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No. 11.

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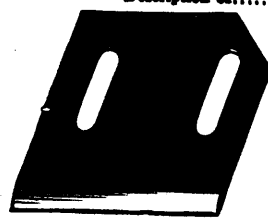
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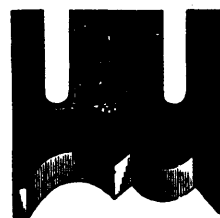
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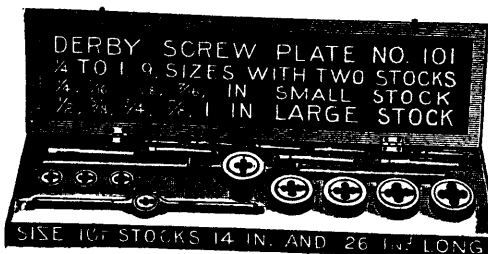
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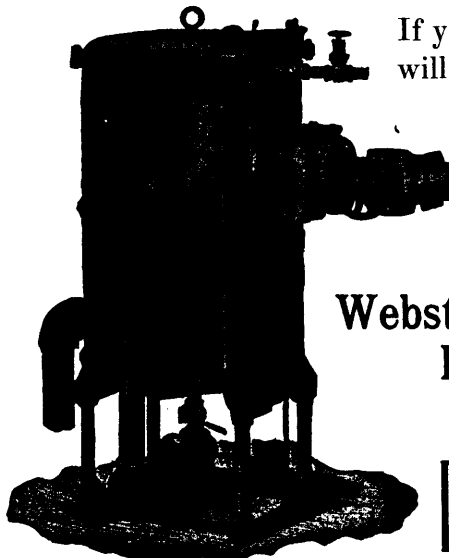
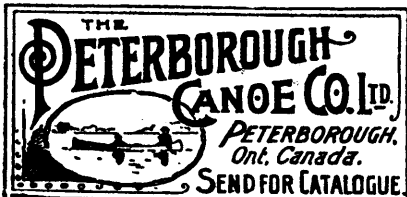
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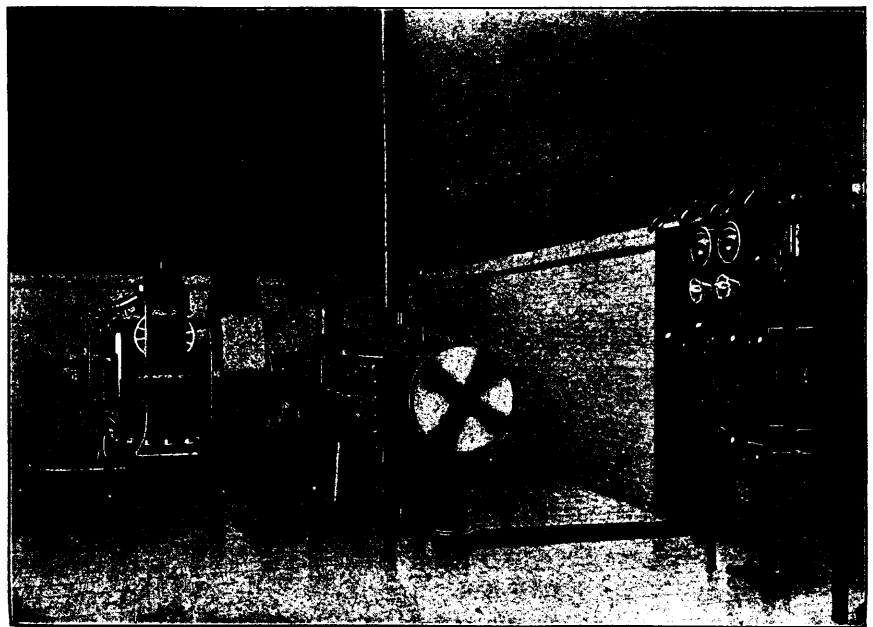
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 The Generator is simple in construction, and does not require skilled labor to work it. **No Purifiers required. Products being a Rich Permanent Gas and Charcoal.**
 These Generators are extensively used in Europe, and are on exhibit at the Paris Exposition. Particulars by applying to

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THE MASON REGULATOR CO.

ESTABLISHED 1883

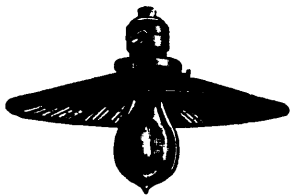
Standard Steam Specialties

Reducing Valves, Damper Regulators, Pump Governors and Automatic Appliances of all Descriptions for the Regulation and Control of Steam, Water and Air Pressures.

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We Stock a Large Variety of SHADES and REFLECTORS in

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FOR FACTORY AND OFFICE.

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164 Federal Street, - Boston, Mass.
 AGENTS FOR UNITED STATES.

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J. J. CASSIDY, - Editor and Manager

THE CANADIAN BEET SUGAR INDUSTRY.

We are in receipt of a communication from a correspondent who takes much interest in the development of the Canadian beet sugar industry, in which he mentions that the subject of growing beets for the purpose of making sugar to supply the demands of the country is beginning to attract much attention, and that there are comparatively few people who realize the full significance of the fact that the Dominion is as well favored, as far as the conditions for propagating the sugar beet, and the manufacture of sugar is concerned, as any other country of the globe. He says that destiny has marked Canada as a favored spot for this purpose, and that this coming industry will give our agricultural and manufacturing enterprises an impulse of a most remarkable and valuable character.

There are many enterprising men in the Dominion who, after a careful study of the subject, have come to the conclusion that the growing of beets for the manufacture of sugar in sufficient amount to supply all the demands of the country is an entirely advisable and feasible proposition; and they are even now seeking to induce farmers and capitalists to develop the industry with the expectation that at a not very distant day they will see their efforts crowned with abundant success.

The total imports of sugars into Canada in 1899 amounted to 265,823,389 pounds, valued at \$5,883,443, upon which \$1,932,556 duty was collected; and in 1900 the imports were 304,660,448 pounds, valued at \$7,228,218, upon which \$2,286,123 duty was collected. More than seven million dollars is a large amount of money to be sent out of the country every year for this one article of prime necessity, every cent of which, were the industry properly developed, would remain in the pockets of the people.

We have the soil and the climate necessary for successful beet culture; we have intelligent and industrious farmers and mechanics; we have enterprising manufacturers; we have all necessary transportation facilities; we have fuels and all other things and materials needed by the factories within easy reach and at reasonable cost, and there is no element lacking to develop the industry—an industry which offers such rich returns to capitalists, farmers and manufacturers.

The Canadian Manufacturer

Reaches all the Blast Furnaces, Iron and Steel Works, Rolling Mills, Manufacturers of Iron and Wood-Working Machinery, Steam Engines and Boilers, Pumping and Mining Machinery, Electric Machinery and Appliances, Machinery Dealers and Steam Fitters' Supplies, all Hardware Dealers, Cotton, Woolen, Knitting and Yarn Mills, Pulp and Paper Mills, etc., in Canada.

