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**CANADIAN MANUFACTURER**  
AND INDUSTRIAL WORLD  
DEVOTED TO THE MANUFACTURING INTEREST OF THE DOMINION

VOL. 40.

TORONTO, MAY 4, 1900.

No. 9.

**MAGNOLIA METAL**  
ANTI-FRICTION  
Used by all the Leading Governments  
THE BEST ANTI-FRICTION METAL FOR ALL MACHINERY BEARINGS  
For Sale by all Dealers  
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DOMINION DYEWOOD & CHEMICAL CO.  
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PRODUCTS OF  
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Pressed, Fencing,  
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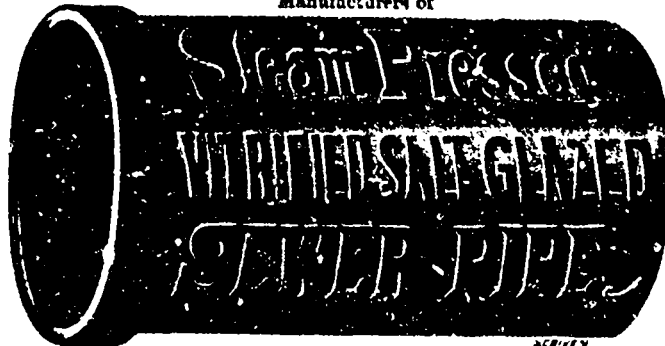
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THE GUTAPERCHA & RUBBER MFG CO.  
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61 and 63 FRONT ST. WEST, TORONTO.

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Works, SHALLOW LAKE, Ont.

Head Office, OWEN SOUND, Ont.

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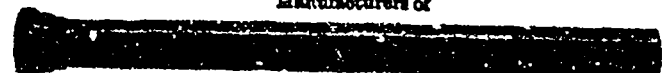
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Highest Awards at the World's Fair, Chicago, upon

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**Branch Offices and Agencies:**

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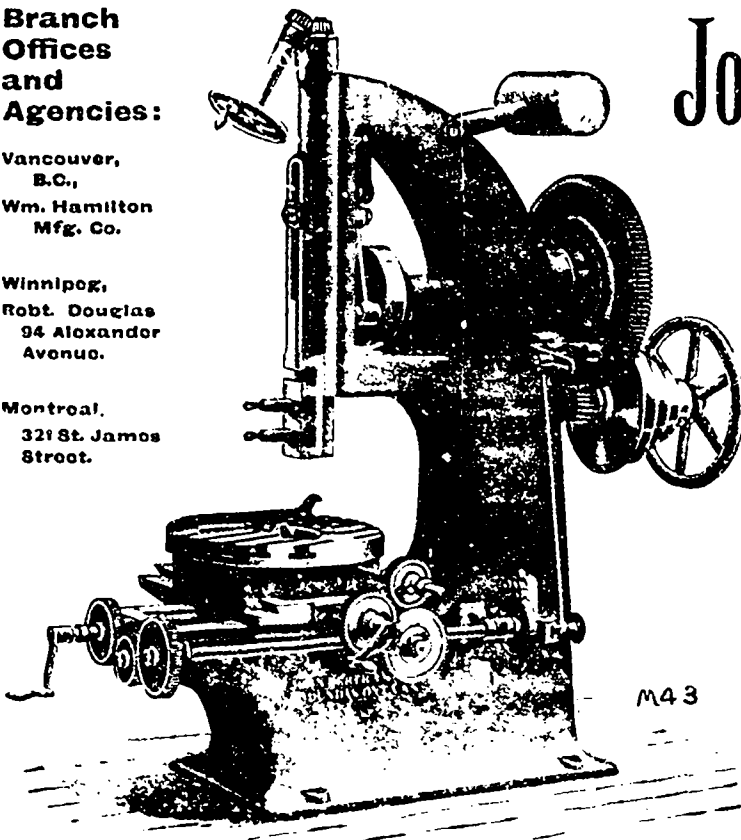
Wm. Hamilton Mfg. Co.

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Montreal.

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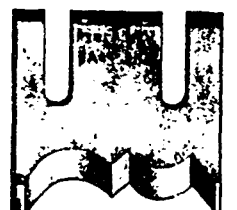
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For Wood-Working, Paper Cutting and Leather-Splitting Machines

BARK KNIVES  
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Quality Guaranteed.

Special Knives Made to Order.

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Steel Bridges for Railways and Highways,  
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A large Stock of **ROLLED STEEL BEAMS, JOISTS, GIRDERS, CHANNELS, ANGLES, TEES, Z BARS and PLATES**

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Bleaching Powder,  
Caustic Soda, ALL STRENGTHS.  
Bicarbonate of Soda,  
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PHILADELPHIA  
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THE BEST EQUIPPED BOILER AND ENGINE WORKS IN CANADA.

We Manufacture— **STEEL BOILERS**

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STEEL STEAM VESSELS OF EVERY DESCRIPTION. STEAM YACHTS AND LAUNCHES.

GET OUR PRICES BEFORE ORDERING.

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**Bicycle Screw Plate**

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...A Complete Repair Shop in Itself...

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DONE FOR THE TRADE.

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For IRON FENCING,  
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of IRONWORK

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Mach. Manufacturers

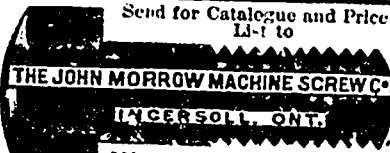
Manufacturers of

HOT PRESSED NUTS.

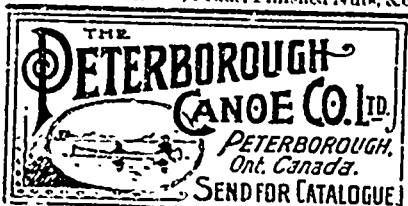
PARIS. - ONT.



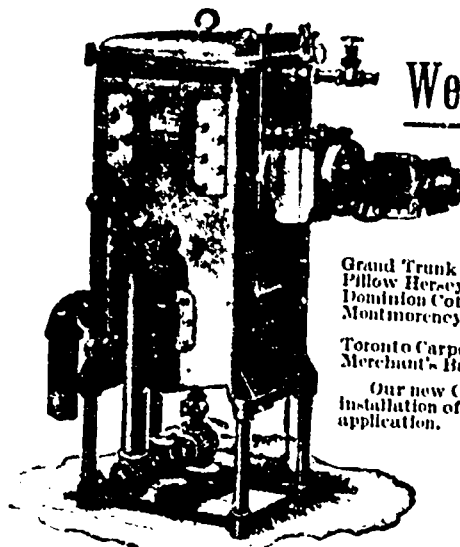
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List to



Mfrs. of Set, Cap and Special  
Screws, Studs, Finished Nuts, &c.



Advertisement in The Canadian Manufacturer



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are increasing every day.

The following well-known firms have recently  
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|   |     |                 |
|---|-----|-----------------|
| Grand Trunk Ry. Co. (Car Shops), Montreal   | (1) | 50 h p. Heater. |
| Pillow Hecsey Mfg. Co., Montreal            | (1) | 1000 "          |
| Dominion Cotton Mill Co., Montreal          | (5) | 200 "           |
| Montmorency Cotton Mills, Montmorency, Que. | (1) | 200 "           |
| Toronto Carpet Co., Toronto, Ont.           | (1) | 100 "           |
| Merchant's Bank of Canada, Montreal         | (1) | 150 "           |

Our new Catalogue explains the saving to be effected by the  
installation of the "Webster" Heater, and will be mailed free on  
application.

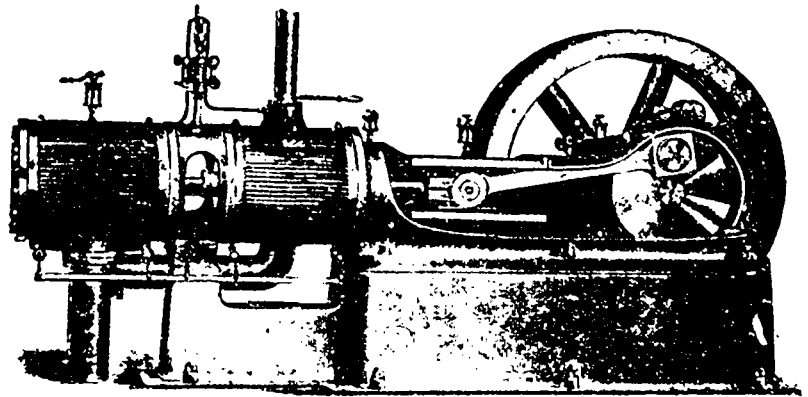
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## A. KLIPSTEIN & CO. 122 Pearl St. New York

Anilines, Dyestuffs & Chemicals

DELIVERY MADE AT NEW YORK, MONTREAL OR HAMILTON.

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Spain,  
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Brazil,

Australia,  
Cuba,  
British Guiana,  
Newfoundland,

AND ALL PARTS OF CANADA.

**Robb Engineering Co., Ltd., Amherst, N.S.**

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Manufacturers of High-Grade Rubber Goods  
of all Descriptions.

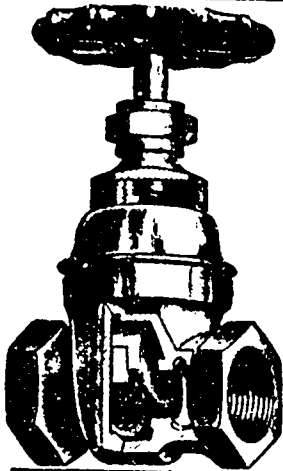


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| BELTING, | HOSE,  | PACKING,   |
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Factories and Head Office. - MONTREAL.  
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**STRAITWAY VALVE**

For  
...Steam, Water or Gas...

**EVERY VALVE TESTED.**

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WALKERVILLE, ONT.

Sole Manufacturers for Canada. Send for  
Price List.

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Oakey's Flexible Twilled Emery Cloth.  
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Oakey's Emery Paper, Black Lead, Etc.  
Prize Medal and Highest Award Philadelphia, 1876, for Superiority  
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Manufacturers **JOHN OAKEY & SONS, LIMITED,** Wellington Mills,  
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MADE BY... **STANLEY INSTRUMENT CO.,** GREAT BARRINGTON, MASS., U.S.A.

FOR SALE IN CANADA EXCLUSIVELY BY

# The Royal Electric Co'y

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"FOR ALL DUTIES"

We invite enquiries from engineers in need of any description of Pumping Machinery. We manufacture over five hundred varieties and sizes of Steam and Power Pumps for stationary and marine purposes. We will be pleased to furnish plans and specifications for any special types. Our Catalogue, giving a good idea of our standard patterns, sent free to all enquirers.

## Northey Gas and Gasoline Engines

To anyone requiring a compact, thoroughly reliable engine, especially suited for users of intermittent power, we recommend our Gas and Gasoline Engine. We shall be glad to furnish estimates for Gas or Gasoline operated pumps, electric light plants, etc., etc. Explanatory Booklet free on request.

**Northey Mfg. Co., Limited,** 1000 KING ST. SUBWAY, **Toronto, Ont.**

# THE ATLANTIC REFINING CO.

TORONTO, ONTARIO

MANUFACTURERS  
AND IMPORTERS  
OF ILLUMINATING  
AND LUBRICATING

## OILS, GREASES

## and SPECIALTIES

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## REFLECTORS, SHADES, LAMPS

We Stock a Large Variety of SHADES  
and REFLECTORS in

ALUMINUM, MIRROR, CELLULOID, PAPER, PORCELAIN,  
FOR FACTORY AND OFFICE.

Imperial Lamps and Helios Upton Enclosed Arcs Give BEST LIGHT with LEAST CURRENT  
ELBRIDGE Sparking Dynamos, SAMSON Batteries and IMPERIAL Salts, for Gas or Oil Engines.

Write us about Lighting  
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PUBLISHED ON THE FIRST AND THIRD FRIDAYS OF EACH MONTH

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**The Canadian Manufacturer Publishing Co., Limited.**

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

Cable address: "CANAMAN." Western Union Telegraphic Code used.

J. J. CASSIDEY, Editor and Manager

**FRANK B. WHITE COMPANY.**

The Fisher Building, CHICAGO. 120 Nassau St., NEW YORK.  
Represent the Advertising Department of THE CANADIAN  
MANUFACTURER in the United States.

**THE INDUSTRIAL EXHIBITION ASSOCIATION  
AND CANADIAN MANUFACTURERS.**

An Act to incorporate the Industrial Exhibition Association of Toronto was passed by the Ontario Legislature March 11, 1879. It was formed for exhibition purposes and for the promotion of industries, arts and sciences generally, and the Act sets forth the names of the various associations and the number of their respective representatives which should be entitled to participate in the organization; and it also provides for the increasing of the number of such representatives and the admission of other societies and associations. The initial number of representatives was sixty, distributed among twenty different bodies, among them being the Manufacturers' Association of Ontario (which name has since been changed to Canadian Manufacturers' Association), to which was apportioned five representatives. The Board of Directors, the Act requires, shall consist of not less than fifteen, nor more than twenty, a majority of which shall be resident in Toronto. Since the organization the number of representative bodies included in it have been increased from twenty to thirty-five, and the representatives from sixty to ninety four. The associations, societies, etc., at present embraced in the Industrial Exhibition Association, and the number of their representatives are as follows:—

|  |    |
|--|----|
| Toronto City Council.....                          | 14 |
| Toronto Electoral District Society.....            | 12 |
| Ontario Beekeepers' Association.....               | 1  |
| Ontario Society of Artists.....                    | 2  |
| Lumbermen's Association.....                       | 2  |
| Educational Department of Ontario.....             | 2  |
| Ontario Poultry Association.....                   | 2  |
| Commercial Travellers' Association.....            | 3  |
| Dominion Millers' Association.....                 | 1  |
| Toronto Horticultural Society.....                 | 2  |
| Toronto Board of Trade.....                        | 3  |
| York County Council.....                           | 3  |
| Canadian Manufacturers' Association.....           | 5  |
| Toronto Poultry Association.....                   | 2  |
| Toronto Natural History Society.....               | 2  |
| Canadian Institute.....                            | 2  |
| Ontario College of Pharmacy.....                   | 2  |
| Ontario Veterinary Association.....                | 2  |
| Ontario Fruit Growers' Association.....            | 2  |
| Butter and Cheese Association of East Ontario..... | 1  |

|  |   |
|--|---|
| Butter and Cheese Association of West Ontario..... | 2 |
| Clydesdale Association of Canada.....              | 2 |
| Shire Horse Association.....                       | 1 |
| Hackney Horse Association.....                     | 1 |
| Canadian Horse Breeders' Association.....          | 1 |
| Dominion Short Horn Breeders' Association.....     | 2 |
| Dominion Holstein Breeders' Association.....       | 2 |
| Dominion Ayreshire Breeders' Association.....      | 2 |
| Canadian Jersey Breeders' Association.....         | 2 |
| Hereford Breeders' Association.....                | 1 |
| Dominion Sheep Breeders' Association.....          | 2 |
| Dominion Swine Breeders' Association.....          | 2 |
| Toronto Gardeners' and Florists' Association.....  | 2 |
| Dominion Draft Horse Breeders' Association.....    | 2 |
| Dominion Cattle Breeders' Association.....         | 2 |
| Toronto Educational Association.....               | 2 |

Total..... 94

There are at present nineteen members of the Board of Directors, distributed as follows:—

|  |   |
|--|---|
| Toronto City Council.....                      | 2 |
| Toronto Electoral District Society.....        | 5 |
| Toronto Horticultural Society.....             | 1 |
| Toronto Board of Trade.....                    | 2 |
| Canadian Manufacturers' Association.....       | 3 |
| Toronto Poultry Association.....               | 1 |
| Ontario Veterinary Association.....            | 1 |
| Ontario Fruit Growers' Association.....        | 1 |
| Shire Horse Association.....                   | 1 |
| Dominion Short Horn Breeders' Association..... | 1 |
| Gardeners' and Florists' Association.....      | 1 |

In the opinion of Mr. Thorn, who is one of the representatives of the Canadian Manufacturers' Association in the Industrial Exhibition Association, there should be a new deal in the directorate which would apportion the directors somewhat as follows:

Toronto City Council, five; Canadian Manufacturers' Association, five; from the associations representing the live stock breeders, the farming industries, etc., five; the Ontario Society of Artists, one; the fruit growers, one; the gardeners and florists, one; the Natural History Society, one; and the Toronto Trades and Labor Council, one. There is somewhat of equity in this proposition but it would be unworkable unless the law were amended so as to give these different bodies the right to name their members on the Board, and not leave the election of them to the general annual meeting of the Association; and Mr. Thorn seems to have overlooked the fact that there is another element quite as important in connection with the Exhibition, and quite as necessary to its success as any of the organizations he alludes to. We refer to the Canadian Press Association. We all know that Canadian newspapers, particularly those of Ontario, render important service to the Exhibition, for which they receive no further recognition than admission tickets to the Grounds, and Mr. Thorn's proposition might be amended in this respect.

Another feature in connection with representation in the Exhibition Association or upon its Board of Directors which should receive consideration is, that the whole body of manufacturers is represented only by the five members apportioned to the Canadian Manufacturers' Association, while in fact the members of that Association who exhibit at the Fair do not average more, probably, than about ten per cent. of all the manufacturers who display their products there. If the idea should prevail that the organizations whose representatives compose the members of the Exhibition Association, should name the directors, account should be taken of the fact that members of the Canadian Manufacturers' Association are but

a small fraction of all the manufacturers who make exhibits at the Fair. There are three representatives of the Association on the Board of Directors, all most excellent gentlemen, two of whom have held that position for more than twenty years, and the other about ten years. One of them is a manufacturer of copper goods, one of drugs and chemicals, and one of watch cases, but never has there been on the Board a manufacturer of iron or wood working machinery, of agricultural implements, of carriages, of electrical machinery or appliances, of paper, of cotton or woolen goods or textiles of any description, or of any of many other lines of manufactures, nor has there ever been a manufacturer on the Board or even a member of the Exhibition Association, representing the Manufacturers' Association who resided outside of Toronto.

It is quite evident, therefore, that while Mr. Thorn's proposition looks in the right direction, it is not sufficiently far-reaching. If the intention and desire is that the Industrial Exhibition Association shall include, as the name indicates, the exhibition of manufactures as well as of farm animals, there should be as numerous representatives of manufacturing associations as of stock breeders, and there should be as much care taken to facilitate the exhibits of the one class as of the other. But this has never been the case in the history of the Association, for we find that at the very beginning the manufacturing industries were represented by but five members, the total being sixty, and at the present there are only these five, while the representatives of all other interests have increased to ninety-four.

It does not appear, however, that this lack of representation of manufacturing interests in the Association is because additional representation has been denied them, but rather because manufacturing organizations have neglected becoming affiliated with the Association. Considering the scope of the work resting in the hands of the Canadian Manufacturers' Association, it is not to be expected that it should do more than it has done or usually does in promoting the success of the Exhibition. It is true a few—very few—of the members make exhibits at the Fair, but it is also true that hundreds of other manufacturers, who are not members, make exhibits, and most complete and exhaustive ones. But these latter are not represented either on the Board of Directors, nor even in the Industrial Association as they should be.

They should be, because their exhibits add so much to the attractiveness of the occasions. What would Toronto's Great Fair be without the Music Building, Annex, or Machinery Hall without the electrical appliances, or Carriage Building without the carriages, or the Stove Building without the cooking and heating apparatus? Or what sort of a show would it be without the agricultural machinery? A score of classes of mechanical products are represented at the Fair, but the manufacturers of them are not represented, and most of these complain of the scant courtesy with which they are treated when they ask for accommodations that they do not enjoy.

Mr. Thorn should extend his efforts towards obtaining the representation of other manufacturing associations in the Industrial; some of these include the piano and organ manufacturers, bicycle manufacturers, agricultural implement manufacturers, carriage and vehicle manufacturers, the manufacturers of electrical appliances, the iron founders, the builders of steam boilers and engines, the builders of wind engines and

air motors. Some of these are already organized and would no doubt, be admitted to representation in the Association on application. The others should organize and apply. There is big work ahead for Mr. Thorn.

#### A BAD BREAK.

When at the annual meeting of the Toronto Industrial Exhibition Association in February, the announcement was made to the effect that a large number of manufacturers of agricultural machinery, who had for years exhibited regularly at the Toronto Fair, were so dissatisfied with the treatment they had received that they would not again exhibit unless their remonstrances were heeded. The matter was viewed as an idle threat from persons who really did not mean what they said. Since then THE CANADIAN MANUFACTURER has frequently raised its warning voice, showing that with a knowledge of the situation and of the importance of something being done by the Association to conciliate the manufacturers, the danger was imminent that what has heretofore been a most attractive feature of the Fair would hereafter be conspicuous by its absence. We regret to say that the Fair Directors, like the ostrich which hides its head in the sand at the approach of danger, in entire disregard of the interests of their Association, and of the warnings given by THE MANUFACTURER, have declined to take any action looking to avoiding the impending trouble, and now it is announced that at a meeting held in Toronto a few days ago, these manufacturers of agricultural machinery came to an agreement among themselves to hereafter decline to exhibit at the Toronto Fair. A remarkable feature of the situation is that Mr. Hill, the manager of the Fair, seems to think that this is a small matter which the manufacturers will repent of, and show up as usual, and if they do not there are plenty of others who would like to have the locations. Canadian manufacturers have heretofore done much to build up the Toronto Fair, but the present management of it seems to think that sideshows and mountebank performances are the entertainments most to be encouraged.

