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 Manufacturers of
 HAMILTON, ONT.

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A. D. JAYLIVE & CO.
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 MANUFACTURERS
MACHINISTS
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CANADIAN MANUFACTURER

AND INDUSTRIAL WORLD

DEVOTED TO THE MANUFACTURING INTEREST OF THE DOMINION

Vol. 41.

TORONTO, JULY 20, 1909.

No. 2.

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ANTI-FRICTION
Used by all the
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THE BEST ANTI-FRICTION METAL
FOR ALL MACHINERY BEARINGS
For Sale by all Dealers
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WORLD'S STANDARD
Galvanized Iron.

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Weigh Your Sheets and Compare Costs.

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Factory : MONTREAL. TORONTO. VANCOUVER.

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**ELECTRIC
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STEAM
HAND-POWER**

All made of the best material and finest workmanship.

Elevators

The Fensom Elevator Works....
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RUBBER GOODS OF ALL KINDS.



61 and 63 FRONT ST. WEST, TORONTO.

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Walkerville Malleable Iron Co., (Limited)
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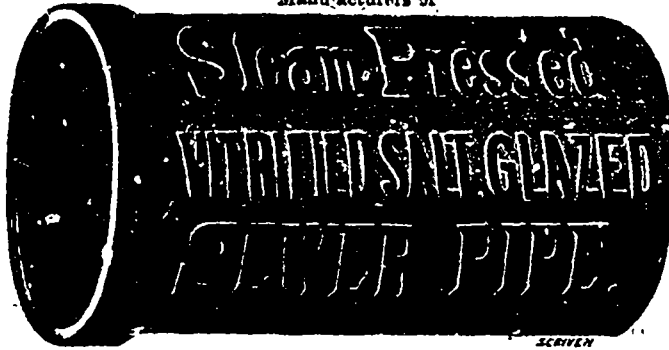
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and General Chemicals, Fertilizers, etc.

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Suitable for Car Wheels, Cylinders and Fine Castings,
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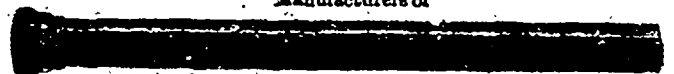
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AN ENGINE with good regulation, using the least fuel, keeping in repair longest, is the kind sought for by manufacturers.

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WE ALSO MAKE PUMPS AND GASOLINE ENGINES, BOILERS, PUMPS, WATER WHEELS, FLOUR MILL MACHINERY, OATMEAL MILL MACHINERY, OATMEAL STEAM PAN KILNS, WOODWORKING MACHINERY, IRON PULLEYS, WOOD RIM SPLIT PULLEYS, SHAFTING, HANGERS, GEARING, FRICTION CLUTCH PULLEYS, Etc., Etc. SAFES, VAULTS and VAULT DOORS.

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

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We manufacture all grades of oils, greases, soap stocks, candles, wool stocks, leather and tanners' oils, fuel gas, machinery, cylinder oils, &c. And sell it opportunity to compete against any oil on the market. Write for prices and samples.

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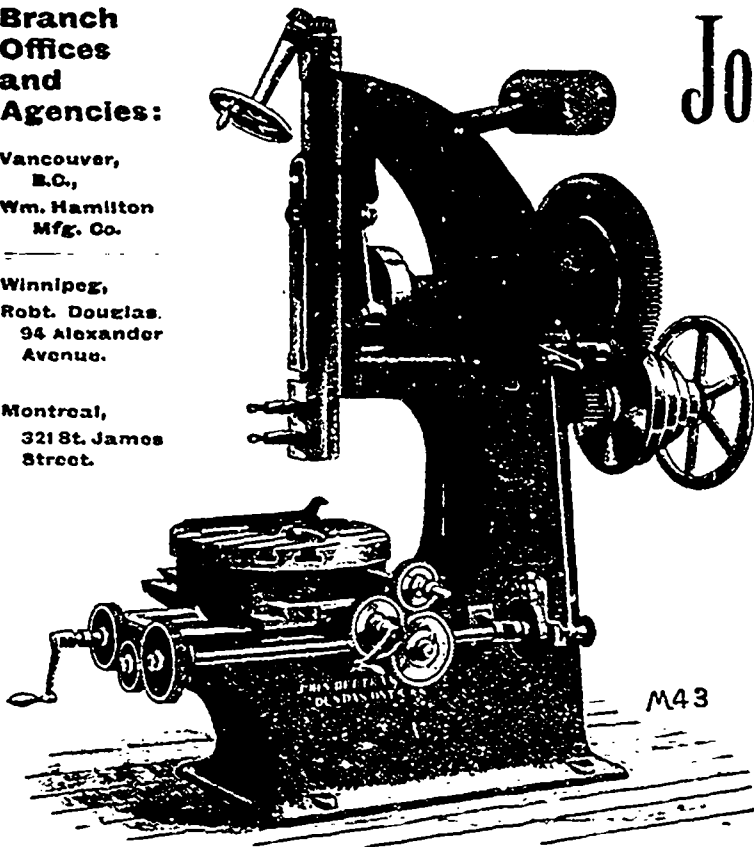
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Works—NEW GLASGOW, N.S., and FERRONA, N.S.

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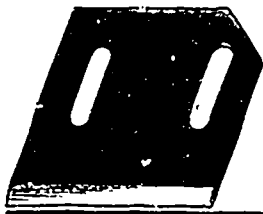


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Steel Bridges for Railways and Highways,
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A large Stock of **ROLLED STEEL BEAMS, JOISTS, GIRDERS, CHANNELS, ANGLES, TEES, Z BARS and PLATES**

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48% and 58% (Light and Heavy)

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CAUSTIC SODA

60% to 77%



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ABSOLUTELY PURE

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THE BEST EQUIPPED BOILER AND ENGINE WORKS IN CANADA.

We Manufacture—

STEEL BOILERS

The BROWN AUTOMATIC ENGINE, MARINE ENGINES (SINGLE COMPOUND AND TRIPLE), Hoisting and Mining Engines

STEEL STEAM VESSELS OF EVERY DESCRIPTION.

STEAM YACHTS AND LAUNCHES.

GET OUR PRICES BEFORE ORDERING.

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CHEAPEST AND BEST

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14 PAIRS DIES—22 TAPS

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Calcined Plaster

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Patent Rock Wall Plaster

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CANADA.

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DONE FOR THE TRADE.

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For IRON FENCING,
BANK and OFFICE RAIL-
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of IRONWORK

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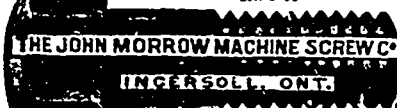
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HOT PRESSED NUTS.

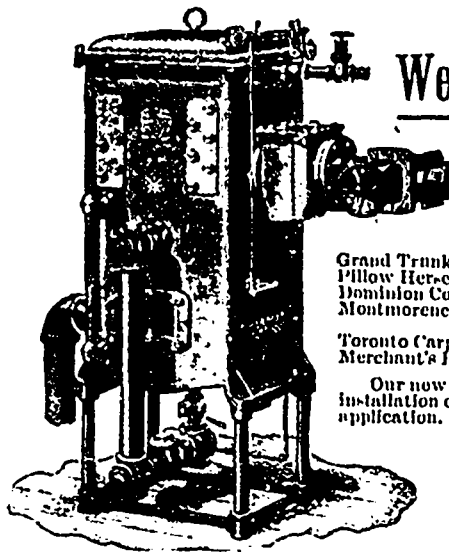
PARIS, - ONT.



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List to



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



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Pillow Hat Co. Mfg. Co., Montreal (1) ..	1000 "
Dominion Cotton Mills Co., Montreal (5) ..	200 "
Montmorency Cotton Mills, Montmorency, Que. (1) ..	200 "
Toronto Carpet Co., Toronto, Ont. (1) ..	400 "
Merchant's Bank of Canada, Montreal (1) ..	100 "

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

DARLING BROTHERS,
Reliance Works, MONTREAL.

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

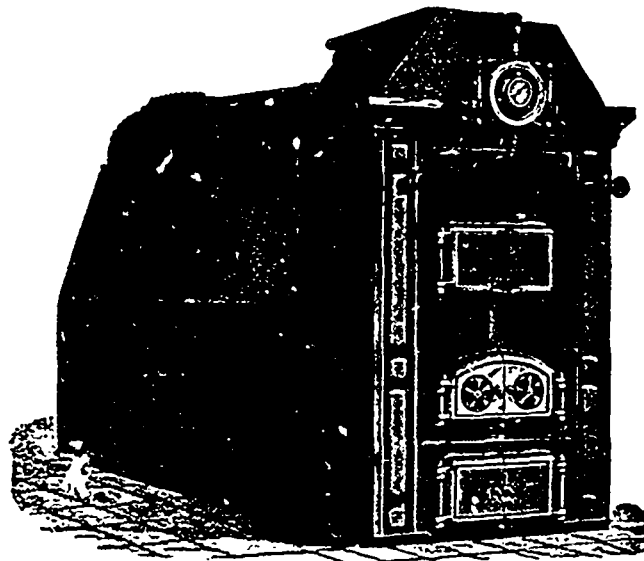
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DELIVERY MADE AT NEW YORK, MONTREAL OR HAMILTON.

WRIGHT & DALLYN, HAMILTON, ONT.

AGENTS,

A FUEL SAVER



This boiler is built with sheet steel case or for brick casing as desired.
It is internally fired, has perfect water circulation, is a quick steamer
and gives the highest economy.

Two settling chambers are provided for catching deposits of scale, and
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Robb Engineering Co. Limited,
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CANADIAN RUBBER CO.,

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Manufacturers of High-Grade Rubber Goods
of all Descriptions.

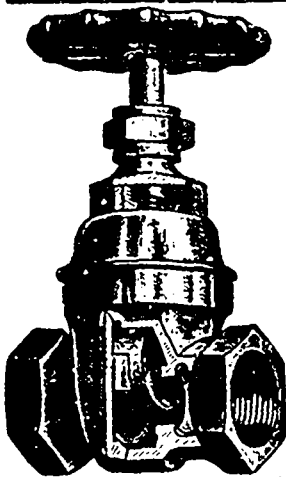


<i>BELTING,</i>	<i>HOSE,</i>	<i>PACKING,</i>
<i>VALVES,</i>	<i>BOOTS,</i>	<i>Etc., Etc.</i>

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Western Branch, - - - - WINNIPEG.



Orders Filled with Despatch from Head Office or Branch Warehouses.



It Pays to Buy Good Valves.

KERR'S

Globe and Webber Straightway

VALVES

ARE THE VALVES TO BUY.

Ask Your Dealer for Them.

Catalogue Sent on Application.

The Kerr Engine Co., Limited

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The Wellington Mills, LONDON, ENG.

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Oakey's Flexible Twilled Emery Cloth.

Oakey's Flint Paper and Glass Paper.

Oakey's Emery Paper, Black Lead, Etc.

Prize Medal and Highest Award Philadelphia, 1876, for Superiority
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Manufacturers **JOHN OAKY & SONS, LIMITED,** Wellington Mills,
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Completely
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ABSOLUTELY ACCURATE

From Less than 5 c.p. to Full Capacity. Guaranteed for Three Years.

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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

SEE THIS SPACE NEXT ISSUE.

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CONSULTING ENGINEER TO
Temple Bldg., - TORONTO.
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MANUFACTURERS:—Competent and impartial advice on
Industrial Electrical Systems of Lighting, Power Distribu-
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REFLECTORS, SHADES, LAMPS

We Stock a Large Variety of SHADES
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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 Engine.

Write us about Lighting
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ESTABLISHED IN 1880.

PUBLISHED ON THE FIRST AND THIRD FRIDAYS OF EACH MONTH

SUBSCRIPTIONS:

CANADA AND UNITED STATES, - - - \$1.00 PER YEAR.
ALL OTHER COUNTRIES IN POSTAL UNION, EIGHT SHILLINGS
STERLING PER YEAR, INCLUDING POSTAGE.

The Canadian Manufacturer Publishing Co., Limited.

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

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

J. J. CASSIDY, Editor and Manager

FRANK B. WHITE COMPANY.

The Fisher Building, CHICAGO. 150 Nassau St., NEW YORK.
Represent the Advertising Department of THE CANADIAN
MANUFACTURER in the United States.

OUR TARIFF EDITION.

The special edition of THE CANADIAN MANUFACTURER of July 1, containing the tariffs of Canada, United States, Great Britain and Newfoundland, all completely indexed, is all that was promised for it, and has been received with the utmost favor by all into whose hands it has come. The texts of the different tariffs were obtained from official sources, and were reproduced with the utmost accuracy, thus rendering them entirely reliable; and the indexes were also similarly obtained and reproduced, rendering it exceedingly easy to refer to any item mentioned in the tariffs. The book, which is 12 by 9 inches in size, contains 202 pages, the cover being of thick and strong paper, and there is a twine loop by which it can be suspended upon a hook. Until some very important changes may be made in the tariffs enumerated, the publication will possess an interest that will insure its being kept for many years.

CANADA AND AUSTRALIA.

We find the following in a recent issue of the Australian Ironmonger:—

THE CANADIAN MANUFACTURER has established an International Bureau of Commerce of Canada, publishing monthly bulletins, giving information of goods required in various parts of the world, asking for the names of manufacturers of certain lines, and so on. In the first, issued on March 2nd, it published a list of articles required in Australia, including plumbing materials, pumping machinery, windmills and tanks, pumps, metal-working machinery, and fancy goods. We naturally ask on what sort of information this list is based. It can hardly be on the ground that there is any scarcity of the lines mentioned. Possibly it is on the ground that developments are contemplated or are progressing, which may increase the demand for these lines. There is certainly a sale for the articles mentioned, although it would be a mistake to infer that the demand is not met by existing facilities.

And the following in a recent issue of the Chemist and Druggist, of Sydney, New South Wales:—

A paper published in the interests of the manufacturers of Canada has established an International Bureau of Commerce, giving to Canadian manufacturers information as to

lines of goods required in various parts of the world. The first bulletin published mentions among other lines required in Australia, druggists' sundries, fancy goods, and medicinal specialties. On what sort of information is this list based? Surely not on any imagination that Australians are insufficiently supplied with medicinal specialties (by which we understand proprietary medicines) or that the existing drug houses are unable to keep up with the demand for druggists' sundries. Is it founded on the success secured by a few firms in introducing their specialties into these colonies, leaving the impression that where they are doing well there is room for others?

We have pleasure in assuring our Australian contemporaries that the information upon which our lists is based is quite authentic and unimpeachable. Our lists are based upon enquiries made by reliable business houses in the countries indicated concerning the articles named. It may not be that there is any scarcity of goods in Australia in the lines mentioned, but reference to the advertising pages of our contemporaries show that many manufacturers, particularly in Great Britain, are announcing their desire to supply the Australian consumers. We take it for granted, as a matter of course, that Australian merchants are wide-awake to the requirements of their customers, and also to the excellence and adaptability of Canadian products to their market, and therefore they enquire for Canadian samples, price lists, etc. Our Australian friends should awake to the fact that as long as there is a demand in their country for such articles as can be produced in Canada, Canadian manufacturers will reach out for a share of the trade.

BRITISH MACHINERY IN CANADA.

Speaking of the openings in Canada for the sale of British machinery, The Chamber of Commerce Journal, of London, says:—

With reference to the action of the Canadian Government in further increasing the preferential rebate of Customs duty in favor of British manufactures from 25 to 33½ per cent., we would call attention to the unique opportunity this affords to British manufacturers of machinery of all kinds. Very little machinery is manufactured in Canada, and a 33½ per cent. rebate will enable them to successfully compete with any American firms. The demand for boilers of all kinds, stamp mills, ore cars, belting, crushers, buckets, wire cables, drills, dynamos, hoisting engines, turbines, etc., etc., extends from Klondyke to Quebec and Nova Scotia. Very large iron and steel works are now in contemplation in Eastern Canada, and the Great collieries provide a constant and increasing demand for many kinds of machinery. Saw mills, pulp mills, electric power and light works can now be supplied from Great Britain at a good profit. In a recent issue the British Columbia Review published a note from its Toronto office, which stated that Canadian mining-machinery firms are refusing to guarantee delivery in less than four to six months after order. The importance of this 33½ per cent. rebate on the duty is so obvious, in view of the immense mining and industrial development in Canada, that those who enter the field now will have a great advantage over those who follow later.