In the modern system of agriculture the sugar beet has become an important factor; where the cultivation of it has been introduced, it has won favor and profit for all concerned. It needs no arguing, nor should it, to convince the Canadian farmer that rich remuneration awaits his efforts in this direction. The profit in the cultivation of the sugar beet averages higher than that from most other crops. It is a crop that would not compete with any other that the farmer would cultivate, but on the contrary it would create a market for other crops. The advent of a sugar factory means for the farmer not only a sure nearby home market at a fixed price for his beets, but an increased demand for all his other products to supply the wants of the increased population of his neighborhood. With the development of the beet sugar industry there would necessarily come other industries to supply the demand for building and other materials, machinery, etc.

In the establishment of a modern beet sugar factory it requires about one thousand dollars capital per ton of beet capacity; thus it would take about \$500,000 capital to establish and operate a factory which would consume five hundred tons of beets per day. There would be no necessity for going outside the country for any materials necessary for the establishment of such an enterprise. Some of such machinery is now being manufactured in Canada equal to any made in foreign countries. In many of the American factories are found filter and other presses and other important parts such as can now be produced here in Toronto and other Canadian works.

Whatever will contribute to the healthy growth and commercial independence of a country, and the improvement of the condition of the people, is much to be desired; and we should be appreciative of the fact that our lots are cast in one of the most favored sections of the globe adapted to the building up of the beet sugar industry.

EXPLORATION OF NORTHERN ONTARIO.

In accordance with the progressive and enlightened policy of industrial expansion inaugurated by the administration of Hon. G. W. Ross an extensive and systematic exploration of this portion of New Ontario lying north of the Canadian Pacific Railway was undertaken during the summer of 1900.

As to the necessity and importance of this step there can be no two opinions. Obviously it was essential to ascertain the extent, character and location of the natural resources of the region with some measure of definiteness, in order to determine the best means of opening up the country and the districts which would best repay the outlay upon railways or colonization roads. Previous to last year's exploration the information obtainable upon these points was exceedingly vague and unreliable. It was known in a general way that some good land and very considerable quantities of spruce timber were to be found on the northern slope, but no accurate knowledge as to the extent or situation of either was accessible to the public.

The plan pursued involved the division of the territory to be explored into ten districts. One of these was assigned to each exploration party, consisting of a surveyor, land and timber estimator and geologist, with the necessary assistants, canoe-men, etc. The ground was covered just as thoroughly as the time and resources at the disposal of the parties would permit, and the results have just been given to the public in the report of the exploration published by the Department of Crown Lands, comprising some 300 pages, including a number of photographic views. The main facts established by the exploration have for some time been known and have fully justified the progressive policy of the administration, and the energy which has been displayed in the work of opening up the Northern country and encouraging its industrial development. Interest in this great undertaking has been immensely stimulated by the revelations of the explorers as to the enormous wealth in natural resources and fertile soil possessed by a region which many people have hitherto regarded as little better than a sterile wilderness with an inhospitable climate. The most significant discovery recorded is that of the great extent of the belt of good clay land running from the eastern portion of Nipissing district across Algoma and into Thunder Bay district, which has been found to comprise about 24,500 square miles or 15,680,000 acres. This area, nearly all of which is admirably adapted for agriculture, is three-fourths the size of the settled portion of Ontario south of Lake Nipissing. Before the explorers ascertained its dimensions little was known beyond the fact that a clay tract of similar character to the soil of the Temiscaming township extended from Nipissing into Eastern Algoma, but no one supposed that it embraced more than three or four million acres at the outside. To definitely establish this one point alone, proving that the Province has lands available for homes for many hundreds of thousands, is well worth all the cost of the exploration. A noteworthy service performed by the careful and painstaking investigations of the explorers is the gathering of data as regards the climate, which effectually dispel the erroneous impression that the shortness of the season and the prevalence of summer frosts are likely to form a serious drawback to successful agriculture. At the Hudson's Bay posts visited by the parties it was ascertained that for many years all the ordinary vegetables which flourish in Southern Ontario had been easily and successfully grown there. The season is but little shorter than in the settled portion of Ontario, and the extensive forests and large areas of water surface considerably mitigate the severity of the winter.

The short-sightedness of the onslaughts made on the policy of the government in granting pulp-wood concessions in order to encourage the pulp and paper making industry has been abundantly exposed by the reports as to the vast quantities of pulpwood timber existing throughout the territory. The total is estimated at 288,000,000 cords, and as the exploration

was far from being an exhaustive one, and some large areas were necessarily left unvisited, this is merely an approximation to the actual growth of spruce, jack pine and poplar. So far, therefore, all the concessions which have been made have merely touched the fringe of our immense resources in the raw material of the paper industry which is destined shortly to attain enormous proportions. There is every prospect that with the encouragement of judicious regulations compelling the working up of this material within our own borders, Ontario may before long rank as the leading pulp and paper producing community of the world. The presence of iron pyrites in large quantities in many localities will be an important factor in securing this result, as it is capable of being utilized in the manufacture of sulphuric acid and other lye products. There are many splendid water-powers on the rivers which will materially aid in the establishment of manufacturing industries.

So far as pine timber is concerned few discoveries have been made, as that tree does not flourish to any extent north of the Height of Land. An estimate of the extent of the pine-bearing tract in the southern part of Nipissing district surrounding Lakes Temagami and Lady Evelyn, and extending for some distance northward, gives a total of some 1,650 square miles with a yield of nearly three billion feet b.m. Large areas in this vicinity have been destroyed by fire, and in order to preserve that which remains from a like fate the government has set aside a large tract surrounding Lake Temagami as a permanent forest reserve, from which settlement is excluded, special precautions being observed for preventing fires. By this means the incoming population in the adjoining agricultural districts will be assured of a continual supply of timber, which will be cut on forestry principles so as to maintain the reproductiveness of the forest.

The discovery of large deposits of peat in several localities, the most extensive of which is in Nipissing district north of Lake Abitibi, is important as affording an assurance that the future population will have a plentiful supply of excellent fuel. An analysis of samples taken from these peat bogs, which are ten feet in depth in some places, showed them to be rich in carbon and combustible material, while possessing an unusually small percentage of ash and moisture.

Although no very notable discoveries of mineral deposits of great commercial value were made, the geologists who examined and classified the rock formations have done valuable practical work. In many places the presence of gold and other metals was observed, and though the samples secured did not make it certain that mines would repay the cost of development, nevertheless the results are of an encouraging character, and the report will be a useful guide to prospectors, as to the localities in which their labors are most likely to command success. The accounts of the game, fur-bearing animals and birds of the region, and the fish which abound in many of the lakes and rivers, will be read with much interest by the naturalist and the sportsman.

The work of which we have only indicated some of the leading features has been well and thoroughly done, showing great care and fidelity to duty on the part of the large staff engaged. Hon. Elihu J. Davis, the Commissioner of Crown Lands, and Mr. Aubrey White, Assistant Commissioner, upon whom rested the responsibility for the selection and equipment of the explorers, and the arranging of the system under which their work was carried out, are to be heartily congratulated upon the highly successful results of the undertaking, which have already had a marked influence in connection with the development of New Ontario.

