000.

The J. C. Scott Co., Toronto, will increase their capital from \$60,000, to \$150,000.

The Grand Union Hotel at Alexandria, Ont., was destroyed by fire August 25. Loss about \$6,000.

The Donnelly Wrecking & Salvage Co., Kingston, Ont., have been awarded the contract for supplying and laying the pipe for the waterworks at Whitby, Ont.

Messrs. Shafer, Killer & Co.'s factory belonging to the Canada Furniture Co., Waterloo, Ont., was destroyed by fire August 26. Loss about \$100,000.

The Canada Preserving Co.'s brewery at Hamilton, Ont., was damaged by fire August 25. Loss about \$2,400.

Building permits have been issued in Toronto to the Firstbrook Box Co. for a three-story addition to their factory to cost \$13,000; to George Goulding & Sons for a four-story brick and concrete warehouse to cost \$35,000, to Alex. B. Elder for a three-story frame and roughcast factory to cost \$1,200.

The Government cruiser Vigilant, which is being constructed at the Polson Iron Works yards at Toronto, will be launched in a few days and machinery installed. She will be put into commission in the fisheries protection service on Lakes Erie and Huron.

The Lake Superior Corporation, Sault Ste. Marie, Ont., have commenced the manufacture of steel rails and the Dominion Government have made a contract with them for the supply of 10,000 tons of 80-pound rails for the Intercolonial Railway, to be delivered as soon as manufactured. The contract of 1900 (never implemented) called for 25,000 tons per year for five years. The present contract is described by the Department as a partial renewal of the old one.

Another large oil well has been bored at Petrolia, Ont., which has a capacity of 125 barrels per day. Wm. Bradley, Petrolia, is interested.

The Department of Marine and Fisheries, have ordered two rendering plants for the purpose of converting dogfish into oil. They will be erected in Nova Scotia. One location will probably be on the Strait of Canso. It is not intended to offer a bounty for the taking of dogfish, but the Government will purchase them from the fisherman at a certain rate per ton.

The report has been received at the Ontario Bureau of Mines regarding the reported discovery of tin on the Manitoba side of the inter-provincial boundary west of Rat Portage, Ont. Prof. Miller is now in Rat Portage, however, and may look over the district on the Ontario side of the boundary to see if there are any indications of tin.

A bylaw was carried at New Hamburg, Ont., granting \$7,000 for building an addition to the public school and other improvements.

Messrs. Barnett & Record, contractors, Minneapolis, Minn., have commenced work on the construction of the Empire Elevator Co.'s new elevator at Fort William, Ont.

The Ford Motor Co. have been organized with a capital of \$125,000, to manufacture automobiles. They have acquired the old plant of the Walker-Milner Wagon Co., at Walkerville, Ont., and will employ about 60 men.

The Board of Education, Toronto, are preparing plans for the erection of a fifteen room schoolhouse to cost \$50,000, an enlargement of five rooms to Huron Street School, costing \$22,000, and an addition of three rooms to Cottingham Street school, costing \$9,000.

The Sturgeon Falls Pulp & Paper Co., Sturgeon Falls, Ont., will increase their capacity and enlarge their works at a cost of about \$1,500,000.

The secretary-treasurer of Rat Portage, Ont., will receive tenders for materials for laying 40,000 feet of water mains and 36,000 feet of tile sewers.

The Rat Portage Lumber Co.'s dry kiln at Norman, Ont., was destroyed by fire August 22. Loss about \$30,000.

The electors of Preston, Ont., have voted in favor of municipal ownership of electric lighting plants. A new power station will be erected and a first-class plant installed.

The Fort William Imperial Oil Co., Fort William, Ont., will build two more large tanks and erect a cooperage at a cost of \$20,000.

The Craig Shipbuilding Co., Toledo, Ohio, have received a contract from the Grand Trunk Railway for a car ferry to operate from the port of Milwaukee, Wis. The ferry will be 360 feet long and of 56 feet beam, and will cost about \$400,000.

The Simplex Railway Appliance Co. will erect a large plant in Montreal, for the manufacture of steel springs and for the construction of railway cars. They will employ about 1,000 men.

The Pressed Steel Car Co., Pittsburg, Pa., will erect a plant in Montreal for the construction of railway cars, etc. They now have a large contract with the Grand Trunk Railway Co.

The St. Raymond Pulp Co., Montreal, will erect pulp and paper mills at St. Raymond, Que., at a cost of \$150,000.

Tenders have been called by the Quebec & Lake St. John Railway Co., Quebec City, for the construction of the proposed branch line, running to La Tuque, in the St. Maurice River district, Que., a distance of 38 miles.

A new cathedral will be erected at Sherbrooke, Que., at a cost of \$150,000.

A dam will be constructed at the outlet of one of the lakes on the Upper Lievre River near Buckingham, Que.

The Singer Sewing Machine Co., have completed plans for the erection of their plant at St. Johns, Que. There will be two buildings, six stories high and similar in construction, one the machinery building, 600x60 feet, and the other the cabinet building, 750x60 feet. The other buildings include a storage, grinding and rumbering building, 200x60 feet; foundry, 400x100 feet, with two wings, one 70x40 feet and one 60x34 feet, used as cupola and core room respectively; foundry shed, 200x60 feet; japanning building 150x75 feet; forge shop, same dimensions; forge shed, 150x40 feet; veneer, cutting and trimming building, 75x40 feet; veneer storage building, 100x75 feet; power house, 150x150

feet; dry lumber shed, 100x80 feet; shipping building, 300x80 feet; pattern storage house, 60x60 feet; log house, 75x75 feet; oil house, 60x60 feet; dry kiln, 52x45 feet, and office building, 60x50 feet. The construction and equipment of the plant is in the hands of E. H. Bennett, vice-president of the Singer Machine Co.

The James A. Brook Co., Montreal, have changed their name to the Dominion Cordage & Oakum Co., Limited.

The Dominion Government have entered into a contract with the Submarine Signal Co., Boston, to install 30 bells along the St. Lawrence river and off the coast of the Maritime Provinces. Of these, some will be operated from lightships, but the larger number from the shore. It is to be expected that all ships plying to Canadian ports will be equipped with the telephonic apparatus necessary for picking up the sounds of these bells. Some have already made the requisite arrangements.

The Tiger Metal Co., Montreal, have been incorporated with a capital of \$20,000, to manufacture chemicals, metals, paints, etc. The provisional directors include Watson Jack, W. F. B. Henry and W. R. Allen, Montreal.

The Canada Car Co., Montreal, have been incorporated with a capital of \$3,000,000, to manufacture railway cars, pressed steel trucks, bolsters, truck frames, etc. The provisional directors include P. Davidson, P. M. Robertson, and A. Wainwright, Montreal.

The new ice-breaking steamer for use in the St. Lawrence River, which the Canadian Government have ordered of Fleming & Ferguson, of Paisley, will be ready for service November 15, 1904.

Cie d'Aqueduc et d'Eclairage de Belœil, Belœil, Que., have been incorporated with a capital of \$20,000, to construct water works, and to produce electricity, etc. The provisional directors include I. Prefontaine, Montreal, C. Guertin and J. Malo, Belœil.

The Drummond Cotton & Bleaching Co., Montreal, have been incorporated with a capital of \$150,000, to manufacture and bleach cotton, cotton goods, etc. The provisional directors include Hon. Wm. Mitchell, Drummondville, Que., J. W. Woods, Ottawa, and G. Bothamley, Montreal.

The Montreal Small Wares Co., Montreal, have been incorporated with a capital of \$100,000, to manufacture pins, needles, buttons, etc. The provisional directors include H. Beaudry, Montreal, G. A. Driggs and W. R. Willetts, Waterbury, Conn.

Messrs. H. L. Maddock & Co.'s lumber mill at St. Jacques, N.B., was destroyed by fire a few days ago.

The Elgin Milling Co., Elgin, N.B., have been incorporated with a capital of \$10,000, to manufacture flour, feed, etc. The provisional directors include H. C. Read, Sackville, N.B., F. W. Emmerson, Moncton, N.B., and J. Friel, Dorchester, N.B.

The Anderson Furniture Co., Newcastle, N.B., have been incorporated with a capital of \$150,000, to manufacture furniture, etc. The provisional directors include O. G. Anderson, M. St. G. Anderson and F. W. G. Anderson, Newcastle.

A new Anglican church building will be erected at Sydney Mines, N.S., at a cost of \$10,000.

A new hospital will be erected at Windsor, N.S., at a cost of \$12,000.

R. Gillis' wood-working factory at Sydney, N.S., was partially destroyed by fire August 16. Loss about \$5,000.

The properties and plant of the Cape Breton Coal & Iron Co., at Cacherones Lake, N.S., have been disposed of to an English corporation which will operate them actively. The new directors are Horace Mayhew, president; Thomas Laucaster, vice-president, and general manager; Wm. Hanson (Hanson Bros., Montreal), treasurer; E. W. Moseley, secretary, and Messrs. Gladstone, Thompson, C. H. Hanson, of London, N. Ferguson and Crowe, of Sydney. The company are preparing plans for a new plant and they will install new air compressors, screens, boilers, etc. Shipping will be done from Louisburg, N.S.

The Davison Lumber Co., Bridgewater, N.S., will erect a large steam plant with a capacity of 250,000 feet a day of two shifts, and new machinery for trimming and handling the lumber will be installed.

The Hillecoat Bearing Co., Amherst, N.S., have been incorporated with a capital of \$20,000, to manufacture ball and roller bearings, etc. The provisional directors include J. W. Taylor, H. V. Hillecoat and H. A. Hillecoat, Amherst.

The Nova Scotia Steel & Coal Co., New Glasgow, N.S., have blown in their first blast furnace at Sydney Mines, N.S. It is of 250 tons capacity.

Messrs Rhodes, Curry & Co., Amherst, N.S., have been awarded the contract for the construction of a number of cars for the Montreal Street Railway Co.

The Burrige-Cooper Co., Limited, Winnipeg, Man., have been incorporated with a capital of \$50,000, to manufacture machinery, engines, boilers, etc., and to acquire the business of Burrige & Cooper. The provisional directors include Jas. Burrige, E. S. Cooper and F. A. Fry, Winnipeg.

The Young Grain Co., Winnipeg, Man., have been incorporated with a capital of \$300,000, to carry on a grain milling and manufacturing business. The provisional directors include Hon. F. McN. Young, Killarney, Man., C. A. Young, Winnipeg, and D. D. Young, Dunrea, Man.

Messrs. D. H. Urquhart and A. McCaul, Rat Portage, Ont., report the discovery of a deposit of tin bearing ore in eastern Manitoba near the Ontario boundary line. The discovery of tin in Canada will mark an epoch in Canadian mining. There is no known body of tin ore in Canada, and practically none in the United States. The discoverer, Neil Martin, was prospecting south of Cross Lake and came upon a body of ore, which he tested in search of gold. The result was several buttons which he did not recognize. He had these buttons analyzed and they were found to consist of 98½ per cent. tin.

Building permits have been issued in Winnipeg, Man., this year for construction of buildings to cost over \$7,000,000. Last year the building in Winnipeg was phenomenal, but the total at the end of the year was only

\$5,800,000, and this is already exceeded by over \$1,000,000.

The Stickle Block, Carberry, Man., was destroyed by fire August 14. Loss about \$40,000.

The ratepayers of Calgary, N.W.T., have passed a by-law for \$30,100 to provide for an extension of the water mains, renewing the old mains and purchasing a new pumping engine for the waterworks, which have just been installed.

The Bank of Montreal have acquired the Queen's Hotel property at Winnipeg, Man., and will erect a large office and banking building.

The Dominion Government have awarded the contract to the Manitoba Construction Co., Winnipeg, Man., for the erection of the new immigration sheds at a cost of \$200,000.

T. S. J. Kimer, Winnipeg, Man., will erect a large hotel building and business block to be six stories high in that city.

The contract for the erection of a new city hall and power house at Moose Jaw, N.W.T., has been awarded to Dennis & Co., Minot, N.D., at a cost of \$41,200.

J. H. G. Russell, architect, Winnipeg, Man., has prepared plans for the erection of Wilson Block, 105x45 feet, five stories high, to cost \$60,000.

Tenders are being invited at Moose Jaw, N.W.T., for the erection of a City Hall, electric light power house and a morgue and for the construction of granolithic sidewalks.

The Canadian Northern Railway Co., are erecting a new station at Portage la Prairie, Man.

A new Collegiate building will be erected at Portage la Prairie, Man., at a cost of \$20,000.

Mr. Laird, Regina, N.W.T., is erecting a transfer warehouse 200x48 feet.

The Windsor Hotel at Winnipeg, Man., will be enlarged at a cost of \$35,000.

The Commercial Club building at Winnipeg, Man., will be enlarged at a cost of \$40,000.

The Cumberland Street Baptist Church, Winnipeg, Man., will be enlarged at a cost of \$28,000.

Messrs. Miller, Morse & Co., Winnipeg, Man., will erect a new warehouse 201x84 feet, five stories high.

The construction of the mammoth stores and factory which the T. Eaton Co., of Toronto, will erect in Winnipeg, Man., will be commenced at once.

It is reported that natural gas has been found in the vicinity of Sheep Creek, near Calgary, N.W.T. Excavations were being made for coal.

G. M. Annable, Moose Jaw, N.W.T., has organized a company to carry on lumbering operations at Violin Lake, south of Rossland, B.C., where 5,000 acres of lumber limits have been secured. The capital of the company is \$50,000.

The new armouries to be erected at Calgary and Regina, N.W.T., will cost about \$80,000. The buildings will each be 60x32 feet, two stories high, with armoury room 30 feet square.

The harbor at Delta Beach, near Portage La Prairie, Man., will be dredged at a cost of about \$30,000.

The Gladstone Gas Co., Gladstone, Man., are inviting tenders for the construction of a new building.

A large hotel building will be erected in Hamiota, Man., at a cost of \$50,000. For further information apply to the Mayor.

The Union Bank will erect a new banking building in Hamiota, Man., at a cost of \$15,000.

The congregation of St. Mary's church at Regina, N.W.T., will erect a new church and convent building.

Messrs. Westwood & Clemons, are erecting a large hotel at Prince Albert, N.W.T.

Tenders are being invited for the erection of a school building at Drinkwater, N.W.T.

A new school building will be erected at Belmont, Man., at a cost of \$11,000.

Messrs. Turner, McMichael & Co., Melford, N.W.T., will erect a 100 barrel flour mill and a 40,000 bushel elevator.

A syndicate of American capitalists have submitted to the Canadian Pacific Railway a proposition to build a beet sugar factory at Calgary, N.W.T., to cost about \$800,000.

The Sutcliffe-Muir Milling Co., Moosomin, N.W.T., are excavating at the rear of their mill for a reservoir with a capacity of 30,000 gallons. A softening plant will be put in, and by scientific treatment the water will be rendered less injurious to the boilers.

Messrs. McEchren & Cumming's planing mill at Brandon, Man., was destroyed by fire a few days ago.

The Dominion Piano & Organ Co., Bowmanville, Ont., will establish a branch factory in Winnipeg, Man.

Messrs. D. Ackland & Son, Winnipeg, Man., will erect a new bent wood factory and will install new machinery.

Messrs. W. H. Clark & Co., Edmonton, N.W.T., will erect a new sash and door factory.

The Snowlake Steam Laundry Co., Edmonton, N.W.T., have about completed their new factory building in which they will install new machinery.

The Anglo-Canadian Elevator Co., have commenced the erection of standard elevators at Drinkwater, Milestone and Boharm, N.W.T. Each elevator will have a capacity of 70,000 bushels and equipped with the latest improvements for the handling of grain.