The misapprehension on the part of our London contemporary regarding the situation in Canada with reference to machinery is remarkable. It is not true that very little machinery is manufactured in Canada as can readily be discovered by reference to our advertising pages, in which appear the announcements of some of the largest and most reliable makers in this country. But of course as in all other

countries there are openings for the introduction of foreign machinery. As the Journal intimates, American manufacturers of machinery find a lucrative market in Canada, and it is not at all complimentary to British manufacturers to suggest that the rebate of one third of the duty in their favor is a "unique opportunity" to successfully compete with American concerns. According to the British free trade idea it should be impossible for American manufacturers to compete with British manufacturers in this or any other market, tariff or no tariff, but the facts show that in the Canadian as well as in most other markets the manufacturer of the country where high protection prevails, is rapidly supplanting the manufacturer of the country where free trade prevails. If the question of protection or free trade has a vital influence upon the situation, then, as would be obvious, there should be a change of the fiscal policy of the free trade country. If the question does not affect the situation, then it is equally obvious that the methods of business of the British manufacturer are at fault, and must be changed before he can hold a candle for his American competitor. It is also obvious that if a reduction of twenty-five per cent. in duties in favor of the British manufacturer does not enable him to successfully compete in the Canadian market with his American rival, a further reduction will not do the trick for him, and it is the opinion of many that if certain lines of British products, mining machinery for instance, were admitted duty free, sales of such would be no greater than they are now.

If British manufacturers desire to sell their products in the Canadian market they should do as their American competitors do—conform to the requirements of consumers and publish that fact. It will not do to depend upon tariff preferences, but rather upon the intrinsic excellence of products, and their adaptability to the requirements of consumers, not forgetting that he who proclaims his readiness to supply the demands of consumers, and recounts the excellence of his products, stands a much better chance of selling them than he who reposes in an office or workshop before which is no sign indicating the name of the proprietor nor the character of his business, and who does not appreciate the potent power of printer's ink.

INABILITY TO COMPETE.

Canada has again led the way in the Imperial trade reciprocity movement by increasing the preferential tariff in favor of the Mother Country from 25 to 33½ per cent. Evidently Canada finds that as she takes more and more from us we import more and more from Canada; a proceeding aided by free imports, in which this country stands alone. Hence it is but fair that some return should be made; and we could wish that certain foreign countries, from whom we purchase raw materials and food products, would follow the Canadian example. British manufacturers, especially of hardware, should now make arrangements by which they will be able to take advantage of the new tariff. Perhaps before long we may also see a similar arrangement in force in Australia.—British Trade Journal.

A most remarkable expression from a self-respecting journal. It would puzzle our contemporary to show why or how Canadian exports to Great Britain are, as a consequence, increased by our imports from that country. British ports are open to all nations including Canada, and whatever we have to sell at any time has free entry into them, whether we purchase more or less of British products. The Trade

Journal thinks that because the products of all nations have free entry into that country, "some return should be made" therefore, as Canada has done. Britain has followed that free trade policy for more than half a century, under the impression that it would ultimately prevail among all nations, but it does not, and she continues to show us much commercial favor to her most enterprising commercial enemy, as for instance the United States, as she does to her best friend both in peace and in war, as for instance Canada. Why should the United States relax its policy of extreme protection in favor of Great Britain while it enjoys all the commercial favor that country can bestow? The Trade Journal thinks Canada has done well in the matter of tariff preference, and is quite anxious that other British countries, Australia for instance, should do likewise. For the purpose of cultivating the Imperial idea most, perhaps all the self-governing colonies may follow Canada's example. But if Imperialism is worth anything to the colonies it should also be worth something to the Mother Country; and if preferential trade on the part of the colonies is worth anything to Great Britain, a reciprocal arrangement by which colonial products would be shown similar favor in the British market would be worth something to the colonies.

The Trade Journal suggests that British manufacturers should take advantage of the enlarged Canadian preference. If this means anything the preference of twenty-five per cent. in favor of British manufacturers which has prevailed for a couple of years was of no value or importance to them, but perhaps the increase of preference to 33½ per cent. may be. The import trade of Canada has been increasing for the past few years by leaps and bounds, but not in the same ratio from free trade Britain as from the United States where ultra protectionism prevails. Why? It would puzzle the British Trade Journal or British manufacturers to explain why otherwise than upon the ground that British free trade manufacturers are not as keenly alive to pushing their trade in Canada as high protection American manufacturers are. It would seem from what the Trade Journal says, that British manufacturers are depending for the success of their trade in Canada more upon the reduction of the Canadian tariff than upon the excellence of their products, which is quite in contradistinction with the methods of American manufacturers.

AS TO ORGANIZATION.

Industrial Canada, the new bulletin published by the Canadian Manufacturers' Association, outlining the work to be done by the Association, says:—

This Association would, if completely organized, be a most powerful organization in the country, and be of the utmost value in securing needed reform for its members. It would remove a great deal of that personal and local jealousy which at present operates to some extent in certain lines of trade and in certain localities in Canada. By bringing the manufacturers together, and making them better acquainted with each other, it will assist in securing a better understanding among the members of this class, a spirit of fair dealing and open business methods.

Aside from the obscurity of some of the language used, the writer is evidently in ignorance of what the Association was formed for and what it has done during the twenty-five years of its existence; and at least the older members—those who were

present at and assisted in its creation, and who have always been its supporters, will be surprised to learn that at this late day it is not yet organized; that it would be a most powerful organization if it were more completely organized, and that it could be made of much value, if so organized, in securing needed reform for its members. This is rather rough on the old fellows who for a quarter of a century have borne the heat and burden of the day in fighting the cause of tariff protection to Canadian manufacturing industries, the success of which is apparent to all who know anything about the economic conditions which now prevail, and have for so many years prevailed in this country. Sir John A. Macdonald recognized the fact that without the backing of the manufacturers, as represented in their Association, the policy of tariff protection could never become a reality. That was the object in bringing the Association into existence; and without doubt that policy will prevail no matter what the party in power may call itself. No matter what the editorial writer of *Industrial Canada* may consider the condition or influence of the Association to be at this time, it is certain that it has always been a powerful and influential organization, and that very largely through its power and influence tariff protection was brought to the front and is being kept there. Political parties may fall from power, or attain to power, but tariff protection will be as it has been, the policy of the Canadian Government.

It is a mistake to suppose that it is any part of the duty of the Association to act as an adjudicator in the settlement of any personal or local jealousies that may exist anywhere in Canada among manufacturers. We are not aware that any personal or local jealousies exist in manufacturing circles that the Association is called upon to adjust; and it is quite certain that its days of usefulness would be numbered whenever it engages in any such meddling business.

SETTLEMENT OF NEW ONTARIO.

There is, perhaps, no branch of administration in Canadian public affairs which has been more severely criticized, whether under Conservative or Liberal rule, than that of immigration, on the ground that the results have been altogether incommensurate with the lavish expenditures made to promote settlement. Making due allowance for partizan exaggeration, there have been serious defects in the system pursued which have in the past resulted in the introduction of either an undesirable class of immigrants or those engaged in occupations already overcrowded. The great need of this Province is settlers who will take up, clear and cultivate land in the unsettled regions. It is easy to send out immigrants drawn from the working classes of the old country, land them in Canadian ports and there leave them to their own resources. But the result in nine cases out of ten is either that they remain in our cities to compete in a labor market already well supplied, or, failing to get employment, cross over into the United States in disgust.

The really important work of effective colonization must be done at this end of the journey, in the guidance and direction of the immigrant to the locality where he can find a home. In the past altogether too much attention has been devoted to the work abroad and too little to the more necessary task of looking after the new arrivals, furnishing them

with information and advice and making their search for a homestead as easy and expeditious as possible. THE CANADIAN MANUFACTURER is pleased to notice that the Ontario Government has recognized the need of an agency to undertake this work in the appointment of Mr. Thomas Southworth as Director of Colonization. The system has been in operation during the present season with highly satisfactory results. The Colonization Bureau furnished the intending settler, whether a Canadian or an immigrant, with full information as to the localities offering the best inducements for farmers, so that instead of having to prospect for land by visiting different localities, entailing considerable expense and delay, the man in search of a homestead can go directly to the neighborhood best suited to his requirements. To further aid him in making a selection, land guides are provided in some of the districts who will conduct the immigrant to the most desirable locations. Mr. Southworth's duties include a personal inspection of the principal fertile areas in New Ontario open for settlement, so as to be able to speak as to the general characteristics of the soil and the conditions of the locality. Such an examination will occupy a good deal of time, but good progress is being made, and the Bureau has done efficient service in directing the largely increased immigration into the colonies forming in New Ontario. One very beneficial arrangement effected has been a reduction of the railway fare from Port Arthur to the settlements reached from that point to one cent per mile, and it is anticipated that yet more favorable terms can be made next season.

A particularly noticeable feature about the large influx of population that is being located in the townships near Thunder Bay, is that the greater number are from the United States, from which it may be concluded that the course of the tide has fairly turned. The inducement of free land—now no longer obtainable in any desirable locality in the United States—will doubtless attract increasing numbers of practical farmers from that country. The filling up of the fertile tracts of New Ontario will be greatly promoted by the policy of building up home industries for the manufacture of the various forms of raw material in which that region abounds, and the creation of such a large and prosperous class of consumers will afford a profitable home market for Canadian manufacturers generally. The establishment of the Colonization Bureau is in line with the progressive policy of the Ross government in provincial development.

EDITORIAL NOTES.

The Manufacturers' Association have asked the City Council for "financial assistance" in connection with the convention they are about to hold in this city. We are accustomed to receive begging letters from religious, educational and fraternal organizations when convening in Toronto, but the manufacturers are meeting here in a business way, and we don't see how they have any claim on the city. To tell the truth, we are somewhat surprised at this request for "financial assistance" from the manufacturers of Canada. The manufacturers as a rule are men of means. The country has treated them handsomely. It is small business this eternal begging for a free lunch or a cab drive by organizations visiting this or other cities. The manufacturers should be the last to make a request of this kind. They ought to set a

good example to all other bodies by refusing a gratuity even if it were voluntarily tendered them. We hope the Manufacturers' Association will withdraw its application for "financial assistance," and thereby raise itself in the estimation of the public and create an enviable precedent for other societies and organizations. To everyone we say, both singly or collectively, "Don't be a deadhead." It is humiliating.—Toronto World.

Among the "Questions for Manufacturers" propounded in The Globe is the following:—

Have you been injured by the preference in favor of Britain? How can the Conservative leaders carry out their idea of preferential trade except on the basis of practical free trade within the Empire? Can we afford just now to subject Canadian industries to the unrestricted competition of British manufacturers?

To which we reply:—Many of the woolen factories in Canada are very seriously handicapped by the British preference. It was about all they could stand when the preference was twenty-five per cent., but the increase to 33½ per cent. is ruinous. Preferential trade does not mean free trade within the Empire. It means give and take. Most emphatically we cannot afford to subject Canadian industries to the unrestricted competition of British manufacturers. If Britain is willing to accept a valuable preference in the Canadian market she ought to be quite willing to reciprocate by discriminating in favor of Canada in her own market.

We are in receipt of the initial number of "Industrial Canada," a monthly bulletin published by the Canadian Manufacturers' Association, intended to bring before its members the work which the Association is doing towards the industrial and business development and extension of Canada. The number is neatly printed, and contains letters on South African trade, reports of committees, the programme of the Congress of the Chambers of Commerce, recently held in London, Eng., and a notice of the convention of manufacturers to be held in Toronto in August.

A telegram from Ottawa states that the works of the Ottawa Carbide Co., that city, are nearing completion, and that they would be put in operation in August, when they would be pushed to their utmost capacity—that the grinding plant has a capacity to prepare 10,000 tons of carbide a year. It is to be hoped that this information is correct. When a certain carbide works in Canada were first put in successful operation several years ago, it was promised that the supply would be equal to any demand that might arise for the article, upon the faith of which the manufacture of acetylene lighting plants became an important industry, which we regret to say is now in a condition of collapse, because of the utter inability to obtain the necessary carbide. Manufacturers invested their capital in machinery for building acetylene lighting plants, and the public were induced to purchase machines which are now, and have for a long time been useless. It is quite time that the carbide manufacturers were supplying the demand.

The next regular annual meeting of the Canadian Manufacturers' Association has been called to assemble in Toronto on August 29, extending over the following day.

It was an inexcusable blunder for the Executive of the Canadian Manufacturers' Association to go begging to the Toronto City Council for financial assistance to enable them to entertain the non-resident members and the ladies of their families who may accompany them on the occasion of the forthcoming annual meeting of the Association, to be held in August. We are quite sure the incident does not voice the sentiments of even the members of the Association who reside in Toronto, to say nothing of the non-resident members. It is a queer idea to invite guests to visit you, and then beg the public to help bear the expense. The application should be withdrawn.

Mr. H. W. Brush, United States Consul at Niagara Falls, Ont., says: "it will require something more than a preferential tariff to shut out American manufacturers from Canada." He says there are only four lines in which England can compete with the United States in Canada, viz., wool and manufactures, cotton and manufactures, iron and steel and manufactures, and flax in its various forms. The preferential tariff has done little or nothing for Great Britain in these lines. Canada's imports of iron and steel from the United States during the period of the preferential tariff, grew from \$6,441,000 to \$14,478,000, while the imports from Great Britain fell off. During the same time Canadian imports of United States cottons and manufactures rose from \$1,174,000 to \$5,485,000. If the trade which the United States does with this country cannot be diverted to Great Britain, why should we not make an effort to divert it to Canada? If the preferential tariff is a failure, why not supplant it by a tariff specially designed to encourage Canadian industry? If Great Britain cannot supply us with iron and steel goods, why don't we make them ourselves? If we desire to supplant United States manufactures in our markets the way to do it is not by a preferential tariff in favor of Great Britain, which has been proved a failure, but by a stiff protective tariff in favor of Canadian manufactures.—Toronto World.

The Dominion Government have decided to issue a complete monthly return of all goods imported into the Dominion, properly classified and tabulated in such a manner as to be of much benefit to importers and manufacturers. In order to put this arrangement into effect the Government have removed the statistical departments from the various ports and consolidated them at Ottawa. It has also reorganized the Board of Customs Appraisers, the work of which has been centralized in Ottawa, and consists of four members, two Dominion appraisers, two members to be appointed, and the Commissioner of Customs. The board will determine upon the cases in Ottawa in place of the old method of going about from port to port, as has formerly been done. Another important change is a new regulation requiring duplicate invoices, one to be filed at the port of entry and the second to be forwarded to the Department of Customs, at Ottawa. This change makes it necessary for merchants to get their invoices in triplicate instead of in duplicate as heretofore.

A scheme has been presented to the Government of the Island of Jamaica by the Canadian-Jamaica Steamship Company for the establishment of a direct line of steamers

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 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 any item that does not interest you but would be of value to some friend, kindly inform him or us.

We are in receipt of an enquiry from City of Mexico, Mexico, for names of parties in Canada who manufacture incandescent gasoline lamps, and mantels and chimneys for same, also manufacturers of carbide of calcium and acetylene lighting machines. If you are interested enquire of us.

AUSTRALIA.

Dyestuffs.
Paints.
Flour.
Hams.
Butter and Cheese.
Canned and Bottled Goods.
Dried Fruits.
Canned Salmon.
Confectionery.
Patent Medicines.
Railway, Ship and Street Lamps.
Lanterns.
Incandescent Burners.
Oil Stoves.
Acetylene Apparatus.
Refrigerators.
Builders' Hardware.
Tools.
Screws, Bolts and Nuts.
Silverware (2).
Lamps.
Cycle Sundries.
Mechanical and other Toys.
Window Shades and Fixtures.

Kitchen Utensils (2).
Paints and Oils.
Rope and Twine.
Bar Iron, Steel and Pig Iron.
Agricultural Implements.
Barb Wire and Fence Material.
Lumber.
Corrugated Iron.
Carpets and Rugs.
Dress Goods, Prints and Ginghams.
Sheetings and Shirtings.
Blankets and Counterpanes.
Hosiery and Underwear.
Printing and Wrapping Paper.
Writing Paper and Envelopes.
Bags and Twine.
Hams, Bacon, Pork and Lard.
Wines, Spirits and Malt Liquors.
Hides and Skins.
Sole and Upper Leather.
Belting and Harness Leather.
Cut Soles and Findings.

AUSTRIA.

Agricultural Implements.
Sewing Machines.
Oatmeal and Cornmeal.

Meat Products.
Hardware.
Machinery and Tools.

BELGIUM.