THE TORONTO INDUSTRIAL EXHIBITION.

The by-law passed by the Toronto City Council to raise \$135,500 with which to erect several new buildings upon the exhibition grounds, which required the favorable vote of the ratepayers of the city, was submitted to such vote last week and was defeated by a remarkable majority. There are, approximately, 18,000 ratepayers in the city, only 505 of whom voted in favor of the proposition.

Mr. W. K. McNaught, vice-president of the Exhibition Association, is reported to have expressed the opinion that the vote did not indicate a want of confidence in the exhibition authorities—that it would have been different had the by-law been submitted in January last; but it is well known that the reason why it was not then submitted was the confident belief of the Exhibition Board that it would meet the fate that has now befallen it. Mr. McNaught and the Board were informed repeatedly that the salvation of the Exhibition could only be accomplished by an entire change of management, but they were too obtuse to observe so patent a fact and the result is before us.

The date of opening the usual Annual Exhibition has been fixed for August 26 and it would be well to allow the status to prevail until after that event; but it is to be presumed and hoped that as soon as possible thereafter the entire Board will resign, a general reorganization be had, and those who now impede the success of the institution retire from it.

THE PAPER COMBINE INVESTIGATION.

The Royal Commission appointed by the Dominion Government to hold an enquiry into the alleged combine among Canadian paper manufacturers begun its sittings in Montreal May 28, and after hearing some evidence adjourned to Toronto, where the investigation was continued on June 4.

It is possible that the existence of a combine may be established, and a report made to the Government to that effect, but what would follow? The Governor-General-in-Council has the right, according to law, to remove the duty on paper—to admit paper duty free from other countries—but is not compelled to do so. It can exercise its discretion in the matter. Before placing paper on the free list, the Government will be likely to consider carefully the effects. First of all, American paper would freely come into the country were the duty removed. That is, a foreign industry would be benefitted to the detriment of a home industry. The Government would be likely to ask what better is this foreign industry than the home industry? Are not the American paper manufacturers as vehemently accused by the American newspaper publishers of being joined in a combine as the Canadian manufacturers are accused by the Canadian newspaper publishers? If there are two combines—a Canadian and an American—is the Canadian to be punished and the American rewarded with a free market?

A contemporary suggests that more than this is involved. If the paper duty is touched, the Government cannot well avoid a general readjustment of duties on material entering into paper. Canadian paper manufacturers have some rights. If their market is to be given over to American and British competitors, irrespective of the fact whether these are or are not combined, they will be entitled to ask that the exportation of pulp wood be restricted by an export duty. They will probably argue that the true solution of the combine problem is an increase of competition. Let that increase be prepared for by a policy which will tend to force American mills now working on Canadian pulp wood to come into

Canada with their mills. The present Provincial restrictions on the exportation of pulp wood are ineffectual.

When the Government faces the whole question opened up by this investigation, it may not see its way to removing the duty, even though the Press Association charges be established.

We remember having heard it said some time ago that the Government were, on principle, adverse to tariff-tinkering.

EDITORIAL NOTES.

Whatever may be said regarding the Board of Directors of the Toronto Industrial Exhibition, too much cannot be said in praise of the services rendered to it by Mr. H. J. Hill, who has been manager for so many years. His wide experience in such work, his executive ability in handling it in spite of influences over which he had to contend, and the success he has met with in catering to the desires of the public for entertainment should receive the warmest approval. His labors have been herculean and his success phenomenal, and it is to be hoped that when the reorganization of the Association occurs, and come it must at a very early day, Mr. Hill will occupy even a more prominent position in it.

In a conversation with a reporter of the Evening News the day after the defeat of the exhibition by-law Vice-President McNaught, when asked if the Association proposed that they be again submitted in the near future, stated that he would be willing, in fact thought it desirable, to have a vote taken again at the next municipal elections. Mr. McNaught forgets that the Exhibition Board declined to have the city council submit the questions at the municipal elections in January last because of the opposition of the community to the methods observed by the Board, believing that a delay of a few months would serve to overcome the opposition, during which time personal solicitation, the active assistance of the Canadian Manufacturers' Association and other influences might have the desired effect, but we see now that out of the 18,000 ratepayers of the city, only 500 could be mustered at the polls to endorse the mismanagement of the Association, and Mr. McNaught thinks it desirable to try again.

At a meeting of the Toronto Trades and Labor Council held on May 23, a resolution was discussed proposing to endorse the city by-law to appropriate money for the erection of new buildings for the Toronto Industrial Exhibition. According to the Evening Telegram, Mr. W. K. McNaught, vice-president of the Exhibition Association, who was speaking in advocacy of the by-law, said that "the main building was not large enough for the purpose for which it was used, the two galleries were objectionable in every particular, and it would be no surprise if some morning after a wind storm the roof would be gone." If the building is in the dangerous condition reported by Mr. McNaught, it should not be used for exhibition purposes. If it is a death trap it should be closed to the public. A committee of competent architects and builders should be sent at once to make critical examination of it so as to verify or disprove the assertion reported to have been made by Mr. McNaught.

The Toronto World and Mr. W. K. McNaught have locked horns over the management of the Toronto Industrial Exhibition. Mr. McNaught scolds the ratepayers for not having voted \$135,000 for new exhibition buildings, and The World says that the ratepayers demand a change in exhibition management, but is not prepared to mention just what such change should be—that it is just possible that there should be

an infusion of new blood. Mr. McNaught says that the ratepayers have made a grave mistake in not voting the money. We suggest that Mr. McNaught and the whole board of directors resign and allow the infusion of the new blood The World speaks of.

Canada's Great Exposition, otherwise known as the Toronto Industrial Exhibition, will be opened with the usual ceremonies on August 26 next and continued open until September 7. Canadian manufacturers and manufacturers of the United States, Great Britain and other countries will neglect a grand opportunity if they should fail to exhibit. There will be largely increased accommodations for all who desire to let the world know what is being done in the manufacturing industries, and the special attractions, which will all be of an entertaining and instructive character, will be more entertaining and instructive than ever before. Mr. Hill, the manager, says so, and he is without doubt the most experienced man in that business on this continent. Manufacturers intending to exhibit should not delay in making application for space, as entries close on August 3.

The Canadian Engineer has favored us with an exceedingly useful chart in which is shown in some detail the various applications of the Metric System. Information regarding the system cannot become too widespread, seeing that it or its equivalent is now in general use in most commercial countries, the worst laggards being Great Britain, Canada and the United States. The importance of the universal adoption of the system has frequently been discussed in these pages and the tables published in full the same as they now stand in the Statutes of Canada.

A rumor to the effect that visitors to the Pan-American Exposition are called upon to pay an admittance fee to each of the exhibit buildings after paying to pass through the gates appears to have gained some circulation in certain quarters. It is entirely unfounded. The fact is that the visitor after paying the gate fee has the privilege of going through all of the dozens of exhibit buildings absolutely free of expense. The prices of admission are: For adults, 50c.; for persons under fourteen years of age, 25c. The Exposition proper does not include the Midway, which is a collection of amusement enterprises conducted by private companies. To these attractions small admittance fees, ranging from 10c. to 25c. are charged.