Work on the Canadian Pacific Railway tank at Shoal Lake, Man., has commenced. The water will be piped from the lake, and 2,000 feet of pipe will be laid. An engine house is being built to pump the water up and force it into the tank.

The Western Engineering & Construction Co., will build a \$200,000 continuous bucket dredge at Vancouver, B.C., for use on their concessions in the Altn country.

The Lawrence Hardware Co., Revelstoke, B.C., have been incorporated with a capital of \$50,000, to acquire the business of W. M. Lawrence, and to manufacture hardware, etc.

The Elk River Coal & Oil Co., have been incorporated at Victoria, B.C., with a capital of \$25,000, to refine petroleum, and to manufacture mining machinery, etc.

The Dominion Government have awarded the contract to Wm. Turpel & Sons, Victoria, B.C., for the construction of a snag boat 115 feet long, by 30 feet beam and seven feet depth of hold to be used on the Fraser River, B.C.

The British Columbia Foundry & Engine Works Co., have been incorporated at Victoria, B.C., with a capital of \$100,000, to manufacture agricultural implements, boilers, machinery, etc.

The Flathead Valley Oil Lands Development Co., have been incorporated at Victoria, B.C., with a capital of \$250,000, to carry on a mining, quarrying and smelting business, etc.

The Wood-Vallance Hardware Co., Nelson, B.C., have been incorporated with a capital of \$50,000, to acquire the business of H. Byers & Co., and to manufacture hardware, paints, oils, etc.

The Dundee Gold Mine, Limited, have been incorporated at Victoria, B.C., with a capital of \$225,000, to carry on a mining and refining business.

The Challenger Mining & Developing Co., Appleton, Wis., have been licensed to carry on a mining, milling and smelting business in British Columbia with a capital of \$24,000. O. D. Hoar, Golden, B.C., is their attorney.

The Truro Condensed Milk Co., Truro, N.S., have been licensed to manufacture condensed milk, coffee, fruits, etc., in British Columbia, with a capital of \$600,000. R. Martin, Vancouver, B.C., is their attorney.

The Royal Lumber Co., have been incorporated at Victoria, B.C., with a capital of \$500,000, to manufacture timber and to operate lumber mills, saw mills, etc.

The Denver Waterworks Co., New Denver, B.C., have been incorporated with a capital of \$25,000, to construct a waterworks system.

The Northern Gold Mines Co., have been incorporated at Victoria, B.C., with a capital of \$1,500,000, to carry on a mining, milling and refining business.

The Nanaimo Fisheries, Limited, Nanaimo, B.C., have been incorporated with a capital of \$10,000, to acquire the business of Jervis & Co., to manufacture fish oils, and carry on a fish canning business.

The British Columbia Fruit Canning & Coffee Co., have been reincorporated at Victoria, B.C., as the Empress Mfg. Co., with a capital of \$50,000, to carry on a general fruit canning business, etc.

The Eva Gold Mines, Limited, have been incorporated at Victoria, B.C., with a capital of \$500,000, to carry on a mining, milling and reduction business.

The Standard Oil Co., of British Columbia, have been incorporated at Victoria, B.C., with a capital of \$1,000,000, to develop petroleum and oil lands, etc.

The Reese-Hammond Fire Brick Co., Bolivar, Pa., have recently secured a number of important firebrick contracts in Canada. The product of this company is well and favorably known throughout the Dominion. The Reese-Hammond Fire Brick Co., are one of the oldest concerns in Western Pennsylvania, having been engaged in the manufacture of high grade fire brick, front brick, paving brick etc., for nearly half a century.

In the manufacture of paper a large amount of steam is used for power as well as for other

purposes. Moreover, the demands for steam are not at all constant. The advantages of mechanical draft as an economical factor in the production of steam in paper mills has recently been illustrated in the installation of an induced draft fan driven by a direct-connected vertical engine in the plant of the Chapin & Gould Paper Co., Huntington, Mass. Previous to the installation of this apparatus they were using three boilers and all the steam they could generate with a high grade of coal. Since the Sturtevant mechanical draft apparatus was installed, they have been using a much cheaper grade of fuel (which could not be used with chimney draft alone) and now instead of using three boilers they are only using two and have all the steam they need, and the sudden demands for steam are easily met. They state that they saved the cost of the apparatus in fuel in six or seven months and regret that it was not installed before.

A water power has been installed in Newfoundland to supply electric light to the towns of Harbor Grace, Hearts Content and Carbonear.

Work has been begun on the installation of a power plant at Silver Falls, on the Winnipeg River. The company are known as the Manitoba Water Power Electric Co., and have a capital of \$5,000,000.

AT THE TORONTO FAIR.

The following well-known Canadian manufacturers are exhibiting at the Canadian National Exhibition:

In Machinery Hall—

Chapman Double Ball Bearing Co., Toronto.
Consolidated Electric Co., Toronto.
T. & H. Electric Co., Hamilton, Ont.
Philip Carey Mfg. Co., Toronto.
Mica Boiler Covering Co., Montreal.
Jones & Moore Electric Co., Toronto.
A. R. Williams Machinery Co., Toronto.
United Electric Co., Toronto.
The Canada Metal Co., Toronto.
Dominion Belting Co., Hamilton, Ont.
Good, Stapley & Muir, Brantford, Ont.
The Fairbanks Co., Toronto.
S. Vessot & Co., Toronto.
Baldock & Wilcox, Toronto.
The Goldie & McCulloch Co., Galt, Ont.
C. Wilson & Son, Toronto.
James Morrison Brass Mfg. Co., Toronto.
Canadian General Electric Co., Toronto.
Canadian Bearings, Limited, Hamilton, Ont.
The Henderson Roller Bearing Mfg. Co., Toronto.
Eureka Mineral Wool & Asbestos Co., Toronto.
Wayland Williams, Montreal.
The McLachlan Gasoline Engine Co., Toronto.
McLachlan, Joy Electric Co., Toronto.
Ker & Goodwin, Brantford, Ont.
Grumm Mfg. Co., Ottawa.
Queen City Cycle & Motor Works, Toronto.
Syracuse Smelting Works, Montreal.
G. W. Thexton, Midland, Ont.

In the Manufacturers Building—

Metallic Roofing Co., Toronto.
Standard Silver Co., Toronto.

Canadian Aluminum Works, Montreal.
Alonza W. Spooner, Port Hope, Ont.
Imperial Varnish & Color Co., Toronto
Canadian Oil Co., Toronto.
Gutta Percha & Rubber Mfg. Co., Toronto.
Dunlop Tire Co., Toronto.
C. W. Mack, Toronto.
B. Cairns, Toronto.
Globe-Wernicke Co., Stratford, Ont.

Manufacturers Building Annex—

Reeves Pulley Co., Toronto.
William Bentley, Toronto.
Canadian Revolving Door Co., Toronto.
Siche Gas Co., Toronto.

Stone Building—

The Walker Steel Range Co., Windsor, Ont.
Wrought Iron Range Co., Toronto.
The Western Foundry Co., Wingham, Ont.
The Gurney Foundry Co., Toronto.
Telephone City Stoves, Brantford, Ont.
R. Fletcher & Son, Toronto.
Charles F. Rees & Co., Toronto.
Pease Foundry Co., Toronto.
The Doherty Mfg. Co., Sarnia, Ont.
Perfection Heating Co., Toronto.
The Canada Radiator Co., Port Hope, Ont.
The Moffatt Stove Co., Weston, Ont.
D. Moore & Co., Hamilton, Ont.
George Sparrow & Co., Toronto.
The International Gas Appliance Co., Toronto.
Burrow, Stewart & Milne, Hamilton, Ont.

Implement Building—

Roman Stone Co., Toronto.
Ontario Wind Engine & Pump Co., Toronto.
Gasoline Engine Co., Toronto Junction, Ont.
Page Wire Fence Co., Walkerville, Ont.
St. Thomas Acetylene Mfg. Co., St. Thomas, Ont.
Eric Iron Works, St. Thomas, Ont.
Sylvester Mfg. Co., Lindsay, Ont.
Chatham Mfg. Co., Chatham, Ont.
Kurtz Acetylene Co., St. Williams, Ont.
Dominion Wrought Iron Wheel Co., Orillia, Ont.

FUEL.

For names of fuel dealers see "Coal and Coke" in Classified Index.

The fuel supply question is a most important one to Canadian manufacturers. The information published in this department will keep the readers posted on sources of production.

The Dominion Coal Co., Glace Bay, N.S., expect to bring to Montreal from one and one-half to two million tons of coal each season, and they contemplate building a number of large carriers to augment their present fleet.

The output for the month of July from the different collieries of the Dominion Coal Co. aggregated the total of 250,355 tons. The shipments for the month amounted to 204,872 tons.

One section of the new coal washing plant of the Dominion Iron & Steel Co., Sydney, N.S., is ready for operation and will be started as soon as the coke ovens are ready, which will be shortly. A test has been made of the machinery of the wash plant, and it was found to work with great ease and satisfaction. The section has a capacity of 1,500 tons a day. One of the blast furnaces will be started as soon as coal washing begins. The washing plant is being constructed by Heyl & Patterson, Pittsburg, Pa. It will cost upwards of a quarter of a million dollars. Five or six of

the open hearth furnaces will be started shortly, three being in operation at present.

The Standard Fuel Co., Toronto, have removed from the Toronto Railway Chambers to 58 King Street East.

Mr. C. E. B. Adams, Toronto, Canadian representative of the Coaldale Mining Co., and the International Coal & Coke Co., has been in Winnipeg the past two or three weeks.

Coal shipments from the Nova Scotia fields for the seven months of 1904 show an increase over the same period of 1903 of 22,665 tons for the Nova Scotia Steel & Coal Co., an increase of 12,624 tons for the Inverness Railway & Coal Co., an increase of 10,058 tons for the Intercolonial Coal Co., a decrease of 138,938 tons for the Dominion Coal Co., a decrease of 20,511 tons for the Cumberland Railway & Coal Co., and a decrease of 5,891 tons for the Acadia Coal Co. Several of the smaller mines are not very busy, and nearly all the Dominion Co.'s collieries are on single shift.

Large shipments of coal and coke from Uniontown, Pa., to far distant points of Manitoba and Quebec have been made within a few days by W. R. Harris & Co., Cleveland, Ohio.

Owing to the anticipated demand for cars to handle the prospective crops in the fall, the Canadian Pacific Railway have issued a circular announcing that during the months of October and November they will not supply any cars for the shipment of coal. It has heretofore been the custom of many of the Canadian dealers to defer the purchase of their season's stock until the fall, when the railroad was making every effort to supply cars to the grain shippers, and this action of the company is expected to result in an earlier buying movement.

PERSONALS.

A delegation from the British Institute of Civil Engineers will be in Ottawa on September 27, when they will be received and right royally entertained by the local members of the Canadian Institute of Civil Engineers. The visiting engineers will number amongst them many distinguished men, including Sir W. H. White, K.C.B., the president, Lt.-Col. C. A. Brereton, who has had experiences in many British colonies; Prof. W. C. Onion, F.R.S., who has been an instructor at the Royal School of Naval Architecture; Mr. Alex. Ross, one of Britain's best known railroad engineers, and many others.

The following are the officers of the Montreal section of the Canadian Manufacturers' Association, elected at a meeting last week: Chairman, Mr. J. J. McGill; vice-chairman, Lieut.-Col. J. H. Burland; executive committee, Messrs. C. C. Ballantyne, J. H. Birks, J. S. N. Dougall, T. J. Drummond, Geo. Esplin, S. W. Ewing, Col. R. Gardner, Chas. B. Gordon, E. McDougall, D. L. McGibbon, W. McMaster, R. Munro, Hon. J. D. Rolland, G. W. Sadler, C. F. Smith, R. R. Stevenson, W. T. Whitehead and D. Williamson.

Mr. J. Craven, manager of the Dominion Tar & Chemical Co., Sydney, C.B., has returned from a trip to England.

The annual meeting of the American Society of Mechanical Engineers will be held in New York commencing December 6. The recent convention in Chicago was a meeting of the American Society and the British Institution of Mechanical Engineers. The

joint participation in the discussions by United Statesers and Britons has made it necessary that the text of these discourses should be sent to England and revised there, before the papers of the Chicago meeting can be made ready for distribution.

Mr. J. A. Taggart, president of the Advance Machinery Co., Toledo, Ohio, was in this office a few days ago. This company are the manufacturers of the Wetmore Glue Heater, in great favor with Canadian furniture makers. Mr. Taggart informs us that his company are about introducing new and unique lines of wood-working machinery.

Mr. E. J. Walsh, with the two surveying parties, which have been organized for the survey of the Trent Canal, are now in the field of their labors. One of these parties is under Mr. G. L. Law, C.E., of Ottawa, who has recently been engaged on Canadian Pacific Railway western construction work. Assisting him will be Mr. A. T. Key, who has done surveying on the Trent route before. This party will work between Port Hope and Rice Lake. The other party is in charge of Mr. Hetherington, lately engaged upon the Quebec bridge, and he will be assisted by Mr. Murphy of Halifax, who has been recently doing surveying work upon eastern railways. This party will make the survey between Lake Simcoe and the Georgian Bay. Both of the parties will be under the supervision of Mr. Walsh, who will make Ottawa his headquarters.

The Packard Electric Co., Limited, St. Catharines, Ont., have recently re-organized and considerably enlarged their sales department, which has become necessary in order to successfully handle their rapidly increasing business. Mr. George C. Rough, who has been manager of the eastern office in Montreal, has been appointed manager of the sales department at the head office in St. Catharines, and is succeeded by Mr. Cecil Doure, who is well and favorably known to the electric trade, and who will hereafter look after the interests of the company in the East. The services of Mr. J. M. Leamy, late with the Westinghouse Co., have been secured and he will cover the Ontario district, while Mr. George A. Powell will continue to look after the important Western territory, as manager of the Western office in Winnipeg. Mr. L. R. Grimshaw will be connected with the office end of the sales department at St. Catharines.

Mr. Eugene Coste, M.E., of Toronto, president of the Canadian Institute of Mining Engineers, was in Toronto for a couple of days last week, having just returned from a two months trip to the Pacific coast on consulting work.

F. E. Myers & Bro., Ashland, Ohio, have lately added to their office force Mr. J. C. Frenz, formerly of the American Seeding Machine Co., Springfield, Ohio. Mr. Frenz has had many years experience in office work, and was lately employed in the collection department of the American Seeding Machine Co. He will no doubt prove a valuable man to his new employers.

The Cleveland Iron Trade Review announces that Mr. G. H. Gardner has resigned as president of the Iron & Steel Press Co., the publishers of that most excellent trade journal, to be succeeded by Mr. John A. Penton in that capacity. Mr. Gardner has been connected with the Iron Trade Review for the past 13 years, and his untiring efforts have had much to do with its success.

WANTED.

Manufacturers and others in need of machines, supplies, etc. of any kind are requested to consult our advertising columns, and if they cannot find just what they want, if they will send us particulars we will make their wants known free of cost, and in this way secure the attention of those who may be able to supply them. No charge for publishing what is wanted nor for giving information. When writing to enquire kindly mention *The Canadian Manufacturer*.

The Syracuse Smelting Works, Montreal, inform us that they are always open to purchase lead and copper concentrates.

Saw mill machinery. Messrs. Dyer & Son, Sutton, Que., desire to purchase a large portable saw mill.

The Minister for the Colonies at The Hague, Holland, will receive tenders for furnishing 1,371 tons of cast-iron water pipes which are to be used for the water mains of Djewana and Ambarawa, Dutch East Indies.

The Bureau of the State Railroads of Belgium, at Brussels, will contract for 1,000 signal lamps in which petroleum is to be used.