Engines.
Machine Tools.

Mining and Electrical Machinery.

BRAZIL.

Incubators.

Castor Oil Presses.

COLOMBIA.

Bicycles.
Oils and Colors.
Pig Iron.
Printing Papers.
Alcohol.
Bottles.
Pork Products.
Canned and Bottled Goods.
Wines and Liquors.
Malt Liquors.

Wire Fence Material.
Building Papers.
Wire Rope.
Blasting Powder.
Children's Vehicles.
Flour.
Confectionery.
Office Furniture.
Hats and Caps.
Boots and Shoes.

CUBA.

Malt Liquors.
Rubber Goods.
Cast-iron Pipe.
Wire (all kinds).
Varnishes.

EGYPT.

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FRANCE.

Stearine.
Oil Cake.
Oil Cake Meal.

GERMANY.

Upper and Sole Leathers.
Shoes (2).
Stores.
Farming and Garden Tools.
Wagon and Carriage Parts.
Furniture and Metal Bedsteads.
Dry Goods.
Notions.
Jewelry.
Perfumery.
Ammunition.
Hardware (2).

GREAT BRITAIN.

Spruce Lumber.

INDIA.

Drugs.
Rubber Goods.

NORWAY.

Flour Mill Machinery.

PORTO RICO.

Windmills.

RUSSIA.

Oil Machinery (especially Presses).

SOUTH AFRICA.

Wooden Dishes.
Folding Boxes.
Toys and Games.

SPAIN.

Wood-working Machinery.

SWITZERLAND.

Writing paper and envelopes.
Cigarette Paper.
Enamelled Hollow-ware.
Lamps.
Table Glass-ware.
Pocket and Table Cutlery.

(The above articles for Philippine trade.)

TURKEY.

Wire Nails.
Metal Bedsteads.
Pumps.
Printing Papers.

Flour.
Wines and Liquors.
Confectionery.
Hams and Bacon.
Butter and Cheese.

Bicycles.

Wheat.
Oats.
Corn.
Tallow.

Soap.
Beans and Peas.
Dried Fruits.
Honey.
Machinists' Tools.
Plumbing Material.
Valves.
Metal-working Machinery.
Wood-working Machinery.
Milling Machinery.
Typewriters.
Cash Registers.

Tackle Blocks.
Brushes (all kinds).

Bicycles.
Children's Vehicles.
Toys and Games.

Pulp and Paper Mill Machinery.
Wood-working Machinery.

Concet Materials.

Horseshoe Machinery.

Printing, Writing and Wrapping
Papers.
Bags.
Twines.

Emery Cloth.
Machinists' Tools.

Dress Goods.
Cotton Prints.
Ginghams.
Sheetings.
Shirtings.
Oileloth.
Blankets.
Towels.
Handkerchiefs.
Hosiery.

Ropes and Twine.
Sheetings.
Sole Leather.
Cut Soles.

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

If You want Information, Ask for It.

Address,

THE CANADIAN MANUFACTURER, Toronto, Canada.

between Canada and the southern ports of Jamaica. The details have been embodied in a petition which has been laid before the Legislature, setting forth that the condition of the south side of Jamaica is greatly in need of assistance for the export of its products, and that the cultivation of bananas is handicapped by the total absence of facilities for export; that as Canada has been given a preferential tariff to Jamaica, a regular steamship connection with St. John, N.B., the natural geographical distributing point of Canada for Jamaica trade, would be of great commercial value to the district, and a decided benefit to Jamaica as a whole. The Canada-Jamaica Steamship Company is prepared to supply and run regularly such steamers as the trade will require. It is estimated that each steamer will take at least 100,000 boxes of oranges and 200,000 or 300,000 bunches of bananas. All cargoes are to be carried at rates of freight, not exceeding corresponding rates to New York. Provision will also be made for conveying coconuts, sugar, coffee, rum, etc. For this service the company will require a bonus for three years as follows:—£3,000 per annum for the first steamer, and an additional £2,200 per annum when two steamers are furnished, and an additional £1,000 per annum when weekly service is furnished.

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.

280. A Yorkshire firm of fruit importers would be pleased to hear from Canadian shippers of apples and other fruits.

281. A London firm desire to hear from Canadian exporters of butter, bacon and fresh pork, who are not already represented here.

282. The makers of elastic stockings, surgical bandages, etc., ask to be referred to Canadian business firms willing to take up these lines.

283. An important firm of hemp and wire rope manufacturers are anxious to extend their business to Canada and ask to be supplied with names of users of such goods.

284. A Canadian firm enquires for the name of a large manufacturer of dolls for which they are about to place an order.

285. A lumber company in the province of Ontario ask for the address of furniture factories using soft elm, birch and maple, the first-named one to three inch and the others one to four inch.

286. Another enquiry comes from the same province for information as to the British demand for such turned wood goods as stair newels and balusters, verandah posts, table and chair legs, made from Canadian birch, beech, maple, oak, pine, etc.

287. A resident of Toronto who could give his undivided attention to the business of representing a manufacturer of necktie silks, desires to hear from a firm requiring an agent.

288. Enquiry has come from a firm in Sydney, N.S.W., respecting Canadian maple sugar and syrup, which they are anxious to introduce to the Australian market.

289. The names of gauge glass buyers in Canada asked for by a manufacturer of these goods.

290. A firm buying box boards from time to time will be glad to send specifications of their requirements to Canadian houses able to meet them.

291. A large Canadian firm of boot and shoe manufacturers are desirous of extending their trade with the United Kingdom, and ask for assistance in this respect.

292. A London firm enquire for the names of Canadian manufacturers of carriage woodware for export.

293. A firm of India rubber and gutta percha manufacturers in Glasgow desire to appoint a reliable agent to have the sole control of the sale of their goods in Canada.

294. An old established London firm are open to represent Canadian woolen manufacturers.

295. Enquiry has been received from a London house desiring to receive samples of oatmeal, pearl barley and similar products in seven and fourteen pound tins and kegs. Also golden syrup in one and two pound tins.

296. A Scotch firm of produce brokers and importers are open to buy brand flaky bran from Canada for shipment during the fall.

297. A firm of wholesale booksellers and stationers are desirous of developing their export trade and would be glad to hear from Canadian houses.

298. A Montreal firm of commission merchants is desirous of obtaining the agency of a good English house for articles in connection with the wholesale grocery, hardware and oil trade.

299. The names of some commission merchants in London who would be interested in the introduction of boneless fish from Canada are asked for.

Transfer Ornaments, AMERICAN MADE.

TRADE MARKS, DECORATIONS, NAME PLATES, ETC.

For **HARDWARE, BICYCLES, VEHICLES, POTTERY, FURNITURE, etc.**

Sketches submitted free of charge. Being home makers can deliver promptly. Write us.

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Canadian Travelling Representative,
CHAS. H. JAGGAR, Buffalo, N.Y.

Largest Makers in the World Guaranteed Decalcomania Transfers.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

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.

The Montreal Canning & Preserving Co., Montreal, has applied for incorporation with a capital stock of \$10,000, to manufacture canned goods, sauces, pickles, etc. The applicants include A. Lang and R. C. McMichael, both of Montreal, and W. P. Innes, Simcoo, Ont.

Messrs. Bready, Love & Tyron's elevator at Killarney, Man., was recently destroyed by fire, together with 10,000 bushels of grain.

The National Pulp & Paper Co., Montreal, has applied for incorporation with a capital stock of \$200,000, to manufacture pulp and paper. The provisional directors include James Reid, Quebec, G. S. Wilson, Montreal and W. R. B. Reid, Indian Lorette, Que.

The Shawinigan Water & Power Co., Shawinigan, Que., is installing a 150 k.w. S.K.C. two-phase inductor generator purchased from the Royal Electric Co., Montreal.

The Mace-Perkins Brewing Co., Montreal, has been incorporated with a capital stock of \$30,000. The charter members include T. F. Mace, E. C. Perkins and J. J. Ryan, all of Montreal.

The Shawinigan Falls Brick Mfg. Co., Shawinigan Falls, Que., has applied for incorporation with a capital stock of \$25,000, to manufacture bricks, drain-pipes, cement, etc. Incorporators include J. A. Frigon, St. Narcisse, Que., John Houlston, Three Rivers, Que., and Wm. Donahue, Westmount, Que.

The Dominion Architectural Metal Works Co., Montreal, has applied for incorporation with a capital stock of \$8,000, to manufac-

ture all kinds of metal work for building purposes, etc. The applicants include F. B. Locker, J. Ballantyne and F. E. McKeays, all of Montreal.

Messrs. Gilmour & Co., Trenton, Ont., has been incorporated with a capital stock of \$1,000,000, to manufacture wooden-ware, boxes, pulp and paper, etc. The provisional directors include Allan Gilmour, David Gilmour and C. M. Richardson, all of Trenton, Ont.

The Gould, Shapely & Muir Co., Brantford, Ont., has increased its capital stock from \$100,000 to \$275,000, and will manufacture gas and gasoline engines, in addition to their other specialties.

The Toronto Star says: The organization known as the Hamilton & Lake Erie Power Company, which came into existence with the idea of supplying power to Hamilton, Toronto, and other convenient cities and towns, and which has obtained permission from the government at Ottawa to proceed with their plans, will lose no time in getting to work. The ceremony of turning the first sod for the works took place at Silverdale, on the Twenty Mile creek, in Lincoln County, at which place the plant is to be located.

One of the immediate results of the introduction of an electrical power into the city for manufacturing and other purposes, by the Shawinigan, the Chambly and the Lachine electrical companies, will be the removing, to a great extent, the smoke nuisance which arises from the use of soft coal, and this is a thing which Montrealers generally will have reason to be thankful for.—Montreal Star.

Hon. A. G. Blair, Minister of Railways and Canals, announced in the House of Commons that it was the intention of his Department to spend \$6,614,000 more on the Canadian canals. The amount now voted for canals and not yet expended was \$1,327,000; the amounts asked for in the main estimates was \$2,311,000; the amounts to be later provided for will run up to \$6,614,000. This would include a further sum in respect of the Trent Valley Canal, which would when completed have cost over \$6,000,000, and would bring the total expenditure on canals up to date to \$85,000,000 or \$86,000,000 for original construction alone. On the various canals it was proposed to spend the following sums:—

Sault Ste. Marie.....	\$1,050,000
Welland Canal.....	1,270,000
North Channel, Galops Rapids...	510,000
Galops Canal.....	592,000
Rapide Plat Canal.....	319,000
Farran's Point Canal.....	246,000
Cornwall Canal.....	253,000
River Reaches.....	103,000
Soulanges Canal.....	900,000
Lake St. Louis Channel.....	497,000
Lachine Canal.....	967,000
Murray Canal.....	10,000
Trent Canal.....	3,536,000

Total \$10,253,000

Canada is surely a great country. The Guelph, Ont., Herald says that seven years ago a farmer in that neighborhood hung his vest in the barn yard; a calf chewed the pocket in the garment, in which was a gold watch. One day recently the animal, a staid old cow, was butchered for beef, and the watch was found in such a position between the lungs of the cow that the process of respiration—the closing in and filling of the lungs—kept the stemwinder wound up, and the watch had lost but four minutes in the seven years. Skeptics are shown the watch in evidence of the truth of the story.

An old Ottawa industry, the McKay Milling Co., burned out in the recent big fire, has received a good offer from the town of Prescott, Ont. The company has been working at a disadvantage in Ottawa, inasmuch as competing mills outside had little or no taxes to pay. The switching charges were also very heavy. As only 500 horsepower was required to run the mill at Chaudiere, whereas the water lot furnished from 2,500 to 300, it would probably be more advantageous to dispose of that site and choose some other location.

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.

THE DOHERTY ORGANS.

POPULAR INSTRUMENTS.

The organ manufacturing establishment of W. Doherty & Co., at Clinton, Ont., ranks among the most successful of Canadian industries. Commencing in a small way in 1875, its history of a quarter of a century in the production of organs exclusively, has been, like the career of Gen. Lord Roberts, an unbroken line of success. During this whole time the factory has been run continuously, except for a brief period of four months in the year 1898, following the disastrous fire, by which their original premises were destroyed. Then, however, in its seemingly darkest hour, its greatest victory was achieved, and the ambitious concern rose, phoenix like, from its ashes a greater establishment, with improved facilities and enlarged capacity, and to-day occupies very extensive fireproof buildings of brick and iron, with a capacity of 500 organs per month. The whole premises cover an area of twenty acres of land, and represent an investment of upwards of a quarter of a million dollars (\$250,000). Besides manufacturing organs, their ever-increasing business now includes timber limits, sawmills, drying kilns, and prospective veheer mills, concentrating on the premises the manufacture of practically everything going into the construction of their instruments, and constituting altogether an industrial hive which gives the undoubted impression of a prosperous and well-managed business.

Entering the roomy, perfectly-ventilated and well-lighted offices, with their five large plate glass windows, one is at once impressed with the solidity of the institution, by the genial yet quiet courtesy of the worthy founder and head of the business and his efficient staff.

Passing into the large packing and shipping room, where apparently upwards of 1,000 finished instruments were ready for

shipment, an idea of the popularity of their instruments, and wide range of the reputation of the firm, and the magnitude of their business may be formed from the address cards, consigning their organs in wholesale shipments, not only to near and distant destinations in the Dominion, but also to many foreign countries, and here the likeness to Lord Robert's career ends, for while the General has conquered South Africa and earned honors at Kandahar, the Doherty organ has virtually won the world for its field. Passing through the hardware storeroom, replete with everything in that line used in the business, we come to the bellows room, where fine work is done in the purest of white wood or bass wood of faultless quality, and where, among other interesting features, are seen fine specimens of made-up stock, consisting of three thin layers of wood glued together of which two are basswood with a core of tuff wood in the centre, giving strength to the whole, and preventing the possibility of splitting or the admission of air, an obvious and important improvement on the ordinary sawn board.

Adjoining this room is the important and extensive two-manual department, where are seen in course of construction organs with two banks of keys, and showing a grand combination of stops, stop action and pedal base, giving the finest effects when skillfully manipulated. These instruments are used mainly in churches.

Upstairs in this building, in size 200x50 feet, is the ensemble department, where a vast number of instruments are nearing completion, and where we find action making, tuning, fly finishing, and case fly finishing, while in an adjoining room we find hand polishing, where cases are hand rubbed the same as piano cases, which operation is said to be one secret of the beautiful and lasting finish of the Doherty organs.

Machinery hall, size 275x50 feet, is furnished with shafting and pulleys nearly its entire length, and with the greatest collection of fine working, labor saving machinery we have ever seen together, all being new, designed principally by the firm, and built especially suitable for their own work. On

the second floor of this building is the action machine room, where not only action material is manufactured, but also keys, for the firm make their own keys and couplers, and have done so for years. In this department are also the silver and copper plating vats and material, and on the same floor we come to the finishing room, while adjoining are the varnishing and flowing parlors.

In the annex to machinery hall is the engine room, where the magnificent 150-horse power Wheelock engine supplies power for all the machinery in the buildings described, and runs an electric dynamo supplying the 500 lights of the factory, dwelling house and stables. There are also the force pumps connected with the waterworks, (all their own system), with a capacity of 500 gallons per minute. In close proximity to the engine room is the dry kiln, with a capacity of 100,000 feet of lumber, said to be the largest and most efficient in Canada, constructed on the department, fan and coil blast system, and heated by both exhaust and live steam, and with accommodation for several carloads of lumber simultaneously. On another part of the grounds, surrounded by millions of feet of logs, a steam sawmill is daily reducing these into lumber for use in the factory, and for sale.

The aim of the firm, however, has been to make the excellence of their organs an inducement to purchasers rather than to impress them with the magnitude of their factories or the vastness of their product, believing that quality is of much more consequence to the purchaser than quantity, and their long experience and added knowledge, gained not only by study, but also by practice, has enabled them to invest their organs with a value and character which are strangers to many of the instruments in the market to-day. They make a great variety of styles of organs, from the smallest single-reed instrument to the largest cathedral organ, and having great scope and power. The piano case organ is, however, the favorite style now in this country for parlor use. In construction, the Doherty organ is thoroughly substantial. In fineness of finish it is unsurpassed. In tone, absolute purity, perfect equality and ample power are combined in the highest degree of perfection, securing a great variety of the finest effects, the makers claiming to put not only brains, but also conscience, integrity, soul and sympathy into their instruments, and the uniform testimony of those who have used them for years fully endorses these claims.—The Farmer's Advocate.