#### CIPHER CABLEGRAMS.

The Great Northwestern Telegraph Company has been notified that the Dominion Government has designated the Western Union Telegraphic code as one which can be used in connection with cipher messages, having deposited with the censors at Aden, Durban and Cape Town copies of this code. The following notice has been received from the cable companies:—"Hereafter commercial or private messages, 'via Aden,' to or from Zanzibar, Seychelles, Mauritius, Madagascar, British East Africa, German East Africa, Mozambique and Lorenzo Marquez may be sent in code at sender's risk, on condition that copies of the code with translations of the code words, must previously be deposited with the authorities at Aden. The codes intended to be used by the subjects of any State must be chosen and deposited by the Government of that State, the number of codes being limited to two for each State. The code words themselves are subject to the ordinary rules of the International Telegraph Convention, but the translations must be in German, English, Spanish, French, Dutch, Italian or Portuguese."

THE CANADIAN MANUFACTURER uses the Western Union

Telegraphic code for its foreign correspondence by cable, and we would be pleased to place the same at the service of any of our friends who may not be otherwise provided in conducting any correspondence they may desire to hold with our Canadian soldiers or others in South Africa or elsewhere. The code is sufficiently expansive to meet all requirements.

#### EDITORIAL NOTES.

We are in receipt of a document issued by the Canadian Manufacturers' Association, which we have been requested to publish, but which the space at our control does not allow of in this issue. It will appear in full in our issue of May 18. It is the announcement of the Association having reference to a convention of manufacturers proposed to be held at the time of the Toronto Fair in August or September, the intention being to have the affair extend over about three days.

Acting under instructions of the Executive Committee, the Tariff Committee of the Canadian Manufacturers Association a few days ago reported a series of resolutions having reference to the preferential tariff, which was delivered in due form to the Dominion Government. The document, when condensed, undertakes to say that the Association is "unswervingly loyal and attached to Great Britain," that "an advantageous commercial bond" is a "strong link in national unity" that tends to "increase trade between Canada and other parts of the Empire," that the Association is in favor of some reciprocal preferential trade but not too much; that Great Britain is not only our "national" but best market; that the Government should observe that the increase of the preference will please some of the manufacturers and displease others, and that there should be no general revision of the tariff oftener than once in five years.

The contention that the increased British preference reduces merely the duties on luxuries is effectively answered by The Brandon Sun, so far as the port of Brandon is concerned. First on the list of British imports comes woollen goods and carpets, \$5,039; next manufactures of cotton, nearly \$3,000; then oilcloths, nearly \$2,000. These "luxuries" make up \$10,000 out of a total of \$12,000. The value of the silks imported was \$505. Something must be done to prevent these Brandon sybarites from wearing clothes and covering their floors with carpets and oilcloths.—Toronto Globe.

The contention of The Brandon Sun and The Toronto Globe is that the preferential reduction of the tariff on carpets diverted some \$12,000 of that trade from Canadian carpet manufacturers who had previously enjoyed the Brandon market, to British manufacturers who had previously been shut out on account of the tariff of 35 per cent. The duty on \$12,000 worth of British carpets would be \$4,200, less 25 per cent., or \$3,150. So the saving of the difference between these two amounts, \$1,050, means giving the manufacture of \$12,000 worth of carpets to British workmen and depriving Canadian workmen of employment to that extent. Certainly something must be done to give employment to British weavers whether Canadian sybarites have employment or not.

To some persistent "New Ontario" farmers who are asking the Ontario government to increase its grant to "New Ontario" from \$5,000 to \$50,000, Premier Ross said that the Government would have a "New Ontario" map in all the

public schools of the province. For what purpose? Are the public schools to be made advertising stations to induce people of one part of Old Ontario to remove to the rocks of "New Ontario." We are afraid that the energetic jaws which are booming the country at the head of Lake Superior are too much for the government.—Hamilton Spectator.

It is quite evident that The Spectator was overlooked last summer when the party of newspaper men were being escorted through New Ontario. But why not educate the school children to the fact that Ontario, new and old, is a country of vast possibilities, of which they should be proud.

The Macdonald Club is a Conservative organization of Toronto, the members of which frequently meet and express their views concerning the political questions of the day. At a recent meeting of the Club, Mr. T. A. Hunt, the vice-president, read a paper on the necessity of tariff protection on agricultural implements, in which he states that the recent large increase in the imports into Canada of such implements proved that the American manufacturers could profitably use this market for the sale of their surplus products. Major John A. McGillivray, who was at one time, and that a very short time, a so-called Conservative member of the Dominion Parliament, declared that he looked upon the marked increase in the importation of agricultural implements with favor. He pointed out that the introduction of American implements could not but be beneficial to Canadian farmers in the sense that competition in trade is always favorable to the consumers, or ultimate purchaser. It is but fair to Major McGillivray to state that he is not a manufacturer, nor yet a Conservative after the manner of Sir John A. Macdonald, after whom the club is called, nor is he at all posted in the fact that the duty upon American agricultural implements imported into Canada is paid by the makers into the coffers of the Dominion Treasury.

The impromptu remarks of Manager Hill ought not to be too harshly judged, but he certainly was not fortunate in his references to the proposal to withdraw the exhibits of agricultural machinery from the Industrial Fair. It may be true, as Manager Hill says, that the manufacturers of agricultural machinery are not indispensable to the existence of the Fair and that the Industrial "can get along without them." It might also be true that the Industrial could get along without Manager Hill, but he would not thank the manufacturers of agricultural machinery for emphasizing that possibility. The services which these manufacturers have rendered to the Fair deserved a better return than the pert suggestion that their withdrawal is a small loss. Canada's great fair is a powerful enterprise, but the withdrawal of the implement manufacturers will be a distinct loss. The Fair is not too rich in exhibits which are illustrative of the country's industrial progress.—Toronto Evening Telegram.

The Toronto Board of Trade have appointed the following named gentlemen as representatives of the Board to the forthcoming Fourth Congress of Chambers of Commerce of the British Empire to assemble in London next month:—Messrs. A. E. Kemp, President; G. R. Parkin, M.A., Toronto; W. F. Cockshutt, Brantford; E. B. Osler, M.P., W. D. Matthews, James Scott, Robert Kilgour, A. A. Allan, Toronto; C. J. Miller, Orillia; and Edgar A. Wills, Secretary.

The congress promises to be a success in every particular, as representatives from all parts of the empire will be in attendance.

If the Dominion Government steadily pursue their policy of increasing the imperial tariff preference they will some day place Canada on the basis upon which only, Mr. Chamberlain says, a Zollverein for the whole empire might be established—that is free trade between different parts of the empire. This was what Sir Charles Tupper used to call Chamberlain's offer of a preference to Canada, and he used to denounce Sir Wilfrid Laurier for his alleged rejection of it. Sir Wilfrid Laurier was not prepared to abolish the Canadian tariff against the Empire at one sweep in order to encourage such a Zollverein. Is Sir Charles Tupper ready to do so? If he is, why is he now demanding a modification of our Imperial preferential tariff in the direction of protecting manufacturers.—Montreal Witness.

It is remarkable how the political party to which The Witness bears allegiance, closes its eyes to the fact that it got into power more through the mismanagement of the other party than through the merits of its own. The Witness loses sight of the fact that Canadian manufacturers and their influence is a power in the land that cannot be ignored in any general election, and if the idea should become fixed in their minds that it is the intention of the party in power to establish or attempt to establish free trade between the different parts of the Empire, the terms of office of that party would be very brief indeed. In proving devotion to Great Britain it was not necessary to do more than what had been done in the way of preferential duties. Better let sleeping dogs lie.

A meeting of the Trade and Industry Committee of the Canadian Manufacturers' Association was held on yesterday—Thursday—afternoon to consider what action if any should be taken in behalf of the Association in reference to the following matters:—1. The proposed general meeting of all classes of manufacturers to be held in Toronto in the early part of September. 2. The question of manual training of pupils in public schools; and also what interest the Association should take in the proposed art museum in Toronto. 3. The withdrawal of the manufacturers of agricultural implements as exhibitors at the Toronto Industrial Exhibition and other fairs. 4. The Pan-American Exhibition to be held at Buffalo in 1901, and the relation of Canadian manufacturers thereto.

Messrs. D. Morton & Sons, soap manufacturers, Hamilton, Ont., have written a letter in which they protest in the interest of all the soap makers in Canada against the valuable concessions proposed to be granted by the city of Toronto to Messrs. Lever Bros., a large English soap manufacturing concern. They show that Messrs. Lever Bros. propose to establish works in Toronto with capacity to produce a million pounds of soap per week, and that the estimated consumption of laundry soap in Canada is one pound per week per family of five, so that the English concern propose making enough soap to supply the entire population of this country. Messrs. Morton say that there are enough soap works in Canada to supply the demands of the whole country, fifteen within a radius of 100 miles of Toronto, none of which are bonused to the extent proposed by Toronto to Lever Bros. The imports of laundry soap into Canada last year amounted to 3,568,862

pounds, valued at \$174,220, and the exports of Canadian soap during the same term amounted to 575,746 pounds valued at \$18,819.

When Mr. Carnegie, the philanthropist, capitalized the steel industry he founded for \$200,000,000, he showed an abiding faith in the cash value of the protective tariff.—The Globe.

Through the protection granted the iron and steel industries in the United States, in which Mr. Carnegie is so largely interested, that country is now a greater producer of all forms of iron and steel than even Great Britain, and can undersell in the British market the manufacturers there of these articles, and although tariff protection is still given to them in the United States, they are sold at much lower price there than in any other country in the world. Tariff protection did it.

During the year ending with June 30, 1899, there was imported into Canada from the United States etc. home consumption agricultural implements, etc., valued as follows:

|   |          |
|---|----------|
| Farm wagons.....                                | \$78,475 |
| Freight wagons.....                             | 26,203   |
| Harvester binding attachments.....              | 32,756   |
| Cultivators.....                                | 17,945   |
| Seed drills.....                                | 64,683   |
| Farm forks.....                                 | 10,968   |
| Harrows.....                                    | 53,739   |
| Harvesters.....                                 | 664,610  |
| Hay tedders.....                                | 4,652    |
| Horse rakes.....                                | 69,043   |
| Lawn mowers.....                                | 6,338    |
| Mowing machines.....                            | 348,735  |
| Plows.....                                      | 192,158  |
| Reapers.....                                    | 23,066   |
| Weeders.....                                    | 56,856   |
| All other agricultural implements, N. E. S. . . | 21,186   |

\$1,673,353

The value of the exports of Canadian products during the month of February, 1900, and the relative value each class bears to the whole is as under:

|                                | Value.      | Per Cent. |
|--------------------------------|-------------|-----------|
| Produce of the Mine.....       | \$986,156   | + 12.2    |
| Produce of the Fisheries.....  | 507,051     | - 6.15    |
| Produce of the Forest.....     | 879,801     | - 10.9    |
| Animals and their produce..... | 2,995,905   | - 37.2    |
| Agricultural Products.....     | 1,682,802   | + 20.     |
| Manufactures.....              | 968,101     | - 12.5    |
| Miscellaneous Articles.....    | 17,236      | 1.05      |
| Total.....                     | \$8,037,052 | 100.      |

Mr. George Johnson, Dominion Statistician, is engaged upon a most interesting report of the pulp-wood resources of Canada, regarding which he has been gathering information since 1894, and is bringing the whole question up-to-date. According to this report, Canada possesses the richest and most extensive pulp-wood districts in the world. He estimates that \$20,000,000 are invested in twenty-three pulp-wood factories.

Scribner's Magazine for May contains several illustrated articles that are unusually informing in regard to events and questions of contemporary importance. The leading article on "Some Picturesque Sides of the Exposition," is both written and illustrated by the artist, E. C. Peixotto. He has spent a number of months in Paris recently, and these drawings give an artist's impressions of the very picturesque group of buildings which are being crowded with visitors from all portions of the world. A great deal of information about "Rapid Transit in New York" has appeared in the press, but the first presentation of exactly what it means and how it will be carried out, and how the tunnel and its stations will actually appear, is contributed by W. B. Parsons, chief engineer of

# THE CANADIAN MANUFACTURER

ESTABLISHED IN 1880.

Devoted to the Development of Canadian Trade,  
Foreign and Domestic.

## THE INTERNATIONAL BUREAU OF COMMERCE

.. OF CANADA ..

In connection with The Canadian Manufacturer, works to attain this end.

Any inquiry addressed to THE CANADIAN MANUFACTURER will result in placing the writer, if he so desires, in communication with Manufacturers, Buyers or Sellers of any sort of merchandise in Canada or any other country.

Merchants, Importers, Exporters, Boards of Trade, Chambers of Commerce and Commercial Organizations in any part of the world are invited to make full use of the facilities afforded by THE CANADIAN MANUFACTURER whenever they may desire information about any article produced in Canada, Tariff Law, Customs Regulations, Routes of Transportation, etc.

We especially request Canadian manufacturers to send us lists of the different lines of goods produced by them so that we may address to them special letters of inquiry as soon as information is received by us.

**WE DESIRE NAMES AND ADDRESSES:**

- Manufacturers of ash boat oars, in quantities.
- Manufacturers of shop and other window blinds.
- Manufacturers of refrigerators for family and store use.
- Desire names and addresses of any one who wishes hides from Paraguay, dry salted for tanning.
- Who make machinery for the manufacture of waterproof or celluloid goods.
- Who produce machinery for cutting box boards out of slabs, and also machinery for making small hardwood handles, dowels, skewers, etc.

We have information, principally from buyers, that is valuable to manufacturers who desire to increase their trade in the British and foreign markets; that will be furnished on application. If you find any item in this list (which is changed every issue), that you are interested in, write to us. If you see an item that does not interest you but would be of value to some friend, kindly inform him or us.

**AUSTRALIA.**

- Printers Type.
- Printers Ink.
- Varnish.
- Photo Engraving Material.
- Engravers Materials.

**BELGIUM.**

- Builders Hardware.
- Carpenters and Machinists tools.
- Wagon and Carriage Parts.
- Plumbing Material.
- Windmills.
- Stoves and Ranges.
- Metal and Wood Working Machinery.
- Milling Machinery.
- Belting.
- Woodenware.
- Hardware Novelties.

**BRAZIL.**

- Drugs.
- Stoves.
- Lard.
- Groceries.
- Umbrellas.
- Portable Houses.
- Underwear.
- Shirts.
- Collar and Cuffs.
- Hosiery.
- Shoes.
- Hats.
- Novelties in Jewelry.
- Silverware.

**DENMARK.**

- Hardware, Light and Heavy.
- Dry Goods.
- Jewelry.
- Leather.

**GERMANY.**

- Drugs.
- Patent Medicines.
- Writing Paper.
- Envelope.
- Wrapping and Printing Paper.
- (Above wanted for west coast of South America.)
- Bicycles.
- Bicycle Parts and Sundries.
- Stoves, Gas and Coal.
- Photographic Articles.
- Watches and Clocks.
- Office Sundries.
- Patent Articles for Brazil by German house.
- Lumber, all kinds.
- Sole Leathers.
- Belting Leather.
- Horse Hides (salted).

**HOLLAND.**

- Machinery.
- Agricultural Implements.
- Tools (all kinds).

**INDIA.**

- Typewriters.
- Furniture.
- Jewelry.
- Sporting Goods.
- Drugs.
- Hides and Leathers.
- Stationers Sundries.

**MEXICO.**

- Bicycle Parts and Sundries.

**PERU.**

- Watches.

**STRAITS SETTLEMENTS.**

(British).

- Builders Hardware.
- Carpenters Tools.
- Machinists Tools.
- Household Hardware.
- Cutlery.
- Bicycles (2).
- Carpets, Rugs and Oil Cloths.
- Stoves and Ranges (2).
- Rattan Furniture.
- Clothing.
- Rubber Clothing.
- Trunks and Satchels.
- Watches and Clocks.
- Paper (all kinds).
- Printers Supplies.
- Toys and Games.
- Sportsmen's Clothing.
- Butter and Cheese.
- Wines and Spirits.
- Carriage Material and Parts.
- Engines and Rollers.
- Milling Machinery.
- Mining Machinery.
- Portable Forges.
- Electric Light Machinery.
- Carriages and Wagons.
- Umbrellas and Canes.
- Watches and Clocks.
- Wines and Spirits.
- Confectionery.
- Canned Goods.
- Bottled Goods.
- Metal Bedsteads.
- Office Furniture.
- Boots and Shoes.
- Musical Instruments.
- Flour.
- Ham and Pork Products.
- Malt Liquors.

**URUGUAY.**

- All kinds of Machinery, especially Metal Working.
- Yachts.
- Pleasure Launches.
- Wrapping Paper.
- Twine.
- Folding Boxes.
- Wooden Dishes.
- Carpenters Tools.
- Furniture.
- Agricultural Implements.
- Edge Farming Tools.
- Paper, all kinds.
- Ice Cream Freezers.

**GREAT BRITAIN.**

- Cotton Canvas and Sail Duck.
- 12s. Cotton Yarn.
- Cotton No 1 Twines 440, 933, 1832.
- Watches.
- Clocks.
- Jewelry.
- Jewelers Tools.
- Optical Goods.
- Lumber, all kinds (3).
- Doors, Sash and Blinds (2).
- Leather Belting.
- Hair Belting.
- Lumber (Wales).
- Doors.
- Spokes and Hubs.
- Mouldings.
- Special Oak Key- 3 1/2 x 1 1/2.
- Tinned Goods.
- Cereals.
- Soaps.
- Corn Meal.
- Corn Grits.
- Draperies.
- Haberda-hery.
- Hosiery.
- Cheese.
- Lard (2).
- Butter (2).
- Builders Hardware.
- Household Hardware.
- Wagon and Carriage Parts.
- Carriage Hardware.
- Refrigerators.
- Office Furniture.
- Saws.
- Kitchen Furniture.
- Kitchen Utensils.
- (Above for Australian market).
- Corn Starch.
- Beeswax.
- Sago Flour.
- Bacon.
- Glucose.
- Hams.
- Canned Goods, particularly Salmon.
- Honey.

Preserve this Bulletin for Reference—it will not be Duplicated.

**If You want Information, Ask for It.**

Address, THE CANADIAN MANUFACTURER, Toronto, Canada.

the Rapid Transit Commission. The illustrations show what this great engineering work will be like. The narrative of the Boer war is continued with another article from H. J. Whigham, who reviews the alleged mistakes of the British generals in strategy and tactics, and discusses many much-disputed points in the campaign.

Outing for May teems with matters of interest to sportsman of all tastes. Whether they be devoted to the rod or gun, to the thoroughbred, the trotter or the bull dog, to the cruising yacht or the canoe, to golf or to cycling or to athletics at home or abroad, they will find abundant interesting and helpful matter in its pages, and should their penchant be the reading of others' adventures and hairbreadth escapes "A Shotgun Episode," by Frederic Remington, "The Professor's Scar," "With the Colorado Cowpuncher on a Round-up," "The Hybrid Wolves of Goshen Hole," and "The Good Bad Lands and the Bad Bad Lands of the West," provide excitement galore.

Just 17,600 square feet of floor space are set apart for printing presses in the building just erected for The Ladies' Home Journal at Philadelphia. It is in the rear of the present publication office, eight stories in height, and within a short time will be occupied by the mechanical departments of the magazine. The constant rapid growth of the Journal's circulation necessitated greatly extended facilities for printing and mailing, and the new structure meets these demands, providing at the same time for future expansion in all departments. Specially designed presses and all the most approved mechanical devices applied to printing are being added to the Journal's already extensive equipment.

The Methodist Magazine and Review for May is a thoroughly patriotic Queen's Birthday number. A fine sketch of the Queen by Mrs. Oliphant, with two portraits, "The Queen's Visit to Ireland," with four engravings, Ian Maclaren's patriotic sermon, "Comfort for England," "India in Famine Time," illustrated, "The Problem of Race and Population in Canada," by C. C. James, M.A., Deputy Minister of Agriculture, "Some Canadian Poets," illustrated, "George Muller" and "Lord Shaftesbury," with several engravings, are all articles of special interest. Toronto, William Briggs. \$2 a year.