The hospitals of Cairo, Egypt, are to receive new supplies of household linen, laundry goods, cooking and sanitary utensils, etc. For particulars apply to Directeur de Magasins Centraux de l'Administration des Services Sanitaires, Cairo, Egypt.

Owing to the extension of the tramway lines of the city of Buenos Aires, Argentina, many new cars will be required.

The following new railroad lines are to be constructed in Mexico: (1) a line from Puerto Marquez to La Dicha, in the Pravos district of the State of Guerrero; (2) a narrow-gauge road in the State of Oaxaca for the Ferrocarril Urbano y Agrícola; (3) a narrow gauge road (8½ miles) in the State of Chihuahua for Alfredo Gonzalez, director of the Mariposa Mining Co. All materials for these roads will, for the term of five years, be allowed to enter free of duty.

A bridge is to be constructed across the Rio Diamante, Province de Mendoza, Argentina, at an estimated cost of \$459,828. For particulars apply to the Direccion General de Vias de Comunicacion, Buenos Aires, Argentina.

The Belgian consul at Calcutta reports that a bridge over the river Ganges is to be built by the East Indian government. In conjunction therewith the river bed is to be regulated. The estimated cost of both projects is about \$4,000,000.

The Governments of Bulgaria and Roumania are consulting as to the construction of a new railroad bridge over the Danube, to connect the towns of Giurgevo and Rustchuk.

Waterproof covers are much in demand at the wharves of Konstanza, Roumania, to protect the grain stored there for shipment.

The German consul at Pernambuco, Brazil, reports that the harbor works of that city are to be extended.

The harbor of Spezia, Italy, is to be improved by dredging and the construction of addi-

tional wharves, involving an expenditure of over \$200,000.

The ministry of Bulgaria have granted \$15,440 for the purchase of 20 street rollers for the use of the capital, Sofia.

The Bulgarian Government are about to increase the rolling stock of their railroads. Among other things they will add 150 new freight cars.

In order to encourage the domestic manufacture of briquettes (pressed coal) the Russian Government now allows pitch and coal tar to come in free of duty. This will also lead to the introduction of briquette-making machines.

The city council of Johannesburg, Transvaal Colony, invites tenders for the construction of steel sheds for their electric tramway cars, and for the building of a steel bridge.

The Ministère des Travaux Publics in Constantinople will receive offers for the construction of five large steel bridges on the Kaiffa division of the Hedjaz Railroad.

The Belgian Government will take tenders for railroad cars and for 40 linemen's huts to be built of oak wood. Apply to M. De Rudder, Administrateur de Voies et Travaux, Rue de Louvain 11, Brussels.

The town of Belmez, in the province of Cordoba, Spain, will soon contract for the erection of electric plants.

The Spanish Government are about to establish telephone plants in the following towns in Spain: Berga, Gironella, Puigreig, Balsareny, Sallent, Castelladrae, Cardona.

Of late a machine for splitting coconuts, to gain the oil contained therein, has been invented, the importance of which is evident, when it is remembered that thus far the natives have cracked the nuts by hand, and that the export of these from the German colonies amounts to \$1,000,000 annually.

The Compania de Sutphen de Lavaderos de Oro, of Buenos Aires, are contemplating buying additional dredging machines, to be used upon work for which they have recently received orders. E. W. Sutphen, Buenos Aires, Argentina, is the head engineer of the company.

The Ferriere Italiana Cie., Rome, Italy, will erect a large iron and steel works at Torre Annunziata, near Naples. A large quantity of the materials necessary for the proper equipment of this plant will be purchased in foreign markets.

The Electric Street Railway Co., Genoa, Italy, have decided to extend their present system of lines and to purchase a considerable quantity of rolling stock—electric motor cars, for the most part. It is proposed to build an electric railroad between Aquila and Teramo, cities which are located in the Abruzzie Molise Compartimento, Italy, about 55 miles apart. Detailed information about this road may be obtained from Cav. Camerini, sindaco (mayor) of Aquila.

The municipal authorities of Barcellos, a place on the Cavado River, about 25 miles north of Oporto, Portugal, are willing to grant a 30 year concession to a company for the erection of an electric light and power plant. One of the stipulations which will be exacted of such a company will be that they furnish the

municipality with 160 16-candle power incandescent lights and six 50-candle power arc lights for the sum of \$1,620 per annum.

A movement is now on foot to build an iron bridge over the Uruera River at San Sabastian, Spain. Particulars may be obtained from José Eugenio Ribera, San Sabastian, the engineer who is in charge of preparing the plans and specifications.

A franchise has been granted to the Great Indian Peninsula Railway Co., who have an office at 48 Cophall avenue, London, E.C., England, to build a standard gauge railroad from Warora to Belapur, in the central provinces of British India.

The municipal council of Rochdale, in Lancashire County, England, are planning to spend the sum of \$200,000 in enlarging and improving their electric plant.

The city council of Meran, Austria, have accepted the plans and specifications of municipal waterworks which have been prepared by engineer Maurer. The cost is estimated at \$142,100.

The city authorities of Fuentes de Andalucía and Iznajar, Spain, respectively, will award contracts for the construction and 20 year management of electric light and power plants.

Although the Italian import duty upon most canned goods is so high as to be almost prohibitive, canned vegetables are an exception. The indications are that quantities of canned vegetables, especially peas and beans, could be imported into Italy in competition with those which are being received from Austria-Hungary.

The city council of East Retford, in Nottingham County, England, are contemplating the building of a municipal electric light and power plant.

The harbor authorities of Motril, a place on the southern coast of Spain, in the Province of Granada, are contemplating making extensive improvements in their harbor.

Word has been received that on the island of Ceylon there is a good market for improved oil presses and other machinery used in connection with the manufacture of coconut oil.

The city authorities of La Plata, Ensenada, and Tolosa, Argentina, will equip their respective municipalities with waterworks. The work has been entrusted to Miguel A. Ponce, a civil engineer of Buenos Aires, Argentina (Oficina de Obras de Salubridad), with whom it might be well for those to correspond who have water pipes, pumps, and other waterworks machinery to sell.

The management of the electric light and power plant of Christiania, Norway, will purchase electric machinery and cables for transmitting electric currents.

Names of concerns who can manufacture bobbins or spools of about ten pounds capacity for holding wire, to be made of No. 14 gauge sheet steel. Address CANADIAN MANUFACTURER.

The town of Thamesville, Ont., will install a waterworks system for fire protection, and will purchase an electric light plant and run it as a municipal concern, and will spend \$6,500 for granolithic walks.

INDUSTRIAL PUBLICATIONS.

The publishers of The Canadian Manufacturer solicit in advance, if possible, catalogues, circulars, and other industrial publications issued by manufacturers. We wish to review such literature, and bring the principal points to the attention of our readers.

Among the copiously illustrated articles in the Methodist Magazine and Review, for September, are, one by the Editor describing Naples and its beautiful environments, including the ascent of Vesuvius; one on the Cossacks of Russia, so much in evidence in war telegrams, and one on Booker T. Washington and his gospel of labor; and the usual notes on matters of general interest, make up a very attractive number. Toronto: William Briggs. \$2.00 a year.

Westinghouse alternating current fan motors are described in a booklet just issued by the Canadian Westinghouse Co., Hamilton, Ont. Another catalogue by the same company refers to the O.D. type of transformers.

The B & T. Roller Bearing Window is described in a folder just issued. The new device is handled by Wm. Bentley, Toronto Arcade, Toronto, who is the patentee.

Fibre and Fabric, the well-known Boston textile weekly, has just removed to more spacious quarters at 146 Franklin Street, Boston, Mass. This change also includes Wade's Overseers' Bureau. The paper has been for twenty years an authority in its line, and its overseers' bureau has proved of the highest value to both mill owners and skilled operatives.

The Canadian Rand Drill Co., Sherbrooke, Que. have just issued an attractive illustrated catalogue on Harrison coal cutters and Rand air compressors. The economy resulting from the use of coal cutting machines is now well recognized and the Harrison cutter is one of the oldest on the market and is extensively used in the Canadian coal fields. The advantages of the compressed air coal cutter as represented by the Harrison "G 3" type are fully set forth in this catalogue, which will be mailed to parties interested. Address Advertising Dept., Canadian Rand Drill Co., Montreal.

The A. R. Williams Machinery Co., Toronto have issued an attractive catalogue and price list in which are described and illustrated the Harrington double chain screw hoist for which the company are exclusive Canadian agents.

E. F. Dartnell, manufacturers agent, Montreal, is sending out literature describing the products of the Cary Mfg. Co., F. B. Gilbreth, The R. I. W. Damp Resisting Paint Co., and other concerns whom he represents.

Messrs. Marion & Marion, patent solicitors, Montreal, have just published "The Investor's Adviser and Manufacturers' Hand Book to Patents, Trade Marks and Designs," which is intended to supply information, to answer questions which are of everyday occurrence upon matters relating to patents, and covers a wide range of subjects which are of more than general interest. In addition to giving a summary of the law and practice relating to patent matters, the book contains a large number of court decisions relating to patent

law both in Canada, the United States and other countries, and much interesting matter not to be found elsewhere. The book will be of great service to manufacturers and inventors. Price, \$1.00.

The Chapman Double Ball-Bearing Co., Toronto, have issued an attractive catalogue which contains many approving letters from Canadian manufacturers now using these bearings.

The September issue of "Graphite," pub-

THE BELL TELEPHONE CO.

OF CANADA, LIMITED

Has extended its

Long Distance Service

From

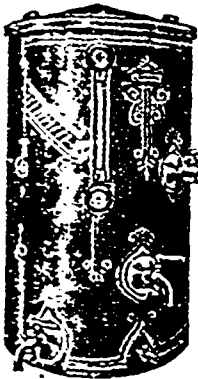
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Rates may be obtained from any of the the Long Distance Toll Stations of the Company.

To the Economical Plant Operator the



CROSS OIL FILTER

is a most important accessory. It reduces a necessary expense—oil—one-half.

"The Cross Oil Filter gives good satisfaction in every case."

Providence (R.I.) Engineering Works.

The Cross Oil Filter is sent anywhere on thirty days' trial.

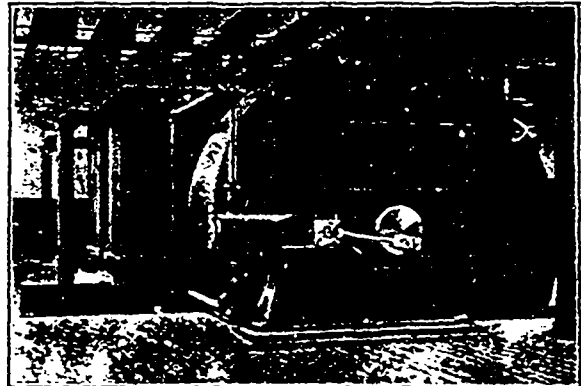
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LARGEST MFRS. OF OIL FILTERS IN THE WORLD.

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A complete stock carried by the **FAIRBANKS CO., Montreal.**

Supplied also by Oil Companies, Engine Builders and Power Contractors.

STURTEVANT



Fans, Blowers, Engines, Motors, Generating Sets, Economizers, Exhaust Heads, Mechanical Draft Apparatus, Forges, Heating, Ventilating and Drying Apparatus, Industrial Equipments.

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BOSTON, MASSACHUSETTS
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NEW YORK PHILADELPHIA CHICAGO LONDON 351

lished by the Joseph Dixon Crucible Co., Jersey City, N.J., contains instructive and seasonable talks on the preservation of metal surfaces with Dixon's Silica-Graphite Paint. Paint specifiers and users in every country of the world, will be interested in the excellent illustrations in half-tone of notable steel structures, and the information on good paint and good painting. This publication will be sent free of charge upon request.

ONTARIO NICKEL

Mr. Thomas W. Gibson, Director of the Ontario Bureau of Mines, returned a few days ago from a tour through the mining districts of New Ontario.

"The nickel mining industry is flourishing," said Mr. Gibson. "The Canadian Copper Co. have just about completed their new and very extensive plant at Copper Cliff. The company draw most of their ore from the Creighton mine, some five or six miles away, without doubt the greatest nickel mine in the world. This mine contains an immense body of rich ore, which so far is being worked as an open cut. The opening is about 250 by 300 feet in area and 60 feet deep, practically all in ore. Below this at a depth of 80 feet further down, a second level has been opened which has been broken through to the floor of the first level, the intention being to slope out all of the area between the two levels. It is also proposed to open another smaller pit about 500 feet distant on the ore body. There are between 250 and 300 roast heaps of ore burning in the Copper Cliff roast yards.

"The Mond Nickel Co. are operating the North Star mine and conveying the ore to

Victoria mine. The Bessemerizing part of the Mond Co.'s plant is being used to treat the Canadian Copper Co.'s mass pending the installation of converters in the latter company's works."

Mr. Gibson also visited the Massey Station copper mine, where some five levels have been run, a large quantity of moderate grade ore being found, and the Hermina copper mine, where the shaft is down 140 feet and is being sunk on a rich but somewhat narrow vein of copper ore. At the Shakespeare gold mine, near Webbwood, work is being vigorously pushed. The ore pans gold readily, even where there is no visible gold.

The development of water power is making considerable advance in new Ontario. At Webbwood, on the Spanish River, the pulp company are arranging to utilize several thousand horsepower. At the High Falls on the Spanish River also the development of power is rapidly progressing. At Wahnapiatae the Canadian Copper Co. have almost completed a very extensive power plant and at Vermillion considerable power is to be utilized for lighting Sudbury and for the supply of power to that town.

SETTLERS LOW RATES WEST.

Via the Chicago & North Western Railway, every day from September 15 to October 15, settlers one way second class tickets at very low rates from Chicago to points in Utah, Montana, Nevada, Idaho, Oregon, Washington, California, also to Victoria, Vancouver, New Westminster, Rossland and other points in the Kootenay District. Correspondingly low rates from all points in Canada. Full particulars from nearest ticket agent or B. H.

Bennett, General Agent, 2 East King Street, Toronto, Ont.

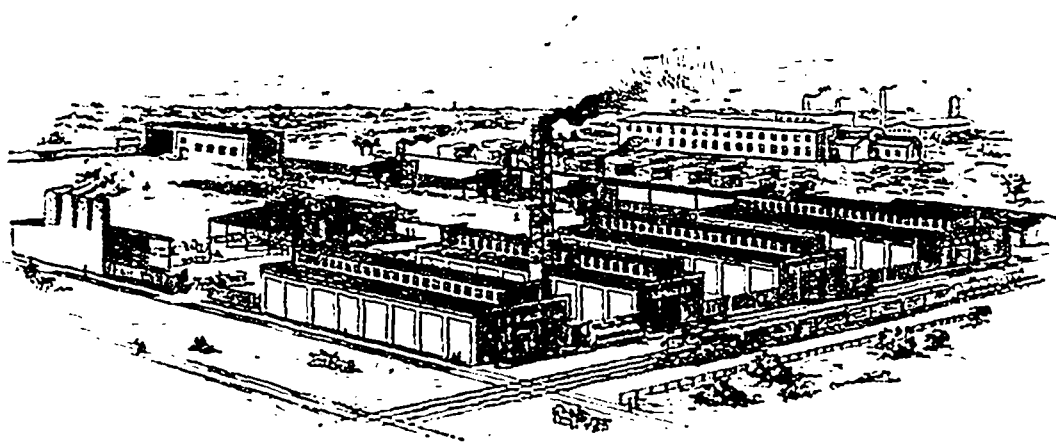
Messrs. Gordon, Ironsides & Fares are building an abattoir at Port Arthur, Ont.