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 belts slack. We take pleasure in saying that Cling-Surface is giving the best satisfaction. JAMES STACKHOUSE, SURT.

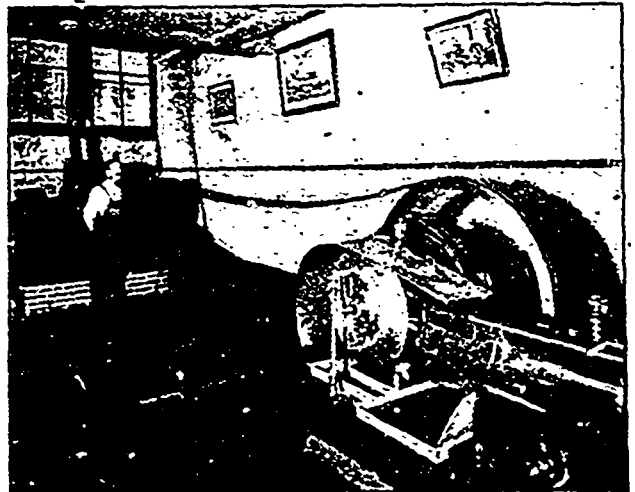
Cling-Surface Does These Four Things :

- 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.

The Owen Sound Stone Co., Owen Sound, Ont., inform us that at their Mono quarry, near Orangeville, Ont., they have what they claim to be the finest deposit of grey sandstone in this province, having a face of from nine to fourteen feet. Most of the grey sandstone used in the construction of the new courthouse and City Hall in Toronto was taken from this quarry.

The Union grain elevator at Belleville, Ont., owned by the Dominion Bank, and occupied by F. F. Cole, was destroyed by fire June 29, loss about \$10,000.

The McLachlan Electric & Gasoline Motor Co., Toronto, have recently shipped one of their gasoline motors to Messrs. Morgan Bros., Lindsay, Ont.

The Abbott-Mitchell Iron & Steel Co., Belleville, Ont., have increased their capital stock from \$150,000 to \$250,000.

The Sun Portland Cement Co., Owen Sound, Ont., has been incorporated with a capital stock of \$500,000, to manufacture Portland cement, whiting, lime, etc. The provisional directors include J. G. Hay, G. A. Ross, both of Owen Sound, and John Flett, of Toronto.

Embury's steam laundry at Newmarket, Ont., was destroyed by fire June 26.

The Burt Mfg. Co., of Akron, Ohio, have just made one of the largest shipments of the year to their London agency. The demand for cross oil filters in England, where they are in competition with a dozen or so of English filters, is another indication of the popularity of American manufactured goods abroad.

The Atikokan Iron Co., Fort William, Ont., has been incorporated with a capital stock of \$1,000,000. The provisional direc-

tors include R. M. Hunter, Duluth, Minn., P. McKellar, Fort William, Ont., and F. H. Keefe, Port Arthur, Ont.

The Robertson Taylor Mfg. Co., Galt, Ont., has been incorporated with a capital stock of \$100,000, to manufacture cream-separators, dairy-machinery, etc., and to acquire business carried on by Robertson, Taylor & Co. The provisional directors include T. C. Robertson and J. A. Taylor, of Galt, Ont., and Charles Pettiford, of Guelph, Ont.

It is expected that the new sawmills, pulp mills, and match factory of the E. B. Eddy Co., at Hull, Que., will be completed and in operation by September.

The F. R. Lalor Canning Co., Dunnville, Ont., has been incorporated with a capital stock of \$35,000. The provisional directors include F. R. Lalor, R. A. Harrison and R. F. Lattimore, all of Dunnville, Ont.

W. A. FLEMING & CO.

MILL SUPPLIES

CAMEL BRAND BELTING

HOSE of all kinds

DRIVING ROPE

BELTING of all kinds



771 CRAIG STREET, MONTREAL.

ONTARIO GOLD MINING DISTRICT :

- Sultana Mine.
- Foley Mine.
- Mikado Mine.
- Olive Gold Mine.
- Cameron Island Mine.
- Hammond Reef Mine.

A Few Mines

WHO USE



BRITISH COLUMBIA :

- Le Roi Mine.
- War Eagle Mine.
- Old Ironsides Mine.
- Centre Star Mine.
- Crown Point Mine.
- Knob Hill Mine.

CANADIAN RAND DRILL COMPANY, Montreal

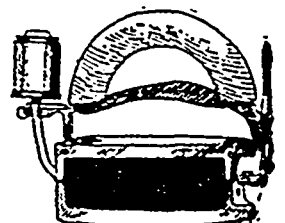
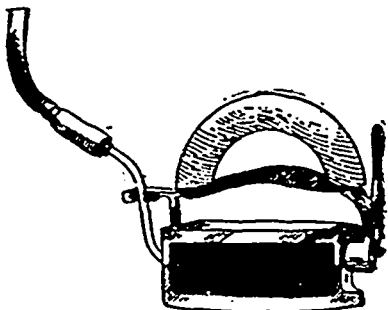
ONE AGENT ONLY IN EACH TOWN WANTED

WRITE US FOR PARTICULARS ABOUT

"PERFECTION"

Self-Heating Sad Iron

Something New. Sells Well.



The EDWARDS SAD IRON CO., Confederation Life Building, Toronto, Canada.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

The Hamilton Motor Co., Peterborough, Ont., has been incorporated with a capital stock of \$50,000, to manufacture electric, gasoline and compressed air motors, etc. The provisional directors include W. J. Hamilton, T. A. Cooley and J. W. Bennet, all of Peterborough, Ont.

Among the orders for American goods which are coming in from new enterprises in Cuba, is an order for cross oil filters to equip a large new electrical power house in Havana. These goods are manufactured by the Burt Mfg. Co., Akron, Ohio.

The McLachlan Electric & Gasoline Motor Co., Toronto, who have built up a most satisfactory business at the intersection of Adelaide and Shoppard streets, now find the premises too small for them, and are occupying much larger quarters at 115 Bay street. This change is largely to enable them to meet the demand for their non-vibrating motor, an illustrated description of which was recently published in these pages.

The Delany & Pettit Co., Toronto, has been incorporated with a capital stock of \$50,000, to manufacture curled hair, glue, sandpaper, etc., and to acquire the business heretofore carried on by Delany & Co. The provisional directors include C. Delany, C. S. Pettit and J. H. Pettit, all of Toronto.

Wright & Spicer's saw mill at Newboro, near Brockville, Ont., was destroyed by fire June 25, loss about \$3,000.

W. H. Danco's saw and planning mill at Clifford, Ont., was destroyed by fire June 14, loss about \$3,000.

The Granby Consolidated Mining & Smelting Co., Grand Forks, B.C., is installing a ten k.w. multipolar direct current generator, purchased from the Royal Electric Co., Montreal.

The J. E. Molleur & Son Woolen Co., St. John's, Que., has applied for incorporation with a capital stock of \$50,000, to manufacture underclothing. The applicants include J. E. Molleur, I. Molleur and J. E. Dore, all of Montreal.

The G. V. Oberholtzer Co., Berlin, Ont., has been incorporated with a capital stock of \$150,000, to manufacture boots, shoes, slippers, etc., and to acquire the business now carried on under the firm name of G. V. Oberholtzer. The provisional directors include G. V. Oberholtzer, N. B. Detwiler and E. E. Werner, all of Berlin, Ont.

The Acetylene Mfg. Co., London, Ont., has been incorporated with a capital stock of \$500,000, to manufacture carbide, acetylene gas, etc., and to acquire the business now carried on by the Acetylene Lighting Co. The provisional directors include C. S. Grosch, F. G. Rumball, both of London, Ont., and E. D. Lang, of Berlin, Ont.

The Pattinson Dental Mfg. Co., Montreal, has been incorporated with a capital stock of \$30,000, to manufacture dental supplies. The charter members include F. W. Brown, C. W. H. Rondeau and G. A. Pattinson, all of Montreal.

The new buildings which are to be erected at Prescott, Ont., for the Imperial Starch Co., of which Hugh Blain, Esq., of Toronto is president, will include a four-story main building 265x107 feet.

Application is to be made for a charter for the Canadian Motor Vehicle & Battery Co., with a capital stock of \$200,000. Hamilton, Ont., will be the headquarters of the company, which proposes to manufacture motors and storage batteries, and build modern electric and gasoline automobiles.

The works of the Barrie Tanning Co., at Barrie, Ont., were destroyed by fire June 22, loss about \$29,000. It is understood that the works are to be rebuilt without delay.

Messrs. Wm. J. Matheson & Co., New York, who are sole agents in Canada and United States for Messrs. Leopold Casella & Co., Frankfurt, Germany, have sent us a pattern card illustrating khaki shades for materials for gentlemen's wear. The colors are produced by the use of the anthracene acid dyes, manufactured by Messrs. Cassella & Co., and are distinguished for their excellent fastness to light and milling, it being possible to produce the same shades in a still simpler manner with their dramine colors. Messrs. Matheson & Co., will take pleasure in sending sample cards to any who may ask for them.

A recent shipment of lobsters from Halifax, N.S., to Havre, France, consisted of 25,000 cases containing 1,200,000 cans, the net weight of the lobsters being 600 tons. The value of the shipment exceeded \$250,000.

The Anchor Knitting Co., Almonte, Ont., are installing a ten k.w. multi-polar direct current generator, supplied by the Royal Electric Co., Montreal, to light their factory.

Keep Before the People

MANUFACTURERS

Who would increase their output—
Retain their present customers
and secure new ones, will
not fail to exhibit at



CANADA'S GREAT

Industrial Exposition

TORONTO

AUGUST 27 to SEPTEMBER 8, 1900

Applications for space should be made forthwith.
Entries close Aug. 4th.



Educational
Entertaining
Aggressive
Progressive

For
Prize Lists, Entry
Forms,
and all information,
address the Manager.

H. J. HILL, *Manager, Toronto.*
ANDREW SMITH, Jr., F.R.C.V.S.,
President.

Reduced Rates on all Lines of Travel.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

The completion of the machine shop and good progressive work at the sulphide and alkali mills, have been followed—rather attended—by excavation for a new office, 100x70 feet, three stories of stone, and occupying the open space between mill No. 1 and the Block House. Such an array of of handsome massive stone buildings for manufacturing purposes only, are not found in any other town in the Dominion of Canada, and it is questionable if they are equalled on the continent, and certainly not as the result of one man's indomitable energy and conception of industrial expansion. —Sault St. Marie Pioneer.

A joint stock company is being formed at Milton, Ont., with a capital stock of \$100,000 to start a pork packing factory.

Mr. John Loughrin, M.P.P., for Mat-tawa, Ont., was in Toronto a few days ago. "I was up at the Sault and Michipicoten last week," he said, "and visited the works Mr. Clergue has erected and are now under way. It is simply wonderful, and Mr. Clergue deserves a great deal more than the Ontario or any government can or has given. It is the largest industry, taking all the enterprises which are under way, in the Dominion of Canada, outside the Grand Trunk and the Canadian Pacific Railways. There are over 5,000 men employed in the various enterprises at the present time, and no idea

of their magnitude can be formed without visiting the premises." Mr. Loughrin also said that arrangements were now under way for the securing of capital from Buffalo and New York for the Blanche River Pulp & Paper Co., which received a concession from the Legislature last winter, and it is the intention to push on the work at once should negotiations prove successful.

Messrs. Chadwick Bros., Hamilton, Ont., manufacturers of brass goods, have recently moved into much larger premises to enable them to meet the increasing demand for their products.

The Silver Dust Washing Compound Co., Hamilton, Ont., have moved into the premises recently vacated by Messrs. Chadwick Bros.

The Dominion Militia Department has sent an ambulance wagon to the Bain Wagon Co., of Woodstock, Ont., to be used as a model upon which to construct several ambulances for which the Bain firm has been given the order. The wagon sent was in use at the summer encampment at Niagara. The wagon is constructed on somewhat the same lines as the transportation wagons built at Bain's for the Royal Canadians, being very much heavier than the ordinary ambulance and requiring two horses to draw it.

Hon. J. R. Stratton, Provincial Secretary of Ontario, has completed a contract with the Hamilton Electric Light & Cataract Co. for electric current for lighting the building and grounds of the Hamilton Asylum for the Insane. The contract, which is for five years, with option to the Province for renewal, provides for 1,100 incandescent lamps for the buildings, and for ten arc lamps for the grounds. The wiring is to provide a capacity for carrying 1,500 lights if required in the future, and the annual cost is to be \$2,750. This new lighting arrangement is regarded as a satisfactory improvement, providing cheaper and better light. The average cost of lighting the institution with gas for the five years from 1895 to 1899, inclusive, has been \$3,609 per year, while the cost of electric lighting under the contract just entered into, being \$2,750, represents a saving in the matter of expense of nearly \$900 a year.

Chalmers Bros. & Bethune's grain elevator at Pilot Mound, Man., was destroyed by fire June 23.

Messrs. W. J. Matheson & Co., whose head office is in New York, have issued a circular announcing that their Montreal office and warehouse have been removed to 96 and 98 Foundling Street, where more commodious quarters will better enable them to serve their friends and patrons.

THE CUMMER DRYERS.

FOR Mechanically Drying Everything

THE F. D. CUMMER & SON CO.,

HUNDREDS IN OPERATION.

CLEVELAND, OHIO.

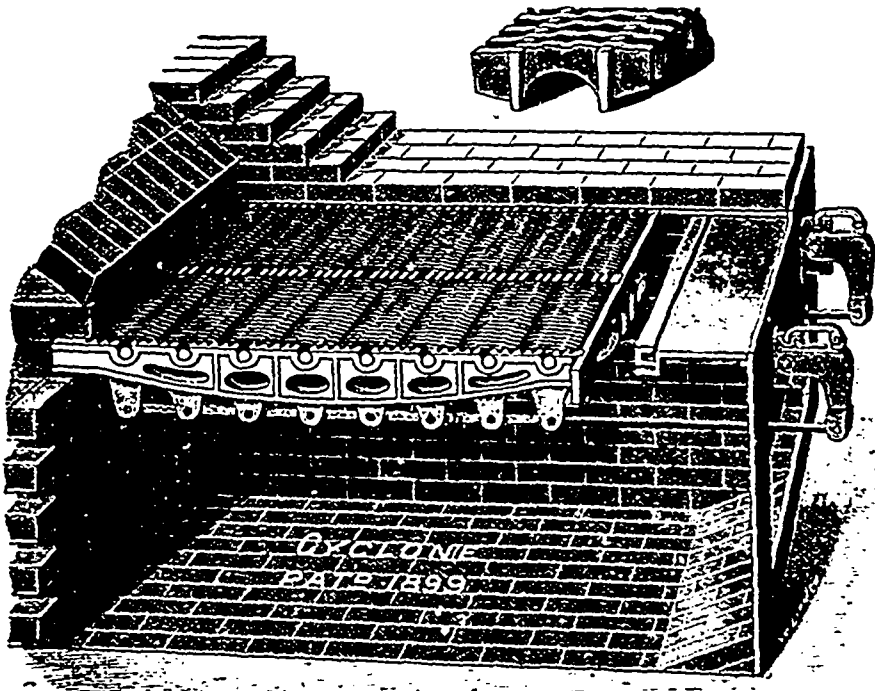
John R. Barber, President.

Geo. E. Challos, 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. 19, 1900.

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.

Wishing your Company every success,

We are, yours 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.

Messrs. Holbrook & Sutherland have been awarded the contract for the construction of the E. B. Eddy Co.'s new match factory at Hull, Que. It will be of brick, three stories high, covering an area of 184 x 100 feet.

At the recent annual meeting of the shareholders of Brunner, Mond & Co., Limited, manufacturers of alkali, held in Liverpool, Eng., a dividend of thirty-five per cent. was declared. The company have recently absorbed the business of Bowman, Thompson & Co., also manufacturers of alkali.

United States Consul Hughes, at Coburg, Germany, writes: "In these times, when coal is hard to obtain, our American turbine wheel houses ought to give special attention to supplying Southern Germany with improved machinery for utilizing the water power which is now running to waste, especially in Thuringia. They should send salesmen who can speak German and know how to operate the machines. The only water wheel known here is the old-fashioned

one." Canadian manufacturers should profit by this suggestion.

The two large Foundrier paper machines being built for the new paper mills of the E. B. Eddy Co., at Hull, Que., will be equipped with rolls having 118 and 102 inch faces. Each machine will have twenty-six drying cylinders forty-eight inches in diameter. The connection for driving the machinery will be of the cone type, and the change speed arrangement will be adapted as to give speeds of 350, 400 and 450 feet of paper per minute.