The Canadian Magazine for May is a most beautiful and appropriate number, in fact it is a "Tourists number," many of the articles relating to scenes and scenery, principally Canadian. Among the most interesting of the articles are the frontispiece—A Scene in the Canadian Rockies, in which is shown the station at Glacier, B.C., with Mount Sir Donald in the distance; Canada and the Tourist, by the editor; Summer on the Pacific Coast, with seven illustrations; the Georgian Bay Archipelago, with ten illustrations; Tourist's Attractions in Ontario, with twelve illustrations; and many pages of delightful fiction and poetry. The Ontario Publishing Co., Toronto, \$2.50 per year.

#### OPPORTUNITIES FOR CANADIAN TRADE.

The following enquiries have been received at the offices of the High Commissioner of Canada in London, and of the Canadian Section of the Imperial Institute, London, England.

NOTE—Those who may wish to correspond with any of these enquirers can obtain the names and addresses by applying to THE CANADIAN MANUFACTURER, Toronto. No charge for giving information. When writing refer to the numerals opposite the enquiries.

212. An important firm of manufacturers of colors, paints

and varnishes are desirous of being placed in communication with buying agents in Canada.

213. The manufacturers of a special kind of digestible biscuit desire to extend their business and to include Canada among the countries to which they export.

214. A firm of exporters of provisions, tinned goods, jam, sauce, pickles, chemicals, etc., desire to appoint agents at various points in Canada.

215. A Copenhagen (Denmark) firm ask to be placed in communication with a first rate exporter of wooden handles from Canada. They are willing to take up any other article suitable for the Scandinavian and Baltic market, and offer a good reference.

216. A Colombo (Ceylon) firm have mica, in lumps and uncleaned, plumbago, cinnamon oil, cocoanut oil, coir-yarn, etc., for sale, and offer samples and quotations to Canadian buyers.

217. A well-known firm of pyrotechnists offer to furnish catalogues of their manufactures to parties interested.

218. The names of Canadian exporters of carriage wheels are asked for by a Liverpool firm.

219. A Bradford house enquires for the names of seed crushing firms in Canada.

220. A Canadian firm packing canned apples, tomatoes and lobsters, ask to be placed in touch with English houses who deal in these lines.

221. The names of Canadian firms making "three ply" hardwood (i.e., one thick and two thin veneers cemented together), are asked for.

222. The same enquirer wishes to correspond with Canadian lumber merchants who can sell large quantities of spruce-wood boxes, planed and unplaned, cut to size and packed in bales.

223. The inventor of a machine for converting peat into hard condensed blocks in ten hours after digging, and also for converting it into excellent charcoal, is open to sell the rights for Canada, and desires to get into communication with a good firm who would be willing to take the matter up.

224. A firm of good standing accustomed to receiving products for sale on consignment, also to buying and shipping a great variety of British goods, and for conducting general agency business for Colonial houses, are open to act as the English branch or as London representatives of a Canadian society, institution, firm or private individual.

225. The names and addresses of the principal soap and candle makers in Canada are asked for.

226. A Canadian firm ask to be furnished with the addresses of a few large manufacturers of flags in Great Britain.

227. A firm in Canada manufacturing and exporting architectural sheet metal building materials, metallic roofing, etc., wish to correspond with likely importers of such goods in the United Kingdom.

228. The manufacturers in Canada of bath rims, closet seats and tanks and other sanitary appliances, desire to be placed in communication with English houses using these goods.

# Transfer Ornaments, AMERICAN MADE.

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# The Clergue Industries in Canada.

## MARVELLOUS INDUSTRIAL DEVELOPMENT.

### THE ILLIMITABLE WEALTH OF ONTARIO.

|   |
|---|
| The Consolidated Lake Superior Co.....                |
| The Lake Superior Power Co. (Nickel Steel Works)..... |
| The Sault Ste. Marie Pulp and Paper Co.....           |
| The Tagona Water and Light Co.....                    |
| The Canadian Electro-Chemical Co.....                 |
| The Algoma Central Railway Co.....                    |
| The Algoma Commercial Co.....                         |
| The Ontario-Lake Superior Co.....                     |

Total Capitalization,  
**\$65,200,000**

#### An Instance of Industrial Evolution in Northern Ontario.

The most notable feature of Canadian industrial progress of late years is the phenomenal development of Sault Ste. Marie, Ont., as a great manufacturing centre, which, judging by the extent and variety of the important enterprises now under way there, bids fair in a short time to rival, and it may be eclipse many cities of long-established position which count their populations by the hundred thousand. This wonderful advance is due in the main to the foresight, enterprise and business sagacity of Mr. Francis H. Clergue, who, recognizing in the natural position of the Sault in relation to water power, the supply of raw materials and the facilities for shipment and distribution, is devoting his energies, influence and means to the creation of the vast and varied enterprises which are transforming an unimportant

backwoods town into a thriving busy centre of manufacturing activity, with possibilities of future expansion such as few communities can parallel.

Mr. Clergue, whose name now occupies so prominent a place upon the list of Canadian Captains of Industry, is still a young man, being about forty years of age. He is a native of the State of Maine, and like many others who have risen to prominence in the industrial and commercial world, was educated for the profession of the law—a training which doubtless had its advantages in connection with his work of organizing large financial undertakings. Becoming associated with men of means and enterprise, who were seeking opportunities for investing their capital to advantage, and realizing the vast field offered by the development of water

power, a careful survey of the situation was made in order to find a suitable locality.

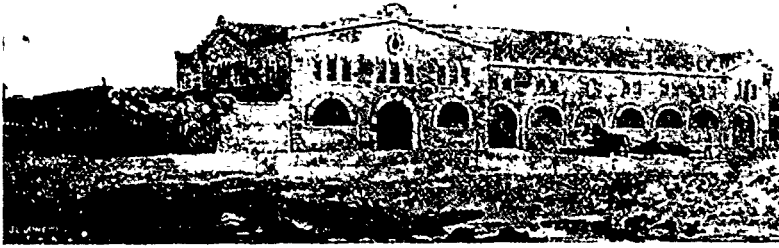
#### SAULT STE. MARIE.

Sault Ste. Marie appeared to present the most favorable opportunities. The attention of capitalists had been from time to time drawn to the great natural advantages offered by this town as a site for the development of the power obtainable by a twenty-foot fall from Lake Superior, but Mr. Clergue and his associates were the first to grasp the extent and value of the situation. They took steps to obtain water power privileges on both the Canadian and American sides of the river, and began the construction of power canals. That on the Canadian side has been in operation about five years and the American power canal is now nearly finished.



General View of Pulp Mills and Machine Shops.





Reduction Works.

#### THE MECHANICAL PULP MILL.

The water power having been secured the next consideration was the branches of manufacture which could be most profitably carried on, and the attention of the investors was directed towards the natural resources of the Algoma district, more especially its forests. The only available section from which forest supplies could be drawn was the watershed of Lake Superior, as it was not feasible to bring up the pine logs from the shores of the Georgian Bay against the current. The only forest product which could be secured in sufficient quantities was the spruce, and the first industry to be set on foot was, consequently, a pulp mill. A contract with the Ontario Government was entered into, which marks an important stage in the history of the development of New Ontario, as it formed the precedent in the new departure which the administration has taken in dealing with the spruce resources of the Province. As the importance of this item of the provincial wealth is realized and the special conditions absolutely necessary to its utilization fully understood, the wisdom of the method of disposing of it will be appreciated. To secure its being manufactured within the Province it is necessary to guarantee the capitalists who undertake the large outlay involved in constructing pulp mills an ample supply of their raw material. Had Mr. Clergue been unable to make an agreement by which, in return for his investment of \$250,000 in erecting a pulp mill, he could be assured of obtaining these supplies, it is safe to say that the enterprise would never have been undertaken. Experience soon convinced Mr. Clergue and his colleagues that they could do better than by confining their operations to the minimum provided for by their agreement. The mill was enlarged and the output increased to 150 tons of pulp per day, requiring a daily supply of 200 cords of spruce wood.

The earlier operations of the pulp mill resulted unsatisfactorily owing to the expense of freight for long distances. On account of the processes then in vogue, the pulp, as shipped to the paper manufacturer, contained about fifty per cent. of water.

Moreover, the process did not extract all the resinous matter, so that the pulp did not fulfil the requirements of the English and other European paper-makers. Mr. Clergue diligently set himself to work to remedy these defects by inventing a machine which would turn out dry pulp, and after many drawbacks and discouragements succeeded. He had not merely to devise the machine, involving a large drying cylinder of different form to any in use, but to build a foundry and machine shop in order to have it constructed, as no paper machine maker would undertake the work. After months spent in correcting defects and getting the improved machine into working order, it proved a complete success, and increased the profits of the mill by perhaps a thousand dollars a day. The Sault Ste. Marie mill is the only one in the world turning out dry pulp, and the product is shipped to all parts of the world.

#### THE MANUFACTURE OF CHEMICAL PULP.

The next stage in development of the industry was the manufacture of chemical pulp as well as mechanical pulp. This is done by removing the resinous matter by the application of sulphate of lime, the main ingredient of which is sulphur. Sulphur is found in large quantities in nickel ore and in the process in vogue at Sudbury in producing nickel matte is burned out and goes to waste. Mr. Clergue visited the Sudbury mining region and procured a quantity of ore in order to ascertain whether the sulphurous acid could be extracted.

#### SULPHUROUS ACID.

After many experiments with the aid of a number of practical scientists associated in his enterprises, he succeeded, and the result was the expansion of his undertakings by the erection of a sulphite pulp mill, which will be finished and ready to commence operations early in June.

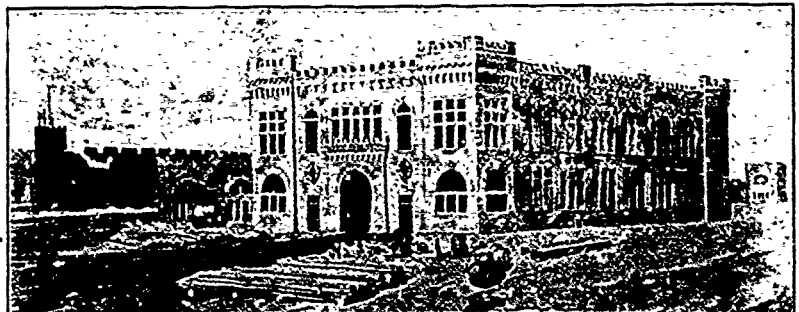
#### THE PULP MILLS.

The illustration shows the pulp mills of the Sault Ste. Marie Pulp and Paper Company, which are under the direction of Mr. B. J. Clergue, a brother of the general manager, who possesses a thorough knowledge of all departments of pulp manufacture. These mills have cost in all about two million dollars, and employ directly some 500 men in addition to about 400 engaged in the forest getting out spruce logs. They are operated day and night and require constantly about 14,000 horse power. A large reserve supply of spruce logs is kept on hand, usually amounting to 30,000 cords or so, and also about 1,000 tons of wood pulp, so as to provide against possible accidents which might retard operations. The dimensions of pulp mill No. 1 are 600 by 80 feet, and pulp mill No. 2 is 800 feet long and 100 wide, forming by far the largest pulp works on the continent. At present prices the annual product of the mills is worth about \$900,000. Latterly the company has been engaged almost entirely in filling extensive foreign orders, making extensive shipments to Japan as well as to several European countries. A large French order now on hand will require the entire output of the mills for two months.

#### THE SULPHITE MILL.

The new sulphite mill, now almost completed, is built of red sandstone, and is a very massive and substantial structure 174 feet long, 68 feet wide and 110 feet high, with an acid department annex of 46 by 42 feet.

In the sulphite process the spruce is cut into small chips about three-quarters of an inch square, and passed into large cylinders known as digestors, each seventeen feet in diameter and fifty-four feet in height, where they are treated with sulphurous acid and



Machine Shop.



Power House, American Side.

subjected to steam pressure for a period of ten hours. This removes the resin and other objectionable substances, leaving the wood fibre, which then undergoes the further processes of washing, screening and bleaching. It is then made into long sheets ready for shipment. It is estimated that the output of the sulphite pulp mill, which will employ 500 hands, will be about 100 tons a day, of a value at current market rates of \$1,500,000 per year.

#### THE NICKEL STEEL INDUSTRY.

Having solved the problem of obtaining sulphur in sufficient quantities and at a price low enough to enable him to engage remuneratively in the manufacture of chemical pulp, the attention of so shrewd a manager as Mr. Clergue was naturally directed to the possibility of utilizing the residue of the nickel ore after the sulphur had been extracted. This substance contains nickel and iron in a natural combination, well adapted for the manufacture of nickel steel. A series of experiments were undertaken with the object of discovering a process for producing ferro-nickel steel for armor plate and other purposes requiring special strength and impenetrability, and for extracting the copper which forms a considerable element in some of the nickeliferous ores. This is accomplished by means of an electric furnace with a daily capacity of five tons, and the Nickel-Steel Plant will contain 100 of these furnaces. Thus the greatest possible economy in the working up of raw material has been secured, and one great enterprise has led up to another and caused additional investments and extensions, so that the original pulp mill has led to the establishment of a group of industries, the adjuncts and ramifications of which form an ever-widening circle.

The supplies of nickeliferous pyrrhotite for the nickel-steel works will be obtained from the Gertrude mine located near Naughton Station, on the line of the Canadian Pacific Railway, from where a five-mile line is being built to connect with the main line. The ore contains about thirty per cent. sulphur, fifty per cent. iron and the unusually large proportion of from four to five per cent. nickel. The ore crushing plant now being constructed will have a capacity of 500 tons per day. By the roasting process to be employed all the sulphur in the ore instead of being wasted will be saved in the form of sulphurous acid gas. One-third of this product will be converted into sulphite liquor for use in the chemical pulp mill and the rest will be utilized as sulphuric acid, sulphurous anhydride, and sulphurous acid. One hundred electrical furnaces, each having a capacity of five tons per day, will receive the ore when freed from the sulphur and prepared for smelting, turning it out in the form of ferro-nickel pig iron. This will be refined into ferro-nickel steel, either in a second battery of electrical furnaces or by the Siemens-Martens process. A fixed proportion of nickel to steel is required, and to obtain this the superfluous nickel in the product will be counterbalanced by the addition of red hematite ore from the company's Helen mine in the Michipicoton district. The crusher plant will be housed in a building 105 by 54 feet, the roasters requiring another measuring 150 by 88 feet, and the manufacture of the various sulphur products will be conducted in a building of the dimensions of 160 by 130 feet. Employment to 500 men will be afforded by these various branches of the nickel-steel industry, in addition to the force of fifty now at work at the mine.

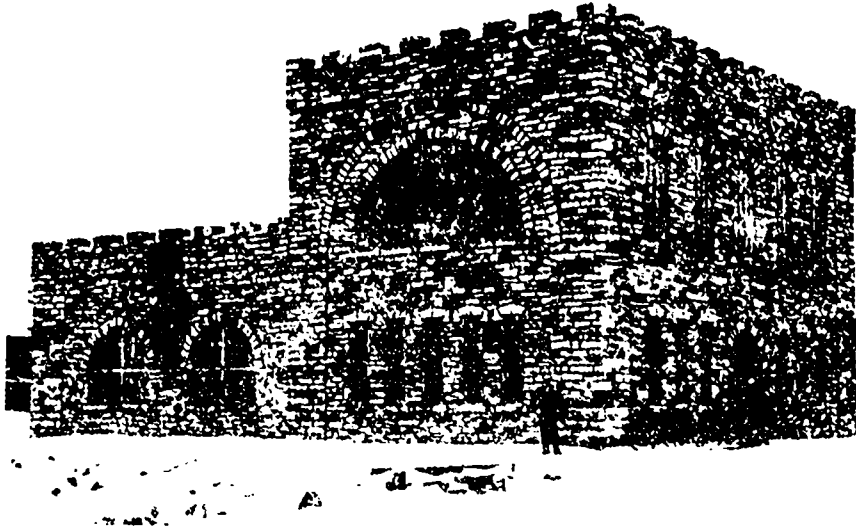
#### BLAST FURNACES.

A still further and more important development of this branch of Mr. Clergue's enterprises for which arrangements have been effected will be the erection of extensive blast furnaces and works for the manufacture of Bessemer steel, and for the finishing processes in the nickel-steel industry, by which those products will be put upon the market in fully completed form as armor plate, rails and structural materials. This feature of the industrial development of the Sault will exceed in importance and value any that have hitherto been set on foot giving employment to 2,500 men and having an output of 1,000 tons a day. The ore for the supply of these blast furnaces will be brought from the company's mines near Michipicoton.

#### THE ALGOMA CENTRAL RAILWAY.

To facilitate the transportation of ore from these mines to the Sault and other ports, a railroad twelve miles in length has been constructed from the mine to Michipicoton where an ore dock is being built for its shipment by water. In order to secure land transportation from Michipicoton to the Sault, and also to render additional supplies of pulpwood accessible, the company is promoting the construction of the Algoma Central Railway connecting Sault Ste. Marie with Missanabie on the main line of the Canadian Pacific Railway, of which the road already constructed to the mine will be a branch.

This road which will be 210 miles in length, and a force of 1,000 men are now at work upon it. In addition to the impetus which will be given by this road to the Clergue group of industries at the Sault it will do much to promote the development of East Algoma by opening



Laboratory.

up extensive areas of fertile farming country and rendering these new unoccupied regions available for colonization. The rolling stock of the road has already been provided. The company has ten 65-ton locomotives, four 100-ton engines, 100 box cars, each with a capacity of 50,000 pounds, besides 500 ore cars, flat cars and construction cars. There are also under construction 200-100,000 pound steel ore cars.

#### THE MINES.

At the Helen mine 400 men are at work and it is anticipated that at least 1,500,000 tons of ore will be shipped this season. Mining operations are under the direction of Mr. E. V. Clergue, another brother of the man at the head of these diversified though affiliated interests. The mining operations of the company are conducted at a great advantage owing to the comparatively low cost at which ore can be taken out, as it is blasted from a hillside, where there are millions of tons in sight. This facility of access combined with the short haul by rail, with distance by water to the lake ports no greater than that from Marquette, will enable the company to compete successfully with American mine owners notwithstanding the United States import duty of forty cents per ton.

#### STEAMERS FROM ENGLAND.

In making arrangements for shipping large quantities of iron ore Mr. Clergue found it impossible to obtain the requisite vessels as the demands of the lake carrying trade for the coming season are so great. He therefore sent agents to Great Britain to arrange for the purchase of eight steamers of a type specially adapted to lake traffic, four of which are expected to arrive very shortly. The construction of eight barges to be towed by these steamers has also been ordered, but the latter will not be ready for

service until 1901. At the close of navigation the steamers will be sent to the Atlantic coast for service during the winter season. They are deep draught steamers and on eighteen feet water will each be able to carry 2,500 tons of ore. They are of the latest English model, with triple expansion engines and of the largest capacity compatible with the size of the canal locks.

#### FOUNDRY AND MACHINE SHOPS.

Among other subsidiary enterprises which are in successful operation at the Sault are the iron works and machine shops required for the construction of the machinery of the pulp mills, for, as already mentioned, it was impossible for Mr. Clergue to obtain the machinery needed for his special processes from any manufacturer of pulp mill equipments. The foundry building is of sandstone, 160 feet in length by 100 in width, and contains an enormous steel travelling crane which can carry a weight of fifteen tons, molting furnace, large molding sinks, etc. A machine shop 160 by 80 feet is in course of erection. The ground floor admits the entrance of the locomotives and cars of the Algoma Central Railway. The company have facilities enabling them to manufacture the machinery they require for any branch of their numerous undertakings.

#### CHEMICAL WORKS.

The manufacture of caustic soda and bleaching powder has been undertaken by the Canadian Electro-Chemical Company, the works of which are now in process of erection. This industry originated in the necessity for alkali for use in the manufacture of nickel, and is made from salt by the application of electricity. The salt used is a Canadian product obtained from Windsor and Goderich, Ont. In the process of manufacture there is a separation of the sodium from the chlorine. The chemical

works were necessary in carrying out the same principle which Mr. Clergue observed to such an extent in his other industries, of using up what would otherwise go to waste, in the manufacture of by-products. Chlorine is used for making bleaching powder—a substance used for bleaching cloths and fabrics of all kinds—the chief sources of supply being Great Britain or Germany. The powder consists of active chlorine gas and lime in the proportions of 44 and 56 per cent, respectively. So the manufacture of bleaching powder was combined with that of caustic soda, ample supplies of lime being obtainable in the immediate neighborhood. Some other chemicals of commercial value are also included in the output of this department. The Canadian demand now wholly supplied from abroad, will furnish the company with a home market for these products.