The ratepayers yesterday defeated the by-law granting money for new exhibition buildings. After all the efforts that were made to secure a favorable vote, only 505 ratepayers voted that the money be granted. What does it mean? The necessity for the buildings is undoubted. The value of the Fair to the city is not disputed by anybody. We believe yesterday's vote means that the people of the city are not willing to vote money to the Fair until it passes under management that is more truly representative of the public. In a word, we believe yesterday's vote expresses want of confidence in the Exhibition Association as at present constituted, and if the directors recognize themselves as answerable to the ratepayers from whom they asked this money, they should consider the question of reconstruction. If a reconstruction were made many of them would again be requisitioned to serve. After such a reconstruction we feel confident that the ratepayers would cheerfully vote the money that was

refused yesterday. If the directors do not consider themselves answerable to the ratepayers, then we can but admire the discrimination of the ratepayers in defeating the by-law.—Toronto Evening Star, June 1.

The Canadian publishers have been slightly more successful in their efforts to "club" the Canadian paper manufacturers than the publishers have been in their attacks on the American industry. Whether the judicial officer will discover anything or not, it is of course impossible to say at present. The chances are, however, that he will not find that the Canadian manufacturers are in a combination in restraint of trade. The facts are against it. Probably the most that will come out of the thing will be some annoyance to the manufacturers, and perhaps the publication of some facts about the industry which, as a general proposition, paper manufacturers would prefer to keep to themselves, but the publicity of which will do no damage to anyone, and may do some good in enlightening people at large regarding the industry, and convincing them that paper manufacturers are not such heinously wicked people as some newspapers have tried to make folks believe. The real merits of the case can hardly be determined at this distance, but as no one hears of any outcry on the part of the Canadian press because of the enhanced value of any other thing that is manufactured, the suspicion is raised that the Canadian press is not unbiased by personal interest. The manufacture of paper is not a public enterprise; nor is it to the lasting good of any country that any industry should be compelled to supply its product at such a low figure as to wipe out the profit of the manufacturer. If every laborer is worthy of his hire, every business man who conducts his business in orderly fashion is entitled to a profit, and the manufacturer of paper is no exception to the rule.—The Paper Mill.

The manufacturers of farm wagons met in Toronto last month, and it is reported decided upon an important line of action. They made an agreement to combine on prices to dealers and agents, to stop advertising of every kind, to dictate credits, and passed regulations making a fairly strong and firm combination. To his credit one manufacturer refused to submit to dictation and stepped out. It might be well for the farm wagon manufacturers, the dealers in farm wagons and the general public to reflect upon the action just taken. The result of this combination will work an important change in the trade, and may go so far as to revolutionize it. It will at once make the close cash buyer pay for the slow buyers' time, and will produce other features objectionable to the general public which in the United States have become a grave burden, and which are already being felt on this side of the line. But the wagon makers themselves might well consider where their action will end before adopting all the clauses of the agreement. Upon the statute books of the Dominion there are regulations which touch with no light hand upon combinations of this kind. These regulations were placed there for the purpose of preventing the kind of agreement which has just been made. When applied to the case in point, this particular clause in the tariff laws means that as soon as notice is brought to the Government of the agreement of the wagon makers, that the Government is bound to remove the duty on wagons. Is that what the wagon makers desire? Do they wish to enter into competition with the large companies in the United States? They know full well that the removal of the duty would mean perhaps death to them, and certainly great disaster. They cannot compete with the firms across the line and they do not wish to try.—Canadian Implement Trade.

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, belt ing, 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 Standard Asbestos Co., Montreal, has been incorporated with a capital stock of \$150,000. The incorporators include R. C. Smith, K.C., R. T. Hopper, both of Montreal, and J. G. Turriff, Ottawa.

The Louisa Mining Co., Montreal, has applied for incorporation with a capital stock of \$200,000. The applicants include A. E. Cartier, Ludington, Mich., J. S. Trempe, Montreal, and Edouard Rodier, St. Jerome, Que.

T. A. Crosby & Co., Sarnia, Ont., have been incorporated with a capital stock of \$600,000, to manufacture machinery of every description. The provisional directors include J. L. Board, Chicago, Ill., C. R. Morrison, Port Huron, Mich., and T. H. Cook, Sarnia, Ont.

For some time before its recent fire the B. F. Sturtevant Co., Boston, Mass., had, notwithstanding its four acres of floor space, seriously felt the need of a much larger plant and better shipping facilities. Now that the damaged portion of the old plant has been made habitable and the effects of the fire have been overcome, attention is being turned to the selection of another site and the consideration of new plans. It is more than likely that such site will be in the vicinity of Boston, and it is certain that it will be that which presents the most favorable conditions as regards shipping facilities, proximity to a skilled labor centre, water supply, etc. The plant, itself, will of necessity, consist of a power house, large foundry, blower, heater, forge, engine, electrical and galvanized iron shops with administration

building, pattern shop, etc., conveniently located. Between five and ten acres of floor space will undoubtedly be required to meet present requirements, while the available land for future extensions must be from fifteen to twenty acres.

The Revelstoke Lumber Co., Revelstoke, B.C., has been incorporated with a capital stock of \$20,000, to manufacture timber, lumber, etc.

A modern roller flour mill will be erected at Canterbury, N.B., by Henry Clark.

The Canadian Northern Railway, Port Arthur, Ont., have let the contract for their new elevator, which will have a capacity of 1,500,000 bushels, at a cost of about \$300,000.

The Burt Mfg. Co., Akron, Ohio, have recently installed several Cross Oil Filters in the New York City public school buildings. Their field is unlimited. They show a saving wherever oil is used for lubrication.

The Detroit Wire Fence Co. will establish a factory at Oshawa, Ont., to give employment to about twenty-five hands.

The Fernie Lumber Co., Fernie, B.C., has been incorporated with a capital stock of \$27,000, to manufacture timber, poles, logs, ties, etc.

The Hastings Shingle Mfg. Co., Hastings, B.C., has been incorporated with a capital stock of \$600,000, to manufacture shingles, etc.

As a result of the recent call for tenders for the new electric light plant for

the town of Blenheim, Ont., the Electrical Construction Co., London, Ont., have secured the complete contract for wiring, both street and house, supply of switchboard, transformers, and all other supplies needed.

The sawmill of George Mills & Son, Mountain Grove, Ont., was destroyed by fire May 16. Loss about \$3,000.

The Canadian Northern Railway Co. will enlarge their shops at Winnipeg, Man., to be especially equipped for the building of box and flat cars for heavy traffic.

The Huron Lumber Co., Spanish River, Ont., has been incorporated with a capital stock of \$40,000, to manufacture lumber, laths, shingles, etc. The provisional directors include H. W. McCormick and C. F. Braman, both of Bay City, Mich.

The J. D. Shier Lumber Co., Bracebridge, Ont., has been incorporated with a capital stock of \$100,000, to manufacture timber, saw-logs, laths, doors, etc. The provisional directors include J. D. Shier and W. H. Shier, both of Bracebridge, and E. A. Begg, Toronto.

