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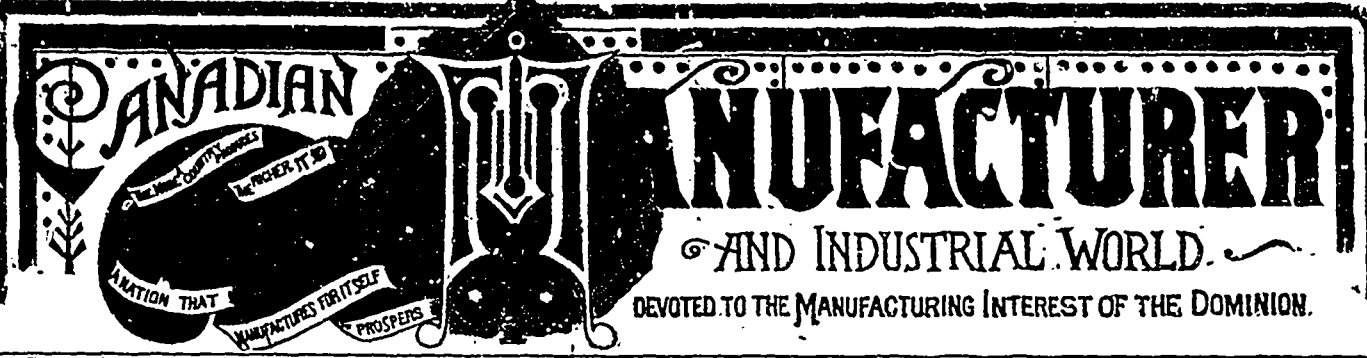
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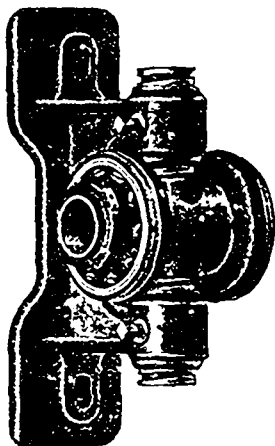
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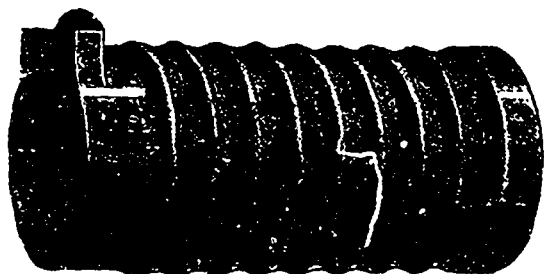
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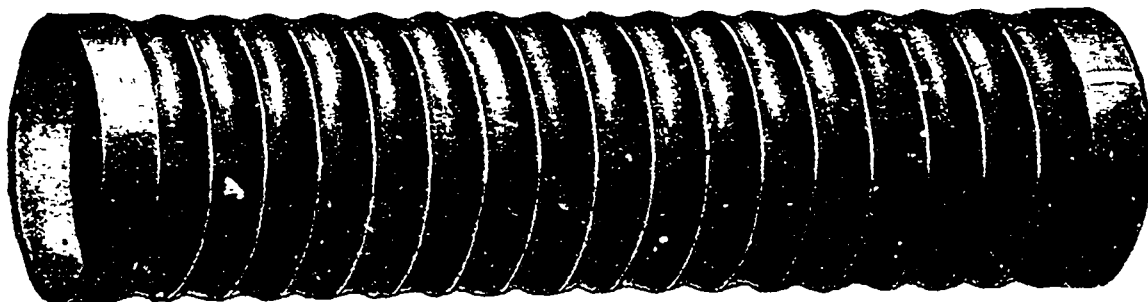


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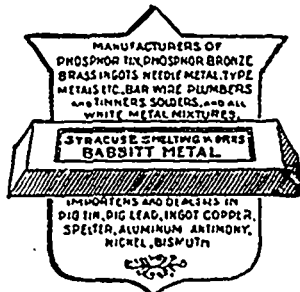
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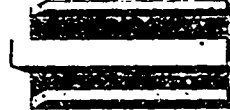
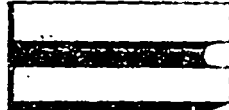
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Manufacturers of

MACHINE KNIVES

For WOOD-WORKING,
PAPER CUTTING and LEATHER SPLITTING
MACHINES,



Quality Warranted.

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TIRESOME

Lifting that carriage to inspect the writing. Actual tests made show the daily average to be 200 times. Think of it! Why not try an Underwood? The cost is only a trifle more.

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President.

J. J. SEITZ,
Gen. Manager.

Thomas Garlin's Sons Company

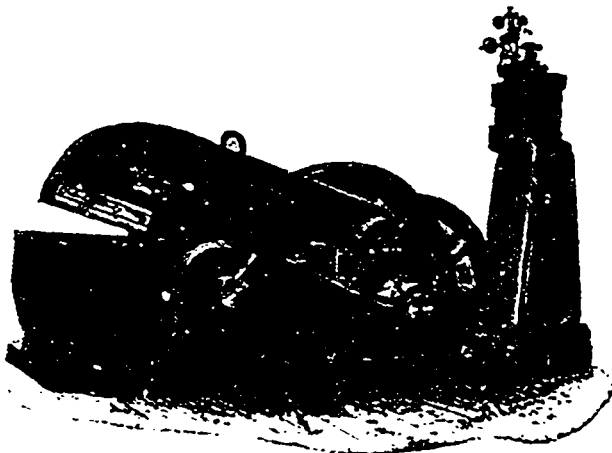
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**SHEARS,
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— AND —

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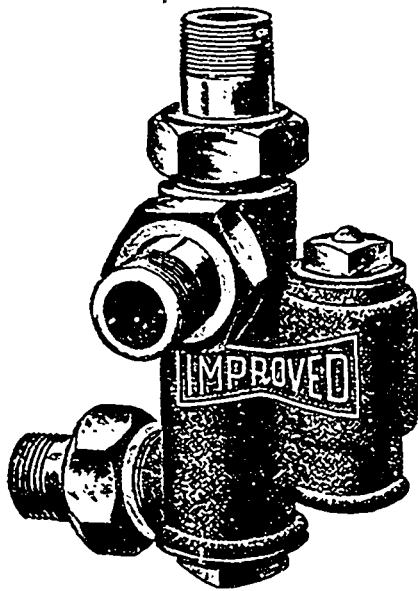
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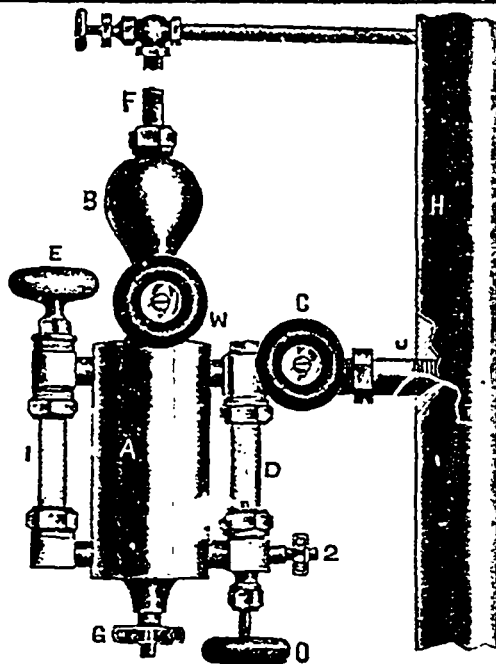
will thank you if, when you write them, you will say that you saw their announcement in

**The
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Manufacturer**

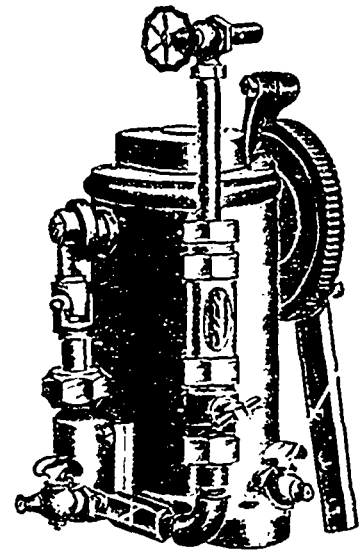
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IMPROVED T. J. G. INJECTOR
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IMPROVED MICHIGAN LUBRICATOR.



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OIL PUMP
with and without Sight Feed.

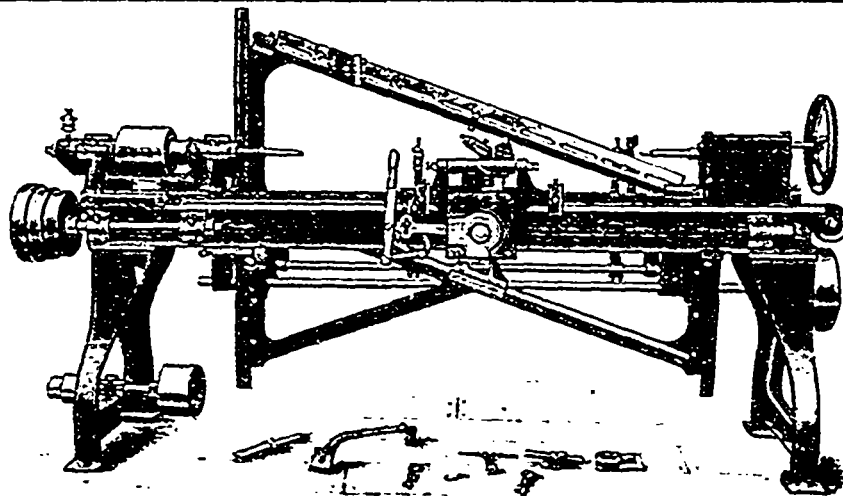
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HAMILTON, - ONT.

BACK-KNIFE LATHES

Made in three
Standard sizes:

- 24-inch,
- 36-inch,
- 50-inch,

To finish up to
2½ inches in
diameter.



We make
Lathes
to finish
up to nine
inches in
diameter.

Manufactured by

C. H. Cowdrey Machine Works, - Fitchburg, Mass., U.S.A.

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TORONTO, ONT.

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Hot Blast Heating Systems

— FOR —

Factories, Mills, Schools,
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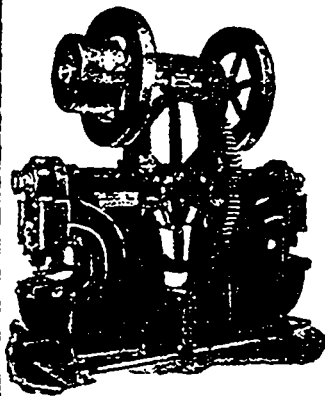
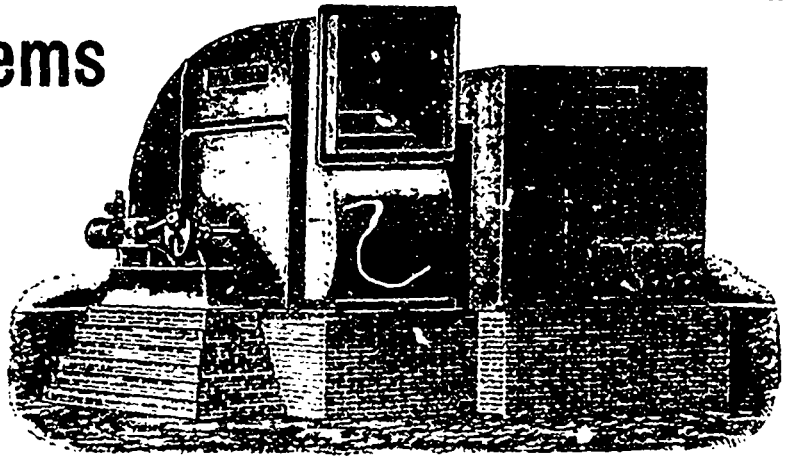
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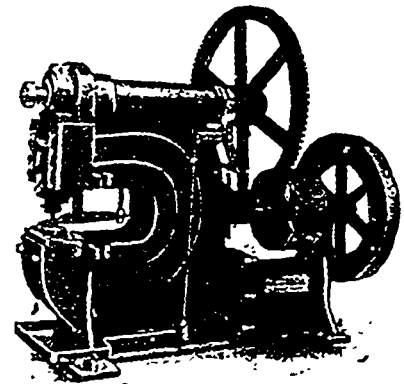
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*Single and Double Punches and Shears
Blacksmiths' Punches and Shears
Foot Power Hammers & Forging Machines*

H. W. PETRIE

GENERAL AGENT FOR CANADA

A Full Line Carried in Stock at 141 Front St. W., Toronto, Can.
Adjoining Union Station.



Packard

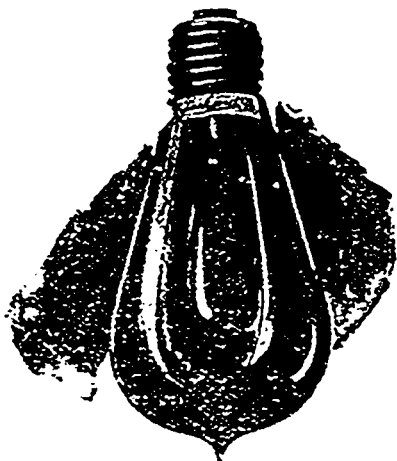
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to greater economy and satisfaction
in incandescent lamps.

ORDER A SAMPLE BARREL

of Packard Lamps and try them
alongside of the lamps you are now
using.

Packard Lamps have the greatest
sustained candle power and lowest
ultimate cost.



PACKARD ELECTRIC CO., Limited

MONTREAL—ST. CATHARINES—WINNIPEG

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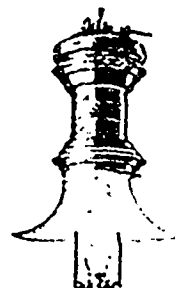
C. G. E. ARC LAMPS

The question of artificial lighting is at hand, let us solve the problem for you. Here are two types, we have many others,

— FOR —

Factories, Mills, Warehouses, Stores, Outdoor Lighting, etc. Alternating or Direct Current.

Send for Bulletin 4332. Series or Multipile Series.



Outdoor Alternating Current.

CANADIAN GENERAL ELECTRIC COMPANY, Limited

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BRANCH OFFICES—Montreal.

Halifax.

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Winnipeg.

Calgary.

Vancouver.

Rossland.

THE EUGENE F. PHILLIPS ELECTRICAL WORKS

MONTREAL, - CANADA

LIMITED

TORONTO STORE, 50 Adelaide Street West

Bare Copper Wire Weatherproof Wire

LONG DISTANCE PHONE 1103.

The Electrical Construction Company of London, Limited

32-40 Dundas St., London, Can.

Perfection TYPE

DYNAMOS and MOTORS

Multipolar or Bipolar, Direct-Connected or Belted.

OVER 1500 OF OUR MACHINES IN USE

We contract for complete installations, including wiring of factories.

We repair machines of any make.

Descriptive matter and estimates furnished on application.

Branches at Vancouver, Winnipeg, Toronto, Montreal, Halifax

WE beg to announce that we have employed a chemist, and will analyze any kind of metal or composition of metals at reasonable prices.

We also supply :

Ingot Copper,
Ingot Brass
and Bronze.

WRITE FOR PRICES.

Syraeuse Smelting Works

MONTREAL.

NEW YORK.

SEATTLE.

VOLTA ELECTRIC REPAIR WORKS

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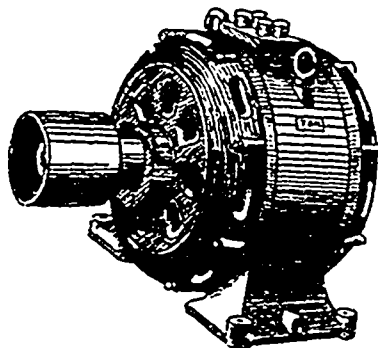
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OUR SPECIALTY:

ELECTRICAL APPARATUS

OF ALL KINDS
REPAIRED and RECONSTRUCTED.

LONG DISTANCE TELEPHONE
MAIN 4118.



Induction Motors

of one, two and three phases.

HIGH POWER FACTOR and EFFICIENCY

— ALSO —

A. C. Generators

IN ALL SIZES.

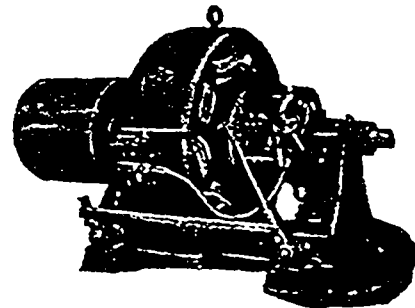
TORONTO & HAMILTON
ELECTRIC CO.

99-103 McNab North. HAMILTON, ONT.

The Jones & Moore

ELECTRIC CO., Limited

ELECTRICAL CONTRACTORS



DYNAMOS, TELEPHONES, SLOW
SPEED MOTORS, MOTORS, SUPPLIES,
DIRECT CONNECTED DYNAMOS.

We manufacture Direct Current Machinery in
all sizes and for any purpose.

20 and 22 ADELAIDE W.,
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SUNBEAM

The Lamp that sells for the most money.

The Lamp that saves the most money in
operation and gives the best light.

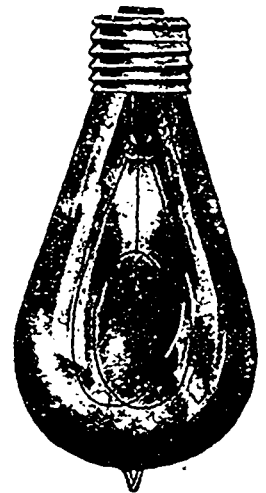
Used by the largest central stations.

MANUFACTURED BY THE

SUNBEAM INCANDESCENT LAMP CO. OF CANADA, Limited

Main Office: TORONTO.

Factory: ST. CATHARINES, ONT.



Special Metal Stampings

of all kinds made from customers' or our own Dies.

"EMPIRE" Wall Plugs and Wall Ties.

STANYON METALLIC FURNITURE CO., Limited

146-154 Niagara Street - TORONTO, CANADA

When you are wanting any Electrical Supplies

Such as **TELEPHONES,**

ARC LAMPS,

WRITE

DYNAMOS, Etc.

JOHN FORMAN, - 708-710 Craig Street, Montreal



ESTABLISHED IN 1880.

PUBLISHED ON THE FIRST AND THIRD FRIDAYS OF EACH MONTH

The Canadian Manufacturer Publishing Co., Limited.

McKinnon Building, Cor. Melinda and Jordan Sts., Toronto.

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J. J. CASSIDY, Editor and Manager

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CANADIAN NATIONAL EXHIBITION.

The Canadian National Exhibition just closed has been in every particular the most successful of the annual shows that Toronto has ever witnessed. This is perhaps the very best annual exhibition on the continent, and one of the few which is managed on a profitable financial basis. Each year new and permanent buildings are being added, and exhibits are increasing in number and completeness along all lines. That these efforts on the part of those in charge are being appreciated is attested to by the record-breaking attendance this year.

Manufacturers and the public in general quite clearly appreciate the value of the Exhibition. The former, from the standpoint of exhibitors, well recognize the value of the opportunities to show their products, and invariably they are finding good profit resulting from this source. To the public the Exhibition is a liberal education, an index to the progress being made in Canada in manufacturing, mining, agriculture, transportation, and in arts and sciences. The value of the Exhibition to Toronto, and to Canada generally, cannot be over-estimated.

Great as was the success of this year's Exhibition, the Association are already considering plans to make that of next year a greater success. The rapidly increasing number and variety of the manufacturing industries in this country certainly demands the best facilities for showing what they are doing, and the Exhibition management will leave nothing undone to assist in bringing home manufactures to the attention of the public.