The Ontario Wind Engine & Pump Co., Toronto, inform us that they are now preparing for shipment to the Levant, an order including ten complete Canadian airmotors, fitted with special drainage pumps, etc. They are also preparing for shipment to Madras, India, an airmotor for supplying two Louses with water similar to such apparatus as this concern make for use in Canada. The concern are constantly making shipments of their airmotors to Great Britain and other countries, where they are building up a gratifying trade.

FACTORY LOCATIONS.

The following Canadian municipalities are offering inducements to secure manufacturing establishments. Inquiries should be addressed to the Mayor, Town Clerk or Board of Trade of the respective cities:

Brantford, Ont.
Hamilton, Ont.
Lindsay, Ont.
Orillia, Ont.
Peterboro, Ont.
Sherbrooke, Que.
Stayner, Ont.
Toronto, Ont.



It is nearly Half a Century

since we commenced to make Varnish. During this period we have acquired a knowledge not only of Varnish, but of the varied needs of varnish consumers that nothing but time can impart, and have also learned how to cater successfully to every varnish want.

Our experience belongs to those who use and sell Berry Brothers' Varnishes. Safest goods to handle, surest and most reliable goods to use.

WRITE FOR CATALOGUE.

BERRY BROTHERS, Limited, - Walkerville, Ont.



LINDSAY

"THE
CANAL CITY"

WANTS MANUFACTURERS.

THIS COMPANY OFFERS

Cheap Electric Power

Other inducements offered by Municipal Corporation.

Canadian Pacific Railway now taps Lindsay, a growing manufacturing centre, which is also tapped by several branches of the Grand Trunk Railway.

Lindsay's population is about 8,000; is located East-North-East 70 miles from Toronto; is in the centre of a large farming district, and was the **first town** to benefit from the construction of the **Trent Valley Canal**, which, when fully completed, will place Lindsay on the world's greatest grain and ore highway.

WE ALSO OFFER POWER AT PETERBORO'

THE **CENTRAL ONTARIO POWER CO., LIMITED**

J. A. CULVERWELL, Managing Director.

Branch Office—9 Toronto St., **TORONTO.**

Head Office—Cor. George & Hunter Sts., **PETERBORO'.**

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...WANTED...

The Municipal Corporation of the **TOWN OF STAYNER, ONT.**, offers to Manufacturers locating in Stayner,

Free Site, Free Water,

Tax Exemptions, . . .

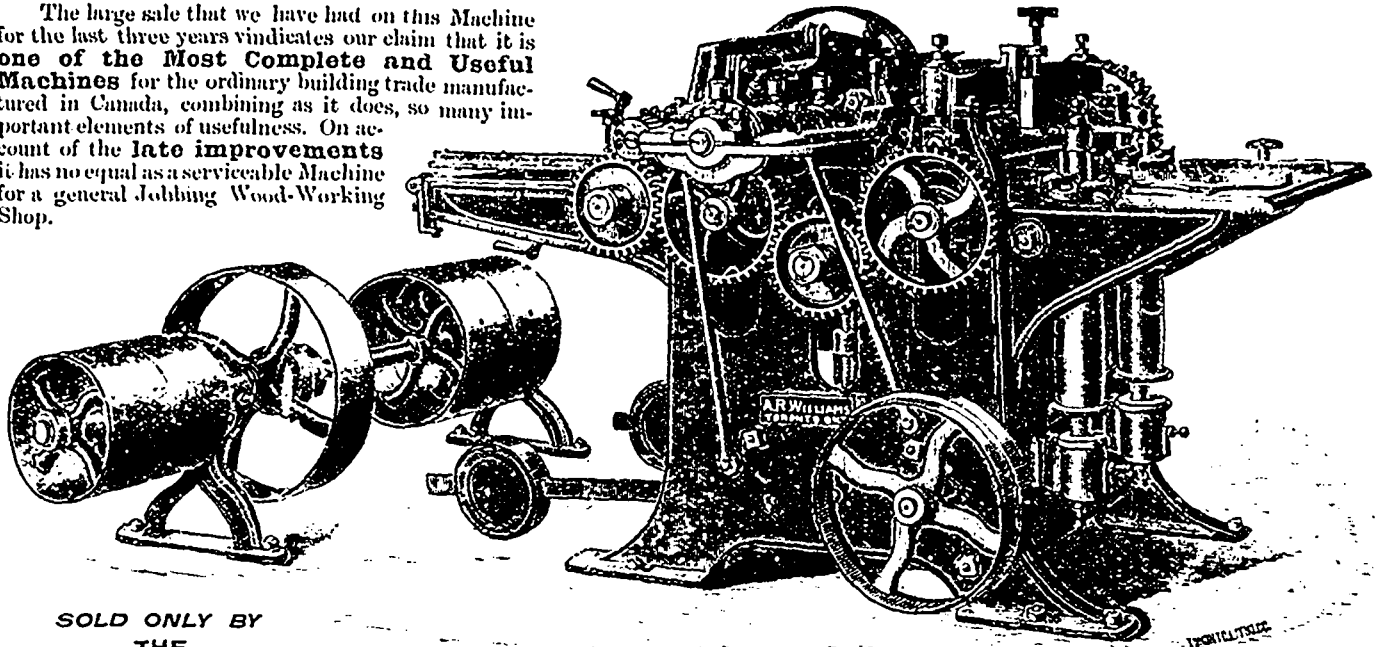
Cheap Power (Electric)

STAYNER Is located on the Grand Trunk Ry., 84 miles from Toronto, 9 miles from Collingwood. Is convenient to shipping on the Great Lakes to Canada's Great West.

J. W. BETHUNE, Mayor.

IMPROVED "ECLIPSE" PLANER, MATCHER and MOULDER

The large sale that we have had on this Machine for the last three years vindicates our claim that it is one of the **Most Complete and Useful Machines** for the ordinary building trade manufactured in Canada, combining as it does, so many important elements of usefulness. On account of the **late improvements** it has no equal as a serviceable Machine for a general Jobbing Wood-Working Shop.



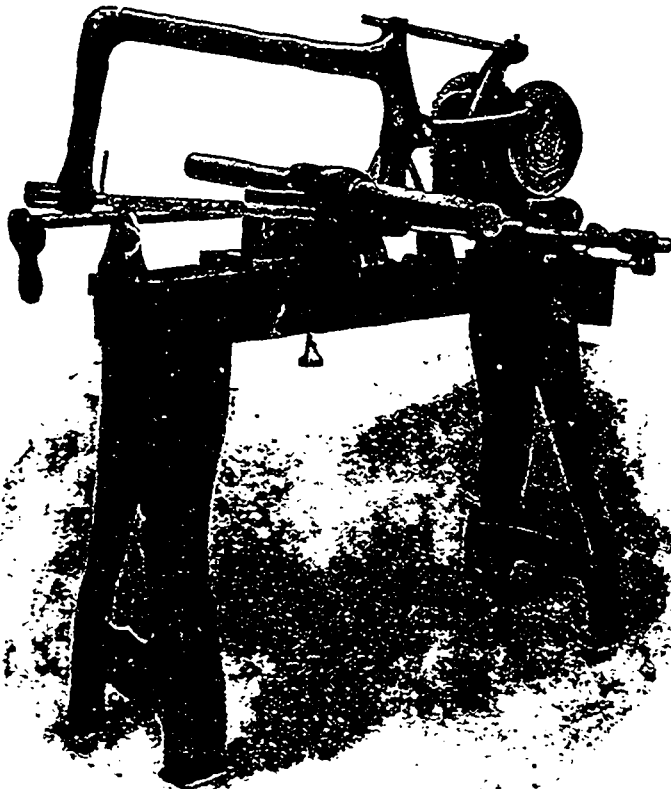
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A. R. WILLIAMS MACHINERY CO., Limited, Toronto

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ENGINES, BOILERS AND MILL MACHINERY SUPPLIES

Robertson's Rapid Cut Power Saw No. 3



One of the four sizes we build.

Capacity 8x8 inches.

Round or square; hard or soft metals.

Angles. T. Rails. I. Beams.

Tubes, etc.

There is no tool or method to compete as cost knockers. They do 40% more work than any other with the same blade. They are automatic, start them going, they do the rest, stop when complete.

No. 3 and 4 cut gear driven. Used in the largest shops all over the world.

Sold by hardware and machinery dealers.

—MADE BY—

THE ROBERTSON MFG. CO.,

BUFFALO, N.Y.

AND BRIDGEBURG, CANADA

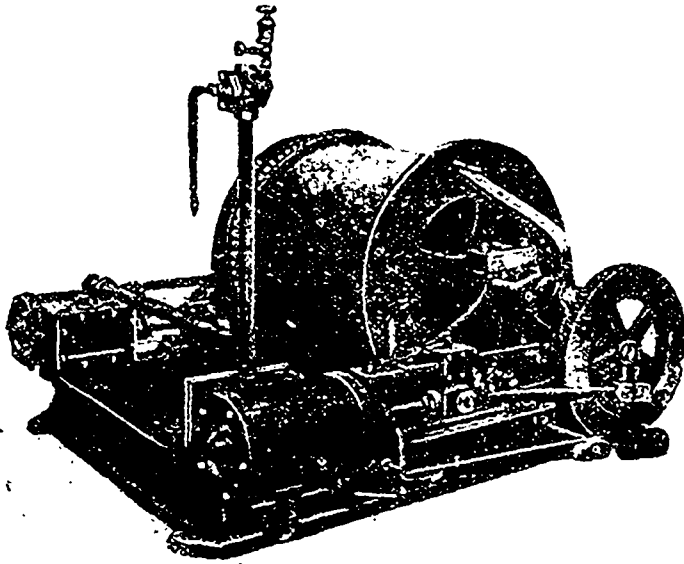
Main Office—BUFFALO.

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DOUBLE CYLINDER. PATENT FRICTION DRUM, HIGH SPEED HOISTING ENGINE

HOISTING ENGINES

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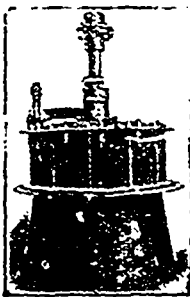
Single or Double
Drums.

—Any Size.—

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The Samson Turbine

FOR ALL HEADS



The results that have been obtained from the use of this wheel—results showing an efficiency of over 80%—confirm our belief, and will prove to you, that this is the foremost water wheel on the market to-day.

Let us send you a catalogue.

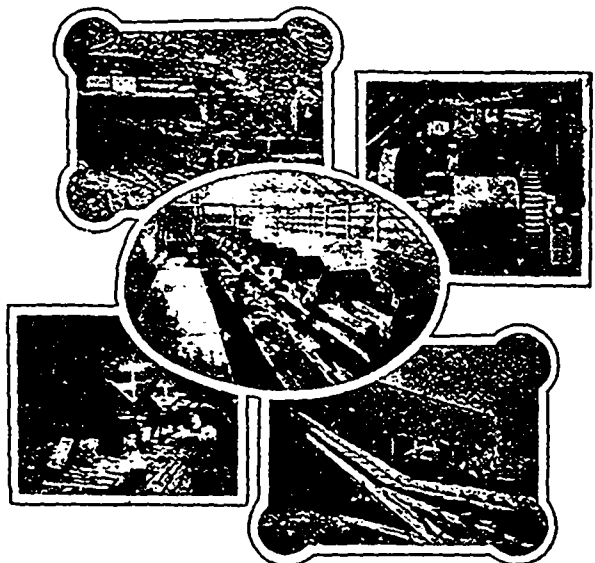
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Limited

PETERBOROUGH, ONT.

Jeffrey Machinery

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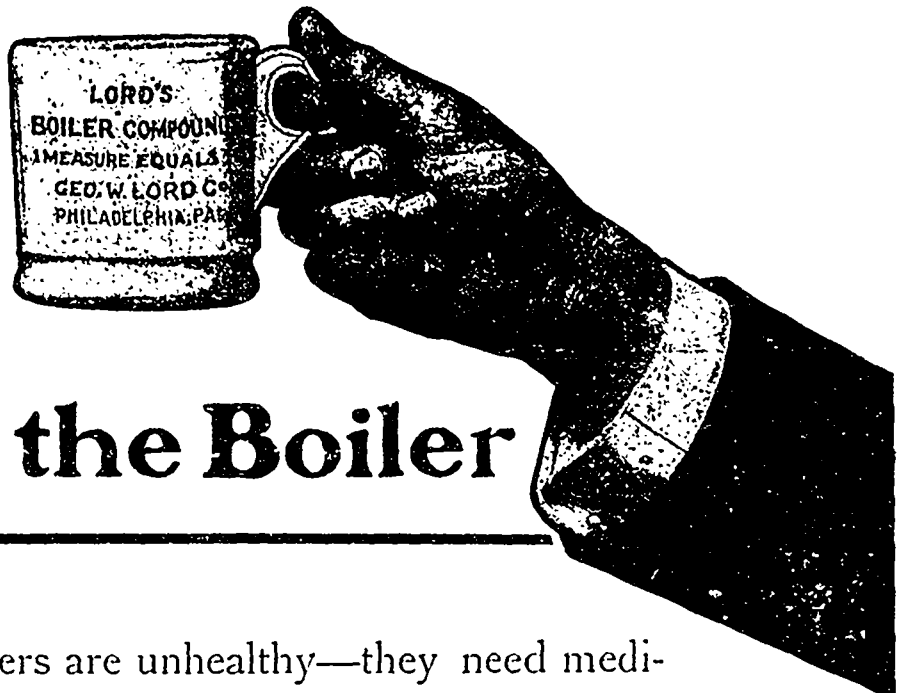
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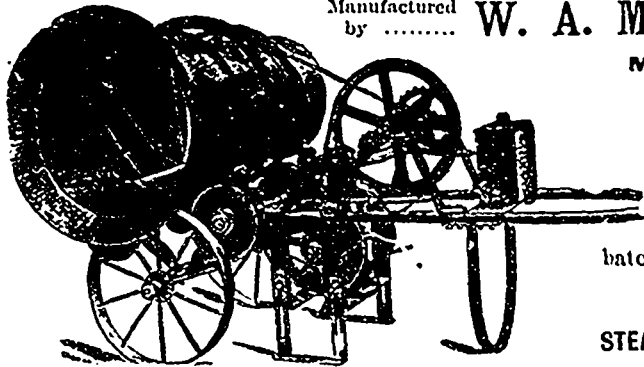
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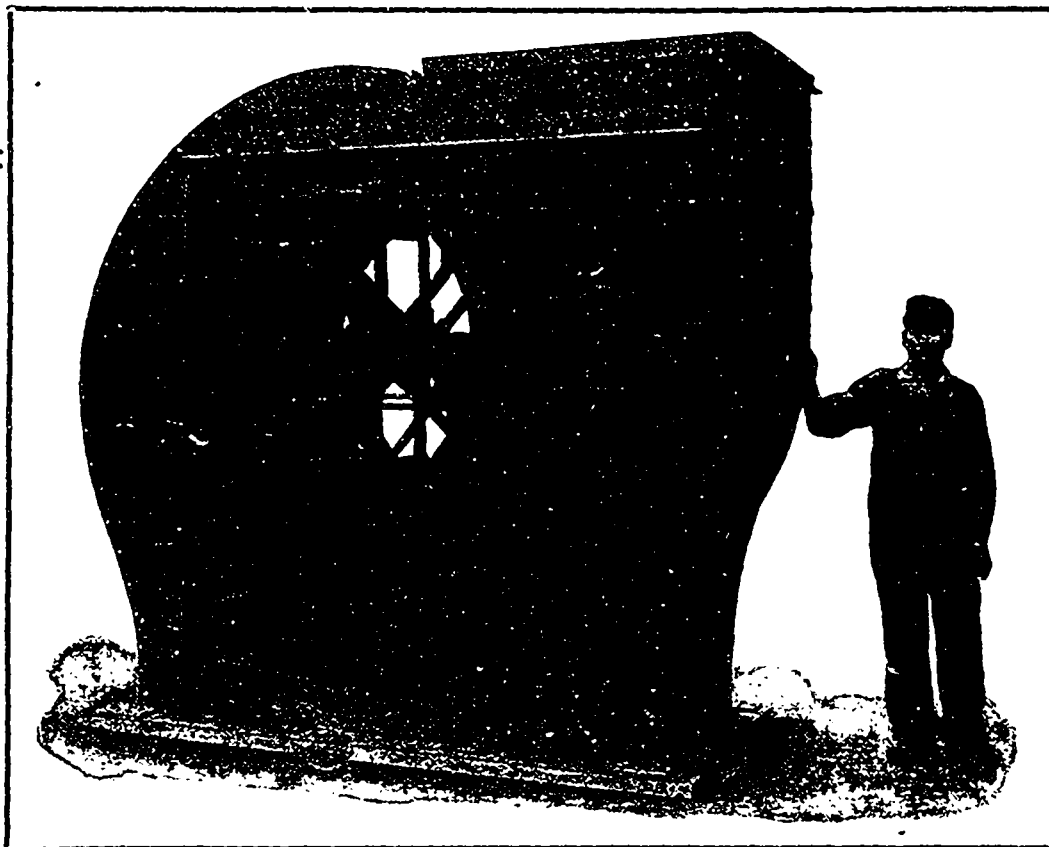
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MONTREAL, QUE. CHATHAM, ONT. PETERBORO, ONT. VANCOUVER, B.C. MONCTON, N.B. STRATFORD, ONT. KINGSTON, ONT. WINDSOR, ONT.