Messrs. G. E. Smith and E. B. Loring, Boston, Mass., are promoting a company to have for its object the building of an electric road to connect Gananoque, Napanee and Deseronto with Kingston, Ont.

The Von Echa Electric Railway Co., Brantford, Ont., have approached the council of that city with a proposition for the construction of an electric railway from Brantford to Galt, Ont.

Messrs. W. A. Fleming & Co., Montreal, have just placed their order with the Garfield Paint Co. for 200 barrels of Zanzibar anti-rust paint. Knowing the superior merit of this article, Messrs. Fleming & Co. have taken the exclusive agency for Quebec and the extreme eastern portion of Ontario. They report a great demand for Zanzibar paint.

Four Cross Oil Filters are installed in the power house at the Pan-American by the Burt Mfg. Co., Akron, Ohio.

The Electrical Construction Co., London, Ont., have recently completed the following contracts: Three dynamos for John Starr, Son & Co., Halifax, N.S.; five dynamos for Bennet & Wright, Toronto; three dynamos for Darling Bros., Montreal; 100 light dynamo for H.

INGERSOLL-SERGEANT Rock Drills

FOR MINES, TUNNELS AND QUARRIES

PISTON INLET **Air Compressors** STRAIGHT LINE
 DUPLEX and
 COMPOUND.

FOR ALL DUTIES.

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

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When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

Shaw, St. Catharines, Ont.; one five h.p. for Geo. A. McGowan, Kingston, Ont.; one motor for the Thorold Pulp Co., Thorold, Ont.; two motors for L. Allcocks, Sault Ste. Marie, Ont.; three for Stuart, Arbutnot Machinery Co., Winnipeg, Man.; and two motors for the Electric Repair & Contracting Co., Montreal.

Mr. E. B. Plewes, of the Garfield Paint Co., has just returned from a two months' trip in Manitoba and the North-west Territories. He reports a most successful trip, having sold large quantities of Zanzibar anti-rust paint manufactured by his company. This paint is being used by some of the representative industries of Canada and has won this confidence through merit alone.

A match factory employing between 150 and 200 hands may be built in Ottawa shortly. President Anderson, of the Walkerville Match Factory, which was destroyed by fire a few weeks ago, was in that city recently, looking for a site. They have been attracted to the city because of Ottawa's excellent railway facilities.

The La Patrie Publishing Co., Montreal, have recently installed a 200 light

dynamo, also switchboard. The Electrical Construction Co., London, Ont., supplied the same. The La Patrie Co. had shortly before this installed another dynamo, made by the same company.

Spicer's shingle mill, Vancouver, B.C., was destroyed by fire May 26. Loss about \$20,000.

The Toronto Fence & Ornamental Iron Works Co., has been bought out by the Canada Foundry Co., Toronto, who will carry it on as a branch of their other business.

The Standard Mfg. Co., Sackville, N.B., are putting a new steam plant in their larrigan factory. They have placed their order with the Robb Engineering Co., Amherst, N.S.

Two fine specimens of the boiler makers' art have just been shipped by the John Abell Engine & Machine Works Co., Toronto, to the Crow's Nest Pass Coal Co. at Fernie, B.C., in the shape of a pair of locomotive fire box boilers of 200 h.p. each.

Some idea of the magnitude of the works of the B. F. Sturtevant Co., Boston, Mass., can be gathered from the fact that the engine and electrical departments, covering over an area of floor

space, which were recently damaged by fire, represented only about one-quarter of the total floor area of the plant. It was therefore possible by a process of compression in the blower and heater departments to provide within these walls sufficient space to re-establish the damaged departments. This has now been done; the offices are again occupying their old quarters and work is progressing much as before the fire.

The Provincial Light, Heat & Power Co., Three Rivers, Que., is applying for incorporation with a capital stock of \$500,000. The applicants include Allan MacDougall, Three Rivers, Que., James Galbraith, Lachine, Que., and John Hyde, H. J. Harrison, both of Montreal.

The W. S. Loggie Co., Chatham, N.B., are buying a forty h.p. boiler and engine for their brickyard from the Robb Engineering Co., Amherst, N.S.

The Hodd & Cullen Co., Stratford, Ont., proprietors of the Classic City mills, which were destroyed by fire April 21, will rebuild on the old walls, which are perfectly sound. The capacity of the new mill will be 150 barrels per day at the outset, but provision will be made for increasing the output.

Transfer Ornaments, AMERICAN MADE.

Guaranteed Quality.

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

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THE MEYERCORD CO., Inc., -MAIN OFFICE- CHAMBER OF COMMERCE, - CHICAGO,

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CHAS. H. JAGGER, Hamilton, Ont.

Largest Makers in the World of Guaranteed Decalcomania Transfers.

THE Crocker Patent Turbine

In Horizontal Setting, with Quarter Turn Elbow.



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

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

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

The JENCKES MACHINE CO.,
42 Lansdowne St., Sherbrooke, Que.

The plant of the Walkerville Match Co., Walkerville, Ont., was destroyed by fire May 14. Loss about \$115,000. The factory will be rebuilt shortly.

Mr. C. Bowes Thistlethwayte, the well-known manufacturers' agent, of Sydney, N.S.W., has been appointed Australian agent for The Acetylene Mfg. Co., London, Ont.

The Frost & Wood Co., Smith's Falls, Ont., manufacturers of agricultural implements, have purchased the building, plant and good-will of the Coulthard-Scott Co., Oshawa, Ont.

The Toronto Lithographing Co., Toronto, have sold their building on corner of King and Bathurst streets, and are erecting a new lithographic, engraving and printing establishment opposite the Gurney Foundry Co. on King street west. The lot has 204 feet frontage on King street by 215 feet in depth. About 200 hands will be employed in the new establishment.

J. L. Board and William Cummings, Chicago, Ill., have organized a company with a capital stock of \$600,000, and will locate a plant at Point Edward, Ont., for the manufacture of machinery for making tin goods.

The Lachine Rapids Hydraulic & Land Co., Montreal, will erect a new plant of about 25,000 h.p., to be used in connection with the lighting of that city.

The Grand Trunk Railway has just completed what is said to be the largest locomotive that ever entered the Grand

Trunk yards. It can maintain a speed of seventy miles an hour, while pulling a train of fourteen passenger coaches, weighs 154 tons, the tender of which has capacity for 6,000 gallons of water and ten tons of coal.

The R. W. English Refining Co., Montreal, has placed an order with the Steel Storage & Elevator Co., Buffalo, N.Y., for the erection of a linseed oil mill of twenty press capacity, and of a steel elevator, capacity 400,000 barrels, with warehouses for cake and feed.

The Lake of the Woods Milling Co's elevator at Winnipeg, Man., was destroyed by fire May 18.

The Toronto Milkmen's Co., Toronto, has been incorporated with a capital stock of \$125,000, and will erect a large dairy building. The provisional directors are Hon. Clarke Wallace, Newman Silverthorne, Dr. Pyne, Col. Davidson, Mr. Taylor and Mr. McCabe.

The Massey Press, Toronto, has been incorporated with a capital stock of \$25,000. The provisional directors include J. H. Housser, P. J. Syms and G. A. Whitaker, all of Toronto.