The James Morrison Brass Mfg. Co., Toronto, are offering a very seasonable hose clamp which is described as strong, light and pliable, having a perfect inner circle which absolutely prevents leakage. It is easily applied, and no special tools or cuss words are required. The latter feature renders the article exceedingly desirable, considering the hot weather.

The ratepayers of Kingston, Ont., have voted in favor of an annual bonus of \$4,000

for fifteen years to the Catarqui Smelting & Developing Co., who will build works at that place costing over \$300,000, to give employment to 100 hands and consume 200 tons of ore per day in the production of iron. Building will be commenced immediately, the expectation being that the works will be in operation before the end of the current year.

Francis J. Clergue, of Sault Ste. Marie, Ont., representing the Lake Superior Power Co. and allied corporations engaged in a large water power development and the opening up of iron mines near the Sault, has communicated with various engineering firms recently concerning its proposed blast furnace and steel plants, of which mention has been made among other enterprises under Mr. Clergue's direction from time to time. The statement is now made that a blast furnace of 400 or 500 tons daily capacity will probably be built, and a Bessemer plant, plate mill and merchant bar mill. No mention is made of an open-hearth plant, but this will be a necessary part of the

BUTTING YOUR HEAD AGAINST A ROCK

Is a poor way to make gravel, but it's on a par with the principle of wasting the energy of good steam by allowing it to pound against water in the engine cylinder.

Wet steam is more than a nuisance—it's dangerous.

AUSTIN SEPARATORS

Deliver dry steam, increase the efficiency of your engine and save money. We have demonstrated this in a thousand prominent power plants all over America.

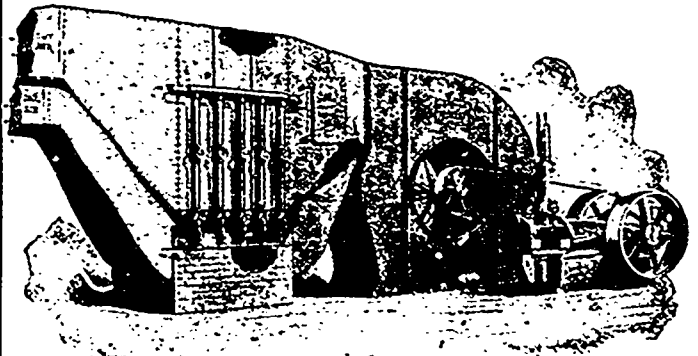
Send for our Catalogue, containing testimonials.

Austin Separator Co.,

38-40 Woodbridge St.
DETROIT, MICH., U.S.A.

THE BUFFALO FAN SYSTEM OF HEATING and VENTILATION

For PUBLIC and INDUSTRIAL BUILDINGS



Type of Apparatus for Double Duet Installation.

Buffalo Forge Co.,
BUFFALO, N.Y.

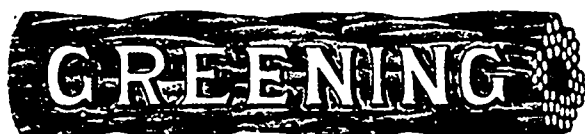
Canadian Representative,

E. A. WALLBERG,
410 Temple Bldg.,
TORONTO



Buffalo Down-Draft Forge.

The B. GREENING WIRE CO., Limited



MANUFACTURERS
OF



Lang's Patent Wire Ropes
for Colliery
and Mining Use.

WIRE ROPE

of every description and for
all purposes
HAMILTON, ONT.
and MONTREAL, QUE.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

plant if plates are to be manufactured. It is stated that if the work is undertaken it will be the aim to have the plant in operation, in part at least, within a year. Since the power company, as is well known, is making a large installation of water wheels, for the utilization of the water power at the "Soo" rapids, it is evidently the purpose to utilize electricity to a considerable extent in the iron and steel works. Thus far no considerable amount of experience in the driving of mills by electricity has been accumulated, and in this respect the proposed plant might introduce some departures.—Marino Review.

Manufacturers, mill and elevator men, contractors and hardware dealers will do well to visit the exhibit of the Garfield Oil Co., at the forthcoming Exposition in Toronto and also in London, Ont. This company is sole manufacturers of Black Zanzibar Anti-Rust Roof Paint so widely and favorably known throughout the United States for many years, and now being used on many of the largest buildings in Canada. The guarantee given on the paint would indicate a very high degree of merit. Don't forget to call on them at the Exposition. Their little booklet, "A Study in Black," is very readable. Send for it.

The Noxon Mfg. Co., manufacturers of agricultural implements, Ingersoll, Ont., are said to be looking for a new location for the erection of enlarged works which they propose to build. It is found that their present factory buildings are old and unsuited to modern conditions.

The premises of the T. Eaton Co. on Albert street Toronto are being extensively enlarged, as they are at present inadequate

to accommodate the enormous production of the various articles manufactured by that concern. The company expects to be settled in the new building by Christmas, but a large portion of it will be completed by Exhibition time. The basement will contain the electric plant, and the remainder of the building will be made into modern manufacturing shops, where about 700 hands will have employment. There are considerably over 3,000 employees of the company at present, and by next January it is estimated that the number will reach 4,000.

The Electric Reduction Co., Buckingham, Ont., is installing two 25 k.w. direct current generators, supplied by the Royal Electric Co., Montreal.

The Galt Reporter tells of a most unique occurrence that transpired in Hespeler, Ont., a few days ago which brings to the attention of the public a most flourishing and productive Canadian industry. It was a picnic tendered by an accomplished ac couché of Hespeler and vicinity to a number of the children at whose birth she had been in attendance, together with some of their mothers. The little people were present in seemingly unnumbered numbers. It is quite evident that the fecundity of Waterloo county is quite equal to that of Quebec.

Walter Dean, Toronto, has just finished a beautiful gasoline motor launch for Mr. Thomson, of Parry Sound, which will have a speed of more than a dozen miles per hour. It is a beauty. Mr. Dean says that his boat building business this year is greater than in any former year, and that he has already sold all the boats he had on hand. He will make important extensions to his shops

during the coming winter, to enable him to do a larger business next year.

The Imperial Varnish Co., Toronto, have recently instituted a new method of applying paint and varnish to carriage work, by which a certain result is arrived at by the application of four coats which give as desirable results as the six or eight coats heretofore thought necessary. Carriage bodies which usually require from twelve to eighteen treatments can now be finished with ten or twelve, and no japan colors are used.

The Garfield Oil Co., manufacturers of black zanzibar anti rust proof paint, with headquarters at Cleveland, Ohio., and Canadian branch at Windsor, Ont., have sent us a beautiful souvenir paper cutter and envelope opener, upon the handle of which is inscribed "Will not blister, crack or peel off," which, we imagine, has reference to the paint and not to the handle. The paint is specially adapted to use on roofs and sidings of all kinds, and is guaranteed to stay where it belongs for at least five years.

The Bowmanville Electric Light Co., Bowmanville, Ont., has been compelled by a large increase in its business to purchase new machinery, and has ordered from the Royal Electric Co., Montreal, a 90 k.w. two-phase S.K.C. inductor & ternator.

The Gould, Shapley & Muir Co., Brantford, Ont., will extend their shops, and include gas and gasoline engines among their products.

Messrs. Wm. Moore & Sons, Meaford, Ont., have purchased a 1,000 light alternator from the Royal Electric Co., Montreal.

THE BEST PIPE THREADING and CUTTING-OFF MACHINES

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

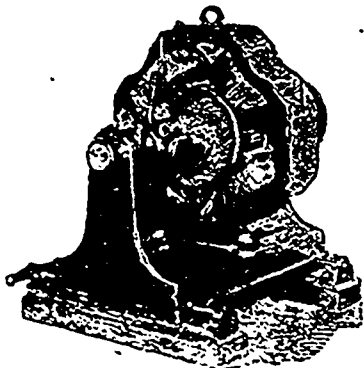
Also Manufacturers of a FULL LINE of **ADJUSTABLE STOCKS and DIES** and Water, Gas and Steam Fitters' Tools.

Send for Catalogue 27.

Factory: BRIDGEPORT, CONN.

New York Office: 139 CENTRE STREET.

THE Electrical Construction Co. of London, Limited.



MULTIPOLAR MOTORS & DYNAMOS

And Direct Connected Plants for Isolated Lighting.

Repair Work a Specialty.

HEAD OFFICE AND FACTORY:

90 YORK STREET, London, Canada.

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RICE LEWIS & SON, LIMITED

HARDWARE and METAL.

Bar Iron, Steel,
Boiler Plate Tubes.

**MACHINIST TOOLS,
PIPE FITTINGS.**

A COMPLETE STOCK OF

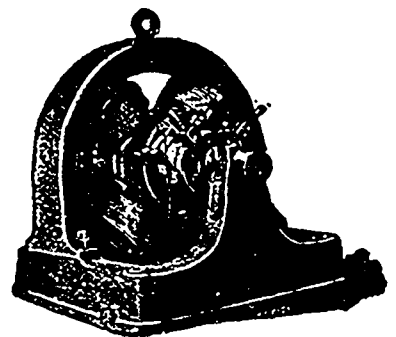
STOCKS and DIES. PIPE VICES.

STILLSON & TRIMO
WRENCHES.

STEAM PIPE.

Cor. King and Victoria, **TORONTO**

**Toronto and Hamilton
ELECTRIC CO.**



Motors and Dynamos

COMMUTATORS REFILLED.

99-103 McNab St. N., Hamilton

'Phone 958.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

The Ontario Government has adopted the Hanrahan system of cold-storage, which, by currents of cold air through the storage chamber, makes it possible to store different kinds of products in the same chamber, and also drives out the gases and odors, said to be a defect in the system used by the Dominion Government, and the inventor, Mr. Hanrahan, the first man to ship perishable goods across the Atlantic successfully, is now inspector of cold-storage for Ontario. The Hon. F. R. Latchford has taken much interest in this question, and lately gave an address on the subject before the Burlington, Ont., Horticultural Association.

The Richelieu & Ontario Navigation Co. has now its complete service in operation. During the winter many improvements have been made in the vessels of the fleet. The steamer Quebec has had new feathering wheels put on and in place of large paddle boxes formerly used, small ones have been introduced. This gives twelve additional state-rooms, besides improving the lighting and ventilation facilities of many more. New fittings for the staterooms, beds, etc., have also been put in all rooms. The

dining room has also been refitted. The steamer Montreal has had her staterooms refitted and the dining room and other portions have been redeccorated. The steamer Hamilton has received new feathering wheels, which will make her time between Montreal and Hamilton much faster than before. The Hamilton and Algerian have been put on the Hamilton route, leaving Montreal on Mondays and Thursdays at 7 p.m., in place of 4 p.m. as in previous years. The leaving time at Toronto and Hamilton has also been changed. The steamer Spartan has been refitted throughout and will run between Montreal and Toronto. The steamer Bohemian has been lengthened about 18 feet, making her 198 feet over all. She will run in connection with the Toronto. The Corsican will also run on this route. The steamer Longueuil has been completely rebuilt, improving her facilities to a great extent. The steamers Carolina, Canada and Saguenay have been overhauled and will operate as usual on the Saguenay line. The running time between Montreal and Toronto has been shortened by three hours, owing to the improved

steamers and the new Soulanges canal, which will be used.

The Lakesfold, Ont., Portland Cement Co. has been voted a bonus by that town of \$10,000 and exemption from taxes as encouragement for establishing their works there.

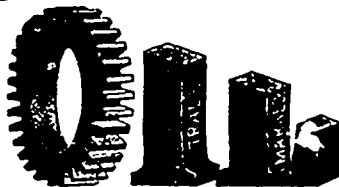
The largest building going up in Toronto at the present time is the new one for the T. Eaton Co., at the corner of Louisa and James streets, running almost from James street to Yonge street. It will be an immense concern and will abut the north side of the large new manufacturing building of the same company, erected on the north side of Albert street a couple of seasons ago. It will be used for factory and storage accomodation. The new building will be five storeys high, with basement floor, and with areas underneath the whole of the sidewalks on Louisa and James streets. A feature of the new building will be an immense chimney at the northeast corner of the block, the foundations of which are now in. The excavation as it now stands is the largest ever made in Toronto, with the exception of the municipal and Parliament buildings. It is also understood that the Eaton Co. will make extensive improvements on Yonge street, immediately to the north of their present main entrance.

Messrs. F. E. Atteaux & Co., manufacturers and importers of aniline colors, dyestuffs and chemicals, whose head office is at 174-176 Purchase street, Boston, Mass., with branch Canadian offices in Toronto and Montreal, have sent us some very attractive cards containing specimens of wool yarns dyed by their methods with dyestuffs handled by them. The colors shown include concentrated violet, metheline blue in different shades, solar black, acid blue, orange, chomazurine blue, brilliant yellow, alizarine brown and alizarine garnet.

"Capitol" Cylinder

"RENOUN"
ENGINE

"ATLANTIC" RED



RELIABLE WELL-KNOWN BRANDS.

ALL ORDERS PROMPTLY FILLED

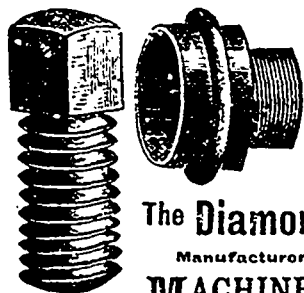
THE...

QUEEN CITY OIL CO.

LIMITED

SAMUEL ROGERS, President.

TORONTO, CANADA



SEND FOR CATALOGUE AND PRICE LIST

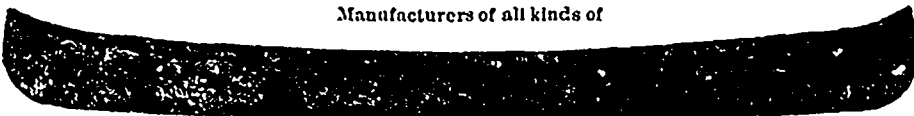
The Diamond Machine & Screw Co.

Manufacturers of TORONTO. Limited.

MACHINE SCREWS and BICYCLE PARTS OF EVERY DESCRIPTION.

The Canadian Canoe Co., Limited, P.O. BOX 107, PETERBOROUGH, ONT.

Manufacturers of all kinds of



CANOES AND SKIFFS Canoes for Paddling, Sailing, Rowing and Prospecting. Skiffs for Rowing and Sailing.

A FULL STOCK OF PADDLES, OARS, FITTINGS, ETC.

Write for Catalogue J.

Correspondence Solicited.

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SAVE THE DROPS

MILLIONS OF DOLLARS

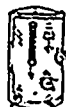
Are annually spent for lubricating oil and over half of it is carelessly wasted.

GROSS OIL FILTERS

Will save the waste. It means 50%. Can we send you one on approval? We pay the freight if not satisfactory.

THE BURT MFG. CO., Akron, Ohio, U.S.A.

Largest Mfrs. of OIL FILTERS in the world. Catalogue 26.



Dominion Oil Cloth Co.

(LIMITED)

Manufacturers of ..

OIL-CLOTHS of Every Description

Floor Oil-Cloth, Table Oil-Cloth, Carriage Oil-Cloth.

Enamelled Oil-Cloth, Stair Oil-Cloth, etc.

Office and Works

Cor. St. Catharine and Parthons Sts MONTREAL, Que.

The Montreal Rolling Mills Co., Montreal, has increased its capital stock from \$500,000 to \$750,000.

The Central Electric Street Railway Co., Sarnia, Ont., has been incorporated with a capital stock of \$100,000. The provisional directors include A. H. Macdonald, Guelph, Ont., A. D. Cartwright, Toronto, and T. H. Cook, Sarnia, Ont.

The Alexandria Wood Export Co., Alexandria, Ont., has been incorporated with a capital stock of \$20,000, to manufacture lumber, etc. The provisional directors include D. M. Macpherson, Lancaster, Ont., John McIntosh, and J. T. Schell, Alexandria, Ont.

The Brantford Electric & Operating Co., Brantford, Ont., who have been furnishing arc and incandescent lights and operating motors from a 180 k.w. S.K.C. successfully for the past four years, are largely increasing their power and lighting business and have ordered from the Royal Electric Co., Montreal, a 360 k.w. S.K.C. two-phase machine.

The Ontario Hydro-Carbon Burner Co., Hamilton, Ont., has been incorporated with a capital stock of \$50,000, to manufacture hydro-carbon burners. The provisional directors include J. H. Tilden and W. B. Solomon, Hamilton, Ont., and W. C. Bonnell, Toronto.