The new Administration Building, opened this year, will be followed next year with a new Process Building. A new Machinery Hall is also needed, the machinery exhibits now being too widely distributed owing to the lack of space in the proper building. The machinery exhibit is one of the most important of the Exhibition, and if placed under one roof would probably be the most extensive. However, all needed improvements cannot be made at once, but will come in their natural sequence. In the meanwhile, Toronto, the province of Ontario, and

THE CANADIAN MANUFACTURER

Reaches all the Blast Furnaces, Iron and Steel Works, Rolling Mills, Manufacturers of Iron and Wood-working Machinery, Steam Engines and Boilers, Pumping and Mining Machinery, Electric Machinery, Textile, Pulp and Paper Mill Machinery, Water Power Plants, Cement, Sewer Pipe and Terra Cotta Works, Dealers in Steam Fitters' and Plumbers' Supplies, and all Hardware Merchants in Canada.

all Canada, in this now national institution, possesses the best annual exhibition held on the American continent, an institution which is doing a great and practical work for our industrial and commercial advancement.

DUMPING A BADGE OF DISTRESS.

The Cleveland Trade Review calls attention to the fact that just as the new Canadian tariff regulations for the prevention of "dumping" of products from the United States into Canada are being put into effect the report of the Chamberlain commission on the iron and steel trade should make its appearance in Great Britain with its recommendation of a system of tariffs. It had been expected that the Chamberlain commission would content itself with proposing some measure like that just put into effect in Canada, which should impose duties on dumped iron and steel products sufficient to make up for the cuts in prices by United States and German manufacturers. Instead the commission express the opinion that the situation can only be remedied by a system of tariffs arranged as follows:

First—A general tariff consisting of a low scale of duties for foreign countries, admitting British wares on fair terms.

Second—A preferential tariff, lower than the general tariff, for the colonies, giving adequate preference to British manufactures, and framed to secure freer trade within the British Empire.

Third—A maximum tariff consisting of comparatively higher duties, but subject to reduction by negotiation to the level of the general tariff.

These recommendations are very general, and while they do not preclude special provisions like that in Canada, to prevent the slaughtering of prices by outside competitors sending their surplus into Great Britain, they reflect the growing sentiment among British manufacturers of iron and steel, that a complete swing from free trade to protection is demanded by the changes of recent years in the international race in iron and steel. This belief will only be strengthened by the statistics of

the British foreign trade in iron and steel for the first half of 1904, showing an increase in imports—a steadily progressive movement in the past three years—and at the same time a considerable decrease in exports. The proposal of Mr. Chamberlain's commission is too radical, probably, to stand any chance in parliament. What may come, our contemporary thinks, is some form of protection against the dumped products of the United States and Germany. And such legislation, if so made as to be practically enforceable—of which there is doubt—should not cause any dismay in the United States. For dumping is but a badge of distress, doing little or no good to the dumper while it positively harms the dumped upon. Ample time will elapse, before any protection legislation in Great Britain will be seriously attempted, for observing the operation of the anti-dumping measure in Canada.

The following is the substance of the Canadian provision against dumping:

That whenever it shall appear to the satisfaction of the Minister of Customs, or of any officer of customs authorized to collect customs duties, that the export price or the actual selling price to the importer in Canada of any imported dutiable article, of a class or kind made or produced in Canada, is less than the fair market value thereof, as determined according to the basis of value for duty provided in the customs act in respect of imported goods, subject to an ad valorem duty, such article shall, in addition to the duty otherwise established, be subject to a special duty of customs equal to the difference between such fair market value and said selling price: Provided, however, that the special customs duty of any article shall not exceed one-half of the customs duty otherwise established in respect to the article, except in regard to the articles mentioned in items 224, 226, 228, and 231 of Schedule A, the special duty of customs on which shall not exceed 15 per cent. ad valorem. The articles referred to in items 224, 226, 228, and 231 in Schedule A are: Item 224—Iron in pigs, iron kentledge and cast scrap iron, \$2.50 per ton. Item 226—Iron or steel ingots, cogged ingots, blooms, slabs, billets, puddled bars and loops or other forms not otherwise provided for, less finished than iron or steel bars, but more advanced than pig iron, except castings, \$2 per ton. Item 228—Rolled iron or steel angles, tees, beams, channels, joists, girders, zeds, stars, and other rolled shapes or trough, bridge, building or structural rolled sections or shapes, not punched, drilled or further manufactured than rolled, 10 per cent. ad valorem. Item 231—Rolled iron or steel plates not less than 30 in. in width and not less than $\frac{1}{4}$ in. in thickness, n.o.p., 10 per cent. ad valorem.

Under this provision the duty on structural material, for example, imported from the United States would be 25 per cent. of \$32 a ton, the price now maintained by the structural pool. It is questionable if on this basis any large business could be done in Canada in competition with British manufacturers on whose products there are preferential duties. But the chances of evading the law by private arrangements and rebates, while billing the material at full prices in the United States are to be reckoned with. Offers have already been received by Canadian houses, in which manufacturers in the United States suggest that goods will be invoiced into Canada at regular prices, but Canadian dealers will be paid

salaries for handling the goods. On the other hand, if the new law can be strictly enforced it promises to give the iron and steel trade of Canada long-sought relief from the practical control in some lines of products exercised by foreign iron and steel manufacturers.

The significant feature of these Canadian and British attempts to cure trade evils, says the Iron Trade Review, is that international movements in iron and steel are to assume increasing importance. If tariff changes come in the United States, as they are very apt to come in the course of time, there will be more reason why international agreements as to their foreign trade should appeal to iron and steel manufacturers of the United States, Germany and Great Britain, than seems at all probable to-day.

THE GRAND TRUNK PACIFIC SURVEY.

The Transcontinental Railway Commission have given out the following information:

It has been arranged to commence the surveys at once all the way along the proposed line from Lake Abitibi to Moncton. This section has been divided into three districts, one extending from Moncton to the boundary line between the provinces of New Brunswick and Quebec; the second extending from the end of the first district to Clear Lake in the province of Quebec; and the third extending from Clear Lake to the western boundary of the province of Quebec. The sub-divisions of this section have not yet been decided upon, and will not be until the preliminary surveys are completed or considerably advanced.

Twenty-seven surveying parties are now being organized as rapidly as engineers and men can be obtained. They will be located as follows: Between Moncton and Chipman, two parties; Chipman to Boisetown, one party; Chipman towards Fredericton and St. John River, one party; between Boisetown and Plaster Rock, two parties; Plaster Rock to Grand Falls, one party; Grand Falls to Edmunston, one party; Edmunston to Connor, one party; Connor to Lake Pohengamook, one party; between Lake Pohengamook, which is the boundary between New Brunswick and Quebec, and to or near Chaudiere, four parties; one at each end and two in the centre; Quebec, including both sides of the proposed bridge, one party; from there on to Clear Lake, four parties, covering about 32 miles each; from Clear Lake to the boundary between Ontario and Quebec, and south of Lake Abitibi, four parties; four parties on the route running north of Lake Abitibi, and between that and the point where the southern route converges.

No action will be taken to make any surveys west of the province of Quebec until it is decided whether the surveys made by the Grand Trunk Pacific will be taken over. It is understood that this will be decided in the near future.

The object in running two surveys from Chipman is to ascertain which of the routes is the most desirable, the one directly across New Brunswick through Plaster Rock, or the one down the St. John River, branching off somewhere above Fredericton. Surveys of the lines running

north and south of Lake Abitibi, respectively, will be made for the purpose of securing such information as will enable an intelligent decision to be arrived at as to where it is desirable to run the railway, north or south of that lake.

No divisional engineers will be appointed at present. The camping outfits, including tents and supplies, are being ordered, and everything done to carry forward the work of surveying with the utmost rapidity. The Board hopes to be able to secure a sufficient number of engineers in Canada to carry on the work. The engineering parties being formed will be put in the field in the course of a few days. The assistant chief engineer and the district engineers will also be appointed in a day or so. The engineers in charge of the surveys in the eastern end will be instructed to run preliminary lines and report such data and information as will lead to a decision upon the final location. As soon as these parties are in the field, with their supplies and transportation arranged for, the Commission will direct their attention to the section lying between Winnipeg and Lake Abitibi. It is their determination to cause that portion of this section, which is required to give relief to the North West, to be constructed as rapidly as possible.

It will require nearly 600 men to make up the 27 parties. It is proposed to carry on the survey work throughout the winter. Other surveying parties for the western end will be organized and put in the field as required.

NEW ZEALAND TARIFF PREFERENCE.

The Dominion Government have received the text of the preferential and reciprocal trade act recently adopted by the parliament of New Zealand, the provisions of which are applicable to Canada as well as to other portions of the Empire. In its operation the act is not confined entirely to the British Empire, as clause 13 says that when any country not part of the British dominions reduces or abolishes, or purposes to reduce or abolish, the duty on any product or manufacture of New Zealand the governor may enter into an agreement with that country to reduce or abolish the duty on any articles the produce or manufacture of such country, to such an extent that the estimated revenue so remitted shall equal as nearly as possible the estimated revenue remitted by that country. No such agreement, however, is to have effect until ratified by parliament.

In connection with this clause the colonial secretary informed the governor, the Earl of Ranfurly, then in London:

"I assume that your ministers realize that any advantage which may be granted to a foreign government in future by virtue of any reciprocal arrangement under section 13 cannot be withheld from a third foreign power entitled by treaty to the most-favored-nation treatment in New Zealand."

There are three schedules to the new act. In the first one is cement, the duty on which, when imported from foreign countries, is doubled. This change is intended to benefit the cement industry in Canada, as it gives its

manufacturers an advantage of 48 cents a barrel over American manufacturers, the existing duty being 48 cents.

On the following articles, which appear in the second schedule, the existing duties are increased 50 per cent. The following list shows the duties on Canadian and on foreign goods:

NEW ZEALAND PREFERENTIAL TARIFF,
SECOND SCHEDULE.

ARTICLES.	Duty on	
	Canadian goods	Foreign goods.
Basket and wicker ware, not being furniture—per cent.....	20	30
Bicycles, tricycles, and like vehicles, finished or partly finished, including weldless steel tubing cut to short lengths, per cent.....	22½	33½
Boots, shoes, slippers, goloshes, clogs, patterns, vamps, uppers, and laces, per cent.....	22½	33½
Candles, per pound.....	\$0 02	\$0 03
Carriages, carts, drays, wagons, and perambulators, and wheels for the same, per cent.....	20	30
China, porcelain, and parian ware, per cent....	20	30
Clocks, per cent.....	20	30
Cordage and rope, not elsewhere specified, per cent.....	20	30
Cream of tartar, per pound.....	\$0 02	\$0 03
Earthenware, stoneware, and brown ware, per cent.....	20	30
Fancy goods and toys, per cent.....	20	30
Firearms of all kinds, per cent.....	20	30
Fish, potted and preserved, per pound.....	\$0 04	\$0 06
Furniture and cabinetware other than iron, not elsewhere specified, per cent.....	25	37
Glass, crown, sheet, and common window, per 100 superficial feet.....	\$0 40	\$0 73
Glassware, plate and polished glass, colored, and other kinds, not elsewhere specified, globes and chimneys for lamps, per cent....	20	30
Hardware, ironmongery, and hollow ware, per cent.....	20	30
Hops, per pound.....	\$0 12	\$0 18
Iron nails, per 112 pounds.....	\$0 48	\$0 72
Iron pipes and fittings for same, including main cocks, per cent.....	5	7½
Lamps, lanterns, and lampwicks, per cent....	20	30
Musical instruments, viz., pianos, per cent....	20	30
Paper hangings, paper, wrapping, viz., blue candle, glazed cap, glazed casings, small hand, lumber hand, and tissue, per 112 pounds.....	\$1 22	\$1 83
Paper, wrapping, other kinds, including brown, cartridge, and sugar papers, per 112 pounds.....	\$1 22	\$1 83
Plate and plated ware, per cent.....	20	30
Pumps, and other apparatus for raising water per cent.....	20	30

On the following articles, which appear in the third schedule, the existing duties are increased by 30 per cent.; most of them were dutiable at 20 per cent., so that the foreign duty will now be 25 per cent.:

Fittings for bicycles and tricycles, viz., all rubber tires, pneumatic tires, outside covers and inner tubes, rubber and cork handles, pedal rubbers, drop forgings and stampings, ball bearings, weldless steel tube in full lengths, rims, forks, and spokes in the rough; gas engines and hammers and oil engines; gum boots; iron and steel cordage; iron, plain black sheet, rod, bolt, bar, and plate; iron wire netting; printing paper; rails for railways and tramways; sailcloth, canvas, and unbleached bouble-warped duck; surgical and dental instruments and appliances.

NEW CUSTOMS REGULATIONS.

The attention of Exporters and Importers is specially directed to the following summary of the Customs Laws and Regulations concerning Customs requirements in respect of goods imported into Canada, on and after October 1, 1904:

INVOICES TO SHOW CONTENTS OF EACH PACKAGE.

It is required that Invoices from Exporters to Importers in Canada shall show the *marks and numbers on the packages*, in such a manner as to indicate truly the quantities and values of the articles comprised in each exportation package, the packages to be legibly marked and numbered on the outside when of such a character as to enable such marks and the numbers to be placed thereon.

If in any *package* any goods are enclosed which are not included in the invoice of such package, the enclosure (to avoid seizure) should be noted on the Invoice of the outside package containing the enclosure, thus—"3 parcels enclosed" (or as the case may be).

Goods certified for entry under the British Preferential Tariff shall be invoiced and packed separately from other goods.

INSTRUCTIONS AS TO WAY BILLS AND MARKS AND NUMBERS ON PACKAGES.

In order to facilitate the Customs entry of goods imported from all countries (and especially from the United States) into Canada, shippers are advised that the Way-bills should show full information regarding name and address of Consignee, marks and numbers of packages and description of packages.

Where goods are shipped in bulk, the number of pieces, bundles, bushels, etc., is required.

In the case of agricultural implements, the number and description of each class of implement is to be stated, except when packed in cases, crates, or other containers, when the number and description of such packages should be stated.

It is very important that Way-bills and Bills of Lading show the required information, in order that the "Carrier" may furnish the reports required to be made at the Custom House and prepare manifests for transporting goods in bond.

VALUATION FOR CUSTOMS DUTY.

Customs Act, Section 58. Whenever any duty *ad valorem* is imposed on any goods imported into Canada, the value for duty shall be the fair market value thereof, when sold for home consumption, in the principal markets of the country whence and at the time when the same were exported directly to Canada. 46 V., c. 12, s. 68.

Customs Act, Section 59. Such market value shall be the fair market value of such goods in the usual and ordinary commercial acceptance of the term, at the usual and ordinary credit, and not the cash value of such goods, except in cases in which the article imported is, by universal usage, considered and known to be a cash article, and so *bona fide* paid for in all transactions in relation to such article; and all invoices representing cash values, except in the special cases herein referred to, shall be subject to such additions as to the collector or appraiser of the port at which they are presented appear just and reasonable, to bring up the amount to the true and fair market value, as required by this section. 46 V., c. 12, s. 69.

VALUE FOR DUTY UNDER SPECIAL CONDITIONS.

Customs Act, Section 64. The fair market value of goods shall be taken to include the amount of any drawback which has been allowed by the Government of any other country, also the amount of consideration or money value of any special arrangement between the exporter and the importer or between any persons interested therein because of the exportation or intended exportation of such goods, or the right to territorial limits for the sale or use thereof, and also the amount or money value of any so-called royalty, rent or charge for use of any machine or goods of any description, which the seller or proprietor does or would usually charge thereon when the same are sold or leased or rented for use in the country whence

they have been exported to Canada. When the amount of such drawback, consideration, money value, royalty, rent or charge for use has been deducted from the value of such goods, on the face of the invoice under which entry is to be made, or is not shown thereon, the Collector of Customs or proper officer shall add the amount of such deduction, drawback, consideration, money value, royalty, rent or charge for use, and cause to be paid the lawful duty thereon. 52 V., c. 14, s. 6.

Customs Act, Section 65. No deduction of any kind shall be allowed from the value of any goods imported into Canada, because of any drawback paid or to be paid thereon, or because of any special arrangement between the seller and purchaser having reference to the exportation of such goods, or the exclusive right to territorial limits for the sale thereof, or because of any royalty payable upon patent rights, but not payable when goods are purchased for exportation, or on account of any other consideration by which a special reduction in price might or could be obtained: Provided, that nothing herein shall be understood to apply to general fluctuations of market values. 46 V., c. 12, s. 71.

2. Whenever goods are imported into Canada under such circumstances or conditions as to render it difficult to determine the value thereof for duty, either because such goods are not sold for use or consumption in the country of production,—or because a lease of such goods or the right of using the same is sold or given, but not the right of property therein,—or because such goods having a royalty imposed thereon, the royalty is uncertain or is not, from other causes, a reliable means of estimating the value of the goods,—or because such goods are usually or exclusively sold by or to agents, or by subscription, or are sold or imported in or under any other unusual or peculiar manner or conditions, of all which matters the Minister of Customs shall be sole judge,—the Minister of Customs may determine the value for duty of such goods; and the value so determined shall, until otherwise provided, be the value upon which the duty on such goods shall be computed and levied. 51 V., c. 14, s. 15.

DUTIABLE CHARGES.

Customs Act, Section 66. No deduction from the value of goods contained in any invoice shall be allowed on account of the assumed value of any package or packages, where no charge for such package or packages has been made in such invoice; and where such charge is made the Customs officer shall see that the charge is fair and reasonable, and represents no more than the original cost thereof. 46 V., c. 12, s. 72.

Customs Act, Section 67. No deduction from the value of goods in any invoice shall be made on account of charges for packing, or for straw, twine, cord, paper, cording, wiring or cutting, or for any expense incurred or said to have been incurred in the preparation and packing of goods for shipment, and all such charges and expenses shall, in all cases, be included as part of the value for duty. 46 V., c. 12, s. 73.

INVOICES, CERTIFICATES AND DECLARATIONS.

On and after 1st October, 1904, *Invoices in duplicate properly certified* shall be delivered at the Custom House with the bills of entry for all imported goods.

Every such invoice shall contain a sufficient and correct description of the goods, and in respect of goods sold by the exporter shall show in one column the actual price at which the articles have been sold to the importer, and in a separate column the fair market value of each article as sold for home consumption in the country of export.

The "price" and "value" of the goods in every case aforesaid are to be stated as in condition packed ready for shipment at the time when, and at the place whence the goods have been exported directly to Canada.

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.

The following Certificate of value is prescribed for Invoices of goods sold and exported to Canada, to be signed by the exporter or by a partner, official or employee of the exporter having a knowledge of the facts certified to, and to be written, printed or stamped on the Invoice.

I, the undersigned, do hereby certify as follows:

- (1) That I am the exporter of the goods in the within invoice mentioned or described;
- (2) That the said Invoice is in all respects correct and true;
- (3) 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 thereon;
- (4) 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;
- (5) That no different invoice of the goods mentioned in said invoice has been or will be furnished to any one; and
- (6) 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 any one on behalf of either of them, either by way of discount, rebate, salary, compensation, or in any manner whatsoever other than as shown in the said invoice.

Dated at this day of 19 (Signature)

The following Declaration is prescribed to be made by the foreign owner or exporter or his agent in the Country whence the goods are exported, in regard to goods shipped to Canada on consignment, without sale by the exporter prior to shipment,—to be attested to in British Countries before a Collector of Customs, Notary Public or other official authorized to administer Oaths; and in other Countries before a British or other Consul, Notary Public or other official authorized to administer Oaths.