The Woodstock Box Co., Woodstock, Ont., has been incorporated with a capital stock of \$20,000 to manufacture paper, wooden and metal boxes, etc. The provisional directors include J. F. Mackay, James McDonald and A. M. Clark, all of Woodstock.

The Walker-Parker Co., Toronto, has been incorporated with a capital stock of

\$50,000, to manufacture boots and shoes. The provisional directors include J. A. Walker, J. T. Parker and A. A. Mark, all of Toronto.

The J. G. Gibson Marble & Granite Co., Toronto, has been incorporated with a capital stock of \$40,000, to manufacture marble and marble products, granite, etc. The provisional directors include J. G. Gibson, R. W. Lowden and J. H. Pearen, all of Toronto.

Bell Island Mines have fairly settled down to work again. At present there are one thousand men over there, and next week there will be fifteen hundred. The higher number at least will be employed all summer, and perhaps very many more. Last week eight steamers were loaded at the mines, and from this on the shipments will be rapidly made. Of the cargoes, seven were shipped by the Nova Scotia Co. The men are now being paid twelve cents per hour, and all seem perfectly satisfied.—St. John's Newfoundland Trade Review.

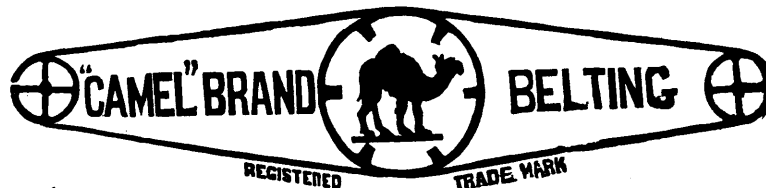
The Diamond Lighting Co., Montreal, will apply for incorporation with a capital stock of \$500,000, to manufacture gas, gasoline, acetylene, etc. The applicants include W. J. Poupore, Ottawa; J. A. Malone, Three Rivers, Que., and E. P. Ronayne, Montreal.

The Canadian Northern Railway are erecting at Port Arthur, Ont., a new terminal elevator, which will have a capacity of 1,500,000 bushels.

W. A. FLEMING & CO.,

771 CRAIG STREET, - - MONTREAL.

THE STRONGEST AND MOST DURABLE



NOT AFFECTED BY DAMPNESS, HEAT OR STEAM

MOST DURABLE

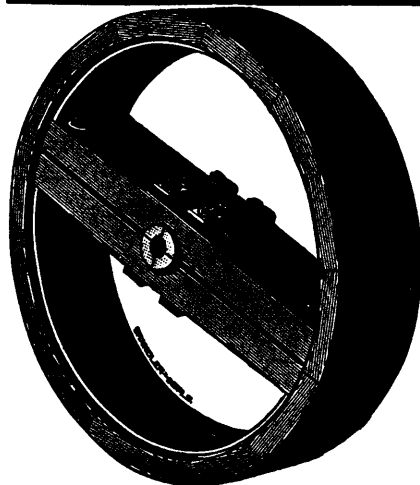
THE BEST FOR MAIN DRIVES

“REDDAWAY”

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STRONG, DURABLE AND NOT AFFECTED BY DAMPNESS.

WRITE FOR SAMPLES AND PRICES



“The Reeves”

A HIGH GRADE

Wood-Split

PULLEY

BUILT HONESTLY

BUILT RIGHT

It Does the Work.

No Trouble.

No Worry.

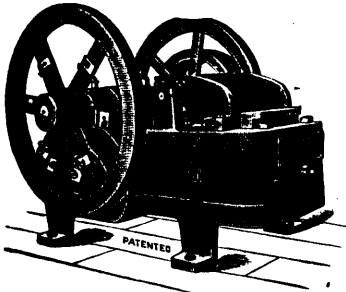
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REEVES PULLEY MANUFACTURING CO., Limited

14 Pearl Street, - Toronto, Ont.

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ROLL JAW CRUSHER.



Crushes

Large Rock

to 4 inch.

Send for Circular.

STURTEVANT MILL CO.,

104 Clayton St.
Boston, - Mass.

The Lake Superior Consolidated Co., recently organized, which now embraces the different companies which have heretofore controlled the large industrial enterprises on the American and Canadian side here, together with the Algoma Central Railway, the steamship company mines, water power and other branches of commercial development, has in immediate contemplation the building of a second water power canal on the Canadian side of the river. The present canal generates power for the operation of the pulp mill, alkali works, electric light plant and iron works, and has a capacity of 25,000 horse power. The new canal will parallel the one in operation on the north side.

It is rumored that Mr. F. H. Clergue is interested in the negotiations for the purchase of the Hull & Aylmer Electric Railway. The line connects with the Pontiac & Pacific Railway, which it is proposed to extend to the French River, and also affords communication with valuable iron deposits at Ironsides.

The salmon canners of British Columbia have united in an association, which practically controls the whole industry in the province. A memorial from a committee of the Salmon Canners' Association to the Government of British Columbia sets forth that the fishing industry is of paramount importance in the coast district of British Columbia, the value of the property being estimated at not less than \$2,000,000. The number of people employed during the season exceeds 15,000. There were seventy-four canneries. During the season of 1899, on the Fraser River alone, there was paid to fishermen, for fish only, approximately

\$1,250,000. The revenue derived by the Dominion Government in 1899 from this industry was \$47,865. A new hatchery has been erected at a point on or near Shuswap Lake, about 200 miles north-east of Vancouver. This will turn out about 10,000,000 fry annually.

The Standard Asbestos Co., Montreal, will apply for incorporation with a capital stock of \$150,000. The applicants include R. T. Hopper, F. A. Johnson and F. H. Markey, all of Montreal.

The Dodge Mfg. Co., Toronto, will make an addition to their factory at the Junction at a cost of about \$40,000.

The Fenlin Leather Co., Montreal, will apply for incorporation with a capital stock of \$250,000, to manufacture leather. The provisional directors will include H. E. McIntosh and H. G. Fenlin, both of Montreal, and C. S. Hyman, London, Ont.

The submarine work in connection with the new Quebec bridge over the St. Lawrence promises to be more difficult than anything of the kind ever yet done on this continent. The main north pier will be erected in twenty feet depth of water, and its foundations, which are to be dug inside the giant caisson built for the purpose, will go down sixty feet below the surface. This caisson is 150 feet long, fifty feet wide and twenty-five feet high, and over a million cubic feet of lumber has entered into its construction. It is built of Georgia pine, of a thickness of five inches. The bottom is four feet thick, and the sides three feet. The interior is a mass of beams and joists, and the caisson has already cost \$30,000. The iron bolts used to hold it together

vary from thirty inches to seven feet in length, and if placed end to end would extend in a straight line eighty miles long.

The Canadian Spool Cotton Co., Montreal, has applied for incorporation with a capital stock of \$200,000, to manufacture cotton, silk, wool and linen threads, and spools, bobbins, boxes, etc. The applicants include S. A. Cauts, New York City, John Beattie, and W. C. McLeish, both of Montreal.