#### ADDITIONAL WATER POWER DEVELOPMENT.

In addition to these stupendous undertakings carried on by the companies organized by Mr. Clergue, whose operations are centred in the Canadian town of Sault Ste. Marie, equally noteworthy developments are being promoted by the same gentleman on the American side of the river. As his interests in the United States are so closely bound up with the large investments made in Canadian mining and manufacturing, a survey of the industrial situation in the Sault would be incomplete without a description of the gigantic power canal now under construction just across the border—which is now nearly completed. It is unquestionably the greatest work of the kind ever attempted, being two miles in length and carrying 40,000 cubic feet of water per second, which will furnish 40,000 horse power. The Union Carbide Co. has contracted for half of the power to be created, and most of the remainder will be taken by the American Alkali Co., which have located here to avail themselves of the extensive mineral supplies furnished by the neighborhood. The work on the canal has been pushed rapidly since the contracts were let in September, 1898. The canal is about 200 feet wide and about 25 feet deep. The force engaged in its construction is aided by 20 locomotives drawing trains of dump cars, and six of the largest kind of steam shovels.

The power will be generated from dynamos operated by turbines converting hydraulic power into electric energy which will be directed by the electro-thermo and electro-chemical application of the current. The water will enter the canal above the rapids and carry it through the City of Sault Ste. Marie for about two miles when it will pass through turbines in a power house immediately below the rapids, and having fulfilled its mission be returned to the river. The intake at the entrance is about 891 feet wide

and 18 feet deep gradually narrowing but retaining its depth, and merging into the canal about 1000 feet from the entrance. A coffer-dam has been constructed at this point to facilitate the work of excavation. From the coffer-dam eastward the canal traverses a rock formation of about 4,100 feet in length, more than one-third of which has been excavated, and then passes through beds of sand, gravel and clay. The latter portion will be revetted and lined with timber below the water line and rock-paved above. The construction of the earth canal necessitates the removal of some 1,500,000 cubic yards of soil, and will require 15,000,000 feet of timber for the revetment. Thirteen streets are crossed by the canal and the city has contracted for the construction of five steel bridges to be put up during the coming summer.

THE POWER HOUSE.

A forebay or mill-pond at the lower end of the canal provides sufficient area for the equal distribution of the current to the turbines. Owing to the expansion of the channel the velocity of the current on entering the turbine chambers will not exceed two feet per second. Embankments are being constructed at the slopes of the forebay as the water will rise somewhat above the level of ground. The power house, as will be seen by the accompanying illustration, stands on the river front and is 1,368 feet in length, 100 feet in width and 106 feet high above the water level. This structure has a

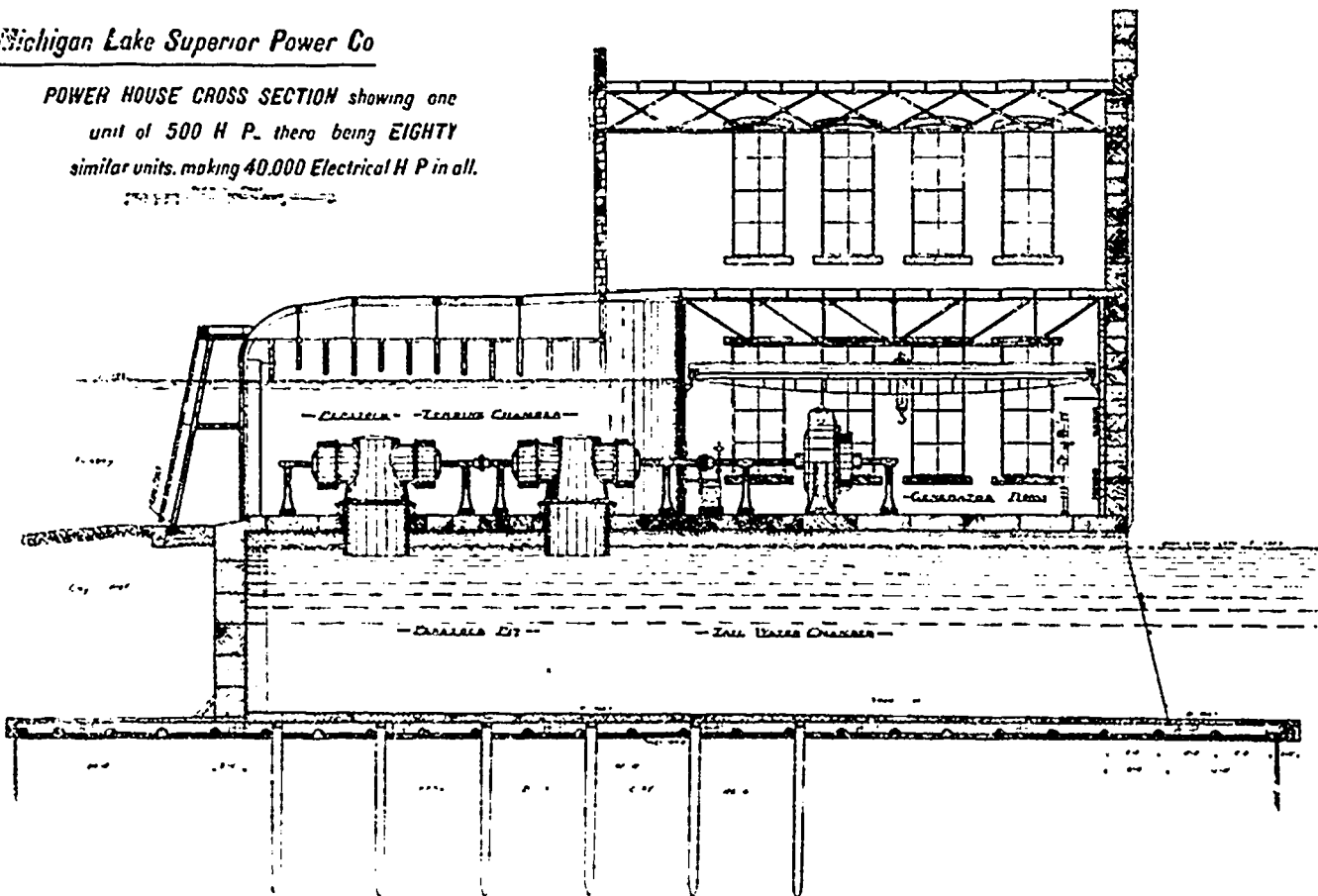
foundation area of 1,400 by 125 feet coffer-damed from the river by substantial sheet piling backed with clay, the entire foundation site having been excavated. The super structure of the power house consists of eighty penstocks or turbine chambers and one spillway, and of dynamo and mill floors. The penstocks are of uniform dimensions separated by steel partitions filled and laced with Portland cement grouting the dynamo floor being continuous on the river side of the penstocks. Above the latter is the mill floor resting on steel columns, and formed of concrete arches laid on steel floor beams and box girders. The masonry below water is of Portland cement concrete very massive and substantial, the walls above being of native sandstone.

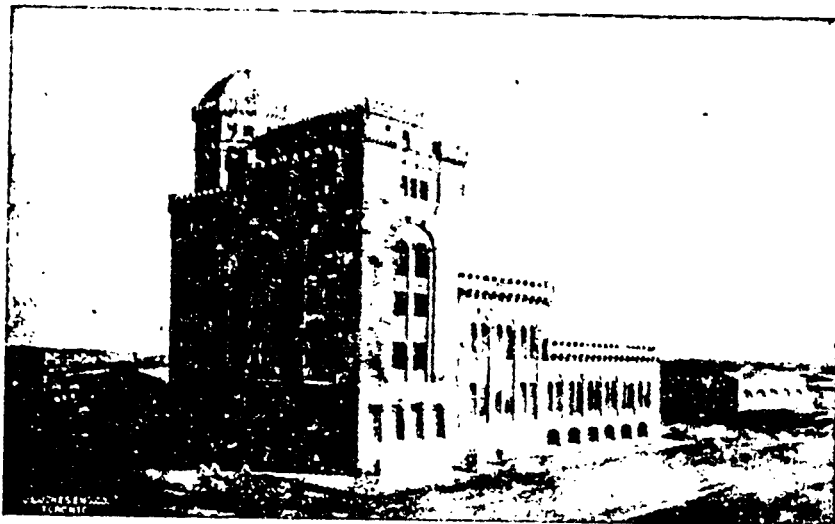
The power house will be equipped with 320 turbines of the McCormick type, four of these being placed in each penstock in tandem fashion resting on steel beam frames secured to the masonry substructure. They are housed in iron cases, no opening being left except for the passage of the water which enters the open penstock, 13 feet above the floor, passing down the draft tubes into the pit from which it flows into the river. Eighty single phase dynamos comprise the electric equipment. Near the upper end of the canal a moveable dam will be constructed by which the water can if necessary be shut off. The engineer in charge of this undertaking, the progress of which will be watched with great interest by the profession as it involves

some important engineering problems, is H. von Schou, a distinguished German expert, who after having secured the best professional training in his native land, has had a varied and extensive experience in hydraulic engineering in the United States. The magnitude of the enterprise and the part which it is likely to play in building up the manufacturing interests of the American Sault, taken in connection with the wonderful development of Canadian industries which owe their inception to the genius and executive capacity of the same organizer, give a special importance to the work which justifies this somewhat lengthy and detailed description. Though located on American soil this canal has a further interest for Canadians owing to the fact that among the other improvements which are contemplated in the near future in connection with the Clergue enterprises is the construction of a second canal of like capacity on the Canadian side. Doubtless the experience gained in the present work in the surmounting of difficult engineering problems and the effecting of the greatest possible economy in the generation of electric power will stand the company in good stead when they are ready to break ground for the 40,000 horse power canal on Canadian territory. The success of the American power canal in furnishing a cheap and plentiful supply of electric energy on terms adequately remunerative to the investors who have had the courage and enterprise necessary for so bold a venture will

Michigan Lake Superior Power Co

POWER HOUSE CROSS SECTION showing one unit of 500 H P. there being EIGHTY similar units, making 40,000 Electrical H P in all.





Sulphide Pulp Mill.

stimulate them to proceed with the work of hydraulic development needed to supplement and extend the manufacturing facilities of New Ontario.

#### CAPITAL INVESTED.

The extent to which the progress of the Canadian Sault and the section of country tributary to it has been forwarded by the network of interests and companies represented by Mr. Clergue, and the brilliant prospects in view for the far greater development of that region in the future as these interests multiply and extend and attract other investors, owing to the force of his example, may be partly realized from the amount of capital invested in the various enterprises specified. The group of companies in question are capitalized at a total amount of \$65,700,000, and the money already expended in power, canals, factories, mills, railways, docks, etc., is fully \$3,500,000. The enterprises already begun and under way will, when fully completed and in operation bring this figure up to \$18,000,000. The great need for the development of our new and unsettled territories has been capital to open up the country by providing the means of transportation and establishing those industries which will furnish employment for the settler; and this lack which has kept regions abounding in natural wealth closed to the people looking for homes, is being supplied with a lavish hand. A particularly noteworthy and creditable feature of the system pursued by Mr. Clergue and his associates is that, notwithstanding the very large amounts involved, their expenditures have been in hard cash. Instead of floating companies, as is so frequently done by the various devices of the stock market, and issuing bonds or incurring other liabilities in order to do an extensive speculative business on the least possible cash margin, they have spent actual money freely and without stint, and consequently the various concerns are all upon a sound financial

basis and able to conduct operations without the constant drain entailed by paying high interest for loans, or financing to keep themselves afloat. They are in consequence enabled to pay the highest wages and at the same time to secure the substantial profits that ought to reward the foresight, enterprise and practical business sagacity exhibited in the course of the remarkable history of the growth and expansion of their operations.

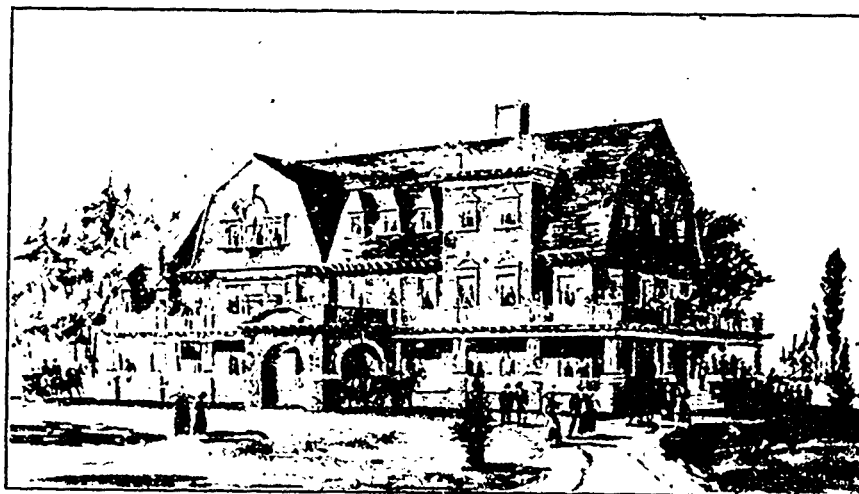
#### GRATIFICATION TO CANADIANS.

It should be a source of gratification to every patriotic Canadian that the too long delayed opening up and exploration of those vast natural resources, concerning which so much has been said, but in developing which so little has been done, has been at length undertaken and pushed forward in such a spirit and under so favorable auspices. There can be little doubt that the next few years will witness a degree of activity and advancement in all branches of productive energy as a direct consequence of the establishment of the Clergue industries that will be attended with the happiest results in the creation of homes and employment for many

thousands of settlers in both town and country, the upbuilding of subsidiary manufactures and the introduction of varied forms of commercial activity.

#### THE ALGOMA CENTRAL RAILROAD.

Meanwhile, it is only due to those who have done so much in the exploitation of resources that have waited so long for the transforming hand of capital backed by the genius for organization, to convert them into the means of subsistence and an asset of the national prosperity, that the Government should show its appreciation of facts accomplished, and its faith in enterprises already under way by a liberal assistance to the Algoma Central Railroad. When it is considered that the line will be a public benefit in the development of Algoma, and a great aid in pushing the work of colonization through a rich and cultivable region, exception can hardly be taken to the bestowal of a liberal subsidy in accordance with the policy which has wisely been followed with regard to pioneer railroads in the past. There may be room to question the advisability of some of the railway subsidies which have from time to time been granted in the past, where the road was either of doubtful utility, a competitor with existing lines, or extending through an old and thickly settled country able to dispense with public aid. But if ever there was a clear case in which a railway enterprise should receive assistance from the provincial treasury on the ground of its opening up new territory, serving as a needed means of transport to build up growing communities and directly contributing to the prosperity, wealth and progress of the country, the merits of the Algoma Central and the public spirit of the company who have undertaken it fully entitle it to the aid so freely bestowed on many less deserving projects. The whole record of its promoters has been in such full accord with the forward policy of the Ontario Government that there can be little doubt of their disposition to afford favorable consideration to their claims.



Hotel at Michipicoton Harbor.

## CAPTAINS OF INDUSTRY.

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

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

The starting of any such concern means a demand for some sort of machines, machinery, or supplies, such as steam engines and boilers, shafting, pulleys, 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, alkalies, 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.

According to a statement made by Mr. B. F. Pearson, one of the directors of the Dominion Steel & Iron Co., of Sydney, N.S., there is a great scarcity of both skilled and unskilled labor in that district. Quite a large number of men have already been sent from Montreal, and drafts are being made upon different points in the United States. Mr. Pearson states that it is probable some of the furnaces will be turning out pig iron in August next. Iron ore is being brought from the company's Newfoundland deposits at the rate of about a thousand tons a day.

The Robb Engineering Co., Amherst, N. S., are building two 300 horse power tandem compound engines for the Demerara Electric Co., Georgetown, British Guiana.

The Kingston, Ont., Board of Trade, of which the Mr. Peuse, editor of The Whig is president, are exceedingly active in promoting manufacturing industries in that city. Through its preliminary arrangements have been made with the Catarague Mining & Development Co., looking to the establishment there of an iron furnace works to cost \$300,000, with capacity to produce 100 tons of pig iron per day. Regarding the Kingston locomotive works the Board passed this resolution:—That the Board of Trade, feeling a deep interest in the continuance of the locomotive works, its members, individually and as a Board, will feel it their duty to assist any company that will carry them on with their old-time vigor, and, in the opinion of this Board, it is a matter for the early consideration of the City Council. Mr. McKelvey favored loaning the works \$75,000 without interest.

Mr. John Carew, Lindsay, Ont., has ordered from the Royal Electric Co., Montreal, a complete electric light plant to light his saw mill and lumber yards. The order included a ten k.w. multi-polar generator.

Messrs. Firstbrook Bros., manufacturers of packing boxes, etc., Toronto, have purchased the factory and premises of the Midland Box, Shook & Planing Co., at Dollartown, near Midland, Ont. Extensive alterations and additions are to be made to the plant, which is to be operated in connection with the Toronto works.

William Stout, late of Dayton, Ohio, and associates have taken over the Russell foundry works at Ingersoll, Ont., which they will operate as a cheese box factory.

The Waverly Gold Mines Co., of Waverly, N.S., has placed an order with the Royal Electric Co., of Montreal, for three of their direct current multi-polar generators to light the Shubonacadie and Waverly mines.

The latest thing in trusts, according to the Hamilton Spectator, is a consolidation of the stove foundries of the Dominion. It is understood, it says, that a syndicate of Americans is now dickering for the amalgamation of the foundries in Hamilton, Toronto, London, Brantford, Woodstock and other places. It is said the projectors will leave intact the foundries in Hamilton, making it the centre of the trust's operations, and working only five concerns outside of that city.

The Sydney Gas & Electric Co., Sydney, C.B., is installing a 150 k.w. S.K.C. two-phase generator purchased from the Royal Electric Co., of Montreal.

Fire in the mills of the Schofield Woolen Co., at Oshawa, Ont., April 22, did damage to the extent of about \$25,000. The centre section of the premises was totally destroyed, together with the contents. The fire commenced in the centre of the buildings near the offices, and spread in both directions. The main building was a handsome three-storey brick structure with a tower, divided into three sections, the north and south ends being separated by fireproof dead-walls, which prevented the spreading of the fire and the total destruction of the entire premises. The mills were equipped with the best and latest machinery, and at the time of the fire a very large stock of raw material was on hand, as the firm were very busy, employing about 125 hands and working overtime. The central portion of the buildings, which contained the offices, the tower and many expensive machines, was totally destroyed, the other sections of the factory and the contents were also badly damaged by smoke and water.

The Ontario Government have concluded negotiations with two more large pulp companies for the manufacture of pulp and paper in New Ontario. The carrying out of these agreements will mean the establishment of two more large mills, one at the mouth of the Nipigon River in Thunder Bay district, and the other at Mattawa, in Nipissing. The western concession, in the name of the Nipigon Pulp, Paper & Mfg. Co., is a revival of a concession granted in 1895 which lapsed. The principal parties to the agreement are Messrs. John Flett, Toronto, merchant; James Whalen, Port Arthur, lumberman; Waidnor, an American pulp capitalist, and N. W. Bowell, Toronto. They will have the right to cut pulp on the Nipigon River and its tributaries, and the right to reserve forty square miles. The second concern, the Blanch River Pulp & Paper Co., which is said to be backed by The New York World, will operate on the Blanch River and its tributaries. Mr. Elliott W. Langley, of Toronto, is one of the directors. Each company will develop water-power, and each agreement extends for twenty-one years. They both agree to spend \$250,000 inside three years, in the erection of a mill, and to employ at least 200 men. The other terms and conditions are practically the same as in the recent Spanish River agreement.

The Canadian Peat Fuel Co., Toronto, are shipping ninety machines for making peat fuel, to Norway and Russia, through Mr. F. O. Thompson of the Head Line of steamers.

## INGERSOLL-SERGEANT Rock Drills

FOR MINES, TUNNELS AND QUARRIES

## PISTON INLET Air Compressors

STRAIGHT LINE  
 DUPLEX and  
 COMPOUND.

FOR ALL DUTIES.

... COMPLETE MINE EQUIPMENT ...

JAMES COOPER MANUF'G CO., Limited, - 299 St. James St., Montreal.

Other Offices - - - ROSSLAND, B.O. RAT PORTAGE, ONT. HALIFAX, N.S.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



Messrs. J. E. Askwith and James Tower, of Ottawa, together with American capitalists will establish a \$500,000 beet sugar factory at Stanbridge, Que.

The Schofield Woolen Mills, Oshawa, Ont., were partially destroyed by fire recently. Loss about \$25,000.

Debentures to the amount of \$75,000, will be issued by Arnprior, Ont., for constructing waterworks and a sewerage system.

An immigration building to cost \$30,000, will be erected by the Dominion Government at St. John, N.B.

The Eastern Townships Bank, will erect a building at Granby, Que., to cost \$30,000.

Messrs. Cowan & Co., Galt, Ont., have just shipped a car load containing 100 h.p. engine and boiler and wood working machinery to Fernie, B.C.

The Frost & Wood Co., intend carrying out some very extensive improvements and additions to their works in Smith's Falls, Ont., during the coming summer. The company's output this year will be the largest in its history, and nearly 400 hands are now employed in the shops.

Messrs. Brown & Rutherford's planing mills at Winnipeg, Man., were destroyed by fire recently. Loss about \$15,000. They will be rebuilt immediately.