The water and sewerage system of St. John, N.B., will be extended at an estimated cost of \$9,000.

The Robertson Taylor Mfg. Co., Galt, Ont., will erect an addition to their building 80x40 feet, at a cost of \$4,000.

The Canadian Meter Co., Windsor, Ont., has been incorporated with a capital stock of \$40,000, to manufacture gas meters, etc. The provisional directors include Wm. McDonald, Albany, N.Y., C. H. Jacobs, Detroit, Mich., and J. B. McNary, Windsor, Ont.

Mr. Clayton, Manager of the Central Electric Co., of Portage la Prairie, Ont., while on a trip through the East a few days

ago placed an order with the Royal Electric Co., of Montreal for one of their 150 k.w. S.K.C. two-phase generators.

The lumber yard of George Wilson & Co., St. Catharines, Ont., was recently destroyed by fire. Loss about \$10,000.

The Manitoba Felt & Yarn Works, Brandon, Man., has applied for incorporation with a capital stock of \$30,000. A large factory will be erected at Brandon.

Messrs. Stetson, Cutler & Co's saw mill, Kingsville, N B, was recently destroyed by fire. Loss about \$15,000. It will be rebuilt.

A large saw mill will be erected at Essex, Ont., by Messrs. Lang, Ritchie & Co.

The General Fire Equipment Co., Toronto, will place the Grinnell sprinkler system in the new factory of the Gutta-Percha & Rubber Mfg. Co., Toronto, and also equip the entire plant of Messrs. T. B. Smith & Sons, sash, door and blind makers, Toronto.

The Firstbrook Box Co., Massey Harris Co., Kemp Mfg. Co., T. Eaton Co., and Robert Simpson Co., all of Toronto, are all using the Grinnell system of fire protection, manufactured by the General Fire Protection Co., Toronto.

The Penetang & Midland Street Railway Light & Power Co., Penetang, Ont., has greatly increased its incandescent lighting business, and has purchased a 150 k.w. S.K.C. two-phase generator, complete with exciter and switchboard from the Royal Electric Co., Montreal.

The Consumers Cordage Co., Montreal, will reduce their capital stock from \$2,500,000 to \$1,000,000.

The Fensom Elevator Co., Toronto, has been awarded the contract for the erection of an electric elevator to be operated in connection with the rapid handling of mail matter at the Union Station. Its dimensions will be 16x12 feet, and it will have a run of twenty feet and be capable of lifting five tons. The elevator cage will be of steel and the electric winding machinery will be

placed upon steel beams resting upon the top of the shaft within which the elevator is to run. It will be equipped with special mechanical and electrical appliances for safety purposes. The intention is to have the elevator hoist and lower the automobiles in which mail matter will be carried to and from the station. Work upon the elevator is to be begun immediately and completed as soon as possible. As has been already stated, the elevator shaft will be located at the northeast end of the Union Station and a few feet west of the York street bridge, with which structure it will be connected by a wooden platform. The shaft will be of brick and attain a height of from fifty to sixty feet.

TORONTO WOOLEN MACHINERY CO.

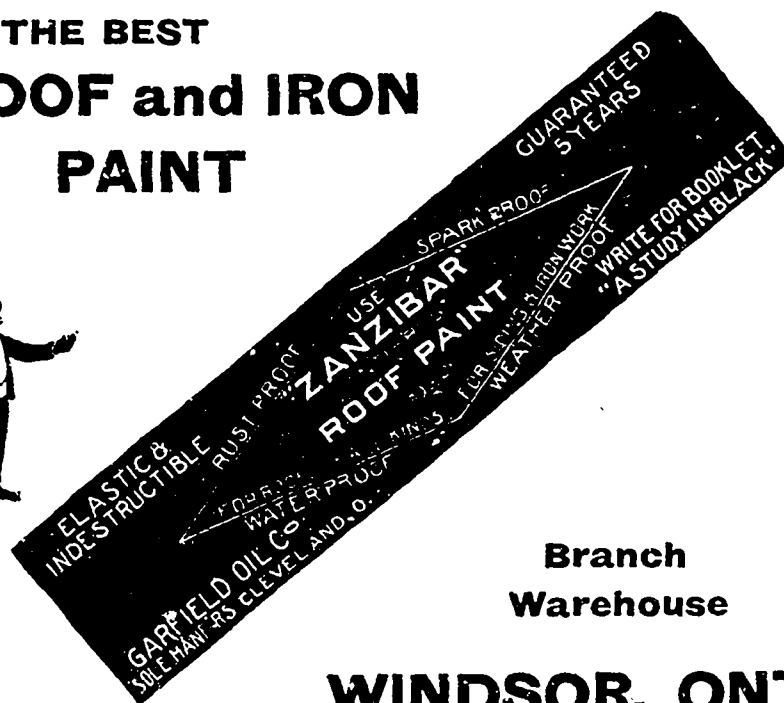
MACHINERY WANTED and FOR SALE

- 1 set 10 in. Wood Frame Cards, Cylinder 41 in. dia.; Bramwell Feed; Rub Roll Condenser.
 - 2 set 48 in. Iron Frame Cards, built by Davis & Furber; dia. of Cylinder 48 in.; 20 cords on this set, all complete and in good order.
 - 1 set 48, 18, 40, Davis & Furber make: good order.
 - 1 200 Spindle Hand Jack.
 - 1 260 " 2 1/2 gage, self-operator, D. & F. make.
 - 1 220 Spindle 2 in. gage, D. & F. make.
 - 2 250 " Houghton Knowles Mules, 2-3-16 gage.
 - 17 92 in. 4 x 4 Box 21 Harness Bow Jack Crompton Looms, all complete with warp and filling chain harness, etc., etc.
 - 2 108 in. Crompton Centre Card Single Box Blanket Looms.
 - 1 Gilbert Loom Broad.
- Also the entire outfit of a one-set mill.
Also the machinery of a one-set yarn mill.
Also a one-set mill as a going concern, 48 in. set of Platt's Cards 261 Spindle Mule, all Broad Looms and a never-failing water power.

We also are Builders of the **EMPIRE BALING PRESS** for baling paper, rags, shoddy or wool.

TORONTO WOOLEN MACHINERY CO.
118 DUKE STREET.

**THE BEST
ROOF and IRON
PAINT**



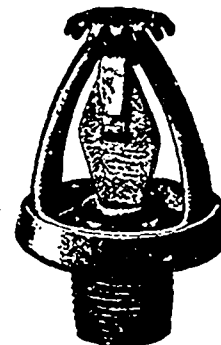
**Branch
Warehouse**

WINDSOR, ONT.

**Protection
Against Fire**

Apart from the protection it affords, it pays as an investment to use the

GRINNELL AUTOMATIC SPRINKLER



From 40 to 70 per cent. of cost of insurance saved by putting in a

**GRINNELL
AUTOMATIC
SPRINKLER
EQUIPMENT**

**Over 3,900 Fires—
—NO FAILURES**

No charge for estimating

Endorsed by Insurance Companies.

"THE GRINNELL"

The General Fire Equipment Co.
72 Queen Street East,
TORONTO.

The Kerr Engine Co., Walkerville, Ont., have sent us their new catalogue having reference to a line of brass and iron valves the manufacture of which they have just begun. They inform us that at the beginning of the present year they equipped themselves with a line of patterns relating to the Jenkin disc valves and cheek valves of substantial and tasty proportions, fully up-to-date in every particular. The valves are of heavy pattern and good appearance and finish, and are of the best materials and workmanship. They are all thoroughly tested before shipment, thus securing users against leaky valves. They are specially recommended to those who desire quality, and not the cheapest article.

The electric light station at Colborne, Ont., was destroyed by fire July 10, loss about \$7,000.

Work has been begun upon the new factory of the Imperial Co., at Hamilton, Ont., which is to cost about \$75,000.

Walter Dean, builder of high grade boats, launches, etc., informs us that some of his recent sales include a 17 1/2 foot launch to Mr. T. B. Grady, of Summerside, Prince Edward Island. It was elegantly finished and furnished, in which black walnut and white cedar predominated, equipped with a 7 h.p. gasoline motor, all exposed metal parts heavily silver plated. The hull was constructed of cedar, closely ribbed, with metallic points, all the engine connections being of Tobin bronze and brass, so as to resist the action of salt water.

A company has been formed at Hamilton, Ont., for the manufacture of locomobiles. The promoters are Messrs. John Sutherland and John Kelly, and it is expected to build a factory that will employ 175 workmen.

A telegram from Sydney, N.S., states that Mr. Graham Fraser of the Nova Scotia Steel Co., while in Sydney recently stated that the steel works were bound to come to North Sydney, and that the present delay was only temporary. He had been advised by English brokers to postpone floating stock until the present stringency of the money market, due to the war, was relieved. The company would, however, at once proceed with the development of the coal areas recently purchased from G.M.A. For this purpose they would sink several new shafts and build twelve miles of railway through the heart of the coal country, from North Sydney to Point Aconi. He expected that as a result of these operations the present output of the mines, amounting to 300,000 tons a year, would be quadrupled.

Great and rapid progress is being made towards the transmission of electrical power in the United States and Canada. The

Pittsburg Reduction Co., the greatest manufacturers of aluminum in the world, who, by the way, are erecting several extensive factory buildings at Shawinigan Falls, where aluminum will be manufactured in great quantities for the Canadian and foreign market, is achieving some very practical results in the transmission of the electric current of the Standard Electric Co., of San Francisco, from the generating plant at the foot of the Sierra Nevada Mountains to San Francisco and the neighboring cities and towns. The voltage is the highest in the country, and the commercial transmission the longest in the world. The transmission is by means of aluminum cables three-quarters of an inch in thickness, composed of thirty-seven wires laid one over the other in a series of twists in opposite directions and then bound together. The tests have proved most satisfactory, sustaining sixteen times the pressure to which they will be put in actual transmissions. These cables weigh over a million pounds. The main trunk for transmission will be 150 miles in length, with numerous branches. Over \$2,000,000 is being expended by the Standard Electric Co. It is expected the whole thing will be in operation next year.—Montreal Star.

The new hotel being built at Belleville, Ont., by Mr. Thomas Tompkins, will cost about \$50,000.

THE BEST IS NONE TOO GOOD

**SYRACUSE
BABBITT**

**BEATS
THEM
ALL**

The largest machinery builders in Canada and United States use our Babbitt Metal.

Is this not sufficient proof of its superiority over other anti-friction metals?

If the largest users are satisfied with our Babbitt Metals, why should it not suit you?

We can furnish you with numbers of testimonials.

Importers and Dealers in

PIG TIN
ANTIMONY
INGOT COPPER
ALUMINUM

NICKEL
BISMUTH
IRON AND STEEL
SCRAP



Manufacturers of

BABBITT METALS
SOLDER
TYPE METALS

COLUMBIA
PHOSPHOR TIN
AND ALL OTHER
WHITE METALS

SYRACUSE SMELTING WORKS,

WILLIAM and ST. THOMAS STREETS,

MONTREAL

Nicholson Patent Flanged Face Compression Shaft Coupling

Is easily and quickly attached to or detached from shafting.
Will adjust to a somewhat larger or smaller than standard size shaft
Has DOUBLE the grip of other COMPRESSION COUPLINGS and is the most perfect fitting coupling made.



Saves cost of key-seating shafts, fitting keys, and refacing couplings after being keyed on shaft.
Holds the shafts in accurate alignment with each other, the jaws being full length of coupling and extending over both shafts.
Has a very powerful grip equally exerted from front sides (not on two sides as with the majority of couplings).

PRICE LIST AND DISCOUNT ON APPLICATION.

Our New Supply Catalogue (Desk or Pocket Size), will be mailed free to anyone on application.

WE CARRY WOOD SPLIT PULLEYS, STEEL SHAFTING, LEATHER AND RUBBER BELTING, COUPLINGS AND SAFETY COLLARS IN STOCK

THE FAIRBANKS COMPANY, 749 CRAIG STREET, MONTREAL

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PUBLIC WORKS IN ONTARIO.

Finance Minister, W. S. Fielding, has announced that the expenditures upon public works in Ontario during the current fiscal year would be as follows:

Brockville Drill Hall (re-vote).....	\$9,000
Deseronto public building.....	5,000
London Custom House alterations and repairs.....	1,200
London P.O., in addition to alterations, fittings and furniture.....	2,000
Sarnia public buildings (re-vote \$10,000).....	15,000
Pictou public buildings.....	13,000
Toronto Postoffice extension to the Union Station room, elevator building and hoist.....	7,250
Toronto P.O. improvements, including automobile cars (re-vote).....	10,000
Toronto Junction public building.....	5,000
Toronto Custom House and Examining Warehouse, paving.....	4,500
Kingston R.M.C., additional buildings, gymnasium and hospital (re-vote).....	8,000
Rat Portage P.O. and C. (re-vote).....	2,000
St. Catharines Drill Hall (re-vote).....	10,000
Windsor Drill Hall (re-vote \$4,000).....	15,000
Woodstock public building (re-vote).....	10,000
St. Thomas Drill Hall and Armory.....	8,000
Deport Harbor breakwater.....	50,000
Sarnia, dredging.....	11,250
Port Hope Harbor dredging (\$5,000) repairs to pier (\$2,000).....	7,000
Lancaster wharf.....	5,000
Cobourg, repairs to pier and dredging.....	5,000
Severn and Black rivers, improvements in connection with regulation of waters of Lake Simcoe and Couchiching.....	2,500
Beaverton, repairs to wharf.....	1,000
Oshawa, repairs to pier (re-vote \$8,000).....	10,000
Pickering harbor, repairs to breakwater and dredging.....	4,000
Toronto harbor, work at eastern entrance (re-vote).....	40,000
Toronto harbor, diversion of Don and dredging in the harbor (re-vote).....	25,000
Bronte, harbor improvements.....	5,000
Oakville, repairs to west pier at mouth of harbor, etc.....	5,000
Burlington channel, repairs to piers (re-vote).....	20,000
McGregor's Creek.....	5,000
Rondeau harbor (repairs \$1,500, dredging \$3,907).....	5,407

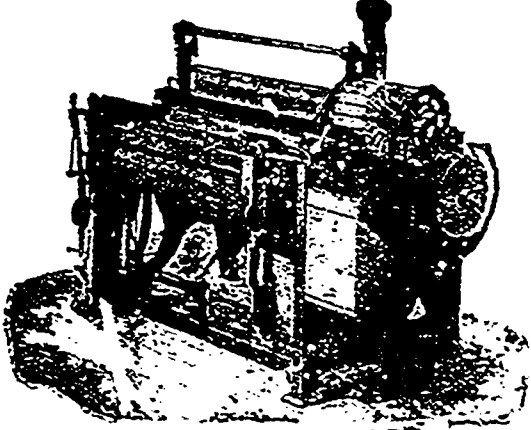
Port Burwell, improvements of harbor.....	\$30,900
Port Stanley wharf.....	8,000
Kingsville, repairs and improvements to wharf and breakwater.....	15,000
Point Pelee Island, wharf (re-vote).....	6,000
Leamington, pier.....	15,000
Sydenham River, dredging (re-vote \$5,000).....	5,000
Bayfield, extension of piers.....	5,500
Goderich harbor, re-construction of breakwater, etc. (re-vote).....	20,000
Goderich harbor, dredging to complete (re-vote).....	11,000
Port Albert, dredging.....	1,000
Goderich harbor.....	5,039
Goderich harbor, blasting and removing rocky shoal in vicinity of elevator.....	4,700
Goderich harbor, repairs to northern entrance pier.....	2,100

Port Elgin, breakwater (re-vote \$3,000).....	\$3,000
Port Elgin, dredging.....	1,500
Kincardine, dredging.....	2,500
Kincardine, harbor improvements.....	5,000
Warton, landing pier.....	10,000
Southampton, dredging.....	2,000
Saugeen River, improvements, etc.....	5,000
Colpoys Bay, extension of pier.....	600
Lion's Head, repairs to pier.....	1,000
Lion's Head, dredging.....	1,500
Owen Sound harbor, dredging and extension of pile protection works (re-vote \$9,000).....	30,000
Oxenden, addition to wharf.....	4,000
Meaford harbor, dredging and pile work.....	30,000
Thornbury, repairs to harbor works.....	1,000
Collingwood harbor, improvement, (re vote \$30,000).....	50,000

W. R. PERRIN & CO.
122 Church St., Toronto.
MANUFACTURERS
**Hydraulic Presses,
Screw Presses,
Filter Presses.**
SEND FOR CATALOGUE.