I, of do solemnly and truly declare as follows:

- (1) That I am the owner of the goods shipped on consignment to at in Canada, and described in the annexed invoice;
- (2) That the said invoice is a complete and true invoice of all the goods included in this shipment;
- (3) That the said goods are properly described in the said invoice;
- (4) That there is included and specified in the said invoice the true value of all cartons, cases, crates, boxes and coverings of any kind, and all charges and expenses incident to placing the said goods in condition packed ready for shipment to Canada;
- (5) That none of the said goods have been sold by or on behalf of the owner aforesaid to any person, firm or corporation in Canada;
- (6) That the said invoice contains a just and faithful valuation of such goods at their fair market value as sold for home consumption in the principal markets of the country whence the same are exported directly to Canada, and that such fair market value is the price at which the said goods are freely offered for sale in like

A regulation of considerable importance to Canadian manufacturers who do a foreign trade has been adopted by order-in-council upon the recommendation of the Customs Department. It provides that articles of Canadian manufacture may be reimported temporarily without the payment of duty when returned to Canada for repairs and to be again exported. For example, a Canadian manufacturer may export a complicated piece of machinery. This may get out of order, in which case it could only be re-

quantity and condition by me or by dealers therein to purchasers in said markets in the ordinary course of trade at the usual credit, 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 any special consideration whatever;

(7) That if the value for duty of any goods as stated in this invoice is other than the value thereof as above specified, such value for duty has, to the best of my knowledge and belief, been fixed and determined under the authority of the Customs Act at the value stated in the said invoice; and

(8) That no different invoice or account thereof has been or will be furnished to any one by me or on my behalf.

Declared at this day of 19 before me (Signature)

The following forms of Invoices are approved:

INVOICE OF GOODS SOLD BY THE EXPORTER PRIOR TO THEIR SHIPMENT TO CANADA.

(Place and date).....

Invoice of purchased by of from of to be shipped per

Marks and Numbers on Packages.	QUANTITIES AND DESCRIPTION OF GOODS.	Fair market value as sold for home consumption.	Selling price to the purchaser in Canada.	
			@	Amount.

(Signature of seller or agent).....

INVOICE OF GOODS SHIPPED TO CANADA ON CONSIGNMENT WITHOUT SALE BY THE EXPORTER PRIOR TO SHIPMENT.

(Place and date).....

Invoice of consigned by of to of to be shipped per

Marks and Numbers on Packages.	QUANTITIES AND DESCRIPTION OF GOODS.	Fair market value as sold for home consumption.	
		@	Amount.

(Signature of owner or agent)

Surtax Certificates remain same as heretofore.

paired here. Heretofore that piece of machinery when entering Canada would have to pay duty; now it can be admitted free of duty for repairs, subject to re-exportation. It is provided in the regulations that articles shall be identified to the satisfaction of the collector of customs at the port of entry, and that a sufficient bond for double the amount of customs duty shall be delivered to the collector as security for the exportation of the articles on payment of duty thereon within six months from the time of entry.

Exhibition Displays.

Many of the friends of THE CANADIAN MANUFACTURER presented excellent displays of their products at the recent Canadian National Exhibition in Toronto, and we take pleasure in making mention of some of them

CHAPMAN DOUBLE BALL BEARING CO.

This progressive company had an extensive exhibit in Machinery Hall that appealed especially to manufacturers and users of power. Last year this company equipped the line shafting in Machinery Hall and the results were so satisfactory to the Exhibition management that they made a similar arrangement for this year. The company's exhibit this year contained a full range of sizes of shaft bearings fitted to most of the standard hangers and pillow blocks, together with bearings for loose pulleys and mule stands and demonstrated the superiority of their bearings over the old fashioned style of bearings. Since putting their bearings on the market, about four months ago, the company have installed them in over 30 factories, which include some of the most progressive concerns in Canada. In every case they have given perfect satisfaction, and many strong letters have been received by the Chapman Co. endorsing the bearings and setting forth the immense saving in power which they effect over the ordinary journal bearings. Their works are located at 39 Pearl St., and offices at 39 Scott St., Toronto.

CANADA FOUNDRY CO.

The Canada Foundry Co. occupied their regular space on the south-west side of Machinery Hall, and showed an extensive line of water pipes, valves, hydrants, ornamental iron work, etc. The exhibit included pumps in operation, mining pumps, and many other lines of power machinery and appliances. The exhibit was lighted by the Canadian General Electric Co. with their latest type of multiple A.C. Arc lamps. Near Machinery Hall the company showed one of the towers which they are building for the Niagara & Toronto Power Co., to transmit electric energy from Niagara Falls to Toronto, also a fine fountain. The exhibit was in charge of Mr. H. O. Edwards, advertising manager of the Canada Foundry Co. and the Canadian General Electric Co., and his assistant Mr. E. B. Price.

GEO. B. MEADOWS CO.

The offices of the New Administration Building are equipped with brass counter railings, cashier cages, etc., manufactured and installed by the Geo. B. Meadows Wire Iron & Brass Works Co. This company are the leading manufacturers in Canada of this line of work and their artistic work in the new building will form a permanent exhibit for them. They are also large manufacturers of fire escapes and all lines of ornamental brass and iron work. The company are located at 117 King St. West, Toronto.

UNITED ELECTRIC CO.

This company occupied their old space in Machinery Hall, and among the electrical machinery exhibited may be mentioned several large dynamos and motors, bipolar and multipolar generators, induction alternators, induction motors together with a large number of electric fans, switchboards, rheo-

stats and electrical recording instruments. The company made a fine exhibit and attracted much attention. Their works are located at 107 Niagara St. and offices and warerooms at 134 King St. West, Toronto.

THE SYRACUSE SMELTING WORKS.

This well known company exhibited in Machinery Hall a complete line of babbitt metal, solder, phosphor tin, phosphor bronze, pig tin, pig lead, ingot copper, spelter, antimony and other white metals and their constituents. Allied with this company is the Montreal Copper Co., who manufacture copper products of all kinds from the raw materials. A feature of the exhibit was the Gautier crucibles which are sold in Canada by the Syracuse Smelting Works. The company have installed a new reverberatory furnace in their Montreal plant and made other improvements.

THE J. C. MCLAREN BELTING CO.

The J. C. McLaren Belting Co., Montreal and Toronto, exhibited a line of leather belting from the smallest sizes up to 48 inch. A four foot belt in the exhibit has been sold to the Firstbrook Box Co., Toronto, and will be one of the largest leather belts in use in Canada. Quite a number of other leather belts exhibited were sold to manufacturers and other power users. Knuckle belting, card clothing, etc., were also shown in the exhibit of this well known and progressive company. The Toronto office is located at 50 Colborne St.

THE DOMINION BELTING CO.

The Dominion Belting Co., Hamilton, Ont., the only manufacturers of cotton belting in Canada, made a fine exhibit of their well known "Maple Leaf" brand of stitched cotton duck belting. The success of this company since formation, less than two years ago, has been most encouraging. Their product is now in wide use in all kinds of mills and factories. "Maple Leaf" belt dressing manufactured by the company was also shown in the exhibit.

THE IMPERIAL STEEL & WIRE CO.

This company exhibited in the Process Building, operating a nail machine manufactured by the National Machinery Co., Tiffin, Ohio, and one of the style of machines being installed in the new plant at Collingwood, Ont., which was designed and is being erected by the Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio. Major J. A. Currie is president and general manager of the Imperial Steel & Wire Co., with offices in the Temple Bldg., Toronto.

VON DER OSTEN BRICK PRESS.

The Weddell Bridge & Engineering Co., Trenton, Ont., exhibited a new brick press, the invention of E. Von der Osten, Toronto. The press is specially adapted to the manufacture of cement brick and a company is being promoted by Messrs. Sheetz & Lynde, Toronto, for the exploitation of the new machine.

THE ONTARIO WIND ENGINE & PUMP CO.

This company who have made a wide reputation for the manufacture of airmotors' towers, tanks, etc., exhibited in the Implement Building. The company are doing a large export business, having recently shipped a number of air motors to India. Their works are located at 95 Atlantic Ave., Toronto.

THE GOLDIE & MCCULLOCH CO.

The Goldie & McCulloch Co., Galt, Ont., showed a full line of planers, moulders, power saws, and other woodworking machinery, as well as Ideal gasoline engines, milling separators and other of their extensive line of machinery. The company occupied their regular space in the centre of Machinery Hall, and their exhibit attracted much attention among machinery men.

THE CANADIAN BEARINGS.

The Canadian Bearings, Hamilton, Ont., showed a full line of Wright Taber Roller Bearings, the application of which was fully demonstrated. The company are now preparing to erect a factory in Hamilton for the manufacture of this power economizer.

THE REEVES PULLEY CO.

The Reeves Pulley Co., made an exhibit in the Manufacturers Annex Building, of their well-known line of split wood pulleys. The exhibit included a 48 inch pulley sold to Firstbrook Box Co., Toronto. Some more Reeves pulleys were shown in Machinery Hall. Their works are located at 16 Pearl St., Toronto.

D. K. MCLAREN.

D. K. McLaren, Montreal and Toronto, had an attractive display of solid leather belting in Machinery Hall. He received the highest award at the Paris Exposition of 1900, and the product is well known to Canadian manufacturers. Weather proof rubber belting, English card clothing, textile supplies, etc., were also shown. The Toronto warehouse is located at 132 Bay St.

THE UNITED TYPEWRITER CO.

The United Typewriter Co., made a fine exhibit of Underwood machines. The many advantageous points of this well-known machine were fully demonstrated to visitors. The offices and salesrooms of the company are at 7 and 9 Adelaide St. East, Toronto.

THE A. R. WILLIAMS MACHINERY CO.

This well known machinery company made a very attractive display of iron and wood working machinery in Machinery Hall. The exhibit included milling machines, shapers, gang drills, planers and other iron working machinery. Also a planing mill in operation and other woodworking machinery. The company are located at 95 Front St. West, Toronto.

THE JONES & MOORE ELECTRIC CO.

This well known company showed a full line of motors, dynamos and other electrical apparatus, including arc lamps, incandescent lamps, switch boards, telephone instruments, electric fans, meters, etc. The company occupied their regular space in Machinery Hall. Their factory is at 296 Adelaide St. West, and offices 22 Adelaide St. West, Toronto.

THE PHILIP CAREY MFG. CO.

The Philip Carey Mfg. Co., showed in Machinery Hall an exhibit of Carey's Magnesia Flexible Cement Roofing. It is absolutely fire proof; acids, fumes, smoke, etc., do not affect it. Mr. O. A. Cole is Canadian manager for the company with offices and sales rooms at 100 Front St. East, Toronto.

GEO. S. SINCLAIR & SONS.

Among the patents issued this year is a mechanical device for coupling shafts of

different sizes together without the use of key bolts, and requires no wrench to put on or take off, and is attracting the attention of the machinery men. The salient features are the safety, simplicity and smooth appearance. It has been tested and proved to be a success, and is winning for itself a large place among power users. The company exhibited different sizes of these new couplings and attracted much attention. They are located at Warton, Ont.

JONES' UNDERFEED STOKER.

The Underfeed Stoker Co., Toronto, equipped the power house of Machinery Hall with their well-known fuel economizers and smoke preventers. The "Jones" method is a radical departure from existing methods of firing boilers, as the fuel is fed to the fire from below instead of on the top and the system is fulfilling the requirements of the most rigid smoke by-laws in Europe, the United States, and Canada. Not only do the company guarantee an abatement of the smoke nuisance, but substantial reductions in the fuel bills. The head offices of the company are located at 20 King St. East, and are in charge of Mr. James Milne.

TORONTO & HAMILTON ELECTRIC CO.

The Toronto & Hamilton Electric Co., Hamilton, Ont., exhibited several of their well-known T. & H. dynamos and motors, and direct connected motors, also switchboards, arc lamps, etc. They also exhibited their new type of two and three phase motors, placed on the market a year or so ago. These new motors are meeting with a wide sale. The exhibit of the company was in Machinery Hall and in charge of Mr. H. E. Job, manager of the company.

BABCOCK & WILCOX BOILERS.

Babcock & Wilcox, Limited, Montreal and Toronto, showed one of their well-known B. & W. water tube boilers of 20 h.p. capacity to carry 130 pounds of steam pressure. The boiler was exhibited as installed ready for operation and gave a good idea of the appearance of this type of boiler as in operation in nearly every part of the world. The exhibit was in charge of Mr. A. C. Larkin, manager of the Toronto offices of the company at 114 King St. West.

THE METALLIC ROOFING CO.

As in former years the Metallic Roofing Co., Toronto, made an extremely interesting exhibit in the Manufacturers Building. In their exhibit were shown the various styles of ornamental and architectural iron and metal work which they manufacture. The factory of this well-known company is located near the exhibition grounds and many interested in this line of work took the opportunity to visit it.

JAS. MORRISON BRASS MFG. CO.

Of all the handsome art furnishings shown at the Fair, three of the most striking are displayed by the James Morrison Brass Mfg. Co., in Machinery Hall. One is an exquisite miniature metal fountain for conservatories. This company also showed the Netherby Flush Valve which they will manufacture in Canada. They are located at 89 Adelaide St. West, Toronto.

THE DODGE MFG. CO.

The exhibit of the Dodge Mfg. Co., Toronto, in Machinery Hall, included a large line of

power transmission machinery, including the well-known Dodge wood-split pulleys, shafting, hangers, clutches, etc.

CANADIAN WESTINGHOUSE CO.

The Canadian Westinghouse Co., Hamilton, Ont., furnished the arc circuit regulators for the electric power and light plant in Machinery Hall.

GUTTA PERCHA & RUBBER MFG. CO.

The Gutta Percha & Rubber Mfg. Co., Toronto, exhibited a full line of their rubber goods, including mechanical rubber goods, used by manufacturers and power users.

OTHER MACHINERY EXHIBITS.

The Eureka Mineral Wool & Asbestos Co., Toronto, had a fine exhibit of their line of boiler covering, packing, roofing, etc., and also exhibited cling surface belt dressing and the product of the Smooth-on Mfg. Co.

S Vessot & Co., Joliette, Que. and Toronto, showed a full line of Champion Feed Mills. Also a line of Rossendale belting manufactured by the Rossendale Belting Co., Toronto.

The Smart-Turner Machine Co., Hamilton, Ont., which recently purchased the Hamilton Motor Works had an attractive display of gasoline engines, pumps, etc.

C. Wilson & Sons exhibited in Machinery Hall a complete line of scales, bakers machinery, etc. They are located at 67 Esplanade East, Toronto.

R. H. Buchanan & Co., Montreal, showed an Ericson hot air engine which they manufacture.

The McLachlan-Joy Electric Co., Toronto, showed a number of dynamos, motors, and switchboards.

The Georgian Bay Engineering Works, Midland, Ont., of which Mr. Thexton is manager, exhibited a gasoline engine of a new type.

The Waterous Engine Co., Brantford, Ont., furnished a Waterous engine for power purposes in Machinery Hall.

Wayland Williams, Montreal, exhibited the Roberts filling machine for transferring oil and other substances from the tank for use.

W. S. Shankland, Toronto, had a display in Machinery Hall of a line of chemical, sand and cement brick which he manufactures.

The Fairbanks Co., Montreal and Toronto, exhibited in Machinery Hall an extensive line of scales, valves, transmission appliances, steam specialties and machinery.

The Canada Metal Co., Toronto, made a good exhibit of babbitt metal and other white metal.

The Canadian Oil Co., Toronto, had an attractive exhibit of lubricating oils, paints, and petroleum products in the Manufacturers Building.

The McLachlan Gasoline Engine Co., made a complete exhibit of gasoline threshing, heating and stationary engines. They are located at 201 Queen St. East, Toronto.

A. W. Spooner, Port Hope, Ont., as usual showed a full line of Spooner's copperine.

The Office Specialty Co., Toronto, Adams Bros., Toronto, and the Globe-Wernicke Co., Stratford, Ont., exhibited lines of office furniture and equipment.

The Consolidated Electric Co., showed a line of "King Edward" dynamos and motors. Mr. J. G. Howorth, general manager of the company is the inventor of these dynamos and motors. The company are located at 710-724 Yonge St., Toronto.

Goold, Shapley & Muir, the well-known Brantford company showed a full line of gas and gasoline engines, pumps, grain grinders, etc., and occupied their old position on the north-west side of Machinery Hall.

The Roman Stone Co., Toronto, made an exhibit of their line of concrete building material. This company's product is largely used in building operations.

The Page Wire Fence Co., Walkerville, Ont., made an extensive exhibit of their product in the Implement Building, and also had an outside exhibit.

Acetylene Gas Apparatus. The exhibitors of acetylene gas apparatus included the Siche Gas Co., and Keith & Fitzsimmons, Toronto, the Kurtz Acetylene Co., Kingsville, Ont., and the St. Thomas Acetylene Mfg. Co., St. Thomas, Ont.

Messrs. Ker & Goodwin, Brantford, Ont., exhibited in Machinery Hall a full line of chucks which they recently began to manufacture. The company report a good demand for their line.

MECHANICAL INSTALLATION AT MINNESOTA STATE CAPITAL.

The new Minnesota State Capital, at St. Paul, Minn., which has been in process of construction for the past few years, is now nearly completed. This building containing about 4,000,000 cubic feet of contents is heated and ventilated by the fan system of forced air circulation, lighted by electricity, provided with hydraulic elevators and in every particular is thoroughly modern in design and construction.

The heating and ventilating apparatus is grouped at five points, each apparatus consisting of a 9x4½ electrically driven Sturtevant steel plate fan, the combined normal capacity of which is 225,000 cubic feet of air per minute, and a Sturtevant heater of ample capacity. These apparatus are operated in connection with five ventilating fans exhausting air from the various rooms. The electric lamps for illuminating purposes require an equivalent of 7000-16 candle power lamps.

The power house is about 367 feet away from the main building, and is connected to it by means of an underground tunnel. The boiler plant consists of four water tube boilers draft for which is supplied by two seven foot Sturtevant induced draft fans driven by direct connected Sturtevant engines. The chimney is but 15 feet above the roof, and conforms harmoniously with the style of architecture of the main building. These induced draft fans are so arranged that they may or may not be used with the economizers, and have a capacity to deliver 16,000 cubic feet of air at 60 degrees or 33,000 cubic feet if the gases of combustion are at 400 degrees, allowing 18 pounds of air per pound of coal.

The Standard Varnish Co., New York City, are erecting a new factory on Pape Ave., Toronto.

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 those 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, belting, 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 compounding department of the Canadian General Electric Co.'s works at Peterboro, Ont., was destroyed by fire September 2. Loss about \$25,000.

The Department of Railways and Canals have issued orders for a survey of the suggested route for the lower stretch of the Trent Valley Canal, which would give that system an outlet on Lake Ontario at Port Hope. An alternative route by way of Trenton has already been surveyed. The department will afterwards choose whichever is shown to offer the cheapest outlet. Another survey party will be sent to examine the upper end of the waterway with a view to carrying it through to the Georgian Bay.

According to statistics the amount of new railroad construction in Canada contemplated and now under way is of a vast extent. The Government are aiding the Grand Trunk Pacific Transcontinental Railway, costing \$175,000,000. The Canadian Pacific Railway are spending \$8,000,000 in building a new line from Toronto to Sudbury, which, when completed and in operation means a more direct line between Toronto and the Soo, and giving a quicker mail service. McKenzie & Mann are also spending \$8,000,000 in building a road from Toronto to Sudbury. The Ontario Government are extending the Temiscamingue line northward to meet the Grand Trunk Pacific and a new road from Port Arthur to the north of Lake Nipigon to connect with the Grand Trunk Pacific.

Mr. J. Roberts, superintendent of the steel construction of the Economical Gas Co., Toronto, is now in Owen Sound, Ont., engaged in the installation of the new coal gas plant. The work includes the installation of 12 ponderous retorts weighing one ton each, besides three tons of fire brick and several tons of steel work.

The Sirocco Engineering Co., 22 Thames Street, New York, are equipping the new cruiser now building for the Dominion Government by the Polson Iron Works, Toronto, with two 25-inch diameter Sirocco fans for forced draft purposes. These fans possess special advantages for ship work owing to the saving in space which can be effected for a given duty while they are also very economical in horse power. The Sirocco fan has not been on the market very long, but it has already attained a leading position among machinery of this class.

The J. C. McLaren Belting Co., Montreal, and Toronto, have closed, through the latter office, an important belting contract. It is

for 100 feet of 48 inch leather belting for the Firstbrook Box Co., Toronto. The Reeves Pulley Co., Toronto, supplied the pulleys to carry this belt. Both the belt and pulleys were shown at the Toronto Exhibition.