During the season of 1899, J. C. Wilson & Co., of Glenora, Ont., received orders for some twenty-two Little Giant turbines for export to Great Britain, Europe, Asia and South Africa, and since the first of the present year this firm have booked orders for eight other turbines for export to European countries, one of these wheels, which is just being completed, is a horizontal electrical turbine for London, Eng.

It is said that a syndicate is at work trying to form a combination of all the leading Canadian stove manufacturers. Five of these—the Gurney Tilden Co., Copp Bros., Burrow, Stewart & Milne, Bowes, Jamieson & Co., and the D. Moore Co.,—are all situated in Hamilton, Ont., and there are five concerns outside which are expected to be in the deal if it goes through. The large stove foundries outside of Hamilton include McClary's, of London; Gurney Foundry Co., of Toronto; Buck, of Brantford; Clare Bros., of Preston; James Stewart Mfg. Co., of Woodstock; Moffat Stove Co., of Weston; Smart Mfg. Co., of Brockville; Findlay Bros., of Carleton Place; and the Doherty Mfg. Co., of Sarnia. Valuers representing the syndicate were in the city to-day,

going over the buildings and plant of the local foundries. Owing to the extent of their work, and the large interests involved, it is not expected that the deal will be closed before July 1. In the event of the deal going through, an effort will be made to concentrate the business in Hamilton, on account of the advantages of cheap power.

Smith's Falls, Ont., will expend \$150,000 on a system of waterworks and sewerage.

St. Louis, Que., will issue debentures for \$30,000, to bonus the Phoenix Bridge & Iron Works.

Messrs. J. & T. Charlton, have placed their order with Cowan & Co., Galt, Ont., for five large boilers and fittings of the most improved type for their extensive saw mills which they are erecting at Collingwood, Ont.

The Guelph Worsted Spinning Co., Guelph, Ont., has been incorporated with a capital stock of \$40,000, to manufacture yarns. The provisional directors include J. T. Calvert, S. Carter and Robert Dodds, all of Guelph, Ont.

J. C. Wilson & Co., Glenora, Ont., have just shipped to Kharkoff, Russia, one 38-inch Little Giant water wheel, ordered by Professor B. Albitzky, of the Technological Institute, of that city.

D. McGillivray has been awarded the contract for building the ore dock at Michipicoten, Ont., to be used in connection with the Algoma Central Railway, and will cost about \$200,000.

The Algoma Central Railway, promoted by the Clergue syndicate, get a land grant from the Ontario Government of 7,400 acres per mile for 200 miles of railway from Sault Ste Marie to Missanabie and Michipicoten. The company bind themselves to bring 1,000 settlers a year for ten years into the district; to provide special railway rates for settlers; to build and operate a fleet of steel steamers on the upper lakes, beginning with four this year, for the purpose of carrying ore; to build large reduction works, a sulphide paper mill, and to double the capacity of their pulp mills. They have also to buy the pine on the banks conceded at current market rates.

Mr. Gibson Collinson, Ceylon, Flesherton Station, Ont., is at present placing in position engine, boiler and saw mill purchased from Cowan & Co., Galt, Ont.

The following orders have just been executed by J. C. Wilson & Co., Glenora, Ont.; E. S. Field, Victoria, B.C., 18-inch Little Giant water wheel and set of machine

dressed driving gears; J. B. Snowball, Chatham, N.B., one set of mortice gears, machine cut teeth. This is the third order received from this firm in the past fifteen months. Wm. Paul, Kilburn, N.B., gears, pulleys, etc.; W. K. Baldwin, Baldwin's Mills, Que., one 28-inch Little Giant water wheel and one Champion double acting water wheel governor; Williamson & Crombie, Kingsbury, Que., one set of driving gears with machine dressed teeth; Joseph Hayes, Shigawake, Que., one 21-inch Little Giant turbine with set of machine dressed driving gears, shafting, etc.; Coaticook Electric Power Co., one large machine cut tooth driving gear, for their main drive in Electric Station.

A joint stock company has recently been established at Lima, Peru, for the manufacture and sale of carbide of calcium. As a commencement has been made with fitting up the mechanical plant, specimens of the output may shortly be expected. The enterprise is practically without a rival, and it is thought that it will prosper. Carbide of calcium has not yet been imported into Peru on account of the danger believed to attend the transport of this substance; and as, in the opinion of experts, carbide of calcium is destined to play an important part in the lightning industry in that country, a syndicate was formed to deal with the project. The present moment therefore appears to be favorable for the introduction of acetylene apparatus, of which fact our Canadian manufacturers should take notice.

Nails imported into Durban, South Africa come principally from England. Wire tacks are supplied by Belgium, Germany, and America. The assortments required are as follows. Rose nails: lengths 1½, 2, 2½ and 3 inches. Cloves or plank nails: lengths 2, 2½ and 3 inches. Wire tacks: lengths 2, 2½ and 3 inches. There are no nail factories in Cape Colony. Plank nails cost 14s. per 100 pounds, and wire-tacks 16s. 6d. for 2 inches, and 15s. per 2½ and 3 inches sizes per 100 pounds, respectively. Nails are imported from England in drums, from Belgium in wooden casks, and from America in sacks. There is no particular preference shown for any style of packing. The expenses to be paid on nails are as follows: 1st, import duty, 7½ per cent. invoice value; 2nd, Dock dues, 2s. 6d. per ton of 2,000 pounds; 3rd, Unloading and delivery or warehousing, 4s. per ton; 4th, Brokerage, one per cent. Canadian nail makers should enjoy a part of this trade.

JOHN HANCOCK BLDG., BOSTON, November 6, 1899.

N. ENG. BRANCH CLING-SURFACE MFG. CO.

We have been using Cling-Surface for seven months and are now running our dynamo and other bolts slack. We take pleasure in saying that Cling-Surface is giving the best satisfaction. JAMES STACKHOUSE, SUPT.

## Cling-Surface Does These Four Things :

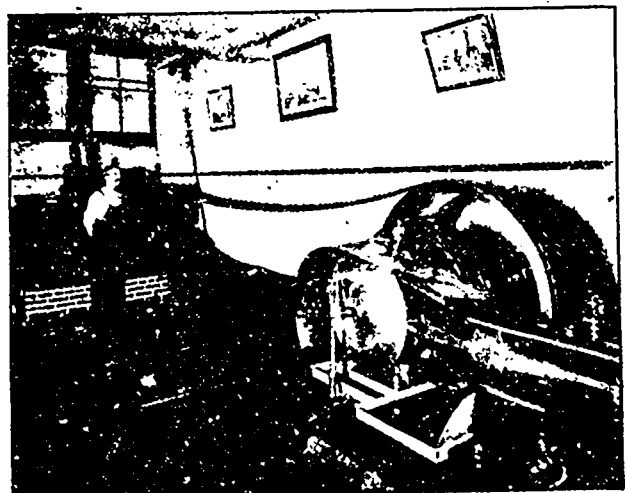
- 1.—STOPS SLIPPING.
- 2.—INCREASES POWER.
- 3.—RELIEVES INITIAL TENSION.
- 4.—PRESERVES THE BELT.

If it fails to do these you Pay-Us Nothing.

### CLING-SURFACE MFG. CO.

N. Eng. and E. Can. Branch: 120-126 Virginia Street,  
170 Summer St., Boston. BUFFALO, N.Y.  
New York Branch: Chicago Branch:  
253 Broadway. 225 Dearborn St.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



Messrs. McLachlin Bros., of Arnprior, Ont. have just received a set of heavy mortice gears from J. C. Wilson & Co., Glenora, Ont. The mortice wheel is eight feet and a half in diameter, and having the cogs machine dressed.

The Wellman & Seaver Co., of Cleveland, Ohio, is finishing up its contract with the Hamilton Steel Iron Co., and everything will be complete in connection with the new steel plant at the company's works in a very short time. The two open-hearth steel furnaces have been finished and a drying out fire has been started in one of them already. The other will be fired in a day or two. These drying out fires will be kept up for about a week, when the hot gas will be turned in and kept going for a couple of weeks. After this is done the furnaces will be ready for work about the first week in May. They are most complete in appointment, and will turn out ninety tons of steel per day. The big steel roll mill is also complete, and will be ready for operations as soon as the furnaces begin work. The whole works were inspected by a Carnegie steel man one day this week, and his verdict was that the works were, for their size more complete and up-to-date than anything to be found at the Carnegie works. The total cost of the new plant will be about \$200,000. — Hamilton Spectator.

Messrs. Cowan & Co., Galt, Ont., are finding business so prosperous in their line that in order to keep up with the demand for their machinery, they are building an extensive addition to their premises, consisting of a large two storey stone building.

The Banner, of Dunkirk, N.Y., says that Dewitt C. Noble, of that city, who was granted a patent on a bicycle tire a few weeks ago, was subsequently offered \$5,000,

for a half interest in it, but this he declined. He says his figure is just twice that amount. According to the Orange County, Cal., Herald, Henry Bundy and Frank Young, were jointly granted a patent for a billiard tip, which screws on to the stick, thus doing away with the troublesome gluing method. They have, says this journal, been offered \$2,000, for a third interest. It is gratifying to learn that the labors of Ottmar Mergenthaler, the inventor of the great type-setting machine, did not go unrewarded, as has been stated many times. It is stated that over \$1,000,000, were turned over in cash to Mr. Mergenthaler, after his machine had been fully perfected and was adopted for general use. Shortly before his death, he sold the remaining lot of stock held by him for more than \$300,000. Nor do his profits end here, for the royalties which he received and which will continue to his heirs, will amount to a great deal of money.

The following Canadian packing houses have placed their orders for machinery, etc., with J. C. Wilson & Co., Glenora, Ont.; Canada Packing Co., London, Ont., two process rotors with trucks and trays complete; Bloomfield Packing Co., Bloomfield, Ont., six green corn stripping machines; F. R. Lalor, Dunnville, Ont., one ten foot process kettle fitted complete with trucks, steam gauge, safety valve thermometer, etc.

Fire in the works of the Diamond Glass Co., at Montreal, April 25, did damage to the extent of about \$1,000.

Waddell's grain elevator at Dominion City, Man., was destroyed by fire April 24, together with 20,000 bushels of wheat.

The Montreal Street Railway Co., has placed an order with the Royal Electric Co., that city, for five 30 h.p. railway motors and controllers.

The Guolph Iron & Steel Co., Guolph, Ont., are remodeling their plant and have placed their order with Cowan & Co., Galt, for a Dakin feed water heater and purifier of 500 h.p. capacity. The Hamilton, Ont., Steel & Iron Works, have also recently placed one of the same capacity and make.

Messrs. Sadler & Haworth, manufacturers of leather bolting, 9 Jordan street, Toronto, and 511 William street, Montreal, have sent us a very useful desk blotting pad, the face of the pad is of white colluloid, upon which the name and business of the firm is printed in neat, original and attractive style, and a colluloid button upon which the British flag is displayed in proper colors, is used as a fastener for holding the blotting sheets to the face.

Messrs. Noxon Bros., Ingersoll, Ont., manufacturers of agricultural machinery, who have a very meritorious exhibit at the Paris Exhibition, are shipping a car load of such machinery to Paris, and another to Hamburg, on cable orders received from Paris.

The Polson Iron Works, Toronto, have under construction a steam yacht for Mr. George Gooderham, Toronto, to cost \$2,000 and another for Rev. Elmore Harris, Toronto, to cost \$5,000, also a beautiful 100-foot passenger steamer for the Muskoka Navigation Co., for use on the Muskoka Lakes, to cost \$18,000.

F. Oswald's grain elevator at Tilbury, Ont., was destroyed by fire April 24. Loss about \$1,200.

Messrs. W. H. Perrine & Co., Toronto and Chicago, will furnish the machinery for the Consumers Packing Co., of Brantford, Ont. The location of Messrs. Perrine's factory in Toronto, will be of great value both to the proprietors and to the Canadian packing industry.

# W. A. FLEMING & CO.

MILL SUPPLIES

CAMEL BRAND BELTING

HOSE of all kinds

DRIVING ROPE

BELTING of all kinds



771 CRAIG STREET, MONTREAL.

## The Stratford Mill Building Co.,

STRATFORD, - - - - - ONTARIO.

STEEL BOILERS—all Sizes,

THE BROWN AUTOMATIC ENGINE,

FLOUR MILL MACHINERY, CORN MILL MACHINERY,

GRAIN CHOPPERS OF ALL KINDS.

Manufacturers  
of . . .

We keep a Full Stock of Chain, Leather and Cotton Belting, Sprockets,  
Pulleys and Iron Work of all kinds.

We have one of the Most Complete Boiler Plant in Canada.

Write for  
Prices.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.



Messrs. Leitch & Turnbull, Hamilton, Ont., manufacturers of electric, hydraulic, hand and power elevators, inform us that they are operating their works over time filling orders for elevators. They are now finishing a fine large apparatus for the Dominion Government building at Victoria, B.C., one for the new Brant Hotel, at Burlington, Ont., for mercantile warehouses at Halifax, N.S., Vancouver, B.C., and Winnipeg, Man. They are in correspondence with some Detroit architects with a view to supplying several large buildings in that city with elevators.

The McLachlan Electric & Gasoline Motor Co., 94 Adelaide street W., Toronto, have sent us an illustrated circular having reference to the gasoline engines built by them. Special reference is had to a new gasoline engine recently invented by Mr. McLachlan, which has been run from 100 to 1,000 revolutions per minute, with no other foundation than the trestles upon which it was placed in the building shop when constructed, and without any fastening to the floor or otherwise. It is specially

adapted for use in boats, motor cycles, carriages, or where any power is desired, where vibration or jar is an objection. It is described as being simple in construction, exceedingly durable, and requiring but little attention. The expenses of running is very small, using about one pint of gasoline per horse power per hour.

The Cling-Surface Mfg. Co., Buffalo, N.Y., are in receipt of a letter from the Gerham Mfg. Co., Providence, R.I., one of the largest manufacturers of silverware in the world, having reference to Cling-Surface in which they say:—Dear Sir:—We send you a photograph of a four inch belt of ours, running from pulley twenty inches diameter on "Almond" coupling, to pulley thirty-six inches diameter, running at about 1,400 feet per minute, driving machine shop. Being unable to get a good photograph when running, we clamped the belt on bot. pulleys and reversed the shaft by hand so as to show as much of the slack as possible. There is, nevertheless, more slack when running than is here shown; the upper part of belt dropping to within three or four

inches of the lower side and yet driving perfectly. Before using Cling-Surface it was necessary to keep this belt quite tight. We think very highly of Cling-Surface.

The Canadian Rubber Co., Montreal, are in receipt of a letter from Mr. S. J. B. Rolland, managing director of the Rolland Paper Co., St. Jerome, Que., in which he says:—In answer to your letter of the 26 inst., I have the honor to inform you that your rubber belts have generally given satisfaction. We replaced two years ago a certain number of your belts that had been in use night and day for fourteen years, which is equal to an ordinary service of twenty-eight years.

Messrs. Edward Gurney, Hugh Blain and Edgar A. Wills, representing the Toronto Board of Trade, waited on the Dominion Government a few days ago to urge the resolution passed by the Board, recommending that the Government spend not less than \$100,000 per annum for five years on beet sugar bounties, beginning with one cent per pound and ending with half a cent in the fifth year.

**THE CUMMER DRYERS.**

FOR **Mechanically Drying Everything**

THE F. D. CUMMER & SON CO.,  
HUNDREDS IN OPERATION.

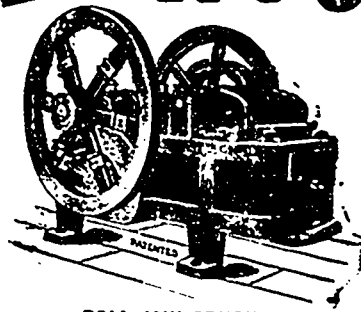
CLEVELAND, OHIO.

THE ONLY

**FINE CRUSHER**

DOES THE WORK OF

CRUSHER AND  
ROLLS  
COMBINED.



FOR

QUARTZ AND  
ORES.

ROLL JAW CRUSHER.

Send for Circular. STURTEVANT MILL COMPANY, Boston, Mass.

**Shafting—Hangers—Pulleys**

FRICITION CLUTCH PULLEYS AND COUPLINGS

Rope Transmission of Power.

HANDSOME ILLUSTRATED CATALOGUE ON APPLICATION.

**DODGE MANUFACTURING CO. OF TORONTO, Limited, - - TORONTO.**

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

The Sherbrooke Gas & Electric Co., Sherbrooke, Que., are increasing their station capacity and have placed an order with the Royal Electric Co., of Montreal, for a 360 k.w. S.K.C. two-phase inductor type generator.

In the House of Commons a few days ago Mr. McLaren, of Perth, Ont., who is largely interested in the manufacture of cheese, showed that while the manufacture and export of butter had remained comparatively stationary since 1808, that of cheese had gone ahead by leaps and bounds. The reason butter exportation had not more largely increased was because bad butter was made. He advocated the making of butter in factories in a uniform way. If this was done he prophesied that in ten years \$20,000,000 worth of butter would be made annually in Canada, and that the combined annual

manufacture of cheese, butter and condensed milk would be \$50,000,000. Butter had begun to be made in factories, and as a result 8,925,408 pounds more had been made in 1899 than in 1893, and \$1,610,457 worth more shipped to Great Britain.

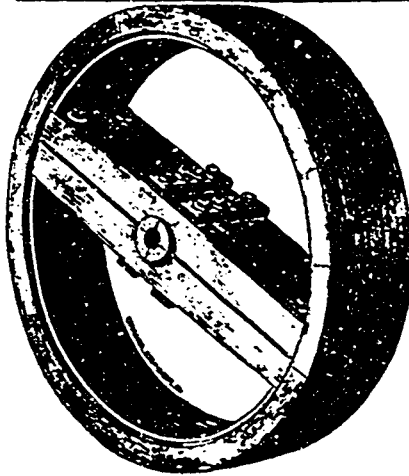
Cordage manufacturers have about quit using Manila hemp for binder twine purposes. The twine works at the Central prison are at present engaged on what is said to be the only stock in Canada, the supply being considerably less than 600 bales. This has created a large demand for Sisal hemp obtained in Mexico, which is inferior, however, to the Manila product and much heavier in bulk. Manager Thompson, of the Ontario Binder Twine Co., states that the Mexican article is now 9¢ a pound delivered in Toronto, against six cents last year and 2¢ in 1897. Farmers will

have to pay at least 12¢ for Sisal twine this year, against ten cents last year's price. The Manila cord to be placed on the market will bring fifteen cents.

The Royal Electric Co., of Montreal, is installing an electric light plant for the Moulthrop Lumber Co., in their mills at Spanish River, Ont.

Strong protests are being made to the Dominion Government by Canadian manufacturers of woollen and cotton goods, cutlery, etc., against the increase of the tariff preference in British imports of like character. The preference should have remained as it was.

Messrs. Coulter & Campbell, copper-smiths, Toronto, are supplying The Hiram Walker Co., Walkerville, Ont., with over \$10,000 worth of copper distillery work.



# "THE REEVES"

## A HIGH-GRADE WOOD SPLIT PULLEY

BUILT HONESTLY

....AND....

BUILT RIGHT

IT DOES THE WORK

NO TROUBLE!

NO WORRY!

SEND FOR CATALOGUE.

Reeves Pulley Manufacturing Co. Limited,

14 PEARL STREET, TORONTO, ONT.

John R. Barbor, President.

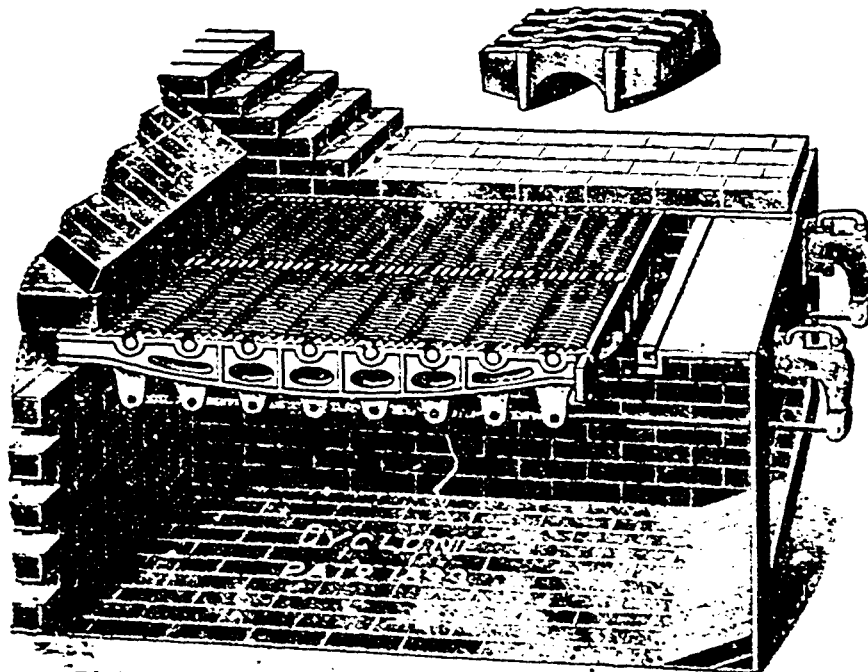
Geo. E. Challes, Sec.-Treas.