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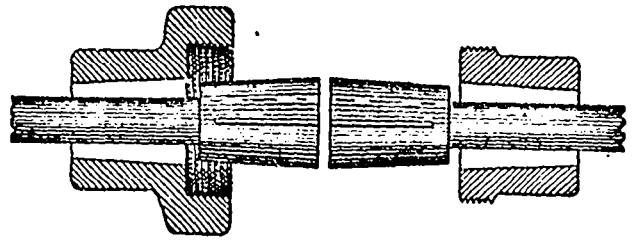
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GEO. B. MEADOWS

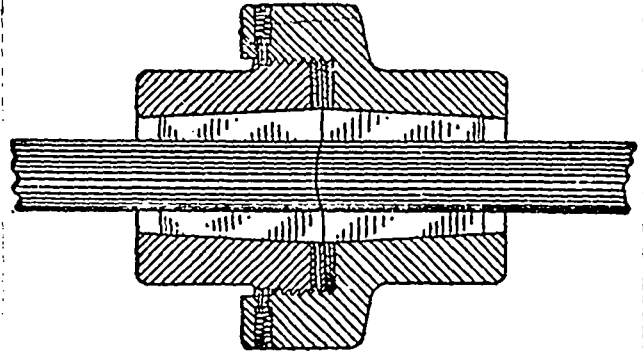
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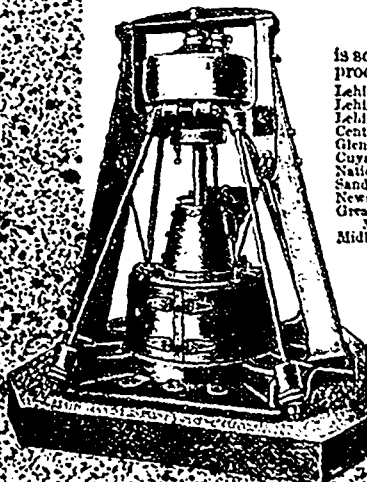
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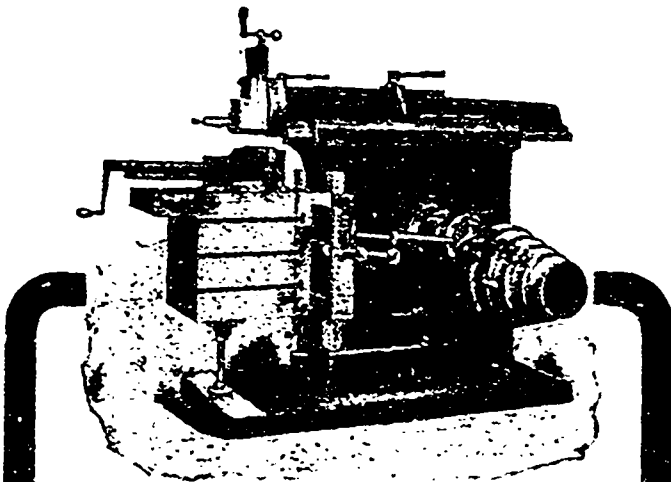
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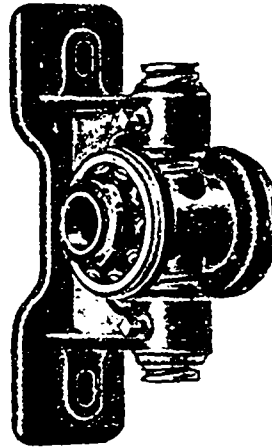
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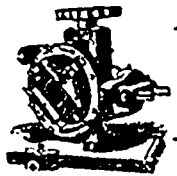


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Persons having business with any of the Inspectors will find them at the above address.

JOHN DRYDEN, Minister of Agriculture.




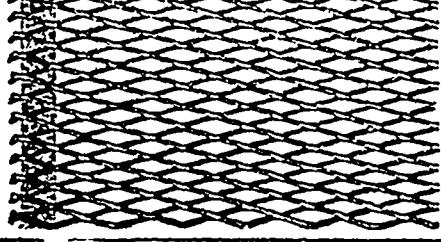
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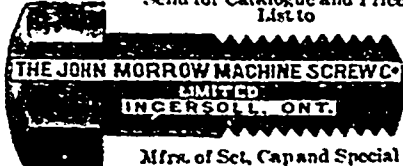


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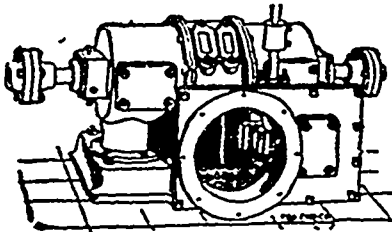
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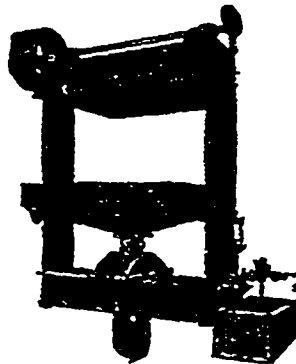
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BUILT IN 44 SIZES.

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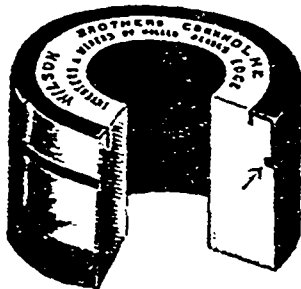


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SEVENTY YEARS' REPUTATION.

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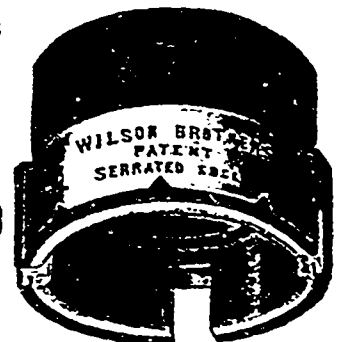
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GARSTON, - LIVERPOOL, ENGLAND

BRANCH WORKS—ST. HELENS

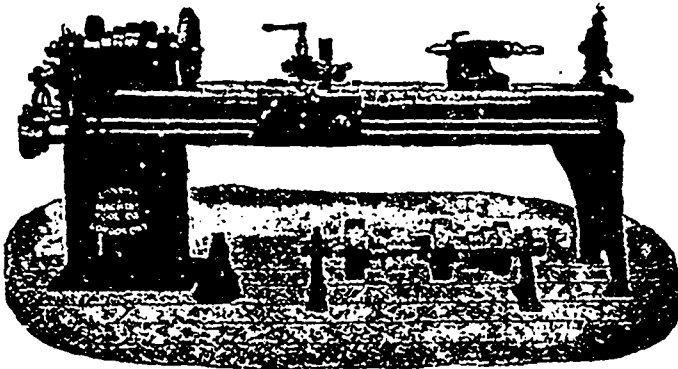
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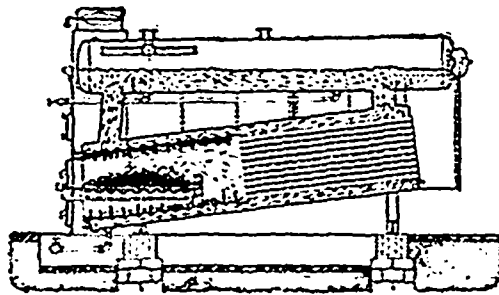
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**SAVES 10
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Syracuse Smelting Works, Montreal.

Banks

Bank of Hamilton, Hamilton, Ont.

Bar Iron and Steel

Bourne-Fuller Co., Cleveland, Ohio.
Hopkins, F. H. & Co., Montreal.
Leslie, A. C. & Co., Montreal.
Rice Lewis & Son, Toronto.

Belt Dressing

McLaren, J. C. Belting Co., Montreal and Toronto.
Petrie, H. W., Toronto.
Rossendale Belting Co., Toronto.
Williams, A. R. Machinery Co., Toronto.

Belt Fasteners

Bristol Co., Waterbury, Conn.
McLaren, D. K., Montreal and Toronto.
McLaren, J. C. Belting Co., Montreal and Toronto.
Petrie, H. W., Toronto.
Pittsburgh Shafting Co., Detroit, Mich.
Rossendale Belting Co., Toronto.
Williams, A. R. Machinery Co., Toronto.

Belting (Cotton)

Dominion Belting Co., Hamilton, Ont.
Fleming, W. A. & Co., Montreal.
McLaren, D. K., Montreal and Toronto.
McLaren, J. C. Belting Co., Montreal and Toronto.
Petrie, H. W., Toronto.
Pittsburgh Shafting Co., Detroit, Mich.
Rossendale Belting Co., Toronto.
Wilby, P. H., Toronto, Ont.

Belting (Leather)

Canadian Oak Belting Co., Brockville, Ont.
Fleming, W. A. & Co., Montreal.
McLaren, D. K., Montreal and Toronto.
McLaren, J. C. Belting Co., Montreal and Toronto.
Petrie, H. W., Toronto.
Pittsburgh Shafting Co., Detroit, Mich.
Rice Lewis & Son, Toronto.
Wilby, P. H., Toronto, Ont.
Williams, A. R. Machinery Co., Toronto.

Belting (Rubber)

Gutta Percha & Rubber Mfg. Co., Toronto.
McLaren, D. K., Montreal and Toronto.
Petrie, H. W., Toronto.
Pittsburgh Shafting Co., Detroit, Mich.

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Boiling and Supplies

Bristol Co., Waterbury, Conn.
 Canadian Oak Belting Co., Brockville, Ont.
 Dominion Belting Co., Hamilton, Ont.
 Fleming, W. A. & Co., Montreal. [1]
 Gutta Percha & Rubber Mfg. Co., Toronto. [2]
 Jeffrey Mfg. Co., Columbus, Ohio.
 McLaren, D. K., Montreal and Toronto.
 McLaren, J. C. Belting Co., Montreal and Toronto.
 Petrie, H. W., Toronto.
 Pittsburgh Shafting Co., Detroit, Mich.
 Rice Lewis & Son, Toronto.
 Rosendale Belting Co., Toronto.
 Wilby, P. H., Toronto.
 Williams, A. R. Machinery Co., Toronto.

Blilot Heating Furnaces

Morgan Construction Co., Worcester, Mass.

Blowers

Sheldon & Sheldon, Galt, Ont.
 Sturtevant, B. F. Co., Boston, Mass.

Bobbins

Wilson Bros. Bobbin Co., Liverpool, England.

Boiler Compounds

Lord, Geo. W. Co., Philadelphia, Pa.
 Sleeth, D., Montreal.

Boiler Inspection

Canadian Casualty & Boiler Insurance Co., Toronto.

BOILERS (See Engines and Boilers)

Brass Founders

Hamilton Brass Mfg. Co., Hamilton, Ont.
 Meadows, Geo. B. Wire, Iron & Brass Works Co., Toronto.
 McKinnon Dash & Metal Works Co., St. Catharines Ont.
 Pemberthy Injector Co., Windsor, Ont.

Building Iron and Steel

Bourne-Fuller Co., Cleveland, Ohio.
 Canada Foundry Co., Toronto.
 Expanded Metal & Fireproofing Co., Toronto.

Builders' Materials

Albert Mfg. Co., Hillsboro, Ont.
 Canada Foundry Co., Toronto.
 Canadian Otis Elevator Co., Toronto.
 Canadian Portland Cement Co., Deseronto, Ont.
 Expanded Metal & Fireproofing Co., Toronto.
 Gartshore, John J., Toronto.
 Hopkins, F. H. & Co., Montreal.
 Meadows, Geo. B. Wire, Iron & Brass Works, Toronto.
 Metallic Roofing Co., Toronto.
 Owen Sound Portland Cement Co., Owen Sound, Ont.
 Pittsburgh & Buffalo Co., Buffalo, N.Y.
 Pittsburgh Shafting Co., Detroit, Mich.
 Rice Lewis & Son, Toronto.
 Sheldon & Sheldon, Galt, Ont.

Cables

Dominion Wire Rope Co., Montreal.
 Phillips, Eugene F. Electrical Works, Montreal.
 Wire & Cable Co., Montreal.

Canada Plates

Leslie, A. C. & Co., Montreal.
 Nova Scotia Steel & Coal Co., New Glasgow, N.S.

Canoes

Peterborough Canoe Co., Peterborough, Ont.

Caps

McCullough-Dalzell Crucible Co., Pittsburg, Pa.

Card Clothing

McLaren, D. K., Montreal and Toronto.
 McLaren, J. C. Belting Co., Montreal and Toronto.

Cast Iron Pipe

Canada Foundry Co., Toronto.
 Gartshore-Thomson Pipe & Foundry Co., Hamilton, Ont.
 Rice Lewis & Son, Toronto.
 Montreal Pipe Foundry Co., Montreal.
 McDougall, John, Caledonian Iron Works Co., Montreal.

Castings (Iron and Brass)

Huhl Malleable Co., Detroit, Mich.
 Kerr Engine Co., Walkerville, Ont.
 McDougall, John, Caledonian Iron Works Co., Montreal.

Cement Machinery

McDougall, John, Caledonian Iron Works Co., Montreal.
 Wentz, R. F. Engineering Co., Toronto.

Chain Making Machinery (Welded Coil Chain)

Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Channels

Bourne-Fuller Co., Cleveland, Ohio.
 Canada Foundry Co., Toronto.
 Leslie, A. C. & Co., Montreal.
 Nova Scotia Steel & Coal Co., New Glasgow, N.S.

Charcoal Pig Iron

Canada Iron Furnace Co., Montreal.
 McDougall, John, Caledonian Iron Works Co., Montreal.

Chemists

Archbold, Dr. Geo., Prescott, Ont.
 Hey's, Thomas & Son, Toronto.
 Wentz, R. F. Engineering Co., Toronto.