The Ritchie-Hearne Co., Brantford, Ont., manufacturers of soap, will remove their works to Brampton, Ont.

The Imperial Natural Gas Co., which supplies Dunnville, Ont., with natural gas, are applying to the city of Hamilton for a franchise to lay their pipes throughout that city.

Frank Simpson, Toronto, has been awarded the contract for laying the six foot steel conduit pipe across the Bay to the Toronto Island at a cost of \$84,745.

Edward Smith, Leamington, Ont., will establish a stove factory at Sault Ste. Marie, Ont., which will give employment to about 50 men.

The Lake Superior Corporation, Sault Ste. Marie, Ont., made their first shipment of steel rails on September 6, when 1,000 tons were loaded on the Steamer Neepawa to be landed at Montreal for the Intercolonial Railway.

The New Century Refrigerator Mfg. Co., Dundas, Ont., inform us that their large new factory building has been finished and thoroughly equipped with the best and most modern machinery, and is now in full operation. One of the specialties made by this concern is the manufacture of hardwood veneer doors with built up bodies. These doors are unshrinkable, cannot warp or twist, and are of pleasing and artistic appearance.

The Hotel Manitou at Manitowaning, Ont., was destroyed by fire September 2. Loss about \$12,000.

A company is being organized in Hamilton, Ont., with a capital of \$100,000 to acquire the business of the Hamilton Biscuit & Confectionery Co., and to enlarge these works. Those interested are T. W. Hand, Hamilton; F. Schalerost, Brantford, Ont., and W. H. M. Williams, Toronto.

Weston's Model Bakery, Toronto, will be enlarged and several new ovens will be installed.

The Waltz Mfg. Co., Toronto, manufacturers of picture frames, mouldings, etc., will erect a factory 120x40 feet, three stories high, at Lindsay, Ont., at a cost of about \$12,000.

The new steamer Haddington, which was built at the Bertram Engine Works shipyards, Toronto, for the grain trade on the upper lakes, made her trial trip around the Island

shore on the lake a few days ago. Her machinery worked to perfection, and she will be one of the fastest freighters on the lakes.

Large shipments of Portland cement are being made from the works of the Ontario Portland Cement Co., Blue Lake, Ont.

Boston's largest department store, controlled by the interests of which Henry Siegel is president, will have the largest equipment of escalators (moving stairways) in the world. The contract has been signed with the Otis Elevator Co., New York City, the Canadian branch of which is at Hamilton, Ont., for the installation of ten of these modern appliances.

The Ferroleum Co., Toronto, have been incorporated with a capital of \$30,000, to acquire the business of the United States Ferrol Co., and to manufacture drugs, etc. The provisional directors include G. Gibson, E. C. Mackenzie and F. H. Honeywell, Toronto.

The Huntsville & Bracebridge Tanning Co.'s Tannery at Huntsville, Ont., was partially destroyed by fire September 6. The company will rebuild at once.

A system of waterworks and sewerage are now being constructed at Oshawa, Ont., at a cost of \$150,000.

The Collingwood Elevator Co., Collingwood, Ont., have been incorporated with a capital of \$250,000, to build and operate grain elevators, to establish flour mills, etc. The provisional directors include J. J. Daley, Chicago, Ill.; P. Paton, and C. E. Stephens, Collingwood.

The J. A. Craig Lubricant Co., Toronto, have been incorporated with a capital of \$30,000, to manufacture lubricating oils, petroleum paints, boiler compounds, etc. The provisional directors include J. M. Sinclair, J. A. Craig and A. V. Boggs, Toronto.

The Ford Motor Co. of Canada, Sandwich East, Ont., have been incorporated with a capital of \$125,000, to manufacture automobiles, motors, etc. The provisional directors include J. Curry, Windsor, Ont.; G. M. McGregor, Walkerville, Ont., and W. L. McGregor, Sandwich East, Ont.

The Toronto Pottery Co., Toronto, have been incorporated with a capital of \$10,000, to manufacture stoneware, sewer pipes, etc. The provisional directors include J. J. Zimmerman, Toronto; H. Robinson and H. B. Manton, Akron, Ohio.

Messrs. F. F. Stuart & Sons, Toronto, have been incorporated with a capital of \$40,000, to manufacture oils, extracts, drug supplies, etc. The provisional directors include J. A. Jackson, F. F. Stuart and W. Northcott, Toronto.

The Kerr & Coombes Foundry Co., Hamilton, Ont., have been incorporated with a capital of \$50,000, to manufacture iron castings, machinery, etc. The provisional directors include W. J. Kerr, Geo. Coombes, and W. H. Kerr, Hamilton, Ont.

The new factory for the Petrie Mfg. Co., Hamilton, Ont., is now completed. The building is 400x90 feet, one story high, equipped with an up-to-date plant.

Messrs. John C. Green & Co., Toronto, have been incorporated with a capital of \$125,000, to manufacture fancy goods, millinery, etc. The provisional directors include J. C. Green, H. E. W. Green and R. W. Green, London, Ont.

The Canadian Northern Railway will build new coal docks at Port Arthur, Ont., and install modern coal handling machinery.

Plans for the proposed 3,500-barrel flour mill to be erected at Keewatin, Ont., for the Keewatin Flour Mills Co., have been prepared by the Allis-Chalmers-Bullock Co., Montreal. A 1,000,000 bushel elevator will also be built.

The Ontario Lantern & Lamp Co.'s factory at Hamilton, Ont., was partially destroyed by fire September 13. Loss about \$10,000.

Messrs. Vigers & Co.'s saw mill in Northern Ontario, has just completed cutting a million feet of cedar, which will be shipped to the Peterboro Canoe Co., Peterboro, Ont.

The Keewatin Lumber Co., Keewatin, Ont., manufactured 15,000,000 feet of lumber last year. They are building a tie mill $1\frac{1}{2}$ miles east of their present property which will have a capacity of 4,000 ties in 10 hours, and will cost about \$25,000.

The Point Pelee Oil & Gas Exploration Co., Leamington, Ont., have been incorporated with a capital of \$40,000, to develop and work oil and gas lands, etc. The provisional directors include W. C. Campbell, A. W. Palmer and C. J. O'Hara, Detroit, Mich.

The Peterboro Rubber Co., Peterboro, Ont., have been incorporated with a capital of \$500,000, to manufacture rubber goods, etc. The provisional directors include L. T. Vance, Marion, Ind.; H. E. Andress, Akron, Ohio; and R. Bayley, Bowmanville, Ont.

The Trout Creek Development & Mining Co., Trout Creek, Ont., have been incorporated with a capital of \$100,000, to carry on a mining, milling and reduction business. The provisional directors include M. Hewitt, G. Trussler, and M. Corkery, Trout Creek.

The Drug Trading Co., Toronto, have been incorporated with a capital of \$80,000, to manufacture physicians, dentists and opticians instruments and supplies. The provisional directors include W. A. Hargreaves, I. Curry and Geo. Marshall, Toronto.

Meyers' Milling & Elevators, Limited, Listowel, Ont., have been incorporated with a capital of \$100,000, to acquire the business of the Meyers Milling Co., and to manufacture flour, erect mills, elevators, etc. The provisional directors include J. S. Meyers and B. H. Meyers, Listowel, and H. S. Osler, Toronto.

A very interesting transaction in the yachting world is the sale of the steam yacht Speedy II., formerly owned by Mr. C. G. Conn, Elkhart, Ind., to the Canadian Government, which was brought about through the agency of Messrs. Gardner & Cox, New York. The Speedy is a twin-screw steel vessel, having a straight stem, and being in general appearance similar to a dispatch boat. She was built in Scotland in 1896, and is of the following dimensions: length over all, 125 feet; length between perpendiculars, 115 feet; beam, 20 feet; draught, 10 feet. She has two triple-expansion engines of 500 h.p., and two water-tube boilers. She is well supplied with auxiliary machinery and her engines will at 110 revolutions produce a speed of 12 knots. Her bunker capacity is large and she is an excellent sea boat, in every way suitable for extended cruising. She is lighted by electricity, heated by steam and is fitted with the most modern plumbing and in every respect her equipment is complete and elaborate. Her accommodation for a vessel of her size

is remarkably large, there being a large stateroom and chart room on the upper deck, as well as galley, pantry and dining saloon. On the lower deck there are four staterooms in addition to the quarters for officers and crew. As stated this boat is to be used by the Canadian Government on the lakes, and will no doubt attract considerable attention.

The Goldie & McCulloch Co., Galt, Ont., are just now making some heavy shipments. One cylinder for a heavy duty engine, weighing about eleven tons, was loaded a few days ago, and also two other cars containing a heavy fly wheel, the weight of which is 109,940 pounds. When this consignment is completed it will make eight car loads that have gone to the Winnipeg Street Railway Co., comprising one compound engine of the heavy duty type, similar to those recently installed in the Cataract Power Co.'s plant in Hamilton, Ont. The Goldie & McCulloch Co. are now busy on this type of engine. It has been specially designed to meet the requirements of modern central station practice. In conversation with one of the officers of the company we were informed that already they have received encouragement from some of the leading consulting engineers in this country as to the market in Canada for such engines as these. The Goldie & McCulloch Co. are evidently keeping fully abreast with the demands of the times.—Galt Reporter.

The Poole Publishing Co., Toronto, have been incorporated with a capital of \$40,000, to carry on a printing and lithographing business. The provisional directors include J. M. Poole, G. McP. Clark and H. L. M. Weller, Toronto.

Mr. H. B. Johnston, in behalf of the promoters, is applying to the Toronto City Council for a site for the erection of a factory for the treatment of sheep skins to be used in manufacturing.

W. E. H. Carter, of the Ontario Bureau of Mines, reports that the Massey Station Mining Co. are erecting an Elmore oil concentrator of a capacity of 50 tons of ore per day at Massey Station, Ont., for experimenting on silicious chalcopyrite, and are also carrying on further experiments in smelting this ore at the Victoria mine nickel-copper furnaces. This ore body, having a quartz matrix and lying in a diorite country, in or close to the contact with the ancient quartzites, is typical of many copper-pyrite veins throughout the district north of Lake Huron. Generally speaking, chalcopyrite is the only sulphide present, and is for the most part finely disseminated and not suitable for any process of wet concentration, since a great deal of sulphide slime floats off and is lost. The strong point of the Elmore process is its ability to save fines, and it is expected to be especially applicable to these copper ores.

The Gale Mfg. Co., Toronto, whose factory was destroyed in the recent big fire erect a new building at a cost of \$75,000.

The Coles National Mfg. Co.'s stationery factory at Ottawa was damaged by fire September 10. Loss about \$8,000.

The Canadian Pacific Railway Co. have closed a contract with the Consolidated Lake Superior Co., at Sault Ste. Marie, Ont., for the delivery of 40,000 tons of steel rails.

The James Bros.' foundry at Perth, Ont., was partially destroyed by fire September 12.

The Department of Railways & Canals, Ottawa, are inviting tenders for the foundations for the proposed big elevator to be erected at Port Colborne, Ont.

Ontario may in time become an important contributor to the production of sulphuric acid, and may produce sulphur enough to fill the needs of its sulphite fibre industry. Two deposits of iron pyrites are now being worked in the Province, one near Madoc, the other near the Helen Mine in Michipicoten district. Most of the product of both was exported to the United States, through the ports of Buffalo and Cleveland, being wanted across the line in the manufacture of sulphuric acid. Last year the total quantity produced was 7,469 tons. Other valuable deposits of pyrites have been found near that in the Madoc neighborhood.

The Brantford & Erie Radial Co. are applying to the city of Brantford, Ont., for power to construct a railway and to run their cars through that city.

The Department of Railways & Canals, Ottawa, are inviting tenders for electric lighting the Carillon and Grenville Canals.

By-laws will be voted on at Peterboro, Ont., for \$25,000, to improve the fire department and \$12,000, for repairing bridges and street improvements.

The location of the Grand Trunk Railway Co.'s round house at Mimico, Ont., has been settled and building work will commence at once.

The Hamilton, Grimsby & Beamsville Railway Co. will extend their line from Vine-land to St Catharines, Ont., which will necessitate the building of a high level bridge of 940 feet span over the old canal at St. Catharines, which will cost about \$100,000.

The Big Master Mining Co., have been incorporated at Rat Portage, Ont., with a capital of \$300,000, and will acquire the Big Master Mine. The provisional directors include F. J. Kendrick, Mount Clemens, Mich., C. P. Russell, Cincinnati, Ohio, and W. Schaler, Albany, N.Y.

Messrs. A. Davis & Son's tannery at Kingston, Ont., will be enlarged and the capacity doubled.

The Fire & Light Committee of the Toronto City Council will recommend an auxiliary system of high pressure mains, a fire boat, three additional new fire engines and a new fire alarm telegraph, at a cost of about \$200,000.

The Imperial Oil Co., will build two large oil tanks, doubling their storehouse capacity, and erect a cooperage shop at Fort William, Ont., at a cost of \$20,000.

The Public Works Department have awarded contracts amounting to about \$11,000, for interior work in the Asylum for Epileptics at Woodstock, Ont. Purdy, Mansell & Co., Toronto, will put in the heating and plumbing, and Macdonald & Wilson the electric work. The contract for heating the court house and jail at Bracebridge, Ont., has been awarded to Harrison & Robertson, Toronto, and that for the electric works at Sault Ste Marie to McDonald & Wilson.

One of the Toronto Railway Co.'s generators was destroyed by short circuiting September 10. Loss about \$40,000. A new generator will be installed as soon as possible.

The General Fireproofing Co., Youngstown, Ohio, will establish a factory in Toronto, for the manufacture of expanded metal and other fireproof material.

Armour, Limited, Chicago, Ill., will, it is said, establish a factory in Toronto, for the manufacture of beef extracts.

A boiler exploded in the rolling mills of the Toronto Bolt & Forge Works, at Swansea, near Toronto. The works will be again in operation in a few days, the loss being comparatively small.

Tenders have been awarded for the power distributing station to be erected for the Toronto & Niagara Power Co., on Davenport road, near Toronto, as follows:—Messrs. E. Gearing for brick, stone, cement, carpenter and cut stone work; T. J. Kelly, the excavating; J. Gillen, the galvanized iron work; A. M. Brown, the painting and glazing; the Canada Foundry Co., the steel and iron work, and Hoidge & Sons the plastering. The company have placed an order for the four large turbines which are to be placed in the immense power house now nearing completion on the Canadian side of the Falls, to the I. P. Morris Co., Philadelphia, Pa. Each of these turbines will be of 10,000 h.p. capacity.

The Star of the East Gold Mining & Milling Co., held their annual meeting in Peterboro, Ont., a few days ago. The following officers and directors were elected: President, M. Smith, Pittsburg, Pa.; secretary and treasurer, A. O. Kidd, Peterboro, Ont.; superintendent, E. J. Cowain, Cloyne, Ont.; D. Fritz, Oil City, Pa.; Dr. J. N. Lear, Pittsburg, Pa.

A board of naval engineering experts from Washington have completed a thorough examination of the Turbinia, belonging to the Turbine Steamship Co., Hamilton, Ont., and operating on the route between Hamilton and Toronto. The board regards the performance of the Turbinia as highly satisfactory. There was a complete absence of vibration; almost no repairs are necessary to the engines, there being no friction whatever, except in a few bearings; there is no pounding or thumping of the engines; the engine room staff is largely reduced and additional coal carrying capacity is gained by the reduction in the weight of the engines.

The Dominion Government's new fisheries protection cruiser Vigilant, for use on Lakes Erie and Huron, was successfully launched a few days ago from the Polson Iron Works shipyard in Toronto. The new cruiser is 176 feet in length and 22-foot beam. The depth from top of keel to top of main deck 14 feet 3 inches and draught 8 feet. The engines are twin-screw, triple expansion; cylinders 13 and 22 and 36 by 21" stroke, with two Clyde boilers, each 11'6" by 12'8" long; working pressure, 200 pounds steam. The total cost is about \$150,000.

The Department of Public Works, Ottawa, are inviting tenders for the construction of a wharf at Bracebridge, Ont.

The Department of Railways and Canals Ottawa, are inviting tenders for the deepening and widening of the channel east of the Vidal shoal of the Upper Channel of the Sault Ste. Marie Canal, Ont.

Messrs. Darling & Pearson, Toronto, are inviting tenders for the erection of a Convocation Hall, for the Toronto University.

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

The Boyd, Caldwell Co., Lanark, Ont, have awarded the contract to Geo. Bradford, Almonte, Ont., for the enlargement of their woolen mills.

The town clerk of Grimsby, Ont., is inviting tenders for the construction of a system of waterworks.

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

The directors of the Hotel Sanita, Sarnia, Ont., are inviting tenders for a two story annex, 84x36 feet.

The town council of North Bay, Ont., will submit a by-law to raise \$34,000 for waterworks extension.

The Toronto Street Railway Co. have recently placed an order with Sheldon & Sheldon, Galt, Ont., for two 180-inch fans for forced draft, to be used in connection with the Jones stokers which they have installed. These, together with the two other fans of the same size and make, which are already installed, will make one of the largest plants of this kind in Canada. The fans are of the three-quarter housing type, direct connected to engines, and have a capacity of approximately 90,000 cubic feet of air per minute each at two ounces pressure.

The Avon Hosiery Co., Stratford, Ont., will erect a new factory building 72x38 feet for the manufacture of hose, socks, toques, etc.

The extensive peat plant which is being erected at Caledonia Springs, Ont., by Mr. Alex. Dobson, Beaverton, Ont., is almost completed. The field appliances are now on the ground, and the plant is reported to be daily taking in a large amount of dried peat. In the course of about two weeks it is expected that the presses will be installed, and that the pressing of briquettes will be commenced. The Beaverton plant has been in successful operation for four years. The Caledonia Springs plant is one of the largest ever erected in Canada.

The Shawinigan Water & Power Co., Shawinigan, Que., have completed arrangements by which they will be able to deliver 10,000 additional horse power into Montreal by December 1. This undertaking entails the erection of another transmission line from Shawinigan to Montreal, and will require the installation, both at Shawinigan and the Maisonneuve station, of large and improved machinery. At Shawinigan a new large penstock pipe is being erected from bulkhead to power house, which will have a capacity of 11,000 h.p. The water wheel, which is being installed by the J. P. Morris Co., Philadelphia, Pa., is one of the largest wheels ever built, and will have a capacity of 10,500 h.p. The generators, which are being installed by the Canadian Westinghouse Co., Montreal, will have a capacity of 6,600 kilowatts, and the transformers a capacity of 4,400 k.w. At Maisonneuve the power stations will be extended, and a motor generator of 4,400 k.w. capacity installed.

The Atlantic Contracting Co., Montreal, have been incorporated with a capital of \$500,000 to carry on a contracting and con-

struction business. The provisional directors include R. D. McGibbon, V. E. Mitchell, and A. Chase-Casgrain, Montreal.

The Hull, Que., city council have granted the Granite Wall Paper Co. exemption from taxation for five years to establish a factory in that city.

The New Pasteurizing Filter Co., Montreal, have been incorporated with a capital of \$90,000, to manufacture filters, caps, filtering and sterilizing plates, etc. The provisional directors include J. L. Perron, J. R. Beaudry, and L. R. Beaudry, Montreal.

The Pressed Steel Car Co., Pittsburg, Pa., is affiliated with a new car company organized in Canada as the Canada Car Co., which will erect a plant at Montreal for the manufacture of steel cars. It is reported that a contract has already been entered into with the Grand Trunk railroad for their requirements for a period of five years. W. P. Coleman, formerly vice-president of the American Car & Foundry Co., is one of the prime movers in the Canadian company and will become their general manager.

The Montreal Copper Co., Montreal, recently incorporated with a capital of \$150,000, have installed a modern reverbratory furnace and other smelting equipment. This company turned out on February 12 last what they claim to be the first refined ingot copper ever produced in Canada. They are allied with the Syracuse Smelting Works of Montreal.