Henry Truesdell, Bus. Man.

# THE CYCLONE GRATE BAR

Economy of Fuel and Increased Boiler Efficiency Guaranteed.

Cut shows construction of the Grate. No alteration of Plant necessary.



Simplicity,  
Durability,  
Economy.

Burns the Cheapest Fuel  
with the Best Results.

A BOY CAN OPERATE IT.

Send for Descriptive Circulars  
and Testimonials.

COPY OF TESTIMONIALS

Toronto, Jan. 12, 1899.

THE CYCLONE GRATE BAR Co.,  
(Limited), Toronto.

DEAR SIRS: We deem it only fair to you to express the appreciation and satisfaction which we have in using your Grate Bar.

As a fuel saver we think it is the only Grate with any merits in this respect, and for operating it is perfect.

Wish of your company every success.

We are, your truly,

"SEAMAN, KENT & Co.

W. G. BLACKGROVE,

Gen'l Agent for Ontario,  
Office, 10 KING ST. WEST,  
TORONTO, CAN.

Manufactured  
by...

Cyclone Grate Bar Co. Limited,

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

**ELECTRIC POWER IN TORONTO.**

A special committee appointed by the Toronto Board of Trade to consider the question of electric power in relation to Ontario industries reported to the council at its meeting on Tuesday. Mr. W. E. H. Massey was chairman. The committee treated of the various kinds of power, present conditions in Toronto, power facilities as a factor in attracting industries, and the desirability and probability of cheaper electric power for Toronto.

The kinds of power dealt with are water-power, steam, gas, and gasoline, electricity and compressed air. Omitting the Street Railway Co. and the Electric Light Co., which together utilize about 10,000 horse-power, the consumption in Toronto is estimated at from ten to twelve thousand horse-power. Of this about half is used by people requiring under fifty horse-power. A well equipped steam plant, developing say one hundred horse-power, can produce power at

from \$20 to \$25 per horse-power per annum. Coal is of course the basis of the cost of steam power, and the present duty of fifty-three cents is an important item in the power problem. The Toronto Electric Light Co. furnishes power at from 2½ to three cents per horse-power per hour, and to large customers as low as two cents. At two cents the cost is \$60 per horse-power per annum. The Hamilton Power Co. supplies power at \$20, and the Niagara Power Co. at \$25.

The committee thought gas and gasoline might be judiciously used where from twenty-five to seventy-five horse-power were required. Considering power facilities as a factor in attracting industries, the committee state:—The name of "cheap electric power," accompanied, as it generally is, with so many false suppositions regarding its cheap, inevitable, and universal application to industrial purposes, has made cities having large quantities of electric power to offer appear formidable competitors of cities less favored. The idea that power transmitted by electricity is all that is needed to start up immense manufacturing industries is

very largely a matter of imagination. Cheap power is by no means the all-important feature in attracting new industries.

The report concludes with a consideration of the probability of cheap electric power in Toronto. It is, the committee states, an event to be desired, but not immediately probable. Niagara is regarded as the only source.

A more extended report of this matter will appear in the next issue of this journal.

The Collingwood, Ont. Meat Co., have begun the erection of an extensive addition to their meat packing works, required to enable them to meet their fast growing foreign trade.

Messrs. Patterson & Co., will erect a large sewer pipe factory at Listowel, Ont.

The Montreal Star has placed an order with the Royal Electric Co., that city, for three 30 h.p. motor teaser equipments, to be direct connected to their new printing presses.

**BELTING**  
**ENGINE**  
**GOAK**

Leather Belting,  
 Lancashire Hair,  
 English  
 Card Clothing,

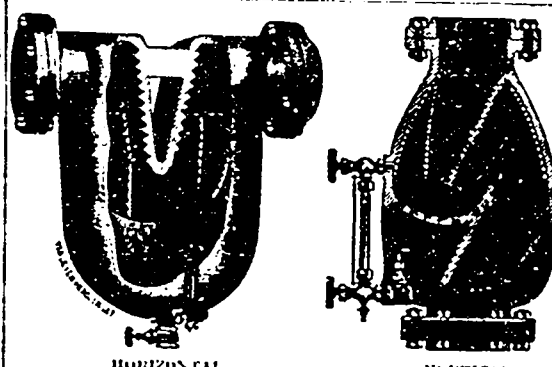
**D. K. McLAREN**  
 Head Office and Factory—  
 MONTREAL

WESTERN TRADE—TORONTO STOCK DEPOT,  
 'Phone 374 88 BAY STREET.

ADVERTISE IN.....

**THE CANADIAN MANUFACTURER.**

SEND FOR RATES.



**EVER KNOW AN ENGINE HAS LUNGS?**

The cylinder of an engine corresponds with lung action, and in some ways is afflicted with lung trouble. For instance, too much moisture in the steam cylinder will cause more trouble than a damp atmosphere to a consumptive.

**AUSTIN SEPARATORS**

Are the proper medicine. They eliminate all moisture, and ensure the greatest efficiency to the engine. Send for our new catalogue.

**AUSTIN SEPARATOR CO.**  
 38-40 Woodbridge St. DETROIT, MICH., U.S.A.

**B. GREENING WIRE CO. (LIMITED)**  
 WIRE MANUFACTURERS  
 & METAL PERFORATORS  
**HAMILTON & MONTREAL.**



Wire Screens for Every Class of Material.

Perforated Metal of Steel Copper Brass, Zinc for all purposes.

Special Attention given to Minors' Requirements.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

# THE BEST PIPE THREADING and CUTTING-OFF MACHINES

Are Made by the **ARMSTRONG MFG. CO., BRIDGEPORT, CONN.**

Also Manufacturers of a FULL LINE of **ADJUSTABLE STOCKS and DIES** and Water, Gas and Steam Fitters' Tools.  
 Send for Catalogue 27. Factory: BRIDGEPORT, CONN. New York Office: 139 CENTRE STREET.

## DAIRY MACHINERY IN TASMANIA.

Tasmania has hitherto devoted but very little time to self-glorification, and has concentrated its energies in quietly developing

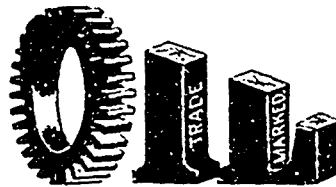
its resources. The products of its mines and of its farms form an ever-increasing item in the returns of the Tasmanians. In 1898 this distant but prosperous colony needed over \$14,000 worth of imported

implements for its dairies alone, of which only \$37 worth was of American origin. Whilst the actual requirements may seem insignificant, it should be remembered that Tasmanians are a wide-awake people, progressive and energetic. Their market is destined to expand considerably, and the manufacturer who is enterprising enough to obtain a foothold at the present time, will find that his reward is not only immediate but cumulative. Cream separators, churns, cheese presses and similar appliances should be pushed as much as possible.

# "Capitol" Cylinder

"RENOVN"  
ENGINE

"ATLANTIC" RED



RELIABLE WELL-KNOWN BRANDS.

ALL ORDERS PROMPTLY FILLED

THE...

# QUEEN CITY OIL CO.

LIMITED

SAMUEL ROGERS, President.

TORONTO, CANADA.

## HAIN'S LATEST IMPROVED WATCHMAN'S TIME DETECTOR

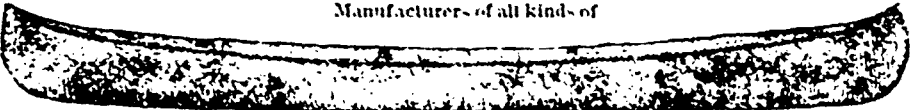
This Clock is adapted for six or twelve stations, and the keys are all different, ranging from 1 to 6, and 1 to 12, instead of as in the old style Time Detectors, which mark either by hole or an impression on the dial, being the same for all stations.  
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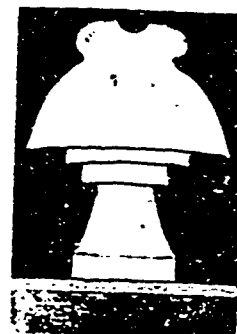


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## OIL WELL MACHINERY IN TURKESTAN.

The results of the geodetic commission appointed two years ago by the military commander of Northern Turkestan have just been published in Russia. The portion of the work which will prove of the greatest interest to our American manufacturers is that which deals with the petroleum deposits of that region. Hitherto these deposits have been exploited in a perfunctory way and according to most primitive methods, the produce of the wells being chiefly sent to Persia. Ever since the connection of Samarkand with the outside world by means of the Trans-Caucasian Railway, the great possibilities of this region have attracted the notice of Russian and foreign capitalists. It seems that the immediate future will see a considerable development of the mineral oil industry in Turkestan. The moment, therefore, is opportune for the presentation of offers for all appliances used in connection with oil wells.

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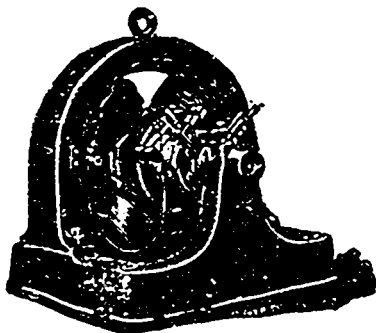
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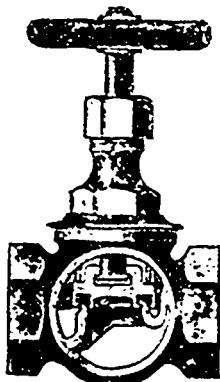
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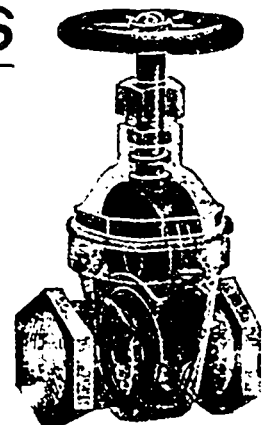
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**THE FAIRBANKS COMPANY, 749 Craig St., Montreal.**

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**THE PRATT & LETCHWORTH CO.,  
BRANTFORD, ONT.**

The new works of the Pratt & Letchworth Co. at Brantford, Ont., were opened and went into operation April 26. These works are contained in the shops and premises recently occupied by the Grand Trunk Railway Co. for car building purposes.

It was but a few weeks ago the announcement was made in these pages that the Pratt & Letchworth Co., of Buffalo, N.Y., had taken over the Brantford premises above alluded to, and would remodel and enlarge them for the purposes of their business, and from which they could supply the Canadian demand for their products. The concern have been long and favorably known as one of the largest and most successful manufacturers of malleable iron and steel castings in the United States, and their Canadian trade in these articles has increased so rapidly and has acquired such large volume that they found it necessary to start a branch of their works in this country. Of course the advent of this important concern into Canada is attributable to that policy of the Dominion Government which gives tariff protection to our manufacturing industries, otherwise Brantford would never have had the opportunity of boasting of the location there of such an important enterprise, for the company's demands for their goods would have been supplied from their Buffalo works. By the addition of the Brantford plant the Pratt & Letchworth Co. now control what is perhaps the most extensive and complete malleable iron and steel castings works on the American continent.

The origin of the business of this concern was in Buffalo in 1848, when Messrs. P. P. Pratt, W. Letchworth and Josiah Letchworth formed a copartnership to engage in the enterprise, under the firm name of Pratt

& Letchworth. They continued as a private corporation until 1896, when the partnership terminated by limitation. It was then re-organized as a stock company. Mr. O. P. Letchworth was elected president, Mr. Josiah Letchworth secretary, and Messrs. Franklin D. Locke and R. L. Fryer directors. The company has ever since continued with these gentlemen directing. They have shown themselves entirely competent to make the large investments of the stockholders perfectly safe and paying, and the determination to establish a Canadian branch is the result. The principal business of the company is the manufacture of iron and steel castings, which they furnish to railroads, locomotive builders, electrical works and manufacturers of agricultural implements.

They have in the past furnished castings to many of the prominent manufacturers of Canada, but as the capacity of the Buffalo works was taxed to its utmost in supplying the demands of American manufacturers and in keeping up with the United States trade, they established their works in Brantford in order to be able to fully take care of the Canadian trade.

Mr. J. C. Bradley, the superintendent of the Brantford works, was formerly connected with the Walter A. Woods Co., of Hoosick Falls, N.Y., one of the largest manufacturers of agricultural implements in the United States. Mr. Bradley is recognized as one of the best informed men in malleable and iron castings. The new concern will have the benefit of his extensive knowledge in the mixing and handling of its metals.

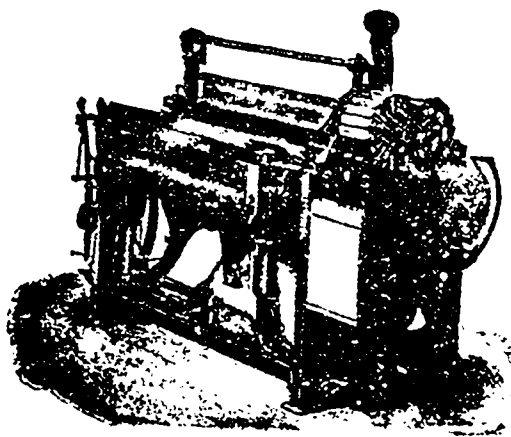
The superintendent of the Brantford works is Mr. G. F. Farrar, who also is from Hoosick Falls, N.Y., where he was with the Walter A. Woods Co. He is a man of much experience and is well-liked. Mr. Richard Elliott, of Brantford, is assistant

superintendent and has been of very great service to the concern in looking after the alterations which it was necessary to make to the buildings. As far as possible the company will employ all Brantford men in the local plant, although it is necessary for them to have a number of experienced hands come from the works in Buffalo.

When the Pratt & Letchworth Co. took over the Grand Trunk shops in February they found the premises in anything but a satisfactory condition, but by dint of hard work they have succeeded in getting them into splendid shape. An immense amount of labor was required, but no expense was spared in renovating, and the buildings which as now occupied present a very creditable appearance. They could not be more conveniently located, for they possess the very decided advantage of having most complete railway facilities. The shops are situated directly north of the yards, and the Grand Trunk railway is as close to them as it is possible to have them. This is a very great factor in the business, as the castings that the company turn out are in many cases of great weight, and it is a distinct advantage not to be at considerable expense for cartage.

Starting from the west end of the buildings on Sydenham street the first department is that of the manufacture of cores. In this room a large number of women will be employed, and everything is laid out for their convenience. The room is well lighted and the ventilation and heating is as perfect as can be made. A dressing room has been fitted up for the convenience of those who are employed there.

Passing through the core room, entrance is had to the main foundry, formerly used by the Grand Trunk as a car-shop. This room is three hundred feet in length, and about one hundred and seventy-five in



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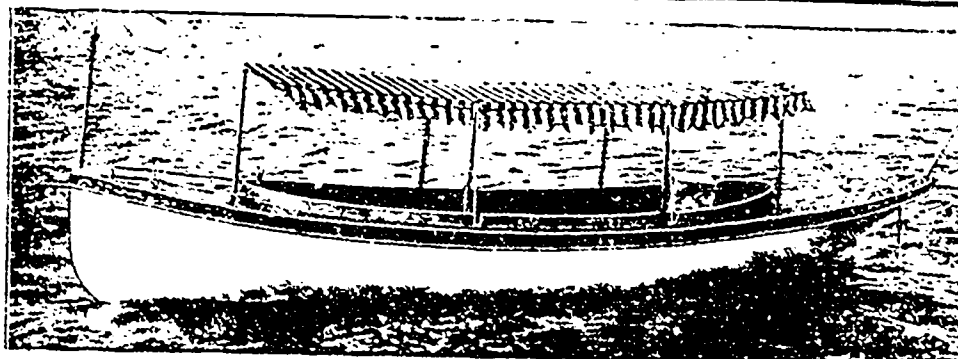
Thousands have been running in the United States, and a large number are now in Canada. Sales steadily on the increase.

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**Gasoline and Steam  
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The latest styles Ask for prices.

**Doan's Canoes**

are known the world over.

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**WALTER DEAN, - Toronto.**

width, and is a model in all its appointments. The large reverberatory furnace is capable of melting fifteen tons of iron at one time, with a capacity to make three heats a day. In the same room are six annealing ovens with a capacity of one hundred tons each. The power is supplied by the Brantford Electric & Operating Co. and is brought into the workshops at a high voltage, reduced through a series of transformers and distributed through three separate dynamos. It is expected that this power will be put in for lighting and other purposes later on.

The shop formerly used as a paint shop

has been partitioned off and at the west end are the offices of the company. These are very commodious, well-lighted and airy and will serve splendidly. The main office is completely fitted, and private offices and telephone arrangements are as good as could be wished for. On the opposite side of a hall which runs through the building is a fire-proof vault, in which will be kept the very valuable patterns which the company will have, and which will be sent from different customers in all parts of the country. In this building also is the machine shop and the room used by the pattern

makers. The east end of the building will be used as a sorting and shipping room.

The company have already laid in a sufficient stock of fuel, pig iron, moulding sand, and other materials with which to begin business, and orders have already been booked for large quantities of goods for railway and agricultural implement supplies.

The main building covers an area 300x150 feet, in one end of which are the sand room, coat room, lavatories, etc., also core ovens. The smelting furnace has capacity to turn out seventy-five tons of castings per day, and is conveniently arranged for access to the iron and fuel supplies which can be discharged directly for the cars. The moulding room has provision for thirty-five hand tables, all fitted with economic machines.

One of the most pleasing features incident to the inauguration of the Pratt & Letchworth Co.'s Brantford works was the banquet tendered by the company to the business men of that and other Canadian cities, to which a generous invitation was extended to THE CANADIAN MANUFACTURER. The function was held in the Kirby House and was characterized by the usual feast of reason and flow of soul incident to such occasions, the "flow" being particularly abundant and delicious. Of course the usual healths were proposed and discussed, the drift of sentiment being strongly international in character and congratulatory in that Canada had become possessed of such a valuable enterprise. The officers of the company are:

Buffalo: Mr. O. P. Letchworth, President; Mr. J. C. Bradley, General Superintendent; Mr. W. C. Houck, General Manager; Mr. W. M. Edwards, Cashier.

Brantford: Mr. J. F. Farrar, General Manager; Mr. R. Elliott, Assistant Manager; Mr. J. Limburg, Foundry Foreman; Mr. W. G. Knapp, Electrician.

## In the High Court of Justice.

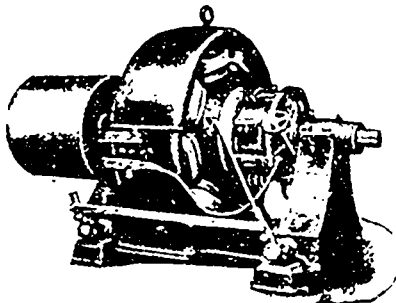
### QUEEN'S BENCH DIVISION.

MR JUSTICE BRUCE.—Wilson Brothers Bobbin Co., Limited, and Herbert William Wilson v. Wilson & Co., Barnsley, Limited, Saturday, January 27th, 1900. A PERPETUAL INJUNCTION was this day granted against the Defendants, restraining them, their servants and agents, from infringing the Letters Patent No. 5559, of the year 1895, for "Improvements in means for strengthening and protecting tubes and bobbins used in the preparation and spinning of fibrous materials." And it was ordered that the Defendant should pay to the Plaintiffs damages, to be ascertained on enquiry, and costs. The Judge also certified to the validity of the Plaintiffs' patent.

The above has reference to the Patent CORNHOLME Shield, with "beaded" or "rolled" edge, for fastening.

## The Jones & Moore Electric Co. ELECTRICAL CONTRACTORS.

Dynamos  
Telephones  
Slow Speed  
Motors  
Motors



Supplies  
Direct Connected  
Dynamos

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

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Adelaide W., Toronto.

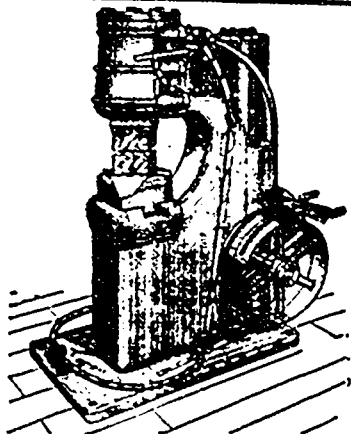
## The Yeakley Vacuum Hammer.

Canadian Patent November 9, 1897.

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of the Canadian Patent:

**George Brush**

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Office and Works  
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MONTREAL, Que.