Clay Working Machinery

Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Coal and Coke

Alexander, John H., Windsor, Ont.
 Bourne-Fuller Co., Cleveland, Ohio.
 Brownlee, J., Galt, Ont.
 Ferguson, J. D., Hamilton, Ont.
 Hancock, J. M. & Co., Niagara Falls, N.Y.
 Hoffman, Jules G., Detroit, Mich.
 Milnes, James H. & Co., Toronto.
 Ohio & Michigan Coal Co., Detroit, Mich.
 Pittsburgh & Buffalo Co., Buffalo, N.Y.
 Pittsburgh Coal Co., Pittsburg, Pa.
 Shawmut Coal & Coke Co., St. Mary's, Pa.
 Shepard, Charles G., Buffalo, N.Y.
 Shipman, O. W. Co., Detroit, Mich.
 Wick, H. K. & Co., Buffalo, N.Y.

Coal Cutting Machines

Canadian Rand Drill Co., Sherbrooke, Que.
 Jeffrey Mfg. Co., Columbus, Ohio.

Coal Tipples

Jeffrey Mfg. Co., Columbus, Ohio.

Coil Chains

Greening, B. Wire Co., Hamilton, Ont.
 Leslie, A. C. & Co., Montreal.

Coke Oven Brick

Dunbar Fire Brick Co., Pittsburg, Pa.

Collection Agency

Petrie, H. D., Hamilton, Ont.

Concrete Construction

Stevens, A. J., Toronto.

Concrete Mixers

Hopkins, F. H. & Co., Montreal.
 McKelvey, W. A., Toronto.

Continuous Rolling Mills

Morgan Construction Co., Worcester, Mass.

Contractors' Machinery

Carlin's, Thomas Sons Co., Allegheny, Pa.
 Gartshore, John J., Toronto.
 Hopkins, F. H. & Co., Montreal.
 McDougall, John, Caledonian Iron Works Co., Montreal.
 Sinclair, G. S. & Sons, Warton, Ont.

Contractor's Plants

Hopkins, F. H. & Co., Montreal.
 Petrie, H. W., Toronto.
 Von der Osten, E. & Co., Toronto.
 Williams, A. R. Machinery Co., Toronto.

Conveying Machinery

Babcock & Wilcox, Limited, Montreal.
 Huhl Malleable Co., Detroit, Mich.
 Canada Foundry Co., Toronto.
 Dodge Mfg. Co., Toronto.
 Jeffrey Mfg. Co., Columbus, Ohio.
 McDougall, John, Caledonian Iron Works Co., Montreal.
 Perrin, William R. & Co., Limited, Toronto.
 Pittsburg Shafting Co., Detroit, Mich.
 Rosendale Belting Co., Toronto.
 Stevens, Alfred J., Toronto.

Copper Materials

Greening, B. Wire Co., Hamilton, Ont.
 Phillips, Eugene F. Electrical Works, Montreal.
 Syracuse Smelting Works, Montreal.
 Wire & Cable Co., Montreal.

Corundum

Canada Corundum Co., Toronto.

Corundum Wheels

Canadian Corundum Wheel Co., Hamilton, Ont.
 Rice Lewis & Son, Toronto.

Covers

McCullough-Dalzell Crucible Co., Pittsburg, Pa.
 Pittsburg Crucible Works, Pittsburg, Pa.

Crayons

Lowell Crayon Co., Lowell, Mass.

Crucibles

Dixon, Joseph, Crucible Co., Jersey City, N.Y.
 McCullough-Dalzell Crucible Co., Pittsburg, Pa.
 Pittsburg Crucible Works, Pittsburg, Pa.
 Syracuse Smelting Works, Montreal.

Crucible Caps and Nozzles

McCullough-Dalzell Crucible Co., Pittsburg, Pa.
 Pittsburg Crucible Works, Pittsburg, Pa.

Crucible Covers and Stoppers

McCullough-Dalzell Crucible Co., Pittsburg, Pa.
 Pittsburg Crucible Works, Pittsburg, Pa.

Dies (Socket, Sower Pipe and Tile)

Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

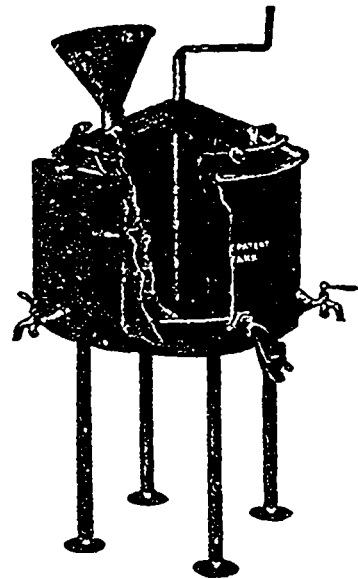
Directories

Kelly's Directories, Limited, Toronto.

Draw Bonches (Wire)

Morgan Construction Co., Worcester, Mass.
 Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

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Drills

Canadian Westinghouse Co., Ltd., Hamilton, Ont.
 London Machine Tool Co., London, Ont.
 Petrie, H. W., Toronto.
 Pittsburgh Shafting Co., Detroit, Mich.

Drills (Pneumatic and Rock)

Canadian Rand Drill Co., Sherbrooke, Que.
 Jeffrey Mfg. Co., Columbus, Ohio.

Drills (Twist)

Cleveland Twist Drill Co., Cleveland, Ohio.
 Pittsburgh Shafting Co., Detroit, Mich.

Drop Forgings

Globe Machine & Stamping Co., Cleveland, Ohio.

Drop Forging Dies

Globe Machine & Stamping Co., Cleveland, Ohio.

Dry Kiln Apparatus

Sheldon & Sheldon, Galt, Ont.
 Stevens, Alfred J., Toronto.
 Sturtevant, B. F. Co., Boston, Mass.

Dust and Shavings Separators

Sheldon & Sheldon, Galt, Ont.
 Sturtevant, B. F. Co., Boston, Mass.

Dye Stuffs and Chemicals

Bellhouse, Dillon & Co., Montreal.
 Benson, W. T. & Co., Montreal.
 Brunner, Mond & Co., Northwich, England.
 Casella Color Co., New York City.
 Geigy Aniline & Extract Co., New York City.
 Klipstein, A. & Co., New York City.
 McArthur, Cornelle & Co., Montreal
 Winn & Holland, Montreal.

DYNAMOS (See Motors and Dynamos)

Electric Motors and Transformers

Packard Electric Co., St. Catharines, Ont.

Electric Mine Locomotives

Canadian General Electric Co., Toronto.
 Canadian Westinghouse Co., Ltd., Hamilton, Ont.
 Jeffrey Mfg. Co., Columbus, Ohio.

Electrical Repairs

Volta Electric Repair Works, Toronto.

Electrical Supplies

Bristol Co., Waterbury, Conn.
 Canadian General Electric Co., Toronto.
 Canadian Westinghouse Co., Ltd., Hamilton, Ont.
 Electrical Construction Co., London, Ont.
 Forman, John, Montreal.
 Jones & Moore Electric Co., Toronto.
 Packard Electric Co., St. Catharines, Ont.
 Toronto & Hamilton Electric Co., Hamilton, Ont.
 United Electric Co., Toronto.
 Worth & Martin, Toronto.

Elevators and Conveyors

Buhl Malleable Co., Detroit, Mich.
 Canadian Otis Elevator Co., Toronto.
 Darling Bros., Montreal.
 Jeffrey Mfg. Co., Columbus, Ohio.

Elevator Insurance

Canadian Casualty & Boiler Insurance Co., Toronto.

Emery and Emery Wheels

Canadian Corundum Wheel Co., Hamilton, Ont.
 Forman, John, Montreal.
 Petrie, H. W., Toronto.

Engineers (Cement)

Wentz, R. F. Engineering Co., Toronto.

Engineers (Chemical)

Heys, Thomas & Son, Toronto.
 Hunt, Robert W. & Co., Chicago, Ill.

Engineers (Civil)

Delano-Osborn Engineering Co., Toronto.
 Kelsch, R. S., Montreal.
 Parke, R. J., Toronto.
 Vogel, C. H., Ottawa.

Engineers (Consulting)

Delano-Osborn Engineering Co., Toronto.
 Electrical Construction Co., London, Ont.
 Electrical Supervision Society, Toronto.
 Hunt, Robert W. & Co., Chicago, Ill.
 Kelsch, R. S., Montreal.
 Marion & Marion, Montreal.
 Morgan Construction Co., Worcester, Mass.
 Parke, R. J., Toronto.
 Perrin, William R. & Co., Limited, Toronto.
 Simpson, T. T., Deschenes, Que.
 Vogel, C. H., Ottawa.
 Volta Electric Repair Works, Toronto.
 Von der Osten, E. & Co., Toronto.
 Wentz, R. F. Engineering Co., Toronto.

Engineers (Contracting)

Babeock & Wilcox, Limited, Montreal.
 Canada Foundry Co., Toronto.
 Darling Bros., Montreal.
 Electrical Construction Co., London, Ont.
 McDougall, John, Caledonian Iron Works Co., Montreal.
 Robb Engineering Co., Amherst, N.S.

Engineers (Electrical)

Canadian General Electric Co., Toronto.
 Canadian Westinghouse Co., Ltd., Hamilton, Ont.
 Delano-Osborn Engineering Co., Toronto.
 Electric Engineering & Supply Co., Montreal.
 Electrical Construction Co., London, Ont.
 Electrical Supervision Society, Toronto.
 Kelsch, R. S., Montreal.
 Jones & Moore Electric Co., Toronto.
 Marion & Marion, Montreal.
 Toronto & Hamilton Electric Co., Hamilton, Ont.
 United Electric Co., Toronto.
 Volta Electric Repair Works, Toronto.
 Worth & Martin, Toronto.

Engineers (Mechanical)

Babeock & Wilcox, Limited, Montreal.
 Buhl Malleable Co., Detroit, Mich.
 Darling Bros., Montreal.
 Delano-Osborn Engineering Co., Toronto.
 Electrical Construction Co., London, Ont.
 McDougall, John, Caledonian Iron Works Co., Montreal.
 Hunt, Robert W. & Co., Chicago, Ill.
 Kelsch, R. S., Montreal.
 Kerr Engine Co., Waukegan, Ont.
 Marion & Marion, Montreal.
 Morgan Construction Co., Worcester, Mass.
 Robb Engineering Co., Amherst, N.S.
 Sheldon & Sheldon, Galt, Ont.
 Wentz, R. F. Engineering Co., Toronto.

Engineers (Mill and Hydraulic)

Buhl Malleable Co., Detroit, Mich.
 Delano-Osborn Engineering Co., Toronto.
 Vogel, C. H., Ottawa.

Engineers (Mining)

Buhl Malleable Co., Detroit, Mich.
 Heys, Thomas & Son, Toronto.
 Mills, S. D., Toronto.

Engineers (Municipal)

Von der Osten, E. & Co., Toronto.

Engineers and Contractors

Buhl Malleable Co., Detroit, Mich.
 Jeffrey Mfg. Co., Columbus, Ohio.

Engines and Boilers

Babeock & Wilcox, Limited, Montreal.
 Bertram Engine Works Co., Toronto.
 Canada Foundry Co., Toronto.
 Canadian Heine Safety Boiler Co., Toronto.
 Corbett, R. B., Brooklyn, N.Y.
 Goldie & McCullough Co., Galt, Ont.
 Hamilton, Wm. Mfg. Co., Peterborough, Ont.
 Hopkins, F. H. & Co., Montreal.
 Leonard, E. & Sons, London, Ont.
 McDougall, John, Caledonian Iron Works Co., Montreal.

Petrie, H. W., Toronto.
 Petroleum Iron Works Co., Washington, Pa.
 Pittsburgh Shafting Co., Detroit, Mich.
 Robb Engineering Co., Amherst, N.S.
 Sheldon & Sheldon, Galt, Ont.
 Sturtevant, B. F. Co., Boston, Mass.
 Williams, A. R. Machinery Co., Toronto.

Engravers

Canadian Manufacturer, Toronto.
 Jones, J. L., Engraving Co., Toronto.

Exhaust Fans

Sheldon & Sheldon, Galt, Ont.
 Sturtevant, B. F. Co., Boston, Mass.

Exhaust Hoods

Burt Mfg. Co., Akron, Ohio.
 Darling Bros., Montreal.

Factory Sites

Central Ontario Power Co., Peterboro, Ont.
 Stayner, Ont., Town of

Feed Water Heaters

Babeock & Wilcox, Limited, Montreal.
 Darling Bros., Montreal.
 McDougall, John, Caledonian Iron Works Co., Montreal.
 Petroleum Iron Works Co., Washington, Pa.

Fires

Spence, R. & Co., Hamilton, Ont.

Financial

Bradstreet's, New York City.
 Dun, R. G. & Co., Toronto.
 Neff & Postelthwaite, Toronto.
 Petrie, H. D., Hamilton, Ont.

Filters (Oil)

Babeock & Wilcox, Limited, Montreal.
 Burt Mfg. Co., Akron, Ohio.
 Darling Bros., Montreal.
 McDougall, John, Caledonian Iron Works Co., Montreal.
 Perrin, William R. & Co., Limited, Toronto.

Filters and Filtering Systems (Water)

Babeock & Wilcox, Limited, Montreal.
 McDougall, John, Caledonian Iron Works Co., Montreal.

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Fire Brick and Clay

Dunbar Fire Brick Co., Pittsburgh, Pa.
Hamilton Facing Mill Co., Hamilton, Ont.
Pennsylvania Fire Brick Co., Lock Haven.
Pittsburgh & Buffalo Co., Buffalo, N.Y.
Scioto Fire Brick Co., Sciotoville, Ohio.
Stowe-Fuller Co., Cleveland, Ohio.
Wynn, W. H. & Co., West Decatur, Pa.

Fire Escapes

Darling Bros., Montreal.
Meadows, Geo. B., Wire, Iron & Brass Works, Toronto.

Forges and Blowers

Canada Foundry Co., Toronto.
Sheldon & Sheldon, Galt, Ont.
Sturtevant, B. F. Co., Boston, Mass.

Founders

Canada Foundry Co., Toronto.
Cowan & Co., Galt, Ont.
Gartshore-Thomson Pipe & Foundry Co., Hamilton, Ont.
Goldie & McCullough Co., Galt, Ont.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.
Sinclair, G. S. & Sons, Warton, Ont.

Foundry Facings and Supplies

Hamilton Facing Mill Co., Hamilton, Ont.

Fuel Economizers

Babcock & Wilcox, Limited, Montreal.
Sturtevant, B. F. Co., Hyde Park, Mass.

Furniture (Lodge, Opera and School)

Canadian Office & School Furniture Co., Prescon, Ont.

Galvanizing

Ontario Wind Engine & Pump Co., Toronto.

Galvanizing and Tinning Machinery and Furnaces (Wire)
Morgan Construction Co., Worcester, Mass.
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Gas and Gasoline Engines

Goldie & McCullough Co., Galt, Ont.
Morrison, T. A. & Co., Montreal.

Gas Producers

Morgan Construction Co., Worcester, Mass.

Gauges (Recording Pressure)

Bristol Co., Waterbury, Conn.

Gauges (Steam)

American Steam Pump Co., Battle Creek, Mich.
Pemberton Injector Co., Windsor, Ont.
Petrie, H. W., Toronto.
Williams, A. R. Machinery Co., Toronto.

Gauges (Water)

Babcock & Wilcox, Limited, Montreal.
Pemberton Injector Co., Windsor, Ont.

Generators

Canadian General Electric Co., Toronto.
Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Electrical Construction Co., London, Ont.
Forman, John, Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
Jones & Moore Electric Co., Toronto.
Phillips, Eugene F., Electrical Works, Montreal.
Toronto & Hamilton Electric Co., Hamilton, Ont.
Volta Electric Repair Works, Toronto.