Mr. S. H. C. Minor, Montreal, the organizer and president of the Granby Mining & Smelting Co., in British Columbia, states: that he has sold out his controlling interest in that company to Mr. J. J. Hill and other interests of the Great Northern Railway of the United States. The company, which have heretofore been operated by Canadians, will now be under American control.

The Consolidated Construction & Power Co., Montreal, have been incorporated with a capital of \$100,000, to construct canals, conduits, elevators, boats, cars, etc. The provisional directors include L. E. Kimpton, C. W. Lester, G. H. Boivin, and R. Madore, Montreal.

The estate of the late James McLaren, Buckingham, Que., will construct a number of dams on the Upper Lievre river for the purpose of conserving the water supply so as to permit of the operation of their saw and pulp mills all the year round.

The Transcontinental Railway Commissioners have appointed Mr. M. J. Butler, who was Engineer of the Montreal Locomotive Works, assistant chief engineer; Mr. A. E. Doucette, district engineer of the district extending from the boundary line between New Brunswick and Quebec to Clear Lake in the Province of Quebec, and Mr. A. N. Molesworth, district engineer for the district extending from Clear Lake westerly to the Ontario boundary.

The Canadian United Milling Co., Montreal, recently incorporated with a capital of \$150,000, have secured an option on a water power on the North River near Lachute, Que., and they will erect their mills there to be operated by electrical power.

The ratepayers of Arthabaskaville, Que., have voted favorably on a by-law granting \$20,000 for the erection of a furniture factory there.

The Fairbanks Co., Montreal, have acquired the plant of the Northrop Iron Works, at Valleyfield, Que.

The American Locomotive Co. will build additions which will greatly enlarge the capacity of the Montreal plant. The American company expect to do most of their exporting from the Montreal works.

L. J. Cote, Aylmer, Que., has been awarded the contract for the erection of the new St. Paul's church at that place, which will cost about \$30,000.

The Carter White Lead Co., Chicago, Ill., will establish lead corroding works in Montreal.

The Grand Trunk Railway Co., have purchased the Canada Atlantic Railway, including the lake carrier fleet, at a cost of \$12,000,000.

Sir Charles Ross, manager of the Ross Rifle Works of Canada, Quebec City, has made application for more land to extend his works to include the manufacture of cannon.

The Moreau's Barking Machine Co., Montreal, have been incorporated with a capital of \$40,000, to acquire the patents of J. Moreau for improvements in bark removing machines, and to manufacture such machines, etc. The provisional directors include J. Moreau, St. Germain de Grantham, Que.; O. Brouillard, Carmel, Que., and O. W. Nordin, Rosebank, N.B.

The Singer Sewing Machine Co., New York City, have awarded the contract for the erection of their new plant at St. Johns, Que., to Messrs. Jas. Stewart & Co., New York and Chicago, Ill., at a cost of \$1,500,000; and the contract for fireproofing the buildings has been awarded to the Clinton Fireproofing Co., New York, who, with the Clinton Wire Cloth Co., Boston, Mass., are to make Montreal their headquarters for Canada, and will open offices and yards there through which all their Canadian business will be handled.

R. S. Fraser has installed a rotary dryer and complete wool and hair washing plant in wool, wool stock and garneting works at St. Gabriel Locks, Montreal. The dryer is a three-apron machine of special design.

Messrs. H. Kellert & Co., Montreal, will erect a five story pressed brick warehouse building.

The Canada Jute Co., Montreal, are considering the establishment of a branch factory in Winnipeg, Man.

The Drummond Cotton & Bleaching Co., Drummondville, Que., recently incorporated with a capital of \$150,000, will erect a modern bleachery and cotton finishing works.

The Dominion Oilcloth Co., Montreal, have recently installed a complete plant for the manufacture of linoleum. This is a branch of manufacture which has hitherto not been attempted in Canada, owing to the large and expensive plant necessary to produce satisfactory goods. Besides purchasing machinery, it has been necessary to increase their building accommodation considerably, the last addition, now in course of construction, being a warehouse 175x130 feet.

The Sissibou Pulp & Paper Co.'s properties, situated near Weymouth, N.S., were sold at auction September 15, and were bought by A. G. Ross, of Montreal, manager of the National Trust Co. The properties comprise about 25,000 acres of good timber land

covered with spruce, pine, hemlock, and hardwood; the two pulp mills equipped with eleven grinders, compressors, wet machines, and all the necessary appliances; a large dam constructed of solid masonry, one of the best in the province; a long wharf at Weymouth Bridge, with a large warehouse, shed, offices, stores, smithy, dwelling house, village lots, etc. Mr. Ross intimated his intention of inviting tenders for the purchase of the properties en bloc.

The Hewson Woolen Mills at Amherst, N.S. will be enlarged and new machinery installed.

A large fire occurred at Halifax, N.S., September 14, which destroyed the following buildings: Plant Steamship Co.'s two warehouses and wharf; Dominion Packing Co.'s warehouse; J. A. & M. J. Neville, warehouse; Abraham Norcotte's cooperage; Dominion Coal Co.'s sheds and shutes; N. & M. Smith's offices, five warehouses and two wharves; E. H. Boutilier's fish refrigerator and warehouse; Capt. Simon's hotel; William Robertson & Sons' warehouse; G. P. Mitchell & Sons' offices, three warehouses and wharf; John White & Co.'s warehouse. Total loss about \$250,000.

The Canso Cold Storage Co., Canso, N.S., have awarded to Jas. Reid, North Sydney, N.S., the contract for the erection of a cold storage building for the preservation of fish, bait, etc., at a cost of about \$50,000.

The Intercolonial Railway Co., at Moncton, N.B., are inviting tenders for the construction of a freight shed and loading platform at North Sydney, N.S., and also for the construction of station buildings at Woodburn, Lorne and Union, N.S., and Assametquaghan and Villeroy Junction, P.Q.

Messrs. Rhodes, Curry & Co., Amherst, N.S., have received contracts for the construction of an office building for the Londonderry Iron & Mining Co., also for the Londonderry Pipe Co. They have also received an order for twelve flat cars for the Londonderry Iron & Mining Co.

A new railway station will be erected at Sydney, N.S.

Work will be started shortly on the erection of the \$5,000,000 pulp mill in Newfoundland. Sir Alfred Harmsworth, is now in St. Johns, Nfld., in connection with same.

The Londonderry Iron & Steel Co. have purchased the iron deposits at Torbrook, N.S., and will shortly resume the shipment of ore to the plant at Londonderry, N.S. The output for the present will average about two thousand tons per month.

The first car load of Cape Breton iron ore was shipped from Barrachois station a few days ago for use in the Dominion Iron & Steel Co.'s works Sydney, N.S. It is expected from this forward to ship to Sydney 50 tons of this ore daily.

The Dominion Atlantic Railway Co. will erect a large hotel at Battery Point, Digby, N.S.

Number four blast furnace of the Dominion Iron & Steel Co., Sydney, N.S., which has been idle since June 1 has been blown in. The company expect to have the three other furnaces in operation by October 1.

The Dominion Coal Co. will erect a dam over 700 feet long, constructed of stone-faced cribwork, on McAskills Brook, near Glace Bay, N.S.

The St. John, N.B., City Council will purchase the west side electric lighting plant of that city, for \$25,000.

W. W. Shaw is rebuilding his saw mill at Hartland, N.B.

The Dalhousie Lumber Co. are building a third mill at Dalhousie, N.B.

Paul Lea is making extensive improvements to his wood-working factory at Moncton, N.B. A new Corliss engine of 80 h.p. has been installed and a new dry kiln, furnished by Sheldon & Sheldon, Galt, Ont., will be used.

Contracts have been awarded as follows for Dominion Public works: Messrs. Harquail Bros., Campbellton, N.B., to erect a post office at that place; Mr. Jas. Reid, Halifax, N.S., to erect a post office at Sydney Mines, C.B.; Mr. A. Tremblay to erect a wharf at Chambord, Que., on Lake St. John, and Mr. C. Page, Three Rivers, Que., to erect a wharf at St. Jean des Chaillons, in Lotbiniere county, Que.

The Enterprise Foundry Co., Sackville, N.B., have their new plant in operation for the production of steel ranges

The bounty of 1½ cents a gallon on crude oil recently granted by the Dominion Government has stimulated the development of oil territory, and the business men of the maritime provinces are congratulating themselves over the development of the New Brunswick oil field. A New Brunswick petroleum company have found oil in paying quantities in a district extending many miles square, over an area as extensive as the petroleum oil field of Ontario. The company have 34 wells now producing at the rate of 50 barrels of oil daily. This is in excess of the product of the Ontario wells and the oil is claimed to be better. The company are now multiplying their wells (11 more wells will soon be producing) and erecting storage tanks. The storage tanks are being built on a strip of land near Memramcook station, and will form the nucleus of a refinery to which the oil will be brought by gravitation through pipe lines. The natural gas issuing from the wells in operation will be used primarily to operate the company's plant, but as the supply increases with the number of wells the gas will be piped to consumers. The operations of the New Brunswick company resemble those in the natural gas fields of England, where petroleum oil has been struck and illuminating, heating, and cooking gas is being supplied to 70 to 80 houses and to the street lamps, and preparations are being made to supply neighboring gas works.

The Department of Public Works, Fredericton, N.B., are inviting tenders for rebuilding Ree's Bridge in Northfield, N.B.

The Balfour Implement Co., Winnipeg, Man., have been incorporated with a capital of \$500,000, to manufacture machinery, implements, vehicles, etc. The provisional directors include J. D. Balfour, R. Rogers and H. J. Macdonald, Winnipeg.

The Pulford Drug Co., Winnipeg, Man., have been incorporated with a capital of \$100,000, to manufacture druggist's sundries, proprietary medicines, etc. The provisional directors include W. Pulford, D. W. Bradshaw and I. Pitblado, Winnipeg.

Messrs. Young Bros. are building three new elevators on the Canadian Northern Railway south of Killarney, Man., one at

Enterprise, Ont., one at Bixters and the other at Wakopa, Man.

The Columbia Flouring Mills Co., are erecting an elevator at Lethbridge, N.W.T.

The Anglo-Canadian Elevator Co., have commenced the erection of standard elevators at Drinkwater, N.W.T., Milestone and Boharn, N.W.T. Each elevator will have a capacity of 30,000 bushels and equipped with the latest improvements for the handling of grain.

Messrs. Couture Bros., who have been manufacturing brick on the bank of the Seine river in St. Boniface, Man., for the past ten years, have about exhausted their clay beds in that locality, and have secured a new site near-by and have installed a new and modern plant, which will enable them to increase their output.

The municipality of Woodlands, Man., are inviting tenders for the construction of a pile bridge on Colonization Road, Woonona, Man.

The Griswold Milling Co., Griswold, Man., are installing a new 150-barrel mill, using a Brown Corliss engine, Universal bolter, Ellis Roller Mills, G. T. Smith Middlings Purifiers and other machinery, all furnished by the Stratford Mill Building Co., Stratford, Ont.

B. Hollonquist, will erect a hotel building at Heward, N.W.T., at a cost of \$10,000.

T. A. Burrows is building a planing mill at Grand View, Man.

The Alberta Lumber Co. are preparing to build their saw mill on the old site at Cardston, N.W.T.

The Hanbury Mfg. Co., Brandon, Man., will build another large addition to their factory for the manufacture of sashes, doors, and interior wood work.

The Canadian Northern Railway Co. will erect a new station at Emerson, Man.

Messrs. Turner, McMichael & Co. are building a 100-barrel flour mill and 40,000-bushel elevator at Melford, N.W.T.

A steam condensing plant is being installed at the Sutcliffe-Muir Milling Co.'s mills in Moosomin, N.W.T.

A. H. Snelgrove's new 150-barrel mill at Carman, Man., built by the Stratford Mill Building Co., Stratford, Ont., has commenced operations.

The Ogilvie Flour Mills Co., will erect a flour mill at Fort William, Ont., to be operated in connection with the 500,000-bushel elevator now in course of construction at that point.

The Gilbert Plains Milling Co. will erect a flour mill at Gilbert Plains, Man.

The Stratford Mill Building Co., Stratford, Ont., have shipped a complete 100-barrel flour mill to the Stuartburn Trading Co., Stuartburn, Man.

The K'ondike City saw mill at Dawson, Y.T. was destroyed by fire September 6. Loss about \$75,000.

Messrs. Knittel & Co.'s roller mill and elevator at Boissevain, Man. were destroyed by fire recently. Loss about \$55,000.

The Winnipeg Construction Co., Winnipeg, Man., have been incorporated with a capital of \$100,000, to manufacture builders and contractors' supplies, etc. The provisional

directors include C. W. Sharp, Jas. McDiarmid and J. W. Smith, Winnipeg.

The John A. Hart Co., Winnipeg, Man., have been incorporated with a capital of \$40,000, to manufacture stationery, etc. The provisional directors include J. A. Hart, C. H. Black and W. Pratt, Winnipeg.

The Manufacturers' Lumber Co., Winnipeg, Man., have been incorporated with a capital of \$1,000,000, to manufacture lumber, pulpwood, pulp, etc. The provisional directors include D. C. Cameron, D. E. Sprague, Winnipeg, and J. Hanbury, Brandon, Man.

The Griswold Milling Co., Griswold, Man., have been incorporated with a capital of \$20,000, to carry on a grist milling business, etc. The provisional directors include O. Kettle, H. J. Mattick and H. S. Trumppour, Griswold.

Messrs. Bromley & Hague, Winnipeg, Man., have been incorporated with a capital of \$40,000, to manufacture awnings, tents, hammocks, etc. The provisional directors include E. Bromley, C. C. Hague and R. W. Pike, Winnipeg.

The Manitoba Gypsum Co., Winnipeg, Man., have been incorporated with a capital of \$450,000, to acquire the business of the Union Mining Co., and to manufacture gypsum, marl, cement, marble, peat, etc. The provisional directors include H. Sutherland, C. W. Sharp and Jas. Fisher, Winnipeg.

The G. C. Emerson Bedding Co., Winnipeg, Man., have been incorporated with a capital of \$50,000, to manufacture furniture, mattresses, springs, etc. The provisional directors include G. C. Emerson, C. E. Luke and A. J. McNeil, Winnipeg.

The Elwood Tinworkers' Gold Mining Co., Cambridge, B.C., have purchased from the Rand Drill Co., a ten-drill compressor, with equipment and accessories.

The Kamloops saw mill at Kamloops, B.C., was destroyed by fire September 9. Loss about \$50,000.

The British Columbia Railway Co., New Westminster, B.C., have commenced work on their new car shops.

The Export Lumber & Shingle Co., have been incorporated at Victoria, B.C., with a capital of \$50,000, to manufacture lumber, shingles, sashes, doors, etc.

Messrs. Meikle Bros. & Co., Vancouver, B.C., have been incorporated with a capital of \$25,000, to acquire the business of Meikle Bros., and to manufacture aerated waters etc.

The Maple Ridge Creamery & Fruit Canning Co., have been incorporated at Victoria, B.C., with a capital of \$50,000, to manufacture butter, cheese, etc., and to carry on a fruit canning business.

The Monarch Lumber Co., who recently acquired the Ross-MacLaren saw mills at New Westminster, B.C., will commence operations as soon as some improvements to the plant are completed. They will employ about 200 men.

A syndicate headed by a Mr. Cook, who has large mills in Algoma, Ont., is negotiating for the purchase of 17,000 acres of timber land from the Nelson & Fort Sheppard Railway Co., with the intention of establishing a large saw mill industry near Ymir, B.C.

Mr. G. A. Laing, of the Royal Distillery Co., Hamilton, Ont., is negotiating with the city

council of Vancouver, B.C., in connection with the establishment of vinegar works for the British Columbia Vinegar Co., recently incorporated.

The Farmers' Elevator Co., Kisby, B.C., recently incorporated, will start building operations at once.

Messrs. Twogood & Bruder will enlarge their brewery at Sandon, B.C.

The Ladysmith Iron Works, Ladysmith, B.C., of which Messrs. Freel & Davidson are proprietors, are about to become incorporated.

Gold miners and prospectors of Victoria, B.C., have discovered a rich deposit of scheelite in the Willow Creek region of the Cariboo District, B.C. The provincial mineralogist says that it is more valuable than gold, and makes 14-cent steel worth 64 cents. The deposit of the mineral is said to be immense, and will be worked at once. Tungstic acid is manufactured from scheelite.

The Trout Lake Water Supply Co., Trout Lake, B.C., have been incorporated with a capital of \$10,000, to operate a waterworks system.

The Hazel Dollar Steamship Co., have been incorporated at Victoria, B.C., with a capital of \$200,000, to construct steamships, etc.

The Department of Marine and Fisheries, Ottawa, state that in addition to the three reduction works for converting dogfish into oil in the Maritime Provinces, a similar establishment will be erected in British Columbia, probably on Vancouver Island.

The Defiance Machine Co., Defiance, Ohio, will complete the installation of the artillery carriage making machinery at the Woolwich Arsenal, Woolwich, England. The company secured the contract after the Government commission had compared the offers of all home manufacturers.

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 Agricultural Bank of Sofia, Bulgaria, have decided on the purchase of 5,000 iron plows, 200 grain-sorting machines, 200 machines for granulating maize, and 500 harrows. The directors of the Bank will invite the best known manufacturers to forward specimens and prices. These orders will lead to considerable purchases in the future, and manufacturers of agricultural machinery would do well to send price lists to the Agricultural Bank, Sofia, Bulgaria.

The Halifax, N.S., city council have decided to engage an expert waterworks engineer to go over their system and report on the most feasible way to increase the water supply. It is believed that a system of pumping from one of the lower lakes on the St. Margaret's Bay road will have to be established, as the capacity of the present source

of supply cannot be increased by dam building, save at an enormous expense.

The Grand Trunk Railway Co., will substitute electricity for steam in the Sarnia tunnel, and will install a plant for that purpose to cost \$500,000. The third-rail system will be used.

The town of New Glasgow, N.S., are calling for tenders for laying 20,000 linear feet of water pipe. Good progress is being made in the construction of the Springhill water service, and the contractors expect to have the system completed by autumn.

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 Pittsburg Coal Co., have booked a contract for 100,000 tons of Pittsburg coal from Coxé Brothers, New York City and Buffalo, most of which will be shipped to Canada.

The Bessemer Coal & Coke Co., Pittsburg, Pa., will likely enter the Canadian coal market and open offices in Buffalo, N.Y.

Messrs. P. Burns & Co., Calgary, N.W.T., have purchased 16,000 acres of hard coal lands in the Misty Range, 46 miles west of Okotoks, N.W.T.

It is probable that the peat beds of Ellice township, contiguous to Stratford, Ont., will shortly be worked. Mr. J. C. Morrison, Chicago, Ill., has invented a contrivance for converting peat into coal, and as there is practically an inexhaustible supply of peat in Ellice; a practical test will be made. It is estimated that by the new invention peat can be produced at 90 cents a ton.

The output of the Pittsburg Coal Co., Pittsburg, Pa., for August was the largest in history, being 2,500,000 tons. In the year 1904 they will produce over 25,000,000 tons of bituminous coal, or more than three times the annual production of Canada. More than 50,000 men are employed by this company.

A correspondent of the British Columbia Mining Record, speaking of the coal measures of that province, and particularly of the International Coal & Coke Co., at Coleman, N.W.T. says:—"The bituminous coal measures of the International Coal & Coke Co. are the largest I have ever seen. In Pennsylvania the largest seam in the famous Connelsville mine is nine feet thick, while one of the seams at Coleman is fully 18 feet in thickness. The Coleman coal is clean, being free from slate and other foreign substances. The output of the International Co. will be limited only by the number of plants the company choose to build. The measures at Coleman are especially adapted for cheap mining for several generations. Unlike the Pennsylvania coal, the coal at Coleman can be mined and extracted by gravity. As the mines will be self-draining no pumping plant need be maintained. The plant will be modern and complete, compressed air being utilized in hauling the cars. Electrical machinery will also be used very extensively.