**THE NEW STEAMER KINGSTON.**

This steamer, to be built at Toronto by the Bertram Engine Works Co. for the Richelieu & Ontario Navigation Co., will be similar in character to the steamer Toronto, built by the same firm, but somewhat longer and with greater accommodation. She will run on alternate days with the steamer Toronto on the route between Toronto and Prescott, and will be ready for June, 1901. Her length over all will be 290 feet; breadth of hull, 36 feet; depth of hull, 14 feet; draft of water, 8 feet 6 in.

The hull will be of open hearth steel with four watertight bulkheads; the main deck also will be wholly of steel. The hull will have considerable dead rise on the bottom, the general shape being based on that of the steamer Toronto, which has proved such a complete success both as to speed, economy of fuel and seaworthiness. The increased length will enable the lines to be somewhat easier and finer than those of the Toronto.

The boilers will be four in number, of Scotch pattern, eleven feet in diameter, and eleven feet six inches long. Each boiler will have two furnaces of Adamson type, forty inches in diameter, fitted with the Howden system of hot draft.

The engine will be inclined triple expansion, with three cranks and three cylinders, respectively twenty-eight, forty-four and seventy-four inches in diameter and six feet stroke, with a working pressure of 175 pounds steam per square inch, capable of making forty revolutions, with feathering paddle wheels twenty-two inches in diameter with curved steel buckets ten feet four inches long and three feet six inches wide.

The average time-table speed will be seventeen miles per hour, with capacity for twenty miles when required.

The general outfit, including steam windlass and capstan forward and steam capstan aft, fire and life-saving apparatus, water tanks for trimming purposes, steam steering gear, steam heating and water works system, artificial ventilation and electric light plant of 1,000 lights, will all be of the latest and most improved design.

With the exception of a limited space for

a small amount of express freight and the space necessary for crew and propelling purposes, the entire steamer will be given up to passenger accommodation.

On the main deck aft will be the smoking and correspondence rooms, barber shop, bar saloon, entrance hall, purser's office and baggage room. In the middle the engine and boilers and a portion of the crew space, and forward the dining room and pantries, extending out the full width of the sides and lit from both sides, and a raised glass canopy in the ceiling. This position of the dining room is admirably adapted for purposes of observation as well as for convenience, with the kitchen below. It will cause a large gain in passenger accommodation, as on most steamers this space is devoted to freight.

With the exception of the open seating space at the bow, sides and stern, the saloons and staterooms will occupy the whole of the first and second decks above the main deck, arranged in the form usual on the large inland steamers.

An exceptional feature, however, will be a large handsome skylight in the roof immediately over the glass canopy in the ceiling of the dining room. There will be 165 staterooms and eight parlor rooms with bath-rooms attached.

The third deck above the main deck will have the pilot house forward, and behind it the rooms of the captain, mates and wheelmen; all the rest of this deck will be an immense promenade for passengers.

Following the principle adopted in the

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Capital and Surplus, \$1,500,000

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- Vancouver " - Cor. Hastings and Hamilton Sts.
- Victoria " - Board of Trade Building.

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

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Visible Writing from start to finish.

The descriptive pamphlet, or any stenographer using the Underwood Typewriter, will explain why 1,000 of these machines have been sold in Canada in one year—more than all others put together.—Visible writing and the tabulator are winners.

SOLE CANADIAN AGENTS.

**Creelman Bros. Typewriter Co.,**

15 Adelaide St. East, TORONTO, ONT.

**VANDUZEN'S STEAM-JET PUMPS**

Fully guaranteed. Especially serviceable for elevating or forcing sandy or muddy water from Mines, Quarries, Wells, Excavations, etc. Simple, portable, cheap. Requires no skill or attention. 10 sizes, ranging from \$7 to \$75. Send for Catalogue No. 63.

E. W. VANDUZEN Co., Cincinnati, O.

**THE SMART-EBY MACHINE CO.,**

Steam and Gas Engines, Pumping Machinery, General Machinery.

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case of the steamer Toronto, the ornamental work will be of original design and finish throughout; and the builders, with their assistant architects and artists, expect the handsomest results yet attained in marine architecture.

#### FACTORY INSPECTION

The Ontario Department of Agriculture has just issued the twelfth annual reports of the Ontario factory inspectors, which present some important conclusions as to industrial conditions. These have greatly changed for the better so far as employment and wages are concerned. Factories are working full time, and in many instances overtime. Some factories are working day and night with double staffs. Wages, in consequence of the general demand for labor, have increased. Another feature of the situation, which is not so pleasing, is the very large increase in the number of accidents. In the western district there were 157 accidents reported, at against 102 for 1898 and ninety for 1897. Of these eighty-four happened in the wood-working industries. Eleven accidents resulted fatally. In the central district Inspector Brown reports 146 accidents, eleven of them fatal. Nineteen were caused by circular saw, five of them resulting fatally; ten, including four fatalities, by belts;

fifteen by power or other presses and seven by gear. In the eastern district fourteen accidents, one attended by loss of life, were reported. The causes assigned for the lamentable increase of casualties are the increase in the number of persons employed and hours worked, but some deduction must be made for the better observance of the law in regard to the reporting of accidents. The inspector for the central district considers that the high speed at which machines are run, and the consequent strain on the operator, is largely responsible. Mr. Rocque of the eastern district has noticed that small mills, which do not come under the jurisdiction of the act owing to the limited number of persons employed, are often more dangerous and accidents more liable to occur therein than is the case with the larger establishments, and recommends an extension of the law so as to include all mills where machinery is worked by power of any kind.

#### NICKEL STEEL RAILS.

In view of the fact that the manufacture of nickel steel rails is a part of the scheme Mr. F. H. Clergue has in view at Sault Ste. Marie, it is interesting to learn something of the durability of them in actual use. Some time ago a section known as the Horse

Shoe curve of the Pennsylvania Railroad was laid with such rails, and Mr. W. H. Brown, chief engineer of that road, writing of them says:—

On June 26, 1899, we placed an order with the Carnegie Steel Co. for 300 tons of steel rails to contain 3 per cent. nickel. The material was made by the Bessemer process and rolled in the American Society pattern 100-pound section the last week in July, 1899; but the nickel content caused 'red shortness' to such an extent that the rolling resulted in only 220 tons of No. 1 and 57 tons of No. 2 rails, and we had to throw out 19 tons of the latter because of 'piping.' The average analysis was as follows: Carbon, 0.504 per cent; phosphorus, 0.094 per cent; manganese, 1 per cent, and nickel, 3.22 per cent. Under the straightening process the rails showed great rigidity; twice the force ordinarily used being required to accomplish the cold straightening, and often the rail would spring back to its former position after being struck, showing no effect of the blow. In drilling the hardness was even more marked; in some cases five twist drills of ordinary tool steel being used up in drilling one hole. After experimenting with different materials for drills, it was found the best results were obtained by using Mushet steel without lubrication. These rails are laid on the west track on the Horse Shoe Curve, but they have not been in ser-

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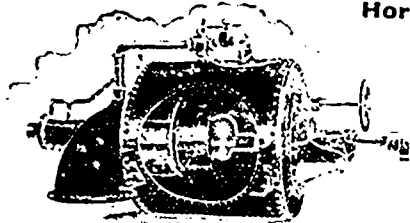
PITT & SCOTT, - - - 39 Broadway, NEW YORK.—121 Water Street, BOSTON.  
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## THE Crocker Patent Turbine

Horizontal Setting, with Quarter Turn Elbow.



Where the nature of the location will permit its use this type has many advantages. It is very suitable for direct connection to dynamos, and many are in operation in this class of service.

Notice how complete and compact this arrangement is, and how easily it may be installed. Can you use anything of this kind? Your inquiries will receive prompt attention.

WATER POWERS examined and Reports made. Estimates submitted for Complete Equipments. - - -

**The JENCKES MACHINE CO.,**  
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vice long enough to enable us to say much about the wearing qualities. Alluding to which the Railway Gazette says:—The experiment is interesting and important. Nickel steel rails have long seemed to be among the possibilities of the future, although we have supposed that they would be too costly to be used except in quite special cases; but the experiment is worth trying. At Chicago the other day Mr. Cushing of the Pennsylvania Lines spoke of the nickel steel rails in use on the Cleveland & Pittsburg Division. He says that after two years' service they show hardly any wear and that they are standing up better than any other rails.

**THE PAN-AMERICAN MACHINERY AND TRANSPORTATION BUILDING.**

One of the big buildings of the Exposition will be that devoted to Machinery and Transportation. This will be 500 by 350 feet, with a central court 100 by 175 feet. Its location is on the west side of the main group, opposite the Court of the Fountains. It is built in the type—as all the other principal buildings are—of the Spanish Renaissance, modified to suit the conditions of the Exposition. The work is far more ornate, however, with roofs laid with red tile and the cemented walls brilliant with color. The colors are to be of reds and yellows in light tints. The facades will present an arcaded effect, with broad overhanging eaves, in imitation of the old mission buildings found in California and Mexico. Each facade will be broken by an important architectural feature, and each corner flanked with low pavilions, the design giving large plain surfaces for color, while the eaves give deep shadows. The loggias, balconies, pavilions and other places are to be ornamented with shrubs, vines and flowers, blending with the coloring of the building. The openings are grided with specimens of wrought-iron "Rejas" or grill screens, such as are seen in examples of Spanish Architecture of the sixteenth century.

The building has numerous entrances, the principal ones being in the center of the four facades. Once inside the structure, the size will be appreciated. All the towers, pavilions and other proper spaces are to be

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.. UPHOLSTERY ..  
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brilliantly illuminated and made gay with banners and flags.

The Central Court will be a veritable tropical garden, with a long narrow pool containing interesting specimens of aquatic life, and will have winding paths and seats among the flowers and shrubbery, where the weary visitor may find rest and diversion from his study of the more practical features of the Exposition.

Walter Dean, boat builder, 1751 Queen street, Toronto, has sent us a circular having reference to the different styles of steam, gasoline and electric launches built by him. The illustrations show perspective views of the different sizes and styles, deck plans, interior fittings, etc. Mr. Dean has built quite a number of these pleasure crafts during the past winter, which are now being delivered, one of the latest and most elegant being a gasoline launch for Edward Mahoney, Esq., Toronto, which is to be shipped to his island home in Muskoka, in a few days.

**CONNERS SYNDICATE PROSPECTUS.**

The Connors Syndicate has issued a prospectus giving the details of its financial plans for the utilization of the privileges it has secured from the Harbor Commissioners of Montreal. From this it appears that the syndicate values the franchise at \$1,500,000, that being the sum which the members expect for their services in promoting the company. The prospectus is as follows:—The Canadian Inland Transportation Company, by its charter, is authorized to issue stock to the amount of \$4,000,000. It may also from time to time issue its bonds in aid of the acquisition of property, the bonds to be secured by mortgage. This company now proposes to purchase from the so-called Connors Syndicate the allotment and franchises recently granted by the Harbor Commissioners of Montreal, and to pay for the same by issuing \$3,000,000 of its stock, and \$1,000,000 bonds. The Connors Syndicate shall turn over to trustees, for the benefit of the company, \$1,500,000 of its stock; also

**DAYLIGHT DISCOUNTED.**

**ACETYLENE GAS**

Does it when made by the

**"SAFETY"**

220 MACHINES IN OPERATION AND NO ACCIDENTS  
SPEAKS VOLUMES.

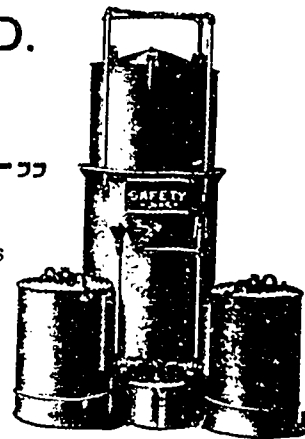
SIMPLICITY SAFETY ECONOMY the Leading Features.

Manufactured by

**THE SAFETY LIGHT AND HEAT CO.,**

Send for Booklet.

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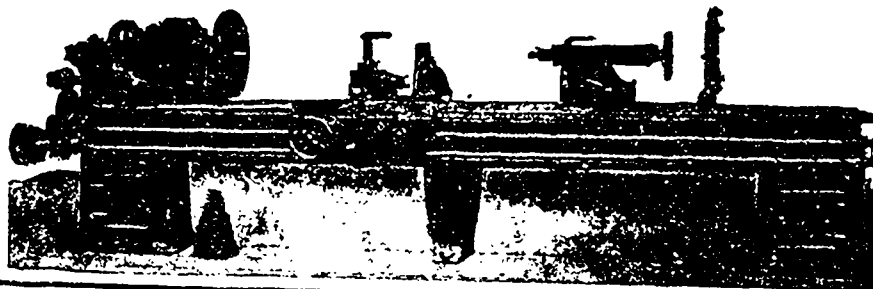
**The London Machine Tool Co., LONDON, ONT.**

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MANUFACTURERS OF

**General Machinery**

HAMMERS,  
BULL DOZERS,  
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ALEX. GARTSHORE, President. J. G. ALLAN, Sec.-Treas. JAS. THOMSON, Vice-Pres. and Gen. Mgr.

**THE GARTSHORE-THOMSON PIPE & FOUNDRY CO.**

Limited



For Water, Gas, Culverts and Sewers  
Special Castings and all kinds of  
WATER WORKS SUPPLIES  
3 in. to 60 in. diameter.  
FLEXIBLE AND FLANGE PIPE.  
HAMILTON, ONT.

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the \$1,000,000 bonds. The remaining \$1,000,000 of stock is offered for subscription at par. Each subscriber for these shares shall receive in addition to his subscription from the Connors Syndicate bonds to the amount equal to his subscription. The avails of the sale of this stock to be used in the erection of elevators, warehouses and general equipment of its plant. To provide for the future expansion of the company it is proposed to authorize a total bond issue of \$4,000,000, twenty years, at 5 per cent., but of which only \$1,000,000 is to be now issued to the syndicate as aforesaid, and which is to be distributed among subscribers of stock; the remaining \$3,000,000 to be issued only by the corporation as the necessities of the company may require for the enlargement of its plant. Thus the subscribers of stock will hold bonds secured by

a first mortgage on all the company's property, including the franchise and all rights under it. The lowest average rate on grain for any one month during the last 10 years from Duluth to seaboard was four cents per bushel. A steamer and two barges operating between Duluth and Montreal will carry 250,000 bushels. At four cents per bushel this would result in gross earnings of \$10,000. The charges against this would be:—Operating expenses, \$200 per day, 20 days for round trip, \$4,000; shovelling charges, \$3 per thousand bushels, \$750; elevator charges, Montreal 1½ cents per bushel, \$250; towing through canals, \$200; total, \$6,200; net earnings per trip, \$3,800. Estimating seven trips for a season of navigation, which is very conservative, a tow could easily make ten and a half trips each year, which would show an earning capacity

of \$39,900 for each tow, and seven tows would earn \$279,300, or ten per cent. interest on the cost of ships, namely, \$2,695,000, as below. As shown above, our elevators will be paid for the use of steam shovels, and the charges will not be less than \$1 per thousand bushels of grain the first year at Montreal. Estimating conservatively, we will handle 30,000,000 bushels. The revenue from this will be \$30,000, or more than the entire cost of operating the elevator. The charges of one-half cent per bushel for elevating at Montreal would bring the company \$150,000. At Port Colborne we would handle 20,000,000 bushels of grain, and the earnings from elevating at one-half cent per bushel would be \$100,000 net, the revenue from the shovelling charges paying for the cost of operating. At Montreal we would haul through the warehouses of the company not

**JOHN J. KELLER & CO.**

104 and 106 MURRAY ST.  
NEW YORK

220 Church St., Philadelphia.  
135 Pearl St., Boston.  
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Dyewood Extracts,  
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Nutmeg Extracts.**

FAST COLORS for Wool Dyeing,  
One Dip Cotton Colors, Novelties  
and Specialties for Calico  
Printing.

MANUFACTURED BY  
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**LIGHT YOUR  
FACTORY WITH**

**LUXFER PRISMS**

The latest device for

**LIGHTING**

dark rooms and  
offices

**By Daylight**

For catalogue  
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write to

**Luxfer Prism  
Co'y, Limited.**

98 King Street West, TORONTO

**I Mean Business**

**Will sell  
Quickly**

Canadian Patent No.  
64,138, a

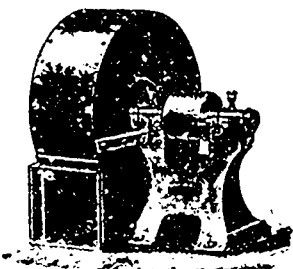
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STRETCHER..**

or place on  
royalty.



Hardware  
Manu-  
facturers  
please  
write me  
quick.

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NORRISTOWN, PENNA.



**PLANING MILL STEEL PLATE  
EXHAUST FANS**

For removal of refuse from Wood-Working  
Machinery

**CYCLONE DUST  
SEPARATORS**

Made of Galvanized Steel. All Sizes for Fans  
from 30 inches and up.

Estimates cheerfully given for Complete Installations of Fans,  
Piping, Gates, Hoods and Separators, with or without  
Shavings Feed Attachment to Boiler Fires.

**McEACHREN HEATING AND VENTILATING CO.,**  
GALT, - ONT.

WE MAKE

Forge, Cupola and Disc Fans, Electric Fans, Heaters and Fans for  
Lumber and Wool Drying, etc., and for Heating of Factories.  
STEAM TRAPS, OIL SEPARATORS, ETC.

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For Wool

Dyed over a Chrome and Tartar  
Mordant produces a black on  
wool equal to Alizarine  
Black for fastness,  
but at a much  
lower cost.

Sole Manufacturers

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TORONTO, ONT. MONTREAL

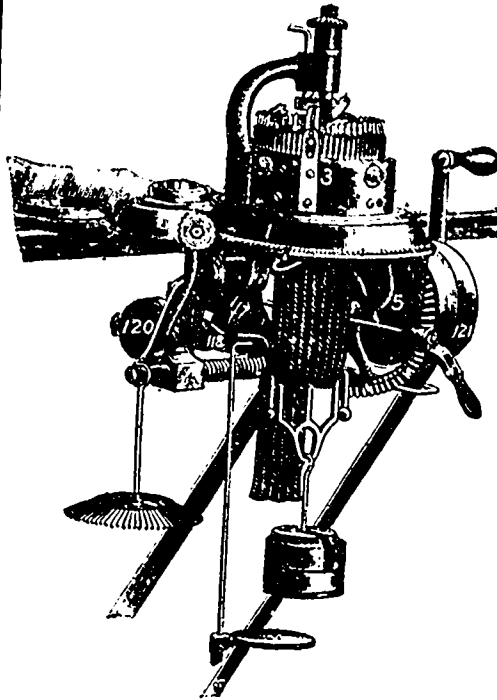
Main Office and Works.

**BOSTON, MASS., U.S.A.**

less than 500,000 tons of merchandise or package freight. The earnings would not be less than twenty cents per ton, or \$100,000 for a season, making the net earnings in the aggregate \$830,300. The total cost of our plant would be as follows.—Seven steamers, at \$165,000, \$1,155,000; fourteen barges, at \$110,000, \$1,540,000; elevator and warehouse at Port Colborne, \$400,000; elevator and warehouse at Montreal, \$900,000; total, \$3,995,000. The above figures are all based on the lowest freight rates on record. The lowest known rate from the head of Lake Superior to ocean points is 12½ cents per hundred pounds. Assuming that we could get 10 cents, or \$2 per ton, our ships will carry 2,500 tons, a tow carrying 7,500 tons, would bring earnings:—Gross, \$15,000. The charges against this would be.—Operating expenses, \$200 per day, 20 days for round trip, \$4,000; towing through canals, \$200; freight handling charges, 50 cents per ton, \$2,250; total \$6,450; total earnings, \$8,550. Ten and a half trips each season, each tow would earn \$89,775, seven tows would earn \$638,425, thus showing that boats in the package freight business would earn \$148,225 more than if engaged in carrying grain. This would put the freight sorted and piled in the warehouse at Montreal, and we can load the transatlantic steamers at one-third less cost than is charged at any sea-port in the United States. The foregoing propositions are based on no return cargo from Montreal to western ports, but several ocean lines are endeavoring to enter into traffic arrangements whereby hundreds of thousands of tons of freight will be delivered to us at Montreal each year.

Toronto companies. Two are Ottawa, and two Hamilton companies. Sixteen are mining companies, with an authorized capital of \$11,539,000. Seven of these companies have their headquarters in Toronto. There were six mercantile companies incorporated,

with an authorized capital of \$620,000. Four of the companies belong to Toronto. There were thirty-nine other companies incorporated with a total authorized capital of \$13,412,656. Six of these are located in Toronto, two in Ottawa and the others in



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WE have been hard at it for nearly 1/3 of a Century.

We have had Success.

Our Customers have had Success.

Why? MERIT and SUPERIORITY in our Machines tells the story.  
CATALOGUE FREE.