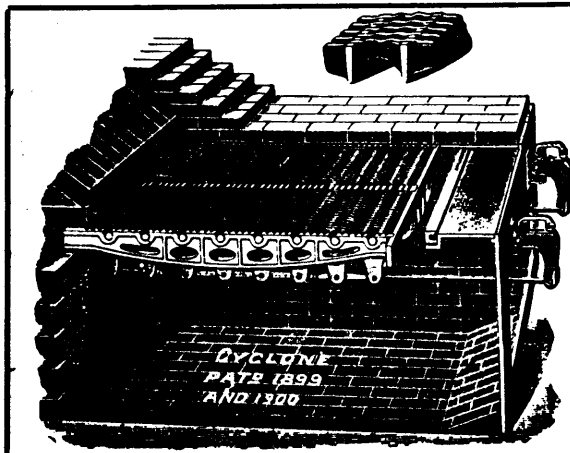
The Lake Megantic Furniture Co., Megantic, Que., has applied for incorporation with a capital stock of \$50,000, to manufacture furniture. The applicants include A. B. Gendreau, Megantic, Fred. Talbot, Sherbrooke, Que., and T. H. Churchill, Truro, N.S.

The factory for the Montreal Co-operative Cigar Co., Montreal, will be started in a short time.

The Blanche River Pulp & Paper Co., Mattawa, Ont., have, in consideration of an extension of time for the completion of their works, agreed to expend upon them \$750,000 instead of \$200,000. They also agree to employ 400 men and turn out 100 tons of pulp daily.

It is stated that the Canadian Smelting Works, Trail, B.C., now the largest producers of lead bullion in Canada, will proceed at once with the construction of a lead refinery.

The Provincial Light, Heat & Power Co., Montreal, has been incorporated with a capital stock of \$500,000, to manufacture electricity, etc. The charter members include Allan MacDougall, Three Rivers, Que., E. P. Ronayne, Montreal, and James Galbraith, Lachine, Que.



USE CYCLONE GRATE BARS AND PRODUCE

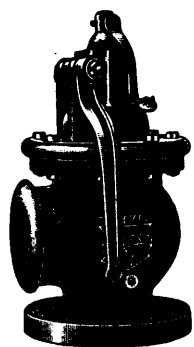
CHEAPER STEAM

No individual consumer can regulate the price of coal, but you can regulate the amount of coal burned for a given power by installing Grate Bars that will produce perfect combustion. Write us for particulars.

E. J. PHILIP, Manager,

404 TEMPLE BUILDING, - - TORONTO, ONT.

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VALVE
YOU
CAN
RELY
ON
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SEND
FOR
PRICES

CROSBY STEAM APPLIANCES EXCEL

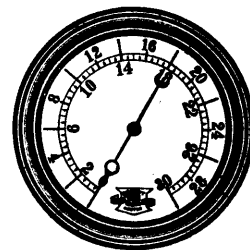
Steam Engine indicators.
Recording Gages.
Revolution Counters.
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Lubricators, etc.



Stationary and Marine Valves.
Water Relief Valves.
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CROSBY STEAM GAGE and VALVE CO.
BOSTON, NEW YORK, CHICAGO, LONDON

A TRUTHFUL GAGE
IS THE
ONLY GOOD GAGE



The Quebec Peat Fuel Co., Quebec City, has been incorporated with a capital stock of \$100,000, to erect and operate mills for the manufacture of combustible turf. The charter members include J. D. Oigny, Montreal, P. H. A. Caron, Petit Metis, Que., and J. P. Michaud, Fraser-ville, Que.

The Ditzel Metal Co., Toronto, has been incorporated with a capital stock of \$500,000 to manufacture metals, metallic compounds, etc. The provisional directors include R. R. Ditzel, New York City; R. M. Bertram and J. W. Mallon, both of Toronto.

The Canada Brass & Electrical Co., Toronto, has been incorporated with a capital stock of \$100,000, to manufacture electrical apparatus, etc. The provisional directors include J. G. Howorth, A. J. Pattinson and A. M. Brodie, all of Toronto.

The mill of the Thorold Pulp Co., Thorold, Ont., is in operation. The capacity of the mill will be ten tons daily, the product to be marketed in Canada.

Messrs. W. J. Poupore & Co., Ottawa, have secured the contract from the Dominion Government for the construction of a new pier and a large amount of dredging work at Sorel, Que., the price to be about \$300,000.

Uralite is an asbestos board with fire-proof and non-conducting properties, and is well adapted for building and other work. Uralite can be veneered to form panelling for railway carriages, etc., it being claimed that such panelling will not swell, crack or blister. Another feature is that uralite is not affected when exposed to moisture or very great changes of temperature, and it can be impregnated throughout with any desired color. The British Uralite Co., the owners of

the British and other patents, have erected extensive works at Higham, near Rochester, Kent, where manufacturing operations are now carried on on a large scale. The buildings are mostly of uralite.

The Lake Huron & Manitoba Milling Co., Goderich, Ont., has been incorporated with a capital stock of \$150,000. S. A. McGaw, Goderich, is one of the incorporators. The company will erect a mill with a capacity of 1,200 barrels of flour per day.

The heavy pressure of water after the recent rains caused the earth approaches of the dam of the Chicoutimi Pulp & Paper Co., Chicoutimi, Que., to give way. The total damage is estimated at about \$30,000.

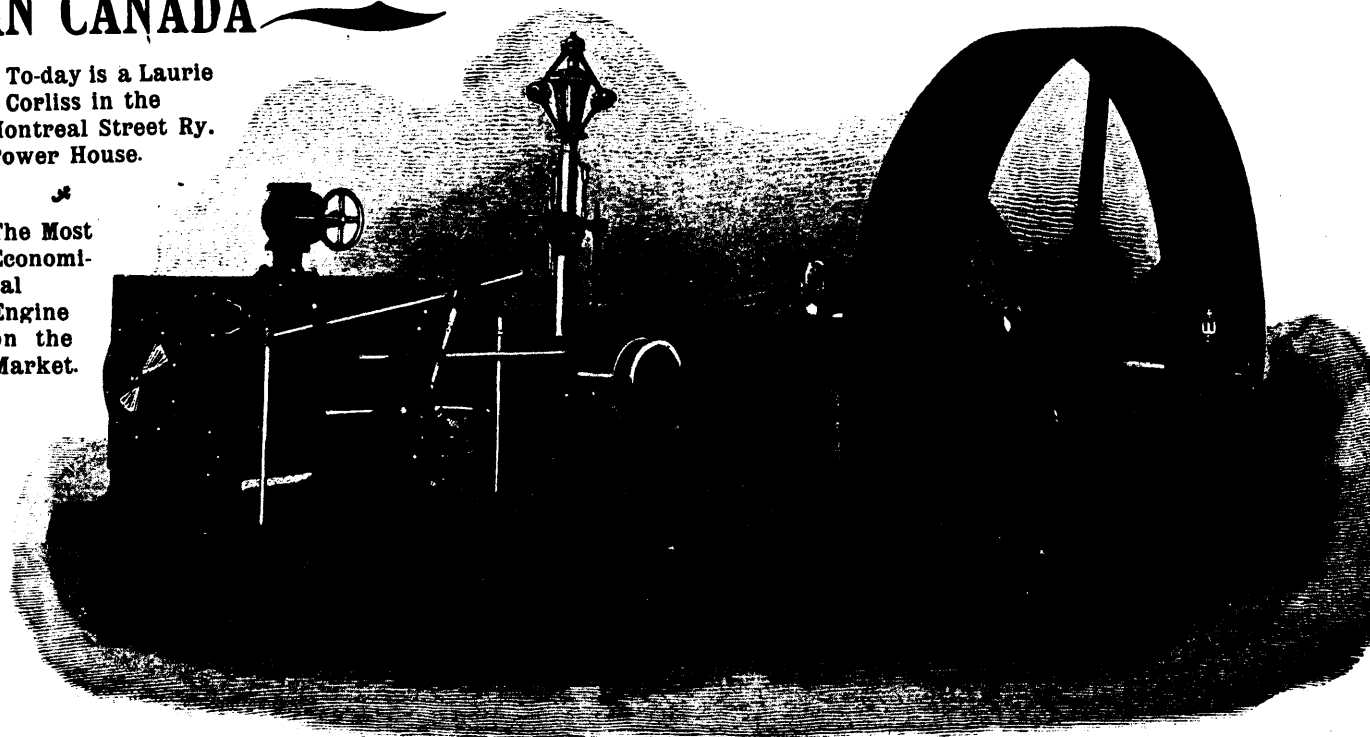
A grain elevator with a capacity of 200,000 bushels is being erected by the Tavistock Milling Co., Tavistock, Ont.