Osmon, a new fuel, is made from peat. The peat used contains 90 per cent of water,

of which 20 to 25 per cent. is removed by means of an electric current. The peat is then further dried and passed through a machine which breaks it up and forms it into briquettes or nut-shaped pieces. Osmon is free from sulphur and burns without slag or smoke.

A large coal seam has been discovered at Point Aconi, N.S., giving the Nova Scotia Steel & Coal Co. an unlimited supply of coal for years to come. A mine will probably be opened at Point Aconi.

Irish Bros., Philadelphia, Pa., have appointed M. C. Thompson as their Buffalo representative with charge of sales in Canada.

The Sydney coal mines, Gowrie and Blockhouse collieries, at Cape Breton, N.S., are now operated a mile under the sea, and it is believed there are possibilities in submarine mining in that locality which were hitherto undreamed of by the most enthusiastic operator.

At Bienfait, N.W.T., near Estevan on the Souris Branch of the Canadian Pacific Railway, mines are being opened which will be capable of turning out 1,000 tons of lignite coal per day. As at this point the coal lies within 70 feet of the surface and quite flat, with a dip of about one degree to the south, an incline or slope is being used in place of a shaft. The thickness of the seam is 15 feet.

H. N. Galer, general manager of the International Coal & Coke Co., Coleman, N.W.T., reports great activity at Coleman. The first battery of 104 coke ovens have been completed. Rapid progress with this installation of the plant is being made. The coal tippie is nearly completed. It will have a capacity of 2,000 tons per day. Three weeks hence will see the fan in operation, enabling the colliery to maintain an output of 500 tons daily.

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 10,958 tons for the Intercolonial Coal Co.

Great activity prevails in the Nicola district in British Columbia, in consequence of the steps which the Canadian Pacific Railway are taking to test its merits as a coal producing field, and the granting of a charter by the Federal Parliament for a railway to run from Nicola to Spence's Bridge. Five different corporations are busy prospecting in the district; two drills are at work on the Coldwater River, and another is on the way to this section, and so far the only coal discovered in workable quantities is of a low bituminous character, just a little removed from lignite; there is, however, a probability that a good grade of bituminous coal may exist, as samples of such have been tested which gave as high as 60 per cent. of fixed carbon. Dr. Ellis, of the Geological Survey, has been detailed to make a thorough examination of the section.

Negotiations conducted by the Canadian Pacific Railway for the acquirement of the Tillsonburg & Lake Erie Railway, are reported as having been successful, and in the near future the short coal line running from Port Burwell to Ingersoll will be a part of the Canadian Pacific system.

NOVA SCOTIA COAL FOR ONTARIO.

The Nova Scotia coal operators are seriously thinking of sending their product into the St. Lawrence and upper Lake Ontario markets. These markets are now practically dominated by coal from the United States, the shorter distance and less expensive transportation giving them an advantage which nothing has been able up to this time to overcome. The fact that the two greatest Canadian railroad systems, the Grand Trunk and the Canadian Pacific, make the bulk of their purchases in the United States shows that so far the present arrangement has not been seriously disturbed.

Representatives of the Dominion Coal Co. have been carefully looking over the towns and cities on the St. Lawrence River, as well as those on Lake Ontario, with a view to possible new business in this territory. The plan may be to ultimately put on a few boats in addition to those which now carry eastern coal to Montreal. Perhaps some paying return cargoes might be had, particularly from Kingston, where a great deal of grain is handled in the course of a season.

Such boats might very likely make paying trips with coal to Prescott, Brockville, Gananoque and Kingston, as well as to some Thousand Island points. To do more than this would probably require a bonus of some kind by the Canadian Government, which action would not be without precedent in the Dominion. Without such subsidy it is simply a question as to how far up the St. Lawrence and into Lake Ontario maritime coal can be carried and compete with the prices and the service of the Pennsylvania and Ohio mine owners and shippers. The situation is simply reversed when Nova Scotia and Pennsylvania coals are brought together in the northern New England markets.

There is a general feeling that in time Nova Scotia coal will become an important factor in Eastern Ontario districts. National pride will undoubtedly lead the Canadian dealers and the Canadian people generally to favor their own country's product so long as they could do so without disadvantage to themselves.

RETAIL COAL DEALERS ORGANIZED.

The Western Ontario Retail Coal Association was formally organized at a meeting recently held at London, Ont., which was attended by over 70 retail coal dealers, and the following officers were elected for the coming year—President, J. C. Hay, Listowel, Ont.; secretary-treasurer, W. A. Martin, London, Ont.; executive board, F. M. Griffin, St. Thomas, Ont., A. J. McIntosh, Woodstock, Ont., R. Wilson, Seaforth, Ont., F. Mann, Brantford, Ont., and J. McDowell, Hensall, Ont.

The encouragement the association have already received from operators, shippers and retailers augurs much for the prosperity and success of the association and its helpfulness to the coal trade in general. Secretary Martin has started a vigorous campaign to increase the membership so that it may include practically every retail coal dealer in Western Ontario. He is also compiling a list of all regular dealers who have the facilities for doing a legitimate business.

Following is a list of Ontario members of the association—J. E. Scott, Aylmer, Ont.; Falls Bros., Amherstburg, Ont.; J. McNichol,

Belmont, Ont.; Hazelwood Bros, Clifford, Ont.; F. B. Peck, Dutton, Ont.; W. Shirton, Dunnville, Ont.; D. Dalton, Delhi, Ont.; J. Cobblecliek, W. H. Levett and W. J. Heaman, Exeter, Ont.; M. Weichel & Son, Elmira, Ont.; W. W. Baker, Granton, Ont.; H. Stark, Grand Valley, Ont.; J. & C. McDonell, Hensall, Ont.; Neagle & Mills, J. W. Patterson and W. Ross, Ingersoll, Ont.; G. A. Stanley, Lucan, Ont.; J. C. Hay, Listowel, Ont.; Bowman & Co., Chantler Bros., J. M. Daly, J. Mann & Sons, J. G. Orchard & Sons, McLeod & Anderson, J. H. Brooks, F. D. Maclic & Co., Southcott & Kettle, Webster & Kershaw, Green & Co., McGuffin & Stanfield, D. H. Gillies & Co., W. Heaman & Son, May Bros., Hunt Bros., R. Kilpatrick and W. H. Winnett, London, Ont.; J. K. McLaughlin, Owen Sound, Ont.; W. H. Mark & Co., Parkhill, Ont.; J. J. Kerr & Co., Petrolia, Ont.; W. Franks, Port Dover, Ont.; H. J. McDonald, Ridgetown, Ont.; Dunseith & Thompson, D. A. Martin and J. Armstrong, St. Mary's Ont.; The Deacon Co., C. J. Stewart, C. F. Neild, and M. Burdett, Stratford, Ont.; F. M. Griffin, A. G. Palmer, Marlatt & Smith, W. Karr, F. H. Ferguson and W. H. Swift & Co., St. Thomas, Ont.; Clark Coal Co., Sarnia, Ont.; R. Nicholson, A. Reed and Scott & Gillis, Strathroy, Ont.; Geo. Muller, Springfield, Ont.; E. S. Hubbell, Thamesville, Ont.; Gnetsinger & Gilson, Thornbury, Ont.; T. Crawford, Tilsburg, Ont.; I. D. Burns, Wingham, Ont.

CAN TURN PEAT INTO COAL.

A Chicago engineer has seemingly solved the problem of changing marsh mud into coal and making it a marketable product all within twenty-eight minutes after it is taken from the bog.

Practical demonstrations, it is all gedy, have been made in Chicago, Ill., with peat fuel manufactured by a process patented by J. C. Morrison, consulting engineer of a company, after four years of experimenting. The results have shown a heat efficiency nearly equalling that possessed by the higher grades of anthracite coal. Chemical analyses have shown a combination of hydro-carbons and volatile substances giving thorough combustion; physical analyses have shown a specific gravity in some cases exceeding that of hard coal, so that a ton of peat fuel will take no more room in the cellar than is required for a ton of coal. The peat fuel can be produced at less than 90 cents a ton.

There is nothing new in the idea of utilizing peat, the soil that covers thousands of acres of waste land throughout America to the depth of three or four to fifty feet, as fuel. The trouble has been to find a process economical enough to make it an article of commerce. The elimination of moisture in the raw product has been one problem. Another has been the compressing of the dried peat into blocks that would withstand the weather and not disintegrate in shipment.

Mr. Morrison seems to have solved these problems.

Practical tests made at the Weir & Craig Mfg. Co., where the plant invented by Mr. Morrison has been installed, showed that there is none of the waste, through smoke and escaping gases, in the use of peat fuel that attends the use of hard and soft coal. There were no clinkers and the percentage of ashes was much lower than with coal.

One interesting test was made with an ordinary cook stove. A fire was built with

four pounds of kindling and six pounds of coal. A thermo-gauge was placed in the oven and readings made at regular intervals through a peephole. When the fire had died out and the stove was cool another fire was built with four pounds of kindling and six pounds of peat briquettes and readings were again made. They showed that the average heat obtained was 10 per cent. greater with the use of peat while the duration of effective heat was 20 per cent. greater.

Several engineers in charge of the motive power of railroad systems and other experts have been witnessing the tests and great interest has been aroused in the new fuel.

PERSONALS.

Russia's only building at the Louisiana Purchase Exposition, the centre of much interest in the Palace of Transportation, excites regret that the withdrawal of the Czar's government from formal participation in the Fair deprives it of larger and more comprehensive displays of the same attractive type. The pavilion in the Palace of Transportation, which was erected by the Westinghouse Co., Limited, St. Petersburg, as a feature of the Westinghouse brake exhibits, is representative in every feature of Russian art and workmanship, and is recognized as the general Russian rendezvous at St. Louis. In the Palace of Machinery, the same company, which has made every effort to ensure a characteristic Russian exhibit at the Fair, has furnished a small Russian kiosk at the head of the row of national booths erected by the different Westinghouse companies of Europe and America. Mr. U. Grant Smith, brother of the general manager of the Russian Westinghouse Co., is in general charge of the Russian exhibit, and Gospodin M. N. Konshia, St. Petersburg, receives and welcomes his countrymen at the Fair.

Mr. E. N. Gunsulus, United States Consul at Toronto, was one of the guests of honor of the officers of the Canadian Industrial Exhibition on American Day.

The DeLano-Osborn Engineering Co., Toronto, have received the contracts for the inspection work on a new bridge to be erected by the New Brunswick Southern Railway and for several bridges across the Welland Canal.

As heretofore announced, the thirty-third annual meeting of the Canadian Manufacturers' Association will be held in the Windsor Hotel, Montreal, September 20-21-22 instant.

Mr. H. W. Pearson, accountant of the Temiskaming & Northern Ontario Railway Commission, has also assumed the duties of secretary-treasurer of the Commission, formerly performed by Mr. P. E. Ryan, who is now secretary of the Transcontinental Railway Commission.

Canada leads all other countries in the extent of her forests. She possesses 799,230,720 acres of forest-covered land. Russia is credited with 498,240,000 acres, about 48,000,000 more than the United States. India comes next with 140,000,000 acres. Germany has 34,347,000 acres. France 23,466,450, and the British Islands about 2,695,000. This computation does not include Africa or South America, both of which contain immense forests.

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.

The Canadian West. The Winnipeg Telegram is sending out a very instructive card relating to our great Canadian West, and particularly to the city of Winnipeg. It says:—Area of good cultivable land south of North Saskatchewan River—75,000,000 acres; area under crop, 1903, Manitoba, 3,689,990, Territories, 1,383,434, total 5,073,324; still open for cultivation 70,000,000 acres. Total grain crop 1903, 114,749,669 bushels. Areas cultivated in Manitoba 1883, 565,652 acres; 1893, 1,553,262 acres; 1903, 3,689,990 acres. Total grain crops in Manitoba, 1883, 17,151,255 bushels; 1893, 28,164,567 bushels; 1903, 82,576,519 bushels. Winnipeg bank clearings, 1894, \$50,540,648; 1898, \$90,674,325; 1902, \$188,370,003; 1903 \$246,108,006. First 6 months, 1903, \$107,107,740; first 6 months, 1904, \$124,855,147. Winnipeg new buildings, 1900, \$1,441,863; 1902, \$2,408,125; 1903, \$5,689,400; first 6 months, 1903, \$2,782,300; first 6 months, 1904, \$6,072,450. Winnipeg population, 1870, 2,5; 1880, 6,178; 1890, 23,000; 1900, 42,534; 1903, 56,741; 1904, 76,600.

Against the Metric System, by Herbert Spencer; Williams & Norgate, London. This is the third edition of the late Herbert Spencer's pamphlet against the metric system, which he directed in his will should be published whenever within ten years after his death a bill should be introduced into Parliament for the compulsory adoption of the metric system. In addition to his own views on the subject, the pamphlet includes an extract from Comte de Montholon's "Memoirs," containing the opinions of Napoleon Bonaparte regarding the introduction of the metric weights and measures in France. A number of other appendices are given, all directed against the metric system. The will directed that the pamphlet should be distributed free to the members of Parliament and put on sale at a nominal price, which has been placed at three pence.

The American Iron and Steel Association have just completed a thorough revision of their well-known Directory to the Iron and Steel Works of the United States, revised to August 1, 1904. This directory is the largest the association have ever published, embracing 484 well printed pages, exactly 40 pages larger than the directory for 1901. The book is well bound. It contains no advertisements. Price, \$10.00 (41s.) per copy.

"Easy Lessons, or Stepping Stones to Architecture," is the title of a valuable little volume just issued by the Industrial Publication Co., N.Y. It explains in simple language the principles and progress of architecture. Price, 50 cents.

Hon. Clifford Sifton, Minister of the Interior, has had published an interesting book of cartoons entitled "Canada—The Granary of the World," in which the various subjects are treated in a manner that forces one's interest, each subject being illustrated by a cartoon that is both humorous and instructive. One represents Uncle Sam saying to

Jack Canuck: "I hate to see any of the folks leaving home, but when they do go I like to see 'em go to Canada, where they'll feel at home and get square treatment." Another represents an ocean of wheat, through which Uncle Sam and John Bull are driving with only their heads visible. Uncle Sam is saying: "They say it's a fine looking country, John, but, darn it all, you can't see eit for the wheat." But the most interesting picture of all is the picture of all the nations singing "The Maple Leaf Forever," with Canada beating the baton. The book is full of information for the intended settler and any one interested in Canada West, and includes a copy of the national song of Canada.

The Nernst Lamp Co., Pittsburg, Pa., have issued a booklet concerning the street lighting by Nernst lamps in Berwin, Ill. It is a reprint from the Western Electrician, and like everything that comes from the Westinghouse Co., is most beautifully done. The little booklet, which is crowded with information concerning the success of the Nernst lamp as a street lighter, will be sent to any one upon request.

The Pittsburg Perfect Fence Co., Hamilton, Ont., have issued a catalogue of their line of fencing.

The American Machine Co., Wilmington, Del., who are represented in Canada by Keith & Fitzsimmons, Toronto, have issued a new catalogue on hot air pumping engines.

The James Morrison Brass Mfg. Co., Toronto, have published a new catalogue on the Netherby Flask Valve for which they are now agents.

The Pusey & Jones Co., Wilmington, Del., have just completed a new catalogue of their patent friction clutch and cut-off coupling. Among the Canadian users of this appliance are the Canada Paper Co., E. B. Eddy Co., the Laurentide Pulp & Paper Co., and J. C. Wilson & Co.

Messrs. Sheldon & Sheldon, Galt, Ont., have just prepared a very attractive catalogue on Hot Blast Heating Apparatus. The publication is finely illustrated and contains complete description of this modern heating system. The catalogue will be mailed upon application to the company.

The Sunbeam Incandescent Lamp Co., Toronto and St. Catharines, Ont., have issued a new catalogue in which they describe and illustrate "The Sunburst Lamp."

The Smokeless Fuel Saving System, Limited, Toronto, have issued a booklet on the Puddington Patent Fuel Saver which they are now manufacturing and installing.

ONTARIO MINING INDUSTRIES.

The annual report of the Ontario Bureau of Mines has just been issued. It states that the output of minerals for the year was valued at \$12,870,593, a decrease over 1903 of about 4 per cent.

"The chief decrease," explains Director Gibson, "in the metallic production were in iron and steel, the greater part of the shrinkage being accounted for by the paralysis that fell on the Sault Ste. Marie industries, involving, as it did, the closing of the Helen Iron Mine, from which the great bulk of the iron ore raised during the last four years in Ontario has come, as well as the stoppage of the Algoma Steel Works. A diminution in the yield of the precious metals and a smaller output of pig iron also contributed to the result. On the other hand, 1903 was the record year in nickel and copper, the production of which, both in quantity and value, considerably exceeded that for 1902, or any previous twelve month. When the increased facilities for mining and treating the nickel-copper ores of the Sudbury district now being provided come into full operation, the output from this field will doubtless show still further advance.

As for the non-metallic substances, the most notable advances were in Portland cement, corundum, feldspar, non-pyrites, calcium, carbide and mica.

A summary of the mineral production shows that 10,383 ounces of gold, worth \$188,036, and 16,688 ounces of silver, worth \$8,949, were mined. The figures for some of the other products were as follows: copper, 5,331 tons; nickel, 6,998 tons; iron ore, 208,154 tons; arsenic, 257 tons; calcium carbide, 2,507 tons; Portland cement, 695,360 barrels (worth \$1,182,799); corundum, 1,119 tons; graphite 4,400 tons; gypsum, 4,520 tons; peat fuel, 1,100 tons; petroleum, 16,640,338 gallons; salt, 58,274 tons.

For the production of the \$12,870,593 above noted, 10,658 men were employed at a wage for the year of \$4,222,386.

Since 1893 the increase in production has made a gain of 100 per cent., the nickel production in 1903 being double that of 1900. The total last year was \$2,499,068.

Referring to the iron industry of the province the report says:

"The potential resources of Ontario in iron ore have been greatly extended within the last five years by the discovery of the following iron ranges situated in widely separated portions of the province: the Michipicoten range of the Michipicoten mining division, east shore of Lake Superior, containing the Helen, Josephine, Frances and Brant Lake hematite deposits; the Hutton or Moose Mountain range, northwest of Lake Wabigoon, where the ore is magnetic; the Lake Temagami ranges, including those on the northeast arm, Vermillion, Iron and Ko-ko-ko Lakes, where the outcroppings are chiefly magnetite banded with jasper, but which also show a little hematite; the Flying Post or Ground Hog River ranges of banded magnetite and hematite; the banded hematite belt of Black Sturgeon Lake, south-west of Lake Nepigon, and the extensive range of interbanded hematite and jasper, stretching, with some interruptions, from the east shore of Lake Nepigon to Little Long Lake, a dis-

ance of some 70 miles, the western and eastern terminations of which on Nepigon and Little Long Lakes respectively have long been known."

The report also says. "Dr A P Coleman, professor of geology in the University of Toronto, and mineralogist of the Bureau of Mines, has spent two consecutive seasons in the Sudbury nickel area, and his paper in the present report entitled, 'The Northern Nickel Range,' presents a continuation of the work begun in 1902, the results of which were given in the twelfth report under the heading 'The Sudbury Nickel Deposits.' Dr. Coleman has arrived at the conclusion that the nickel-bearing area is really comprised in a continuous band of eruptive rock, entirely enclosing a roughly elliptical or boat-shaped area composed in the main of tuffs, slates and sandstones, about 35 miles long and eight miles wide. This nickel-bearing band on its inner edge is acid in composition and tends to phases of granite or syenite, but becomes more basic and passes into gabbro or norite as it approaches the outer rim, where the ore bodies are found. Dr. Coleman regards the belt of eruptive as probably synclinal in form and as really constituting a gigantic laccolithic sheet, whose upturned edges rest on rocks of Archaean age both on the north and the south. He will probably complete his examination of the nickel field during the season of 1904, and it is intended to issue a full account of the region and industry, with maps, in the fourteenth annual report of the bureau, and perhaps also in the form of a monograph."

CANADA'S RESOURCES AND POSSIBILITIES.