**CREELMAN BROS.,**  
Manufacturers,  
GEORGETOWN, ONTARIO, Canada.

### ONTARIO RAILWAY SUBSIDIES.

During the session of the Ontario Legislature just closed, subsidies were granted for railway construction as follows:—

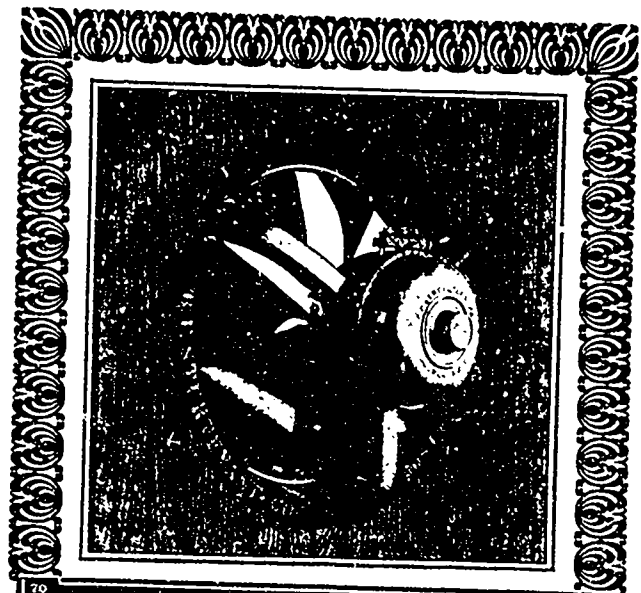
Toronto, Lindsay & Pembroke Railway, for thirty-six miles, from a point fifteen miles east of Bancroft to Golden Lake, Renfrew County, \$3,000 a mile, \$18,000 in all; Central Counties Railway, seven miles, from Rockland to Clarence Creek, \$1,200 per mile; Central Ontario Railway, from Bancroft to a point on the Canada Atlantic between Madawaska and Whitney, forty miles, \$3,000 per mile, not to exceed \$120,000 in all; for the extension of the Parry Sound Railway, which now ends at Parry Harbor, into the town of Parry Sound, five miles, \$15,000 in all.

The grant of \$50,000 to the Ottawa interprovincial bridge at Nepean Point was given in 1895, subject to the condition that Quebec Province should give a like amount. This proviso is abrogated, provided it can be shown that \$800,000 has been spent on the bridge.

The land grant to the Algoma Central Railway is understood to be 7,400 acres per mile of the 200 miles of railway. In return for this concession the promoters agree to bring 1,000 settlers a year for ten years into the district; to provide special railway rates for settlers; to build and operate a fleet of steel steamers on the upper lakes; beginning with four this year, for the purpose of carrying ore; to build large reduction works, a sulphite paper mill, and to double the capacity of their pulp mills. They have also to buy the pine on the lands conceded at the same rate as the timber sells at auction at the time. Should the company fail to carry out any of these conditions the land grant all reverts to the Crown.

### PROSPEROUS ONTARIO.

The present year gives promise of being a very eventful one in the history of commercial enterprises in the province of Ontario and more especially in the city of Toronto. During the first quarter the number of companies incorporated, and that is always considered a very good index, surpassed any other quarter in the history of the province. During that period ninety companies were legalized. The total authorized capital amounted to \$32,617,656. Of these companies twenty-nine are manufacturing companies with a capital of \$7,046,000 and twelve of them are



## ELECTRIC VENTILATING FANS

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various districts in the province. Of the ninety companies, thirty-seven have headquarters in Toronto and the combined capital of those companies amounts to \$9,856,000. Hamilton has four companies, the capital of one being \$10,000,000, and the total is \$11,315,000. In Ottawa there were five companies formed with a capital of \$270,000. During the next few weeks a number of very large Toronto companies will be incorporated.

**AS TO BOILER INSPECTION.**

In the Ontario Legislature a few days ago, just before its adjournment, in moving the second reading of his bill for the protection of life and property in the use of stationary boilers and engines, and the examination and licensing of persons in charge of them, Mr. Carscallen, of Hamilton, Ont., said: I do not know exactly what view the attorney-general takes of this bill, but I think it will commend itself to this house, because it aims at affecting greater security to life and property in this province. I have been furnished with some very important statistics, which will be of some interest to the House. I shall not detain the House with going minutely into the statistics, but just give the results of what has taken place in this province since 1892. I have placed in my hand a statement showing the number of persons killed. The information comes largely from the Boiler Inspection Co. Since 1892 and up to 1899 there were some eighteen or nineteen boiler explosions, resulting entirely from their being in charge of inexperienced persons. With regard to those accidents, fifty-one people have lost their lives, and more than double that have been injured, and in each case the loss of property has been very extensive, in fact, from the figures given to me here it exceeds over \$100,000, I am told that does not represent actually ten per cent. of the actual casualties resulting from boiler explosions during the years I have named. I think this shows the necessity of legislation in this direction. You will be surprised,

Mr. Speaker, to be told that there are some 8,000 stationary boilers and engines in use in the province of Ontario to-day, and there seems to be no law by which those who are operating those stationary boilers and engines are compelled to obtain a certificate of qualification to take charge of such risky callings. The principle of this bill, I may say, does not apply to such small things as a printing press or to the machinery in cheese factories. It exempts also the boilers used in connection with threshing

machines; but it reaches out to get at those persons who are in charge of stationary engines and boilers so extensively used in this province. The main principle of this bill, I may say, is also in operation in the following countries: Great Britain, Quebec, Manitoba, the North-west Territories, British Columbia, in most of the States of the American Union and in all the large cities of the United States, and I am informed that the law in some of these cities is more stringent than the state law. I do not know

THE ...  
**A. R. WILLIAMS MACHINERY CO.**

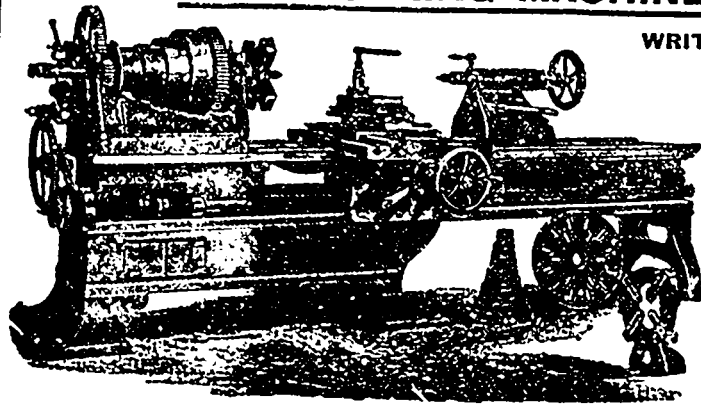
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Head Office, - SOHO MACHINE WORKS, TORONTO

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**High-Class Iron Tools,  
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and Supplies.**



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**IRON WORKING MACHINERY.**



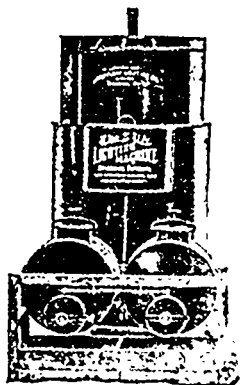
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Send for Circulars,  
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to this Advt.

**Sun Lighting Machine.**

ACETYLENE GAS.



The  
Acme  
of  
Perfection  
in  
Lighting.

At the Minimum of Cost.

Suitable for any place where Artificial Light is required. Dwellings, Stores, Churches, Factories, Hotels, Street Lighting, etc.

Write for Catalogue.

THE  
**Acetylene Lighting Co.**  
(LIMITED).  
LONDON, ONTARIO.

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**MAKE** Gas or Gasoline Engines from 1 h.p. to 6 h.p.  
Stationary or Marine and Electric Motors from ½ h.p. up.  
Motor Carriages for Pleasure or Business. One cent spent for a postal will bring you any information you wish.

**The Packard Electric Co.,** Limited.

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**Lamps and Transformers**

Sole Agents for SCHEEFFER RECORDING WATT METERS  
ST. CATHARINES, ONT.

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that I ought to occupy much time in connection with the bill beyond saying further than it ought to commend itself to the house, because it will secure life and property to a much greater extent than they are secured to-day, and it is reasonable that there should be some certificate from some board certifying that the man knows how to operate a stationary engine and boiler. I have had placed in my hands this afternoon a letter from the firm of John Inglis & Sons, who, I understand, do a very large business here in the city of Toronto, and who know whereof they speak. They write me and say:

We are informed there is a bill to be brought before the House to-day asking for the placing of stationary steam boilers under government inspection and control. We will thank you for your support of such bill, as we consider this a most important matter, not only for the safety of the general public, and for the users of boilers, as we know of boilers carrying a high pressure of steam under sidewalks and in large buildings that are not safe and attended by incompetent help, which can only be remedied by being under proper control. By giving this your kind consideration and support, you will oblige.

The principles of the bill are very simple in their nature. The bill provides for the appointment in a very simple way of a board of examiners. The fees payable are very light. The board of examiners, upon being satisfied of the qualifications of the candidate, will grant a first or second class certificate, as the case may be. The bill gives the control to the government, by the appointment of an inspector, and also the making of regulations for the proper working and carrying out of the act. We have learned from the Boiler Inspection Co., that where they send their men out to examine boilers very few cases of explosions have occurred, but they say they have discovered a great many incompetent people are in charge of stationary engines and boilers, who ought not to be in charge, and if it were not for the inspection made annually, sometimes semi-annually, many more serious accidents would happen than what have happened heretofore. So that, with the precautions taken and the simplicity of the bill, and it being aimed in the direction of securing qualified persons to take charge of engines and boilers, I think the bill ought to commend itself to the House, and I would, therefore, move the second reading of the bill. There are many other reasons that I could give why this bill ought to become law, but I would prefer to reserve any further remarks until the bill goes into committee, as I trust it will.

**A FEARFUL FIRE.**

The city of Ottawa, and the city of Hull, Que., which are separated by the Ottawa river, which is very narrow and rapid at that place, were destroyed by a fearful fire that swept over portions of them last week, destroying property to the value of millions of dollars, and in which several lives were lost. The Globe speaking of the event, says:—

This is a calamity that must always hang suspended over a town of closely-grouped wooden houses, and although it may be delayed for years by care and good luck, a sudden blaze is certain some day to get beyond control. The resinous pine of the northern district is naturally inflammable, and where it is virtually the only building

material used, a few days of dry, warm weather are sufficient to make dangerous preparations for a conflagration. All that is needed is the first unfortunate spark. A building of dry pine flares up almost with the suddenness of an explosion. Sparks, coals and burning embers are scattered about. Fire appears in many places at once, the sudden heat creating new draughts of wind and carrying burning debris high into the air. A few minutes headway, and the best appliances are of no avail, however, determined the workers may be. The heat of such a conflagration shrivels and burns before buildings are reached by flame or sparks, and destruction spreads with a speed that seems incredible. The fire that has destroyed millions worth of property in Ottawa and Hull started under exceptionally unfortunate conditions. A period of drouth has rendered the pine houses of Hull specially inflammable, and a strong north

wind was blowing. The flames were carried rapidly toward the Chaudiere bridge. The fight was hopeless. The intense heat drove the firemen back, and rendered their efforts futile. The drooping of buildings in the path of the fire had no perceptible effect. Dwellings, churches, business blocks, the great lumber manufacturing establishments by the river, and everything in the way of the flames were swept away.

The total loss by the fire is hard to estimate. The wide extent of lumber yards, and the many factories burned, make all estimates to a great extent a matter of guess work. Mr. W. C. Edwards, M.P., was asked to estimate the loss. He said the fire had done between \$15,000,000 and \$20,000,000 worth of damage. The loss in lumber alone is \$3,000,000, and this is a conservative estimate.

According to the estimate of E. C. Dingman, insurance agent, Ottawa, this list is appended:

**GALVANIZING**

We are prepared to attend to all orders Promptly and Economically.

WINDMILLS, PUMPS, TANKS, Etc.  
**ONTARIO WIND ENGINE and PUMP CO., LIMITED,**  
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**THE ABBEY IMPROVED CHILLED SHOT COMPANY, Limited, Newcastle.**

What better testimonials do Sportsmen require than the following, viz:—

Output of Shot in 1899 exceeded 1897 by 5,040 cwt., or equal to the loading of (at 1 oz per load) 2,031,680 Cartridges.

The winner of the All England Champion ship Cup in December, 1898, fired with our shot, and speaks highly of it.

**F. W. Hore's Sons, HAMILTON, ONT.**  
 Manufacturers of

*Wheels, Wheel Materials, Shafts, etc.*

**WANTED.**

**Electric Light Plant.**

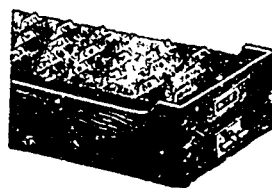
The Corporation of the Village of Lakefield, Ont., solicits correspondence from any party or company who will instal and run an Electric Light Plant in the village.

Other information on application to

ALEXANDER BELL, M.D.,  
 VILLAGE CLERK.

If you would like to advertise but don't know exactly how write us for plans and prices. It's our business to take all the details of an advertising system on our shoulders. The E. Desbarats Adv. Agency, Montreal.

**Know Your Customers**



Their addresses, buyers' names, ratings and references, how they pay, what they deal in, etc. No man can afford to clutter up his mind with the details of his business which could easily be preserved in a permanent form, which you can obtain by using one of Archibald's special outfits.

**\$2.25**

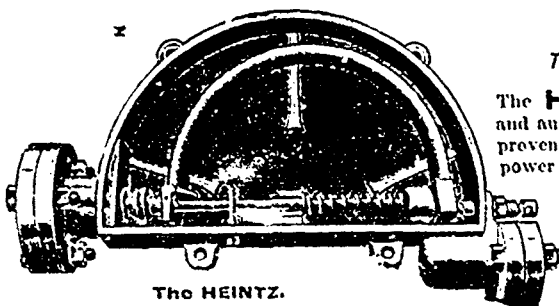
Shipped on approval. If not satisfactory, return it at our expense.

Consisting of 1 quarter-sawed oak desk drawer box, 9 inches long; 100 Record Cards, ruled; 1 set of Alphabetical Index Cards; 1 set of Daily Guides; 2 extra Dividers; Customers and Blank Cards.

*New 1900 Catalogue for the Asking.*

**The Canadian Typewriter Exchange**  
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**Don't waste your Steam—It Costs Money!**  
**IT takes Fuel to make Steam!**



**THE LESS USED**  
**THE SMALLER THE COAL BILLS.**

The **HEINTZ** saver will economically and automatically control all steam outlets, preventing waste increasing productive power at a less cost for fuel.

A line by mail will bring descriptive booklet B., proving interesting to all steam users.

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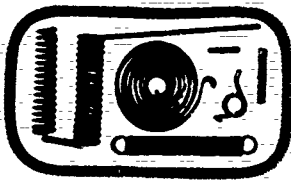
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**CHARTERED-ACCOUNTANT**  
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 Audits and Investigations a Specialty.

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**Toronto Paper Manufacturing Co.,**  
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Manufacturers of Engine-Sized Superfine Papers, White and Tinted Book-Papers, Blue and Cream Laid and Wove Foolscaps, Account, Envelope and Lithographic Papers, etc.

**KIRVAN & BARNARD,**  
**ELECTRICAL ENGINEERS and CONTRACTORS,** Purchasing Agents.  
 Complete Electric Light Plants, Wiring, Dynamo and Motor Repairing Residential and Factory Work, Telephones, Bells, and all Electric Fixings. Specifications, Plans, Tests and Consultations. Estimates furnished free, and all work promptly executed  
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 St. Johns, Mich.

Manufacturers of  
**OIL TEMPERED,  
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 EXTENSION,  
 COMPRESSION SPRINGS.**

**All Shapes and Sizes.**

**JOHN J. GARTSHORE,**  
 81 Front St. West, Toronto.  
 RAILWAY, TRAMWAY, and  
**...Contractors' Supplies**  
 METALS and SCRAP IRON  
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**C. B. THISTLETHWAYTE.**  
 Manufacturers' Agent,  
 (Canadian Lines).  
 31 VICKERY'S CHAMBERS,  
 76 PITT-STREET, SYDNEY, N.S.W.  
 Will be pleased to communicate with Manufacturers seeking the extension of their trade to Australia.

**CANADIAN OFFICE & SCHOOL FURNITURE**  
 FINE BANK OFFICE, COURT HOUSE & DRUG STORE FITTINGS.  
 OFFICE, SCHOOL, CHURCH & HOUSE FURNITURE.  
 SEND FOR CATALOGUE

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| Bronson Carbide Works  | 75,000     |
| McKay's flour and oatmeal mills                                    | 100,000    |
| E. B. Eddy's four paper mills                                      | 2,000,000  |
| Machine shop   | 500,000    |
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| Victoria Brewery Co  | 25,000     |
| Roe's foundry  | 20,000     |
| Export Lumber Co.  | 500,000    |
| Gilmour's mills  | 150,000    |
| Hewson's mills   | 125,000    |
| Canadian-Pacific Railway station, cars, yards, rolling stock, etc. | 200,000    |
| Paris Planning Mills   | 15,000     |
| Oliver Cabinet Mfg. Co.  | 10,000     |
| Bronson's lumber yards   | 200,000    |
| Upper Ottawa Improvement Co.                                       | 25,000     |
| Offices of Lower Ottawa Broom Co.                                  | 5,000      |
| Ottawa Specialty Co  | 30,000     |
| Victoria Foundry   | 10,000     |
| Methylated spirits factory and depot                               | 20,000     |
| Booth's stables and storehouses                                    | 1,000      |
| Ottawa Electric Co., including six power houses and steam plant    | 45,000     |
| Ottawa Electric Railway Co.  | 40,000     |

This brings up the total loss to the main mills and factories to \$4,771,000, on which the insurance is \$1,102,000.

But with this must be taken the millions of feet of lumber consumed, the residences and stores burned, and other works not of so much importance as those named. The estimate of W. C. Edwards that the loss will go over \$15,000,000 may be taken. He is of the opinion that everything, except the dwellings of employees, was insured to about half its value.

The Merchants' Bank and the Bank of Ottawa, the St. James' Church in Hull were totally destroyed.

**IMPORT OF PLANTS AND FRUITS INTO CAPE COLONY.**

The authorities at Cape Town, South Africa, have issued regulations relating to the import of plants and fruits into Cape Colony, a summary of which is as follows.

The importation into the colony of grape vines or portions thereof is prohibited, except those imported by the government with such precautionary measures as it may deem necessary.

All trees and plants, other than vines, and parts thereof, and all fruits of any description, and all tubers, roots, hulls, or portions thereof, and packages, etc., containing the same, shall undergo strict examination by an officer to determine the absence of noxious insects and plant diseases; and the consignee must open packages, etc., to permit the examination to be made. Without a certificate from the officer showing the absence of insects or diseases, no articles such as those named can be entered. If insects or diseases are found, the consignee must cleanse or disinfect the plants or coverings as prescribed by the officer.

The importation of any stone-fruit tree, or any fruit, graft, cutting, scion, root, or seed, growth or produce thereof, from the United States or Canada is prohibited.

These regulations do not apply to canned or preserved fruits.

Messrs. Reid & Co., Esplanade, Toronto, a few days ago placed a large double surface-planer and matcher, and are now placing a band-ro-saw, both machines manufactured for them by Cowan & Co., Galt, Ont.

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- 1 Barrel Scale
- 1 Wheat Scourer and Smutter.
- 1 Half chest of Reels, 18" x 30".
- 1 Huntley, Holamb & Hono Purifier.
- 1 Reel, 19" x 30".
- 1 Reel, 18" x 30".
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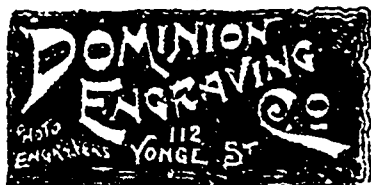
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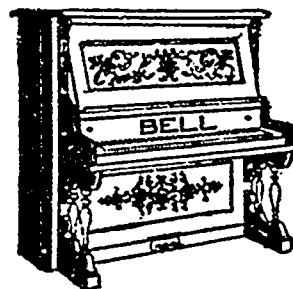
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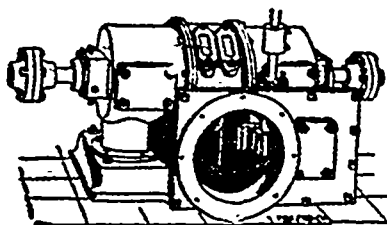
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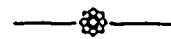
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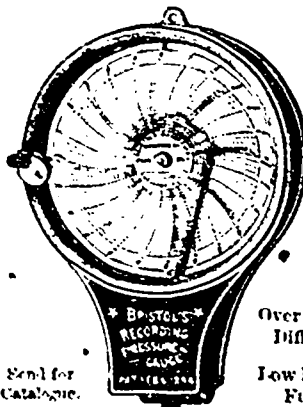
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