Gloves, Mittens and Moccasins

Storey, W. H. & Son, Acton, Ont.

Glue Heaters

Advance Machinery Co., Toledo, Ohio.

Glue Room Equipment

Advance Machinery Co., Toledo, Ohio.

Government Notices

Factory Inspectors.
Minister of Agriculture.

Graphite

Dixon, Jos., Crucible Co., Jersey City, N.J.
McCullough-Dakell Crucible Co., Pittsburgh, Pa.
Pittsburg Crucible Works, Pittsburg, Pa.

Grass Cups

Pemberton Injector Co., Windsor, Ont.

Grinding Machinery

Canadian Corundum Wheel Co., Hamilton, Ont.

Grinding Pans

Carlin's, Thomas Sons Co., Allegheny, Pa.

Hand Traveling Cranes

Morgan Construction Co., Worcester, Mass.

Hardware

Butterfield & Co., Rock Island, Que.
Cleveland Twist Drill Co., Cleveland, Ohio.
Gartshore, John J., Toronto.
Globe Machine & Stamping Co., Cleveland, Ohio.
Hopkins, F. H. & Co., Montreal.
Morrow, John, Machine Screw Co., Ingersoll, Ont.
Rice Lewis & Son, Toronto.
Ryall Machine Screw Co., Montreal.
Stanyon Metallic Furniture Co., Toronto.

Heating and Ventilating Apparatus

Darling Bros., Montreal.
Leonard, E. & Sons, London, Ont.
Sheldon & Sheldon, Galt, Ont.
Stevens, Alfred J., Toronto.
Sturtevant, B. F. Co., Boston, Mass.

Hoisting Engines

Bertram Engine Works Co., Toronto.

Hoists (Chain and Pneumatic)

Canadian Hand Drill Co., Sherbrooke, Que.
Hopkins, F. H. & Co., Montreal.

Hose (Fire and Pneumatic)

Gutta Percha & Rubber Mfg. Co., Toronto.
McLaren, J. C., Belting Co., Montreal and Toronto.

Hydrants

Kerr Engine Co., Walkerville, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.

Hydraulic Accumulators

Morgan Construction Co., Worcester, Mass.
McDougall, John, Caledonian Iron Works Co., Montreal.

Hydraulic Cranes

Morgan Construction Co., Worcester, Mass.

Hydraulic Machinery

Canada Foundry Co., Toronto.
Darling Bros., Montreal.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Morgan Construction Co., Worcester, Mass.
McDougall, John, Caledonian Iron Works Co., Montreal.
Perrin, William R. & Co., Limited, Toronto.
Petrie, H. W., Toronto.
Wilson, J. C. & Co., Glenora, Ont.

Industrial Plants

Von der Osten, E. & Co., Toronto.

Insulated Wires and Cables

Phillips, Eugene F., Electrical Works, Montreal.
Wire & Cable Co., Montreal.

Iron and Steel Specialties

Abbott, William, Montreal.
Armstrong Mfg. Co., Bridgeport, Conn.
Bailey-Underwood Co., New Glasgow, N. S.
Bourne-Fuller Co., Cleveland, Ohio.
Brown & Co., Paris, Ont.
Huhl Malleable Co., Detroit, Mich.
Canada Foundry Co., Toronto.
Cleveland Twist Drill Co., Cleveland, Ohio.
Leslie, A. C. & Co., Montreal.
Lysaght, John, Limited, Bristol, England and Montreal.
Meadows, Geo. B., Wire, Iron & Brass Works Co., Toronto.
Nova Scotia Steel & Coal Co., New Glasgow, N. S.
Petrie, H. W., Toronto.
Petroleum Iron Works Co., Washington, Pa.
Pittsburgh Shafting Co., Detroit, Mich.
Rice Lewis & Son, Toronto.
Ryall Machine Screw Co., Montreal.
Sinclair, G. S. & Sons, Warton, Ont.

In-jectors

Canada Foundry Co., Toronto.
Hamilton Brass Mfg. Co., Hamilton, Ont.
Pemberton Injector Co., Windsor, Ont.
Williams, A. R. Machinery Co., Toronto.

Iron and Steel Inspection

Hunt, R. W. & Co., Chicago, Ill.

Lamps—Electric

Canadian General Electric Co., Toronto.
Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Forman, John, Montreal.
Packard Electric Co., St. Catharines, Ont.

Lathes

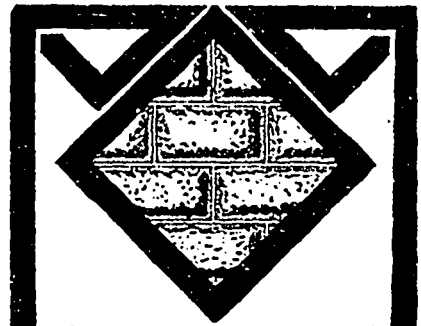
Cowdrey, C. H. Machine Works, Fitchburg, Mass.
London Machine Tool Co., London, Ont.
Petrie, H. W., Toronto.
Williams, A. R. & Co., Toronto.

Lathes (Wood-Working)

Cowan & Son, Galt, Ont.
Goldie & McCullough Co., Galt, Ont.
Petrie, H. W., Toronto.
Williams, A. R. Machinery Co., Toronto.

Lubricators

Pemberton Injector Co., Windsor, Ont.



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Bertram Engine Works Co., Toronto.
Buhl Malleable Co., Detroit, Mich.
Goldie & McCullough Co., Galt, Ont.
London Machine Tool Co., London, Ont.
Worth & Martin, Toronto.

Machinists' Supplies

Armstrong Mfg. Co., Bridgeport, Conn.
Buhl Malleable Co., Detroit, Mich.
Butterfield & Co., Rock Island, Que.
Cleveland Twist Drill Co., Cleveland, Ohio.
Goldie & McCullough Co., Galt, Ont.
Gutta Percha & Rubber Mfg. Co., Toronto.
Hopkins, F. H. & Co., Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
London Machine Tool Co., London, Ont.
Morrow, John, Machine Screw Co., Ingersoll, Ont.
Petrie, H. W., Toronto.
Pittsburgh Shafting Co., Detroit, Mich.
Ryall Machine Screw Co., Montreal.
Sinclair, G. S. & Sons, Warton, Ont.
Worth & Martin, Toronto.

Machine Tools

Abbott, William, Montreal.
Bertram, John & Sons Co., Dundas, Ont.
Cleveland Twist Drill Co., Cleveland, Ohio.
Cowdry, C. H. Machine Works, Fitchburg, Mass.
Darling Bros., Montreal.
London Machine Tool Co., London, Ont.
Petrie, H. W., Toronto.

Machinery Repairs

Bertram Engine Works Co., Toronto.

Malleable Iron Castings

Buhl Malleable Co., Detroit, Mich.
McKinnon Dash & Metal Works Co., St. Catharines, Ont.
Smith's Fr's Malleable Castings Co., Smith's Falls, Ont.

Marine and Stationary Engines and Boilers

Bertram Engine Works Co., Toronto.

Mechanical Draft

Babcock & Wilcox, Limited, Montreal.
Sheldon & Sheldon, Galt, Ont.
Sturtevant, B. F. Co., Boston, Mass.

Metal Shoars

Morgan Construction Co., Worcester, Mass.

Metal Stamping

Empire Machine & Metal Stamping Co., Toronto.
Globe Machine & Stamping Co., Cleveland, Ohio.

Metallurgists

Mills, S. D., Toronto.
Wentz, R. F. Engineering Co., Toronto.

Mill Machinery and Supplies

Armstrong Mfg. Co., Bridgeport, Conn.
Buhl Malleable Co., Detroit, Mich.
Cleveland Twist Drill Co., Cleveland, Ohio.
Cowan & Co., Galt, Ont.
Darling Bros., Montreal.
Fleming, W. A. & Co., Montreal.
Gartshore, John J., Toronto.
Goldie & McCullough Co., Galt, Ont.
Greyc, Wm. & J. G., Toronto.
Gutta Percha & Rubber Mfg. Co., Toronto.
Hamilton Brass Mfg. Co., Hamilton, Ont.
Hamilton, Wm., Mfg. Co., Peterborough, Ont.
Hay, Peter Knife Co., Galt, Ont.
Hopkins, F. H. & Co., Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
Leonard, E. & Sons, London, Ont.
London Machine Tool Co., London, Ont.
Morrow, John, Machine Screw Co., Ingersoll, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.

McLaren, D. K., Montreal and Toronto.
Penberthy Injector Co., Windsor, Ont.
Petrie, H. W., Toronto.
Pittsburgh Shafting Co., Detroit, Mich.
Rice Lewis & Son, Toronto.
Robb Engineering Co., Amherst, N.S.
Ryall Machine Screw Co., Montreal.
Sinclair, G. S. & Sons, Warton, Ont.
Snence, H. & Co., Hamilton, Ont.
Wilson, J. C. & Co., Glenora, Ont.

Miners' Lamps

Anton, John & Son, Monongahela, Pa.

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Canadian Rand Drill Co., Sherbrooke, Que.
Cleveland Twist Drill Co., Cleveland, Ohio.
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Gartshore, John J., Toronto.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
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Jeffrey Mfg. Co., Columbus, Ohio.
McDougall, John, Caledonian Iron Works Co., Montreal.

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Petrie, H. W., Toronto.
Williams, A. R. Machinery Co., Toronto.

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Canadian General Electric Co., Toronto.
Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Corbett, R. B., Brooklyn, N.Y.
Electrical Construction Co., London, Ont.
Forman, John, Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
Jones & Moore Electric Co., Toronto.
Petrie, H. W., Toronto.
Toronto & Hamilton Electric Co., Hamilton, Ont.
United Electric Co., Toronto.
Volta Electric Repair Works, Toronto.

Moulding Sand

Hamilton Facing Mills Co., Hamilton, Ont.

Novelty Manufacturers

Worth & Martin, Toronto.

Nozzles

McCullough-Dalzell Crucible Co., Pittsburg, Pa.
Pittsburg Crucible Works, Pittsburg, Pa.

Office and Bank Fittings

Canadian Office & School Furniture Co., Preston, Ont.
Mendows, Geo. B., Wire, Iron & Brass Works Co., Toronto.

Oils and Lubricants

Dixon, Jos. Crucible Co., Jersey City, N.J.
Fleming, W. A. & Co., Montreal.
Hart & Co., Chicago, Ill.
Imperial Oil Co., Petrolia, Ont.
Queen City Oil Co., Toronto.

Oil Cloth

Dominion Oil Cloth Co., Montreal.

Oil Cups

Penberthy Injector Co., Windsor, Ont.

Paints and Colors

Bellhouse, Dillon & Co., Montreal.
Fleming, W. A. & Co., Montreal.
Geigy, Aniline & Extract Co., New York City.
Klipstein, A. & Co., New York City.
McArthur, Coruclio & Co., Montreal.

Paper Manufacturers

Barber, Wm., & Bros., Georgetown, Ont.
Toronto Paper Mfg. Co., Cornwall, Ont.

Patents

Budden, Hanbury, A., Montreal.
Case, Egerton R., Toronto.
Fetherstonhaugh & Co., Toronto.
Marion & Marion, Montreal.
Patent Exchange & Investment Co., Toronto.

Perforated Metals

Globe Machine & Stamping Co., Cleveland, Ohio.
Greening, B. Wire Co., Hamilton, Ont.
Stanyon Metallic Furniture Co., Toronto.

Personal Accident

Canadian Casualty & Boiler Insurance Co., Toronto.

Phosphorizers

McCullough-Dalzell Crucible Co., Pittsburg, Pa.
Pittsburg Crucible Works, Pittsburg, Pa.

Pig Iron

Bourne-Fuller Co., Cleveland, Ohio.
Canada Iron Furnace Co., Montreal.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Shepard, Charles G., Buffalo, N.Y.
Syracuse Smelting Works, Montreal.

Pipe (Riveted, Iron and Steel)

Babcock & Wilcox, Limited, Montreal.
McDougall, John, Caledonian Iron Works Co., Montreal.
Petroleum Iron Works Co., Washington, Pa.

Pipe Threading Machines

Armstrong Mfg. Co., Bridgeport, Conn.
Butterfield & Co., Rock Island, Que.
Petrie, H. W., Toronto.
Rice Lewis & Son, Toronto.

Pipes and Tubes

Abbott, William, Montreal.
Bourne-Fuller Co., Cleveland, Ohio.
Canada Foundry Co., Toronto.
Corbett, R. B., Brooklyn, N.Y.
Gartshore-Thomson Pipe & Foundry Co., Hamilton, Ont.
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Hamilton Facing Mills Co., Hamilton, Ont.
McCullough-Dalzell Crucible Co., Pittsburg, Pa.
Pittsburg Crucible Works, Pittsburg, Pa.

Pneumatic Tools

Canadian Rand Drill Co., Sherbrooke, Que.

Pointer Rolls (For Rods and Wire)

Morgan Construction Co., Worcester, Mass.
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Portland Cement

Canadian Portland Cement Co., Deseronto, Ont.
Owen Sound Portland Cement Co., Owen Sound, Ont.
Rathbun Co., Toronto.
St. Lawrence Portland Cement Co., Montreal.

Power Plants—Equipments

Babeck & Wilcox, Limited, Montreal.
Canadian General Electric Co., Toronto.
Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Cleveland Twist Drill Co., Cleveland, Ohio.
Corbett, R. B., Brooklyn, N.Y.
Darling Bros., Montreal.
Delano-Osborn Engineering Co., Toronto.
Electrical Construction Co., London, Ont.
Goldie & McCullough, Galt, Ont.
Gutta Percha & Rubber Mfg. Co., Toronto.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Jeffrey Mfg. Co., Columbus, Ohio.
Jones & Moore Electric Co., Toronto.
Kelsch, R. S., Montreal.
Leonard, E. & Sons, London, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.
Packard Electric Co., St. Catharines, Ont.
Perrin, William R. & Co., Limited, Toronto.
Petrie, H. W., Toronto.
Phillips, Eugene F., Electrical Works, Montreal.
Pittsburgh Shafting Co., Detroit, Mich.
Robb Engineering Co., Amherst, N.S.
Sinclair, G. S. & Sons, Warton, Ont.
Stevens, Alfred J., Toronto.
Sturtevant, B. F. Co., Boston, Mass.
Toronto & Hamilton Electric Co., Hamilton, Ont.
United Electric Co., Toronto.
Wilson, J. C. & Co., Glenora, Ont.

Presses (Tilo, Sower Pipe, Nozzles and Sleeves)

Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Pulleys

Darling Bros., Montreal.
Goldie & McCullough Co., Galt, Ont.
Greay, Wm. & J. G., Toronto.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Jeffrey Mfg. Co., Columbus, Ohio.
McDougall, John, Caledonian Iron Works Co., Montreal.
McLaren, J. C., Belting Co., Montreal and Toronto.
Petrie, H. W., Toronto.
Pittsburgh Shafting Co., Detroit, Mich.
Wilson, J. C. & Co., Glenora, Ont.

Pumps and Pumping Machinery

Canada Foundry Co., Toronto.
Corbett, R. B., Brooklyn, N.Y.
Darling Bros., Montreal.
Downie Pump Co., Downieville, Pa.
Goldie & McCullough Co., Galt, Ont.
Kerr Engine Co., Walkerville, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.
Ontario Wind Engine & Pump Co., Toronto.
Petrie, H. W., Toronto.

Punches and Shears

Globe Machine & Stamping Co., Cleveland, Ohio.
Petrie, H. W., Toronto.

Purifiers

Babeck & Wilcox, Limited, Montreal.
Goldie & McCullough Co., Galt, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.