J. Stephen Jeans, secretary of the British Iron Trade Association, has written and has recently published an octavo volume of 300 pages under the title "Canada's Resources and Possibilities," and the sub-title: "with special reference to the iron and allied industries and the increase of trade with the mother country." Mr Jeans visited Canada in August, 1903, as a delegate representing the British iron trade at the congress of chambers of commerce of the empire at Montreal. Many of the delegates traveled through nearly 11,000 miles of Canadian territory and visited most of the principal centres of population between the two oceans. It is pointed out in the preface to the book that the Dominion has a special interest for the iron trade of the Mother Country for the following reasons.

"1. Because it is already the greatest market among the possessions of the British crown after the Mother Country.

"2. Because it has offered to the Mother Country greater facilities and consideration than have been offered by any other colony of British possession.

"3. Because the future increase of population, and consequently of iron and steel con-

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sumption, in the Dominion is likely to exceed greatly that of any other British possession.

"4. Because Canada herself has enormous resources in the raw materials of the iron industry, and is likely in the near future to enter on a large scale into the competition of iron making countries for the supply of the world's markets.

"5. Because it is the attitude and the conditions of the Dominion that have primarily raised the pending controversy as to the fiscal position of Great Britain in relation to her colonies."

Emphasis is put upon the fact that in the last twenty years the proportion of the total iron and steel imports of Canada contributed by the mother country has fallen from more than 70 per cent. to less than 25 per cent. It is pointed out that in the United States the greatest increase of population and wealth has coincided with the greatest increase in consumption of iron and steel, and it is believed a similar relation between the two may be demonstrated to exist in Canada. The author calls attention to the enormous wheat growing area in Canada, which offers good ground for the expectation that the Canadian crop, now about 96,000,000 bushels a year, may be multiplied several times in the not distant future. In his treatment of industrial conditions in all lines in Canada, Mr. Jeans makes prominent the fact that Canada is ripe for rapid development.

CANADA SHIPPING.

The Department of Marine and Fisheries have just issued their shipping list for 1903. The total number of ships registered in Can-

ada on December 31 last was 7,020 of 683,147 tons. Estimating their value at \$30 a ton the total capital represented is \$20,494,000. During the past three years both the tonnage and the number of vessels registered in Canada has been increasing, whereas before 1900 there had been a steady decline for several years.

Last year the provinces were credited with new shipping as follows.

	Number.	Tonnage.
Nova Scotia	135	12,907
Ontario	71	10,719
New Brunswick	24	1,708
Quebec	31	1,076
British Columbia.....	56	3,494
Prince Edward Island	6	171
Manitoba	5	248

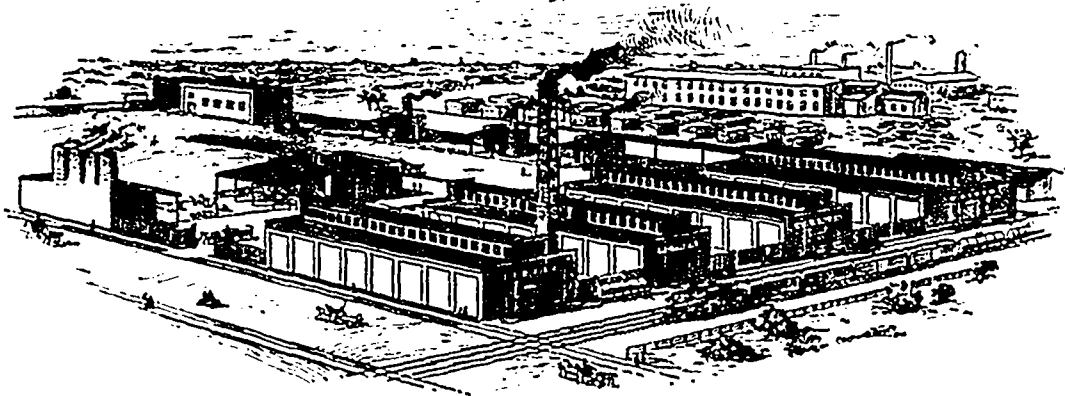
The provinces chiefly affected by the decline of shipping since 1878 are New Brunswick and Nova Scotia. In 1878 New Brunswick ports were credited with 1,142 vessels of 335,965 tons, last year they had bought 929 vessels of 59,508 tons. In 1879 Nova Scotia had 2,975 vessels of 552,159 tons; last year it had 2,069 vessels of only 216,053 tons. Ports which formerly figured largely in the register of new shipping have ceased to build altogether. The cause of this is the replacement of wood by steel as a ship building material. Shipbuilding in Canada declined when steel became the accepted material for ship construction. Nor will Canada regain a considerable place in ship construction until she is able to employ steel. In point of fact the gain during the past three years was due to the steel ships that have been built for Canadian lake service by the plants on Lake Ontario.

CANADA'S PULP INDUSTRY.

The figures issued by the Dominion Statistician as to the extent of the pulp industry in Canada show a remarkable development in a comparatively new field. The industry during the calendar year 1903 was carried on by 39 mills, which had an output of 275,619 tons of wood pulp. Of this quantity 187,871 tons were mechanical pulp, 84,808 sulphite, and 2,940 soda. The corresponding quantities for 1902 were: Mechanical, 155,210 tons; sulphite, 76,735 tons; and soda, 9,044 tons. This shows an increase of 34,630 tons in 1903. The increase in sulphite was 8,073, and in mechanical 32,661 tons, soda showing a decrease of 6,104 tons. The total value of the output of 1903 was \$5,219,892. Nine of the thirty-nine mills manufacture mechanical pulp, five make both chemical and mechanical. Taking the returns of thirty-nine mills, the average time the mills ran during the year was nearly nine months. The value of the production was \$5,219,892, the amount exported \$3,013,441, leaving \$2,206,451 for home use. These figures show that we export about 57 per cent of our production. Of the \$3,013,441 worth exported by Canada in 1903, Great Britain took \$865,826, the United States \$1,890,448, and other countries \$248,107. With excellent waterpower and abundance of raw material, Canada should take the lead in the pulp-making industry.

THE WIDENING USE OF ELECTRIC WELDING.

The electric weld is becoming a more and more important factor in many industries.



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.



During recent years the extension of its application has been steady, and each year has witnessed its entrance into new fields. Sometimes, indeed, new manufactures, or new ways of obtaining results, have been based upon its use. The electric welds under consideration are the results of that operation of uniting two pieces of metal by what is known as the Thomson process, first brought out by the writer and rendered available in commercial practice a considerable number of years ago. The rapidity, flexibility, cleanliness, neatness, accuracy, and economy of the electric process has won for it such an important standing in the arts that many future extensions in its application are assured.

The uniformity of the work, the control of the operation, the extreme localization of the heat to the particular parts to be united and the fact that the process is not limited to iron and steel, but can deal equally well with other metals, such as copper, brass, bronzes, and even lead, are characteristics of the electric welding operation.

In the wagon and carriage industry the process is applied in the production of tires of all sections, axles, hub, spoke and sand bands, fifth wheels, shifting rails, steps, shaft iron, etc., while it has found a large use in the welding into continuous strips or bands of the wires inclosed in rubber tires for holding them in place. The larger part of the dash-frames used in carriages in the United States are now probably made by electric welding, while iron and steel agricultural wheels are built up, or have their parts united, by electric welds.

To enumerate the many applications to the bicycle industry would be almost to cata-

logue most of the metal parts of this useful machine. It must be borne in mind, too, that a welding machine, slightly modified, is equally applicable for locally heating parts in electric brazing or hard soldering, for upsetting and for bending or shaping.

In the wire industry the part played by electric welding is already quite important, and becomes steadily more so. Besides the mere simple joining of wires or iron, steel or copper into long lengths, the welding of wire or strip into loops for barrels, tubs, pails, etc., is supplanting the older forms. Numerous machines are in operation turning out electrically-welded wire fence, such as a loom turns out cloth,—Ellis Thomson, in Cassier's Magazine.

VALUE AND USES OF ASBESTOS.

One of the most profitable finds that a prospector could make in this country would be an extensive deposit of chrysotile asbestos. The importance of this useful mineral is emphasized by the meagerness of our supply. The total quantity produced in the United States during the year 1903 was only 874 short tons, valued at \$14,160. Asbestos to the value of \$689,337 was imported into the country during the year 1903, which indicates the inadequacy of our home supply. The great economic value of our limited asbestos resources is shown by Dr. Joseph Hyde Pratt in a report to the Geological Survey.

Nearly all of the asbestos imported into the United States is obtained from the Canadian deposits. The asbestos produced in the United States comes principally from deposits in Sall Mountain, White county, Georgia, but

small quantities were mined near Dalton Berkshire county Mass., and near New Hartford, Conn. With the exception of the small amount of asbestos produced in Massachusetts, the entire product on was of the amphibole variety. In view of the manifold uses of chrysotile asbestos, which would surely multiply with any reduction in price, it is unfortunate that our country contains so little of this valuable mineral. The most promising deposits of chrysotile asbestos in the United States are the properties of the Vermont Asbestos Co. and the Tucker Asbestos Co., near the village of Lowell, Vt.

Dr. Pratt devotes the major portion of his report to a discussion of the uses of asbestos and the origin of the chrysotile variety. In practically all cases where asbestos is used its power to resist heat is the important quality. A few years ago only a few articles were made of this mineral, but it is now used in hundreds of forms, as asbestos products can be manufactured in almost any size and shape to meet all kinds of demands.

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.

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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

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Branch Office—9 Toronto St., TORONTO.

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

THE GUTTA PERCHA & RUBBER MFG. CO.

One of the most striking evidences of industrial expansion in Toronto is provided by the Gutta Percha & Rubber Mfg. Co. Ten years ago this company gave employment to 75 artisans; to-day the number of their pay roll is nearly 600, eight times as many. To fill the demands for the products of the works it has been necessary to add considerably to the factory every year, until now the company own a number of mammoth shops in Parkdale, covering several acres. Not only are the company doing an immense trade with all parts of the Dominion, but they are exporting large quantities to the British Isles, Australia, New Zealand, South Africa, and the east. Seven years ago the company commenced the manufacture of rubber boots and shoes, which gave employment to over 100 girls. The industry is protected by a tariff of 25 per cent on the average. Asked whether they felt the effects of dumping from the United States, the manager of the company stated that there was a tendency in that direction in the Maritime Provinces, owing to their close proximity to the New England factories and shipping points.

ELECTRIC SMELTING OF IRON AND STEEL.

Important negotiations looking to the establishment in the Ottawa district of works for the smelting of iron ores and the manufacture of iron and steel are under way, and will probably be completed at an early date. The essentials for this industry are cheap electrical energy and an abundance of magnetic iron ore. The hydraulic energy for the development of electricity and large deposits of iron ore are to be found near Ottawa, and the particular properties in question are controlled by one gentleman, who is now devoting himself to obtaining the necessary capital for their development. Mr. P. Heroult, of La Praz, was in Ottawa last week looking into the proposition, and is believed to have given it his indorsement, Mr. Heroult is the inventor of the process of manufacturing aluminum, and probably turns out more of the product than any other manufacturer in the world. He also invented the process of making steel by electricity, and at his works at La Praz is demonstrating the commercial feasibility of the method. He controls the patent rights for the electric process, but if he is interesting himself in the development

of iron deposits near Ottawa there will be no hindrance to the introduction of the process there. Experts believe that by the electric process the cost of manufacturing steel can be considerably reduced. If, for example, it can be manufactured for \$12 by the electric process, whereas it costs several dollars more by the present method, a revolution will be wrought in the iron and steel industry, and Canada will be able to successfully compete in the manufacture of these products against the rest of the world. All through Ontario and Quebec deposits of iron in great quantities are scattered, and contiguous to them are water powers, which permit of cheap development of electricity. No other country is favored to an equal degree, and it is almost safe to predict that by means of the electric process we are on the eve of an era of phenomenal development in the iron and steel industry in Canada.

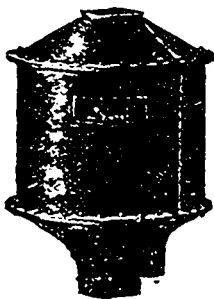
The Northern Construction Co., Toronto, have commenced work on the construction of the James Bay Railway, track-building operations having been commenced between Richmond Hill and Aurora, Ont.

Phosphor Bronze can be made with less energy than formerly—since the advent of McCullough-Dalzell special phosphorizers. Practical foundrymen know this. Write for prices.

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It stops the dripping and spraying of water and oil from the exhaust pipe. The most reliable, durable, safest and economical head on the market.

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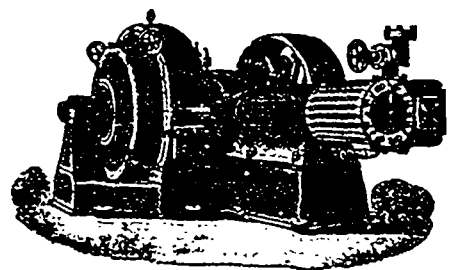
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We build both Engine and
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Will Issue a new . . .

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REPAIRING and ALTERING. EDWARD RAMACE,
Steel and Composite Hulls our Specialty. Builders of Yachts, Tugs, Launches, Scows, Tanks, Etc. Manager.
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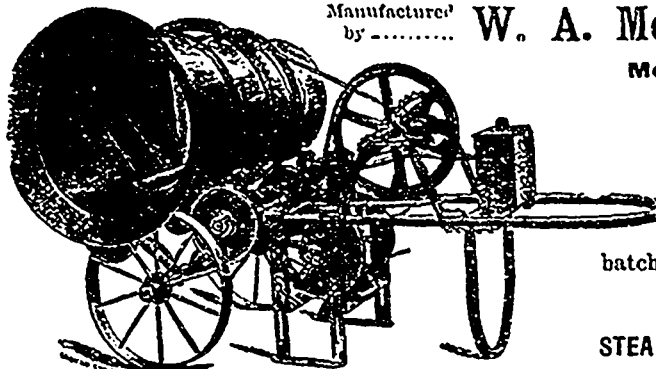


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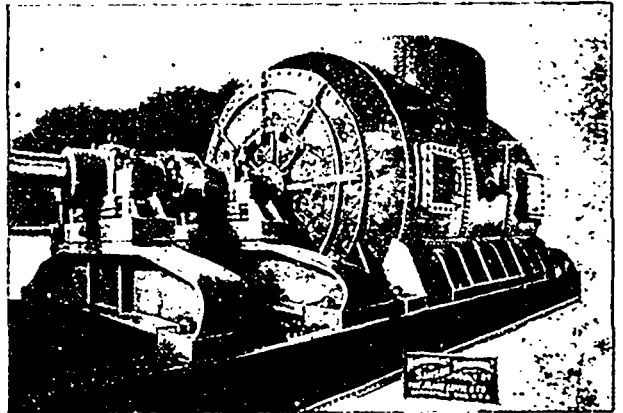
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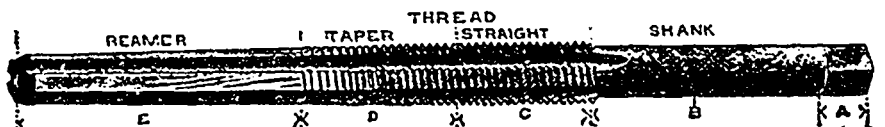
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Regular and Full Mounted Reece and Derby Plates, Bicycle
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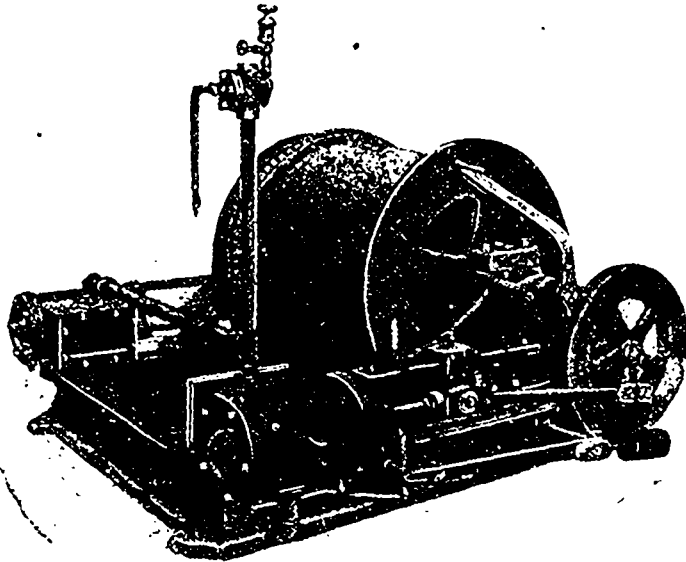
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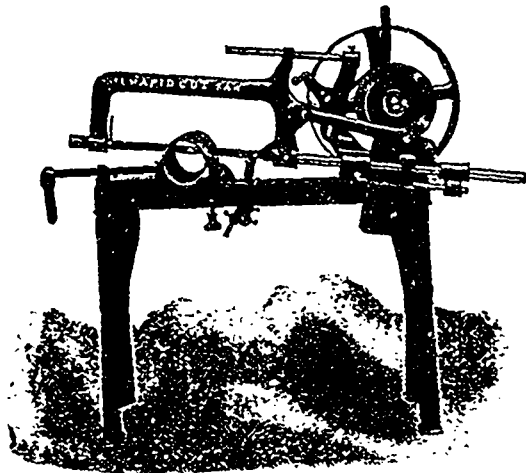
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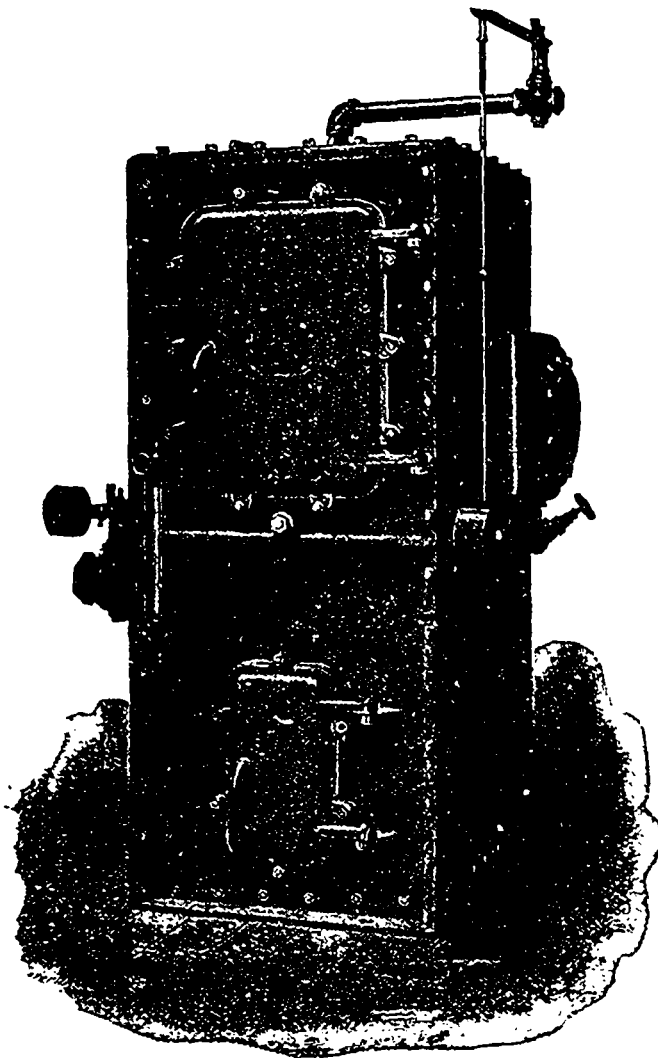
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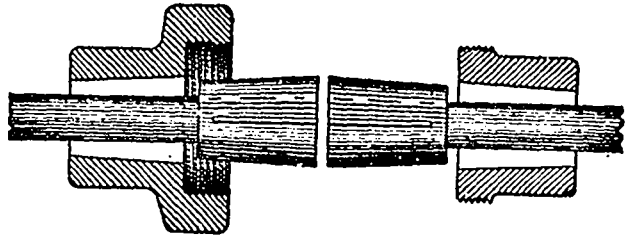
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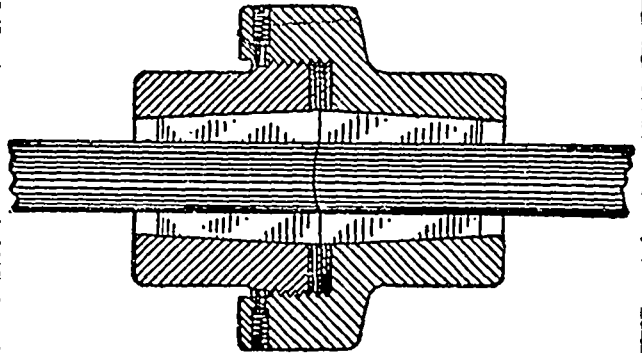
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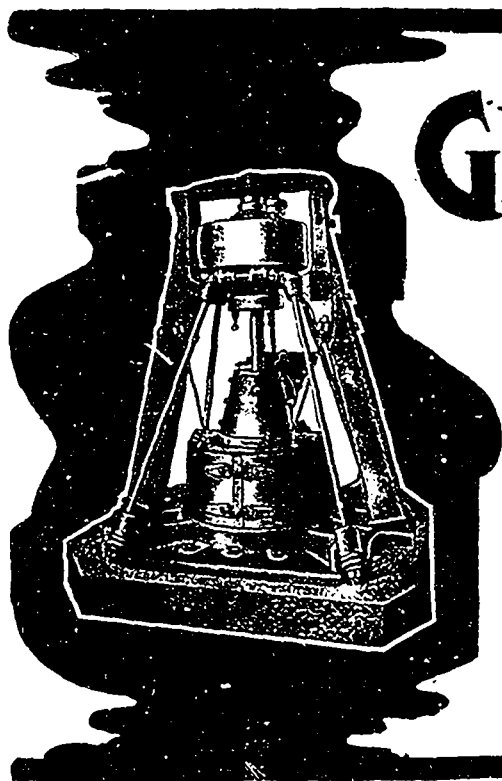