**The Yeakley
Vacuum Hammer.**
Canadian Patent, November 3, 1887.
Is now Manufactured and for Sale by
the undersigned Sole Proprietors
of the Canadian Patent:
George Brush
EAGLE FOUNDRY,
MONTREAL.

THE NORTHROP LOOM.

There is only one Profitable Plan—**BUY NORTHROP LOOMS**
With them the Future is Assured.
They are no Experiment.
Thousands have been running in the United States, and a large number
are now in Canada. Sales steadily on the increase.
“The Mills that refuse their opportunities will find their
future utility serving as picturesque ruins in the landscape.”
We also Manufacture the Best Warper at present
Known—also Spoolers.
Write for particulars and quotations. Address

The NORTHROP LOOM CO. OF CANADA, Ltd.
VALLEYFIELD, P.Q.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

Barrie, works of re-construction and repairs on public wharves.....	3,000
Hawkestone, wharf (re vote \$1,500).	2,250
Midland harbor, dredging.....	3,300
Bruce Mines, wharf (re-vote).....	8,000
Providence Bay, wharf (re-vote)....	5,000
Sheguinah, landing pier.....	2,300
Sault Ste. Marie, harbor improvements.....	10,000
Little Current, north channel improvement.....	1,000
Port Findlay, wharf (re-vote \$2,500)	5,800
Port Arthur, dredging.....	3,500
Desharats, to complete wharf.....	1,000
Hawkesbury, dredging.....	4,000
North Bay, repairs.....	2,300
Seugog River, dredging channel (re-vote).....	4,000
Fenelon River, piers to regulate descent of logs.....	800

Sturgeon Point, wharf on Sturgeon Lake.....	500
Kingston graving dock wharves, works of re-construction and repair.....	5,000
Trenton, dredging channel Murray Canal to Central Ontario Railway dock, etc.....	8,400
Burlington channel bridge.....	3,730
Pelee Island, renewal of original portions of cable connecting the island with the mainland.....	6,000
A new lighthouse on pier on Middle Ground, Lake Erie.....	60,000

They have just purchased thirty looms of latest and best design and an outfit of most modern machinery for the manufacture of haircloth, and will have a capacity of over 1,000 yards per day.

They have engaged a first-class superintendent who is thoroughly conversant with the making of all grades and designs of haircloth. They have for some years been drawing weaving hair for the manufacture of haircloth and with this late addition to their rapidly increasing business, they will make a complete combination of the hair industry.

A NEW INDUSTRY IN TORONTO.
Messrs. P. & P. Griffin, Toronto, manufacturers of steam curled hair, weaving and brush hair, etc., are making a large extension to their works, and will introduce the manufacture of curled hair and haircloth.

The Dreyfus Importing Co., Montreal, has been incorporated with a capital stock of \$25,000, to manufacture articles made wholly or partly of leather. The charter members include H. J. Dreyfus, F. H. Markey and W. B. Powell, all of Montreal.

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Roll Jaw Fine Crushers Reduce Large Rocks at once to Gravel and Sand. Centrifugal Rolls. Cost half and do three times as much as Common Rolls of equal dimensions, and do finer work.

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When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

**ELECTRIC TRAMWAYS,
PERTH, AUSTRALIA.**

Perth is the capital and largest city of Western Australia, with a population of about 36,000. In spite of the size and general prosperity of the city, no tramways of any description had been built previous to the system recently completed.

In April 1897, a concession for thirty-five years was granted by the Government to the Perth Electric Tramways, Ltd. No progress was made until September, 1898, when J. G. White & Co., of New York, were retained as engineers. They submitted plans for the construction of a line of the most substantial character, which were approved by October 1, and authority given the engineers to purchase the necessary materials and apparatus, all of which, except cross-ties, wood poles and cross arms, were shipped from the United States and Canada. Work on the permanent way of the first section, consisting of about five miles of track, was commenced March 10, 1899, and finished June 15.

The concession stipulated that the Tramway Co., was to pave the roadway in the centre of the city for a width of sixteen feet with wood block paving. The blocks were of Western Australia jarrah sawn 3x9x6 inches, and laid on a foundation of concrete six inches thick. Owing to the excessive expansion of the blocks during the rainy season, it was necessary to insert "Mastic" joints between them at fixed points. The joints consisted of ribbons or sheets of asphalt and tar to take care of the expansion and prevent buckling. The surface of the roadway on either side of the sixteen foot strip was paved in a similar manner by the city authorities.

The rails used through the wood paved sections are nine inch, eighty-four pound grooved girder rails, with thirty-six inch joint plates fastened with twelve one inch bolts, and were furnished by the Pennsylv-



Completed Track, Perth Tramways.

ment railways and was specified in the concession.

The overhead line work is of a very substantial character, with wrought iron tubular poles of four inches, five inches and six inches, sections furnished by R. B. Corey of New York. These poles were set in the ground to a depth of six feet and imbedded in concrete.

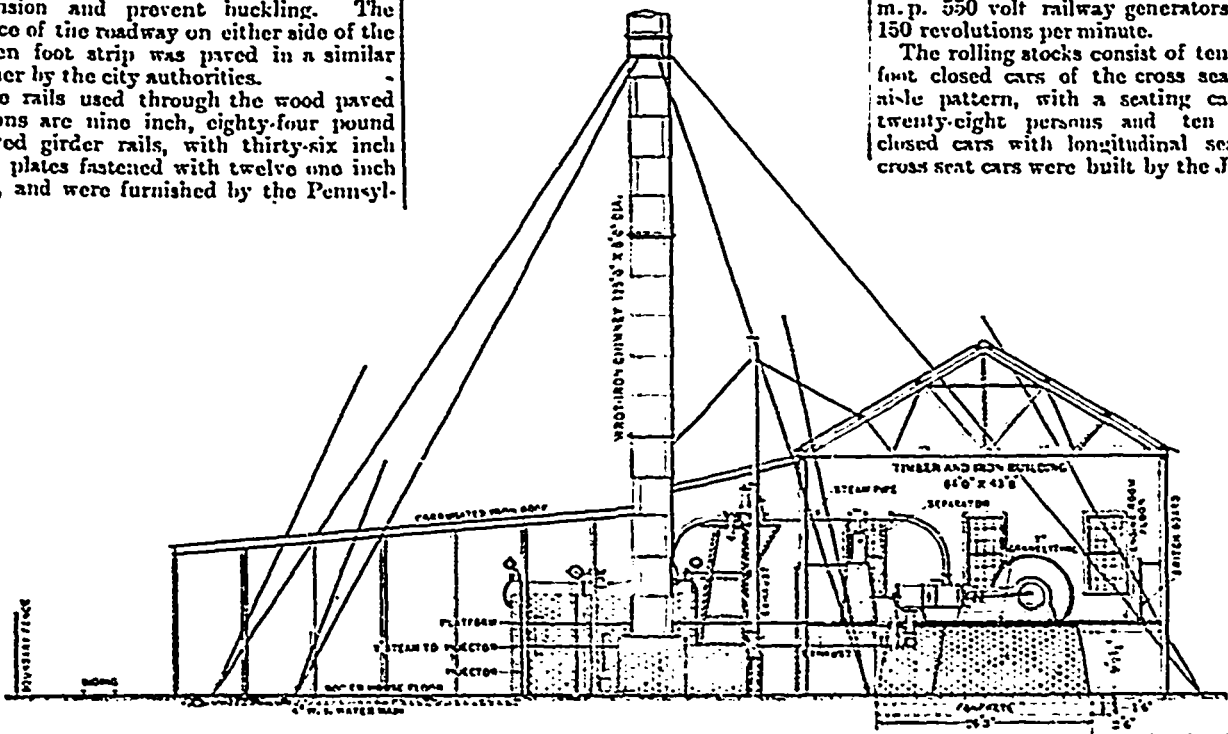
The car house is of brick 204 feet long, sixty-nine feet wide and eighteen feet high on the inside between the tops of the rails and bottom chords of the trusses. This building occupies the unique position of having the first and as yet, the only, roof in the Colony of Western Australia, constructed of structural steel. The structural work was executed in the shops of the Keystone Structural Co., at Roger's Ford, Pennsylvania. Owing to the high freight rates, the trusses could not be shipped in sections as is usually done. They were assembled at the works, all holes reamed in place, the pieces marked with steel stamps and shipment made in bundles with no two pieces rivetted together.

As it is possible the Company may enter the lighting and power field, it was decided not to erect a permanent building for the power station. The machinery was placed on permanent foundations and a temporary station erected so as not to interfere with the permanent building when it is decided to proceed with it.

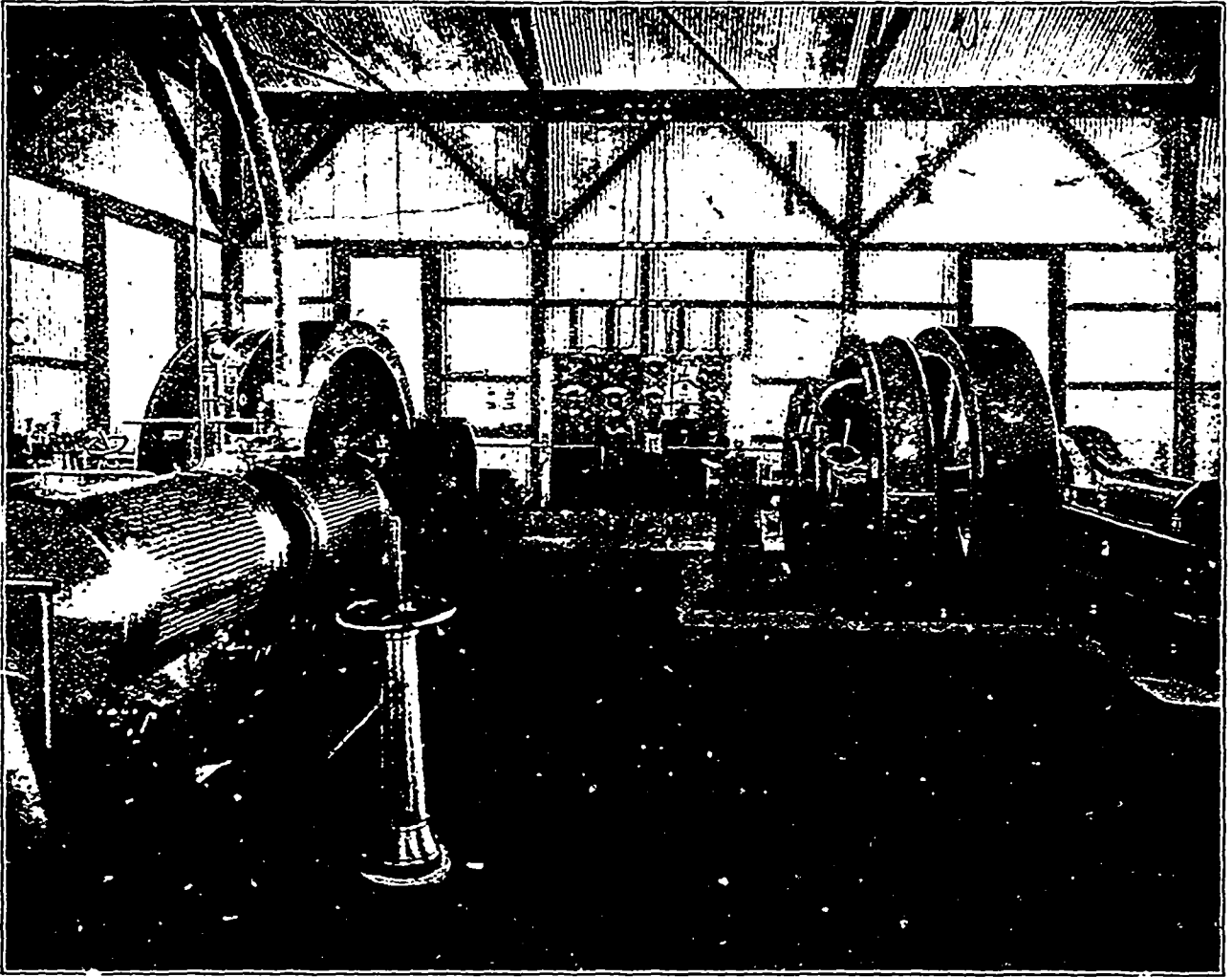
The engines are tandem Compound, side crank type and were built by the Robb Engineering Co., of Amherst, Nova Scotia. They are 300 h. p. each, and are direct connected to General Electric m. p. 550 volt railway generators running 150 revolutions per minute.

The rolling stocks consist of ten thirteen-foot closed cars of the cross seat, center aisle pattern, with a seating capacity of twenty-eight persons and ten standard closed cars with longitudinal seats. The cross seat cars were built by the J. G. Brill

vania Steel Co. These rails are spiked to a three foot, 6 inch gauge which is the standard of the Western Australian govern-



Side Elevation of Machinery in Temporary Station.



Engine Room, Perth Tramways.

Co., while the others were supplied by the Jackson & Sharp Co.

The handling of construction material along the line was exceedingly difficult on account of the poor condition of the road which in many places consisted only of loose sand. A great many difficulties were also

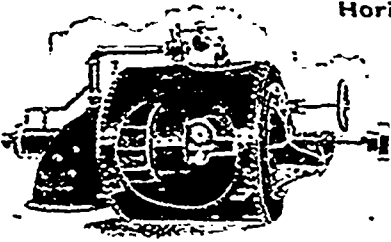
encountered during the construction of the overhead work, owing principally to the fact that the telephone, telegraph and electric light wires had been put up several years before without any regard to the possibility of a trolley road being built. Nearly all these wires had to be raised the full length

of the line, necessitating the setting of longer poles and the transfer of the wires. The head of the Tramways Syndicate is Allan H. P. Stoneham, of London. E. E. Rogers is managing director at Perth and H. J. Somerset, formerly superintendent of the Winnipeg Street Railway System, is superintendent.

THE

Crocker Patent Turbine

Horizontal Setting, with Quarter Turn Elbow.



Q 549

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

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.

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The JENCKES MACHINE CO.,
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The Largest Leather Belt Ever Made in Canada—From the Factory of Sadler & Haworth.

SOME BIG LEATHER DRIVING BELTS.

The illustration on this page represents what is said to be the largest leather belt ever made in Canada. It was manufactured by Sadler & Haworth, of Montreal and Toronto—for the Ogilvie Milling Co., at Winnipeg, Manitoba, the width is seventy-two inches, length 151 feet, thickness three ply and total weight 2,300 lbs.

The same firm have recently furnished the Standard Electric Co., and the Street Railway Co., in Montreal with some forty-eight inch three ply belts, and are now building a large number of belts for the Great Niagara Power Co., at Niagara Falls, Ontario—including a number of twenty-four inch "doubles" and forty-eight inch three ply. The present is a "growing time" for big leather belts—especially as far as the old and reliable firm of Sadler & Haworth are concerned.

Mr. Langmuir, Esq., Toronto, has just been supplied with an elegant gasoline motor launch built for him by Walter Dean, the well-known boat builder of Toronto. She is now doing her twelve and a half miles per hour on the Muskoka lakes, where Mr. Langmuir has his summer residence.

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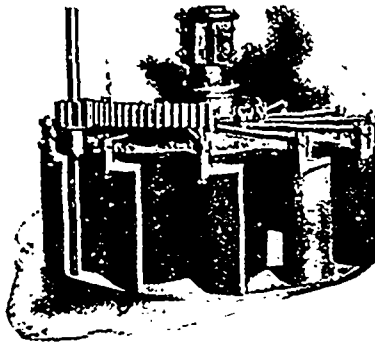
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CROCKER IMPROVED TURBINE.

The Jenckes Machine Co., Sherbrooke, Que., have just issued their fourth edition of their water wheel catalogue having special reference to the Crocker turbine manufactured by them, in the preface of which we are told that the modern turbine is the evolution of ages from two distinct types, one of which delivers the water in a tangential direction to radial arms or vanes projecting from a central shaft, without confining it in any way; the other conveyed it in a closed tube to hollow radial arms through which it passed, and, leaving them in a tangential direction, gave, by the reaction pressure, a rotary motion to the whole apparatus. Both systems may be traced back to such remote antiquity that it is useless to attempt to find their origin.



The Crocker Turbine.