Purifying and Softening Systems (Water)

Babeck & Wilcox, Limited, Montreal.
Darling Bros., Montreal.
McDougall, John, Caledonian Iron Works Co., Montreal.

Railroads

Chicago & North-Western Ry., Toronto & St. Paul, Minn.
Quebec Central Railway, Sherbrooke, Que.

Railway Supplies

Algoma Steel Co., Sault Ste. Marie, Ont.
Gartshore, John J., Toronto.
Greening, B. Wire Co., Hamilton, Ont.
Gutta Percha & Rubber Mfg. Co., Toronto.
Hopkins, F. H. & Co., Montreal.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Phillips, Eugene F., Electrical Works, Montreal.

Reamers

Butterfield & Co., Rock Island, Que.
Cleveland Twist Drill Co., Cleveland, Ohio.

Rivets

Bourne-Fuller Co., Cleveland, Ohio

Roll Lathes

Morgan Construction Co., Worcester, Mass.

Roller Bearings

Pittsburg Shafting Co., Detroit, Mich.

Rolling Mills

Morgan Construction Co., Worcester, Mass.

Rolling Mill Engineers

Bourne-Fuller Co., Cleveland, Ohio.
Morgan Construction Co., Worcester, Mass.

Roofing

Bourne-Fuller Co., Cleveland, Ohio.
Metallic Roofing Co., Toronto.

Rubber Goods

Gutta Percha & Rubber Mfg. Co., Toronto.
Pittsburg Shafting Co., Detroit, Mich.

Rubber Packing

Gutta Percha & Rubber Mfg. Co., Toronto.

Rubber Washing Tubs

Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Rural Mail Boxes

Globe Machine & Stamping Co., Cleveland, Ohio.

Safes and Vaults

Goldie & McCullough Co., Galt, Ont.

Screws

Morrow, John, Machine Screw Co., Ingersoll, Ont.
Ryall Machine Screw Co., Montreal.

Screw Plates

Armstrong Mfg. Co., Bridgeport, Conn.
Butterfield & Co., Rock Island, Que.

Sewer Pipe

Pittsburgh & Buffalo Co., Buffalo, N.Y.

Shafting

Bourne-Fuller Co., Cleveland, Ohio.
Goldie & McCullough Co., Galt, Ont.
Greay, Wm. & J. G., Toronto.
Jeffrey Mfg. Co., Columbus, Ohio.
McDougall, John, Caledonian Iron Works Co., Montreal.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Petrie, H. W., Toronto.
Pittsburgh Shafting Co., Detroit, Mich.

Shafting Coupler

Sinclair, G. S. & Sons, Warton, Ont.

Shapers and Carvers

Advance Machinery Co., Toledo, Ohio.

Shear Knives

Carlin's, Thomas Sons Co., Allegheny, Pa.
Hay, Peter Knife Co., Galt, Ont.

Sheets (Iron and Steel)

Abbott, William, Montreal.
Bourne-Fuller Co., Cleveland, Ohio.
Leslie, A. C. & Co., Montreal.
Lysaght, John, Limited, Bristol, England and Montreal.

Sheet Metal Goods

Globe Machine & Stamping Co., Cleveland, Ohio.
Metallic Roofing Co., Toronto.
Stanyon Metallic Furniture Co., Toronto.

Sheet Metal Stamping

Globe Machine & Stamping Co., Cleveland, Ohio.
Metallic Roofing Co., Toronto.
Ryall Machine Screw Works, Montreal.
Stanyon Metallic Furniture Co., Toronto.

Ship Builders

Bertram Engine Works Co., Toronto.
Clyde Steel Works, Toronto.

Smoke Stacks

Hamilton, Wm. Mfg. Co., Peterborough, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.
Petroleum Iron Works Co., Washington, Pa.

Solder

Globe Machine & Stamping Co., Cleveland, Ohio.
Syracuse Smelting Co., Montreal.

Special Machinery

Globe Machine & Stamping Co., Cleveland, Ohio.
Stanyon Metallic Furniture Co., Toronto.

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Stamps & Stencils

Globe Machine & Stamping Co., Cleveland, Ohio.
Hamilton Stamp & Stencil Works, Hamilton, Ont.
Stanyon Metallic Furniture Co., Toronto.

Steam Pumps

American Steam Pump Co., Battle Creek, Mich.
Canada Foundry Co., Toronto.
Darling Bros., Montreal.
Goldie & McCullough Co., Galt, Ont.
Leonard, E. & Sons, London, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.
Petrie, H. W., Toronto.
Pittsburgh Shafting Co., Detroit, Mich.
Williams, A. R. Machinery Co., Toronto.

Steam Separators

Babcock & Wilcox, Limited, Montreal.
Darling Bros., Montreal.

Steam Specialties

Darling Bros., Montreal.
Penberthy Injector Co., Windsor, Ont.
Sheldon & Sheldon, Galt, Ont.

Steam Valves

American Steam Pump Co., Battle Creek, Mich.
Babcock & Wilcox, Limited, Montreal.
Darling Bros., Montreal.
Kerr Engine Co., Walkerville, Ont.
Petrie, H. W., Toronto.
Williams, A. R. Machinery Co., Toronto.

Steel and Composite Ships

Bertram Engine Works Co., Toronto.

Steel Plants

Morgan Construction Co., Worcester, Mass.

Steel Rails

Algoma Steel Co., Sault Ste. Marie, Ont.
Drummond, McCall & Co., Montreal and Toronto.
Gartshore, John J., Toronto.
Hopkins, F. H. & Co., Montreal.

Steel Shafting

Darling Bros., Montreal.
Goldie & McCullough Co., Galt, Ont.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Leslie, A. C. & Co., Montreal.
McDougall, John, Caledonian Iron Works Co., Montreal.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Pittsburg Shafting Co., Detroit, Mich.
Wilson, J. C. & Co., Glenora, Ont.

Stocks and Dies

Armstrong Mfg. Co., Bridgeport, Conn.
Butterfield & Co., Rock Island, Que.
Petrie, H. W., Toronto.
Rice Lewis & Son, Toronto.
Worth & Martin, Toronto.

Stoppers

McCullough-Dalzell Crucible Co., Pittsburg, Pa.
Pittsburg Crucible Works, Pittsburg, Pa.

Structural Steel

Abbott, William, Montreal.
Bourne-Fuller Co., Cleveland, Ohio.
Canada Foundry Co., Toronto.
Hopkins, F. H. & Co., Montreal.

Suspension Furnaces

Continental Iron Works Co., New York City.

Tanks (Oil and Water)

Canada Foundry Co., Toronto.
Corbett, R. B., Brooklyn, N.Y.
Goldie & McCullough Co., Galt, Ont.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.
Ontario Wind Engine & Pump Co., Toronto.
Petroleum Iron Works Co., Washington, Pa.

Taps and Dies

Butterfield & Co., Rock Island, Que.
Cleveland Twist Drill Co., Cleveland, Ohio.
Globe Machine & Stamping Co., Cleveland, Ohio.
Hamilton Stamp & Stencil Works, Hamilton, Ont.

Toos

Bourne-Fuller Co., Cleveland, Ohio.
Canada Foundry Co., Toronto.

Textile Manufacturers

Canadian Colored Cotton Mills Co., Montreal.
Dominion Oil Cloth Co., Montreal.
Hamilton Cotton Co., Hamilton, Ont.
Morrice, D. Sons & Co., Montreal.
Smith Mfg. Co., Toronto.
Storey, W. H. & Sons, Acton, Ont.

Textile Supplies

McLaren, J. C. Belting Co., Montreal and Toronto.

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Bristol Co., Waterbury, Conn.

Tin

Leslie, A. C. & Co., Montreal.
Syracuse Smelting Works, Montreal.

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Abbott, William, Montreal.
Bourne-Fuller Co., Cleveland, Ohio.
Hopkins, F. H. & Co., Montreal.
Leslie, A. C. & Co., Montreal.

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Corbett, R. B., Brooklyn, N.Y.
Hopkins, F. H. & Co., Montreal.
Morgan Construction Co., Worcester, Mass.
McDougall, John, Caledonian Iron Works Co., Montreal.
Sheldon & Sheldon, Galt, Ont.

Trucks (Railway)

Canada Foundry Co., Toronto.

Trucks (Wire Mill Supplies)

Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Tubs (Cleaning and Coating Wire)

Morgan Construction Co., Worcester, Mass.
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Tugs

Bertram Engine Works Co., Toronto.

Tumbling Barrels

Globe Machine & Stamping Co., Cleveland, Ohio.

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Canada Foundry Co., Toronto.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Wilson, J. C. & Co., Glenora, Ont.

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United Typewriter Co., Toronto.

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American Steam Pump Co., Battle Creek, Mich.
Babcock & Wilcox, Limited, Montreal.
Canada Foundry Co., Toronto.
Hamilton Brass Mfg. Co., Hamilton, Ont.
Kerr Engine Co., Walkerville, Ont.
Petrie, H. W., Toronto.
Williams, A. R. Machinery Co., Toronto.

Valves (Rubber)

Gutta Percha & Rubber Mfg. Co., Toronto.

Varnishes

Berry Bros., Walkerville, Ont.

Ventilators

Darling Bros., Montreal.
Sheldon & Sheldon, Galt, Ont.
Sturtevant, B. F. Co., Boston, Mass.

Wagon and Carriage Wood Work

Hore, F. W. & Son, Hamilton, Ont.

Washers or Hollenders (Cleaning Rubber)

Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Water Purifying Chemicals

Lord, Geo. W. Co., Philadelphia, Pa.
Sleeth, D., Montreal.

Windmills

Ontario Wind Engine & Pump Co., Toronto.

Wire Mill Supplies

Morgan Construction Co., Worcester, Mass.
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Wire and Wire Rope

Dominion Wire Rope Co., Montreal.
Greening, B. Wire Co., Hamilton, Ont.
Leslie, A. C. & Co., Montreal.
Phillips, Eugene F. Electrical Works, Montreal.
Pittsburg Shafting Co., Detroit, Mich.
Wire & Cable Co., Montreal.

Wire Rope Fittings

Dominion Wire Rope Co., Montreal.

Wire Cloth

Greening, B. Wire Co., Hamilton, Ont.

Wire Drawing Machinery

Morgan Construction Co., Worcester, Mass.
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Wire Rod Reels

Morgan Construction Co., Worcester, Mass.

Wire Specialties

Meadows, Geo. B. Wire, Iron & Brass Works Co., Toronto.
Stanyon Metallic Furniture Co., Toronto.

Wire Testing Machinery

Morgan Construction Co., Worcester, Mass.

Wood-Working Machinery

Advance Machinery Co., Toledo, Ohio.
Cowan & Co., Galt, Ont.
Crowdy, C. H., Machine Works, Fitchburg, Mass.
Goldie & McCullough Co., Galt, Ont.
London Machine Tool Co., London, Ont.
Petrie, H. W., Toronto.
Sheldon & Sheldon, Galt, Ont.
Stepco, John Shaper Co., Cincinnati, Ohio.
Williams, A. R. Machinery Co., Toronto.

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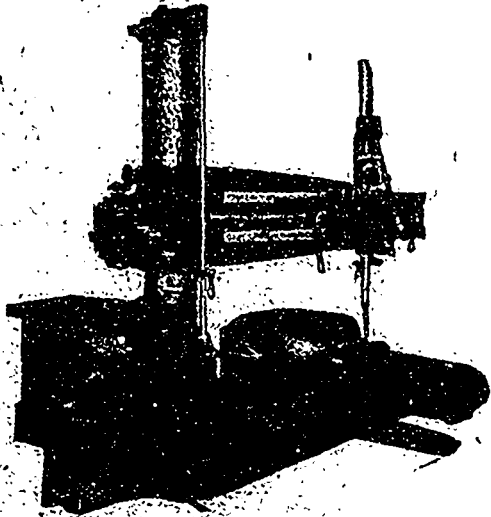
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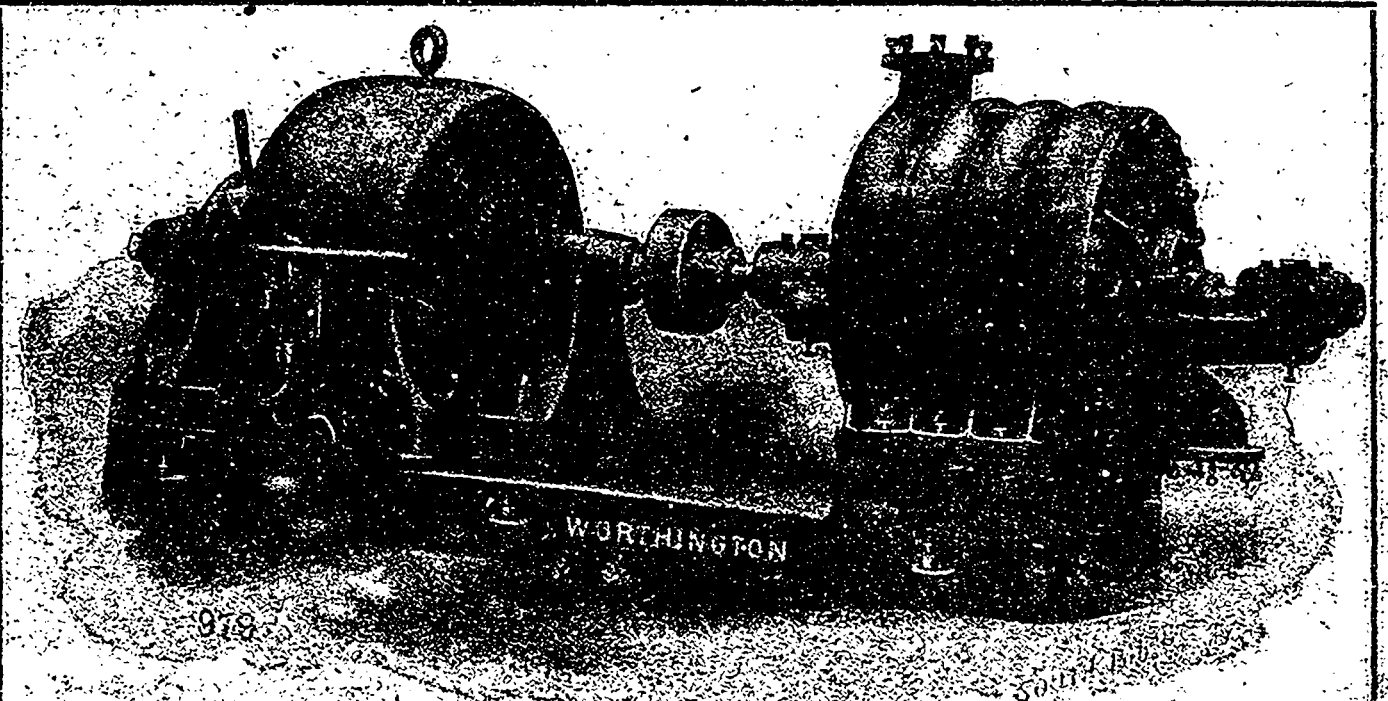
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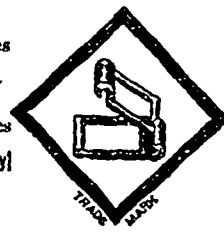
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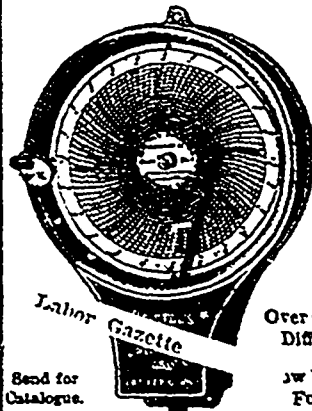


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