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Newaygo Portland Cement Co., Newaygo, Mich.
Great Northern Portland Cement Co., Baldwin, Mich.
Midland Portland Cement Co., Bedford, Ind.
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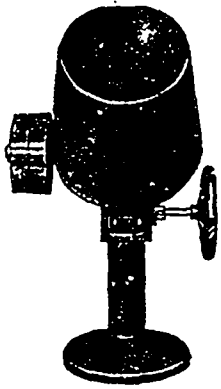
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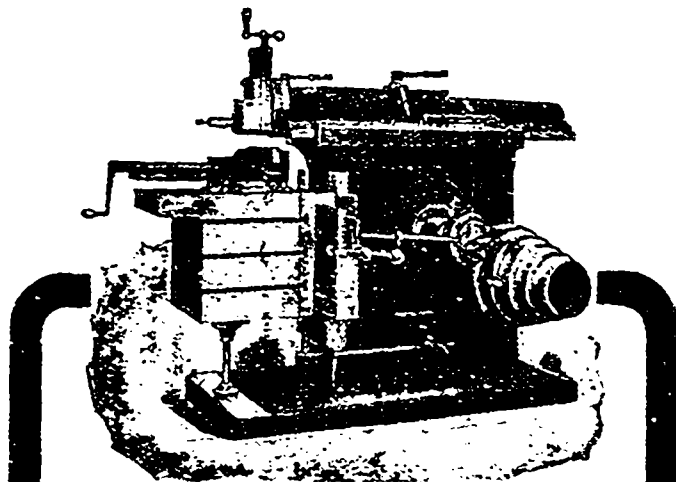
To produce power costs money, and it is surprising how much more money is expended to produce steam power than is absolutely necessary.

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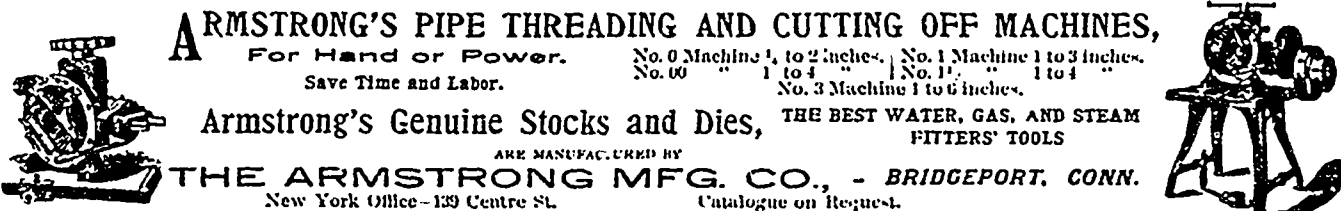
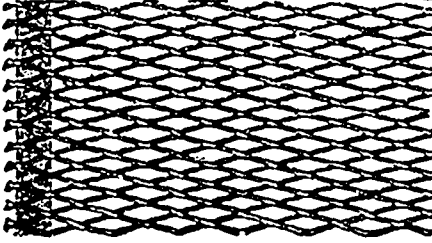
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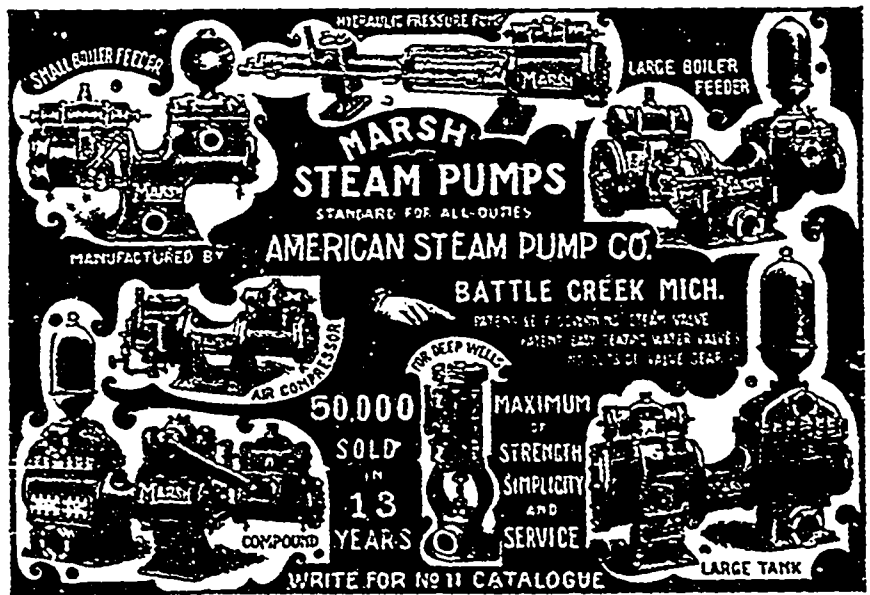
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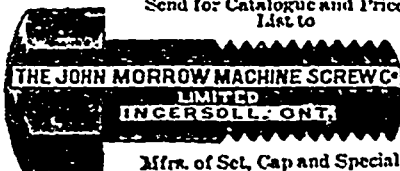


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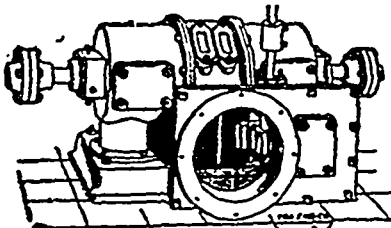
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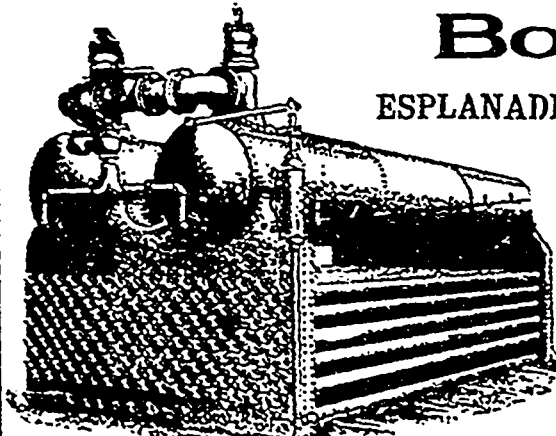


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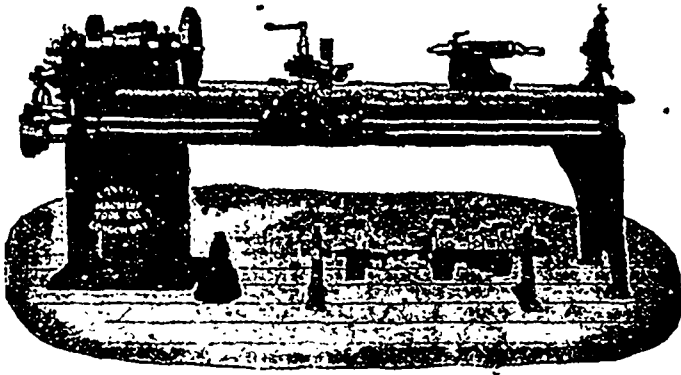
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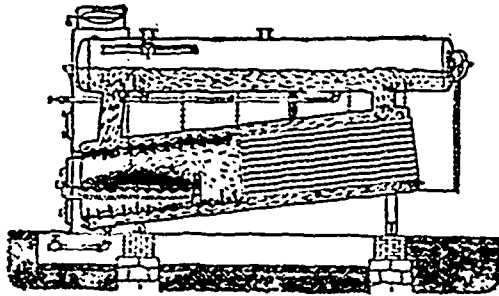
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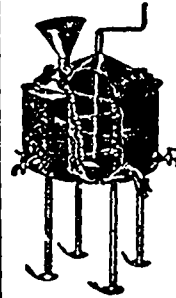
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 Stillson and Trim
 Wrenches,

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Pipe Vices, Steam Pipe.

CORNER KING & VICTORIA STS.

TORONTO

CLASSIFIED INDEX.

(CONTINUED).

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 Road Drill Co., Sherbrooke, Que.
 Jeffrey Mfg. Co., Columbus, Ohio.

Drills (Twist)

Cleveland Twist Drill Co., Cleveland, Ohio.
 Pittsburg 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.
 Furman, 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., Wakeville, 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 Heino 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

Food Water Heaters

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

Files

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

Financial

Bradstreet's, New York City.
 Dun, R. G. & Co., Toronto.
 Neff & Postlethwaite, 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, Pa.
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., Preston, 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.
Pemberthy Injector Co., Windsor, Ont.
Petrie, H. W., Toronto.
Williams, A. R. Machinery Co., Toronto.

Gauges (Water)

Babcock & Wilcox, Limited, Montreal.
Pemberthy 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-Dalzell Crucible Co., Pittsburgh, Pa.
Pittsburg Crucible Works, Pittsburgh, Pa.

Grease Cups

Pemberthy Injector Co., Windsor, Ont.

Grinding Machinery

Canadian Corundum Wheel Co., Hamilton, Ont.

Grinding Pans

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

Hand Travelling 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.
Buhl 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.

Injectors

Canada Foundry Co., Toronto.
Hamilton Brass Mfg. Co., Hamilton, Ont.
Pemberthy 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.

Lathos

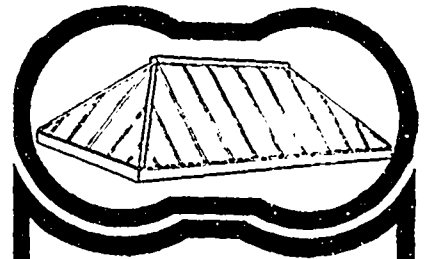
Cowdrey, C. H. Machine Works, Fitchburg, Mass.
London Machine Tool Co., London, Ont.
Petrie, H. W., Toronto.
Williams, A. R. & Co., Toronto.

Lathos (Wood-Working)

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

Lubricators

Pemberthy Injector Co., Windsor, Ont.

**Metallic Skylights**

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Vancouver, B.C.	Winnipeg, Man.

THOMAS C. IRVING, Gen'l Manager Western Canada
TORONTO.

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Machinists

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, Warrington, 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 Mash & Metal Works, Co., St. Catharines, Ont.
Smith's Fa. 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.
Greer, 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, Warrington, Ont.
Spence, R. & Co., Hamilton, Ont.
Wilson, J. C. & Co., Glenora, Ont.

Miners' Lamps

Anton, John & Son, Monongahela, Pa.

Mining Machinery

Buhl Malleable Co., Detroit, Mich.
Canadian Rand Drill Co., Sherbrooke, Que.
Cleveland Twist Drill Co., Cleveland, Ohio.
Corbett, R. B., Brooklyn, N.Y.
Gartshore, John J., Toronto.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Hopkins, F. H. & Co., Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
McDougall, John, Caledonian Iron Works Co., Montreal.

Perrin, William R. & Co., Limited, Toronto.
Petrie, H. W., Toronto.
Williams, A. R. Machinery Co., Toronto.

Motors and Dynamos

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.
Meadows, 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, Cornelio & Co., Montreal.

Paper Manufacturers

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

Patents

Hudden, Hanbury, A., Montreal.
Case, Egerton R., Toronto.
Fetherstonhaugh & Co., Toronto.
Marion & Marlon, 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.
Syrause 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.
Montreal Pipe Foundry Co., Montreal.
Rico Lewis & Son, Toronto.

Plaster

Albert Mfg. Co., Hillsborough, N.B.

Plates

Bourne-Fuller Co., Cleveland, Ohio.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Rice Lewis & Son, Toronto.

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Plumbago

Hamilton Facing Mills Co., Hamilton, Ont.
McCullough-Dalzell Crucible Co., Pittsburg, Pa.
Pittsburg Crucible Works, Pittsburg, Pa.

Pneumatic Tools

Canadian Rand Drill Co., Shorbrooke, Que.

Painter 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

Babcock & 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 (Tile, Sewer 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

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

Purifying and Softening Systems (Water)

Babcock & 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.

Roamers

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

f. Adie & 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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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 Shafts

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.

Tees

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.

Thermometers (Recording)

Bristol Co., Waterbury, Conn.

Tin

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

Tool Steel

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

Trucks

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.

Turbines

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

Typewriters and Supplies

United Typewriter Co., Toronto.

Valves

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 Rollers (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 Rods

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.
Cowlrey, 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.
Steptoe, John Shaper Co., Cincinnati, Ohio.
Williams, A. R. Machinery Co., Toronto.

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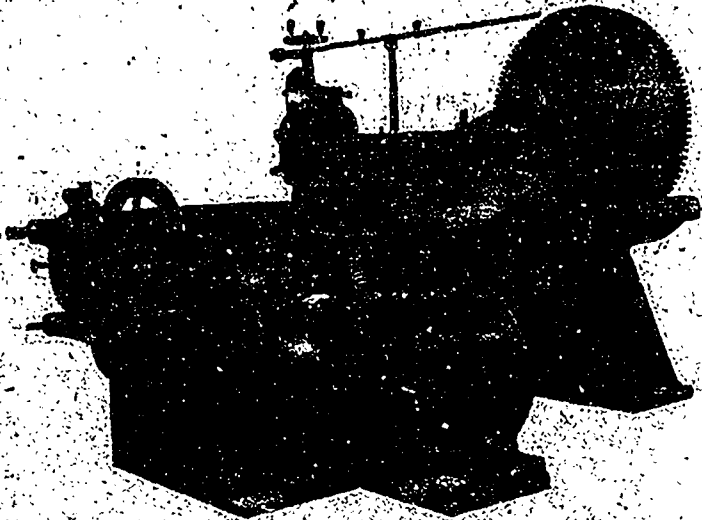
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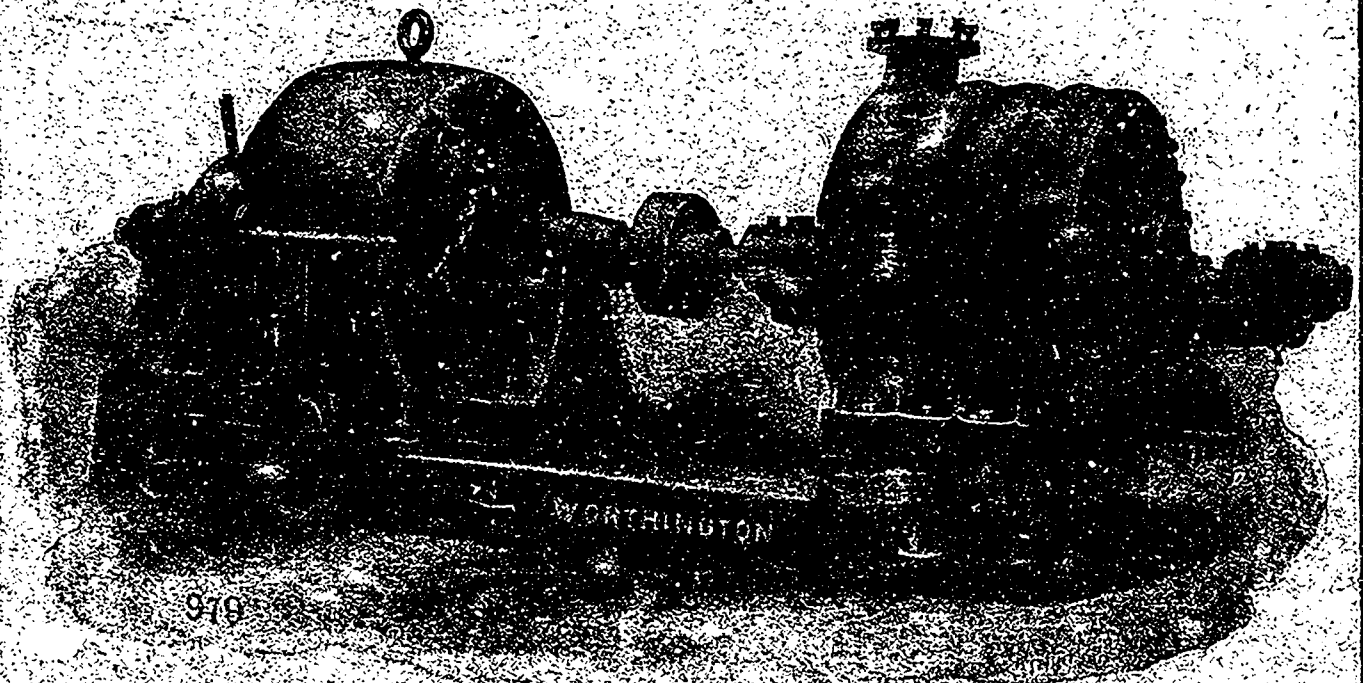
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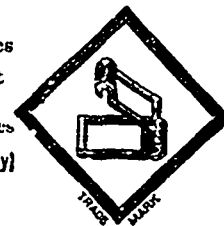
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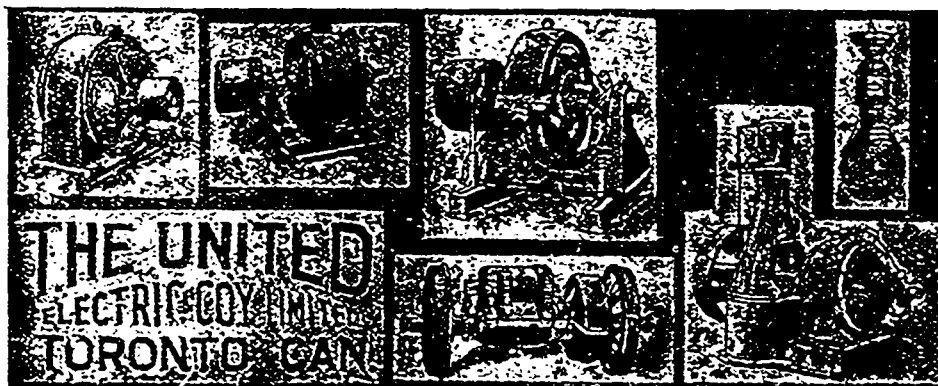
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