They are generally classed as inward flow, downward flow, and outward flow. The early forms of turbines were principally of the outward flow type, but being expensive in construction and liable to clogging owing to the large number of buckets employed, they have given way to the inward and downward flow turbines. In 1855, A. M. Swain, a mechanic employed in water-wheel construction at the Lowell Machine Shop, conceived an idea which produced the prototype and exemplar of all the modern American turbines. He combined the inward and downward flow wheels, curving the buckets both laterally and vortically, and discharging the water mainly downward. From 1862 to about 1878, the number of turbines placed upon the market was legion, with all sorts of variations of curve of bucket and form of gate, but all containing the

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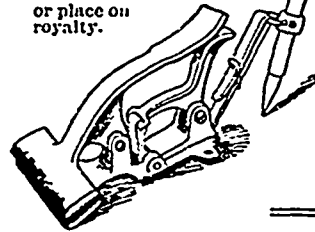
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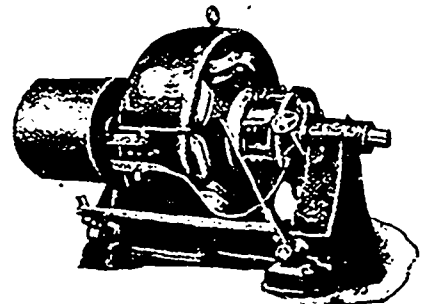
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L. M. LOWNES,
NORRISTOWN, PENNA.

The Jones & Moore

ELECTRIC CO.

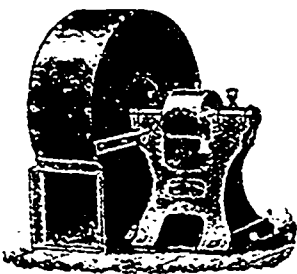
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same general features of inward and downward discharge.

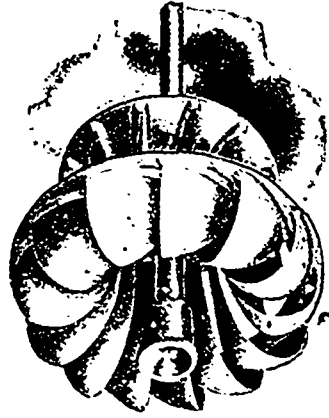
The general result has been to furnish the public with turbines of equal power as compared with the older types, in one-half the space and at one-fifth the cost. The general outline of evolution has been that of lower and deeper buckets with wider openings.

Regarding the Crocker turbine we are told that it embodies all the desirable characteristics required for use in connection with the diversified industries of to-day. The invention resulted after a careful study of the principles of hydraulic science and the practical requirements of a turbine, and a thorough examination of existing types of wheels. In the construction of this machine the makers have given special attention to securing efficiency, durability and uniform velocity, and no attempt has been made to obtain the greatest possible capacity for any given diameter; nevertheless, all things considered, they claim this to be the most compact form of turbine made.

The runner, or wheel proper, used in the Crocker turbine, is a model of skillful design and scientific construction. It unites ample strength with large capacity and the highest efficiency. The gates and chutes are formed and secured to the casing in a manner permitting of easy operation, even under high heads, thus admitting of perfect regulation by ordinary water-wheel governor. The surface of the gates and chutes introduce the water to the wheel in solid streams, the full height of the buckets, thus producing high part gate results and uniform speed under varying conditions. Economy results

also from the fact that every particle of water is directed on to the buckets, there being no leakage through the crownplate to the wheel vents, as may occur when cylinder gates are used.

The wheel runner consists of vertical buckets having reversed curved surfaces with looped arm discharge edges, which are enclosed between curved surfaces. The one forming the body of the wheel has



Crocker Turbine Runner.

the concave surface next to the buckets; the other forms a hoop or band which encloses the reacting parts of the buckets, and has the convex surface next to them or larger end downwards. By this construction the vent portion of the wheel is greatly expanded, which secures an abundant and perfect discharge. All the surfaces are

modelled by graceful curves, imparting to the design a finished appearance as well as adding to the efficiency of the wheel.

The gate system consists of a series of chutes and swinging valves hinged together and secured in position between a supporting and a scalloped crown plate by bolts. This is the only device in use whereby water can be graduated without checking its velocity, changing the direction, or destroying a uniform delivery to the buckets; all necessary to secure economical part gate results. These valves or gates are operated by rods that connect the gates with an arm that swings on a hub projecting from the top of the scalloped crown plate, this arm being operated by a segment and pinion. The gate and chutes are detachable, and renewals can be made; this is of great importance, especially on large wheels. In the case of other turbines, when one chute is disabled from any cause, it becomes necessary, from the construction, to renew the whole chute-way or curb. Above the gate arm is a steady box with adjustable blocks in the usual form.

The gate mechanism above described is mounted on a flanged cylinder or draft tube, the flange being turned or faced on both sides, the lower side being intended to rest on the bottom of the flume. In this cylinder or draft tube is secured a spider or bridge tree for holding the step of the wheel, with an adjusting screw for raising or lowering same, and so arranged that a step can be taken out and a new one put in without removing the wheel.

Very careful attention to details is evident in the general appearance and construction

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Shipped ready for operation upon receipt of order

B. F. STURTEVANT Co., Boston
New York Philadelphia Chicago London

of these wheels. In the case of another prominent wheel, now on the market, the surfaces between which the gates work are not finished in any way, simply cast, as owing to the construction of the wheel it is not practicable to finish them. In the Crocker Turbine, however, these surfaces and all other working parts are carefully machined and fitted, resulting in a neat and workmanlike appearance, and adding very materially to the easy working of the gate system.

In the preparation of the catalogue the company have availed themselves of the opportunity to thoroughly revise their tables of horse-power of the Crocker Turbine. Improvements in the construction of the wheel enables them to table higher results than formerly, and still come well under actual safe performance. These tables have been extended from forty to 100 feet head; the simple, strong construction of the wheel permitting its use under a wide range of conditions and higher heads. A number of tables and rules have also been included, to meet the needs of practical men and to facilitate the calculations and estimates required in connection with water-wheel work. Diagrams and tables of the principal methods of settings have also been inserted, together with views of plants built and installed, which serve to show the adaptability of the Crocker Turbine to varying requirements and local conditions.

For further information, catalogues, etc., enquire of The Jenckes Machine Co., Sherbrooke, Que

THE UNITED ELECTRIC COMPANY, LIMITED.

The United Electric Co., Toronto, inform us that some of their recent sales of electric apparatus include the following:—

Generators.—Ludwig Mond, Whitelash, Ont., 200-h.p. generator direct connected to engine, also several motors for hoists, crushers, etc.; Dominion Bridge Co., Montreal, one 60 k.w. generator; Lever Bros., Toronto, one 200 h.p. generator and engine and twelve motors, also arc and

incandescent lamps installed; Maritime Electric Co., Halifax, N.S., one 10 k.w. direct driven generator and engine; Kootenay Navigation Co., Nelson, B.C., one 10 k.w. direct driven generator and engine; La Prairie Pressed Brick Co., Que., one generator and motor; West Lorne Electric Co., West Lorne, two generators with arc and incandescent lamps, and wiring for street and commercial lighting.

Dynamos.—Truth Publishing Co., Toronto, one 300 light dynamo; Schofield Woollen Co., Oshawa, Ont., one 250 light dynamo and lighting installation; Rainey

Novelty Co., Kingston, Ont., one plating dynamo; Canada Electric Co., Montreal, one 9 k.w. dynamo; James McBurney & Son, Callander, Ont., one 20 light arc dynamo and lamps.

Motors.—E. S. Stephenson & Co., St. John, N.B., 1 eight, 1 six, 1 three h.p. motors; Peter Stewart & Co., Ingersoll, Ont., 1 forty h.p. motor; R. Elliott, Ingersoll, Ont., 1 forty h.p. motor; Miller Bros. & Toms, Montreal, 4 five h.p. motors; Fred. Thompson & Co., Montreal, 2 five h.p. motors; Miller Bros. & Toms, Montreal, motor and controllers for eleva-

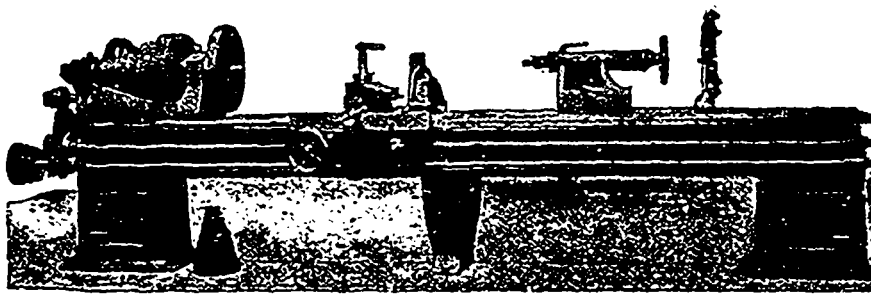
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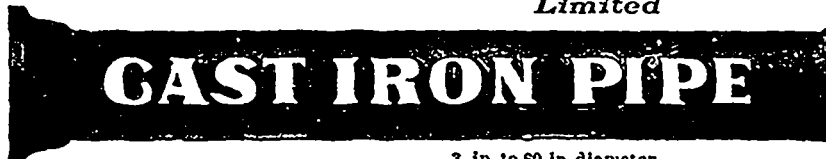
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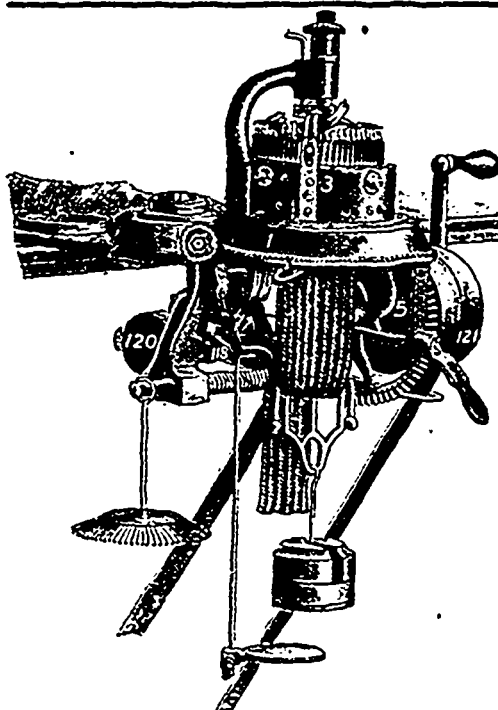
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treil, 2 six h.p. motors; Darling Bros., Montreal, 1 six h.p. motor; Wells & King, Toronto, 1 five h.p. motor; West End Laundry, Toronto, 1 four h.p. motor; Charles Miller & Co., Toronto, 1 three h.p. motor; E. French, Toronto, 1 two h.p. motor; Chalcraft & Co., Toronto, one h.p. motor; Gilmour & Sons, St. Catharines, Ont., 1 three h.p. motor; C. S. Crabtree, Toronto, 1 five h.p. motor; Darling Bros., Montreal, 1 five h.p. motor.

1 three h.p. motor; 1 four h.p. motor; 1 eight h.p. motor; 1 thirty light dynamo. To Messrs. Hoffmeister Bros., Vancouver, B.C., 1 three h.p. multipolar motor. The Georgian Bay Navigation Co., Collingwood Ont., a 150 light dynamo, including the complete wiring of their steamer Britannic.

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J. A. Cooley, Peterborough, Ont., 1 one h.p. motor.

G. E. Matthews, Montreal, 2 two h.p. motors.

Messrs. Geo. May & Sons, Ottawa, have placed an order with this company for 1 five h.p. motor.

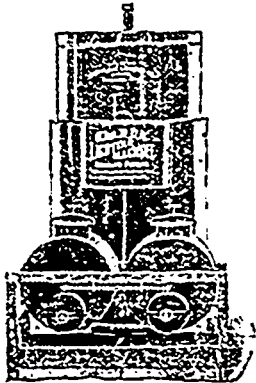
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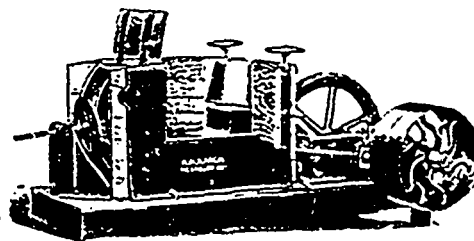
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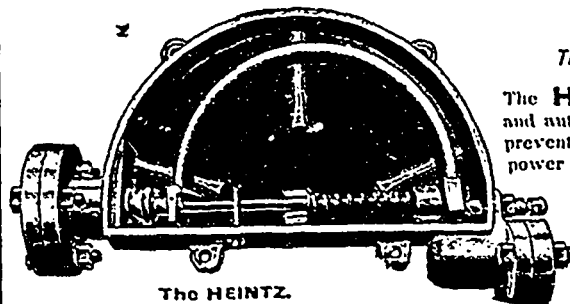
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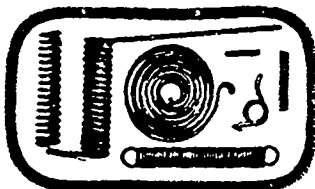
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So far as the immediate prospects of the building trade in Toronto is concerned there is a very favorable outlook, involving the expenditure within the next year or so of probably two million dollars on large structures alone. Of these the principal is the Toronto Hotel, to cost in the neighborhood of \$1,000,000 for building and equipment, exclusive of the site. Plans for this have been in preparation for weeks, and if the expectations of the directors are realized contracts will be called for within a few days. Then there is the new St. Lawrence Market, on which a conservative estimate places the expenditure at \$200,000. W. R. Johnston & Co., are putting up a five-storey clothing warehouse at the corner of Front and York street, at a cost of \$125,000, while two prospective \$100,000 items are the milk trust building and the new Knox Church. New public and separate schools, to cost about \$120,000, will be erected this summer, while Mr. Manning's office building on Queen street will probably require \$60,000. The T. Eaton Co. are building another \$40,000 extension of five stories on Albert street, while it will take \$50,000 yet to finish the Sunlight soap factory on Eastern avenue. In addition to these the William Davies Co. contemplate an extension to their packing factory on Beachall street, and the Robert Simpson Co. the addition of three stories to the southwest corner of their present premises.

There has been a marked change in Toronto in the last couple of years in respect to the number of vacant houses to rent, the steadily decreasing number, in spite of the new buildings going up, being an evidence of prosperity here as well as of the fact that Toronto is drawing to itself population from outside points in the province. While there are yet no accurate figures available this year of vacant properties at present in the city, the assessors, who have perhaps the best opportunities of observation, state that this season will show an improvement upon last, which in turn was an improvement upon the year before. As an example, in 1898 there were 2,209 vacant houses and 320 vacant stores and other buildings, a total of 2,529. Last year the number was reduced to 1,503 houses and 263 stores and other buildings, a total of 1,766 only. This year the reduction will be even greater. It is to be remembered, however, that few houses are going up that are not absolutely necessary. In other words, there is comparatively little speculative building. On this account houses that are already up are made to serve the purposes of tenants, and as a result nearly all the good substantial properties are being rented. Some few, that held at exorbitant figures, are vacant, but for the most part the houses that are not now rented are the cheap roughcast and frame buildings.

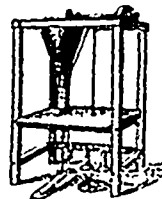
The Kinleith Paper Co., St. Catharines, Ont., has been incorporated with a capital stock of \$200,000, to manufacture pulp, etc. The provisional directors include E. Findlay and L. P. Snyder, of St. Catharines, and F. A. Ritchie, Toronto.

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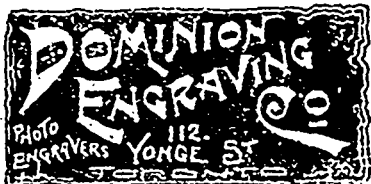
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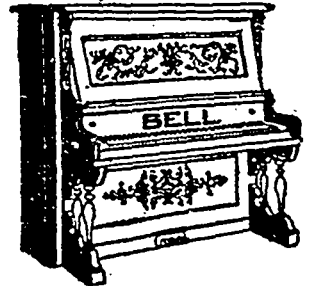
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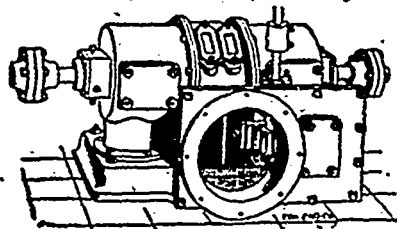
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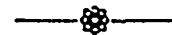
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