THE BIGGEST ENGINE IN CANADA

Laurie Engines are installed in the Power Houses of the Montreal, Toronto, Winnipeg and Vancouver Street Railways, the Dominion Iron & Steel Company, Sydney, etc.

To-day is a Laurie Corliss in the Montreal Street Ry. Power House.

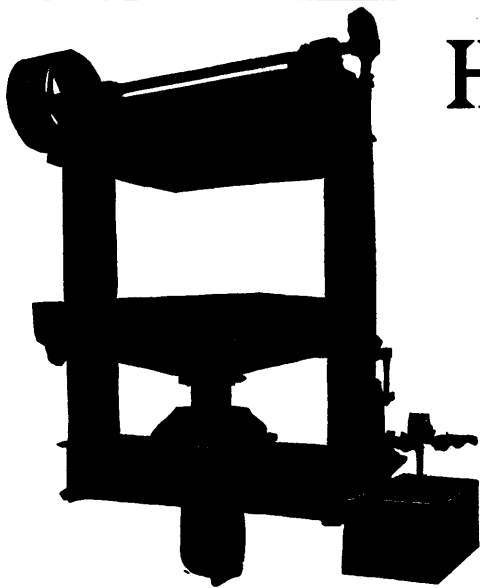
The Most Economical Engine on the Market.



Any Size—Small or Large—Supplied.
Information gladly furnished upon writing to

LAURIE ENGINE CO., 1021 and 1014 St. Catherine St.,
321 St. James Street, **Montreal.**

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Hydraulic PRESSES

We Build Presses
for...

**PRESSING VENEERS
TANNERS' USES
BALING, Etc.**

SEND FOR
CATALOGUE
AND PRICES

William R. Perrin & Company

TORONTO, - CANADA

A company has been formed with Dr. G. T. Demers, as secretary, to put water-works and an electric light plant in at Rimouski, Que. The town has voted to guarantee the interest on \$50,000 of the bonds for twenty-five years. The company has purchased good water power and taken over the old aqueduct.

The George E. Martin Co., Toronto, has been incorporated with a capital stock of \$150,000 to carry on a cold storage business. The charter members include Wm. Needler, J. M. McLennan and G. E. Martin.

The James Maclaren Lumber Co., have purchased the spruce limits on the Lievre River, a Quebec tributary of the Ottawa River, and will erect a pulp mill to be in operation this fall, with a capacity of 120 tons of pulp per day. A paper mill will be built later on.

A bill providing a subsidy of \$100,000 per annum for a direct line of steamships from Canada and France has been passed.

The Central Screen Plate Works, Niagara Falls, N.Y., will establish a branch at Niagara Falls, Ont.

CANADA'S GROWING TRADE.

Canada's aggregate trade on the basis of goods entered for consumption and export, exclusive of corn and bullion, for the ten months ended April 30, exceeded that for the same period of the previous year by nearly twenty millions. The actual figures were \$302,567,352, as against \$283,517,239, showing an advance of \$19,050,113. The imports totalled \$142,942,420 for the ten months, as against \$143,303,759 in 1900, a falling off of \$361,339. The diminution is accounted for by the fact that the dutiable goods were less by \$1,064,708 than in 1900. The free goods were \$703,369 in excess of the same class of imports for last year. For the month of April the imports of dutiable and free goods were \$322,423 ahead of the same period last year. The increase was wholly in free goods. The exports, reckoning both foreign and domestic produce, amounted to \$159,624,932, as compared with \$140,213,480 for the preceding ten months.

The following are the exports in detail for the two periods:—

TEN MONTHS ENDING APRIL, 1900.

	Domestic.	Foreign.
Mines	\$10,833,379	\$168,866
Fisheries	9,048,910	50,086
Forest	24,577,226	286,149
Animals	48,187,911	960,685
Agriculture	23,410,785	9,991,330
Manufactures ..	11,118,976	1,014,448
Miscellaneous ..	284,258	280,471

Total\$127,461,445 \$12,752,035

TEN MONTHS ENDING APRIL, 1901.

	Domestic.	Foreign.
Mines	\$30,163,967	\$121,593
Fisheries	8,665,271	9,759
Forest	23,065,604	263,720
Animals	48,299,828	2,060,058
Agriculture	21,448,758	10,981,329
Manufactures ..	12,834,520	1,428,957
Miscellaneous ..	42,955	238,613

Total\$144,520,903 \$15,104,029

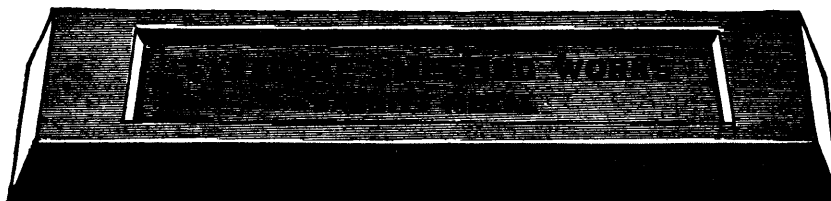
For the month of April last the exports, including foreign and domestic, show a betterment of \$1,622,414, as compared with the same month of last year.

THE BEST IS NONE TOO GOOD.

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 METAL MIXTURES**

SYRACUSE

BABBITT

**BEATS
THEM ALL**

SYRACUSE SMELTING WORKS

WILLIAM AND ST. THOMAS STREETS, - - MONTREAL

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A VALUABLE BOOK ON THE BEET SUGAR INDUSTRY.

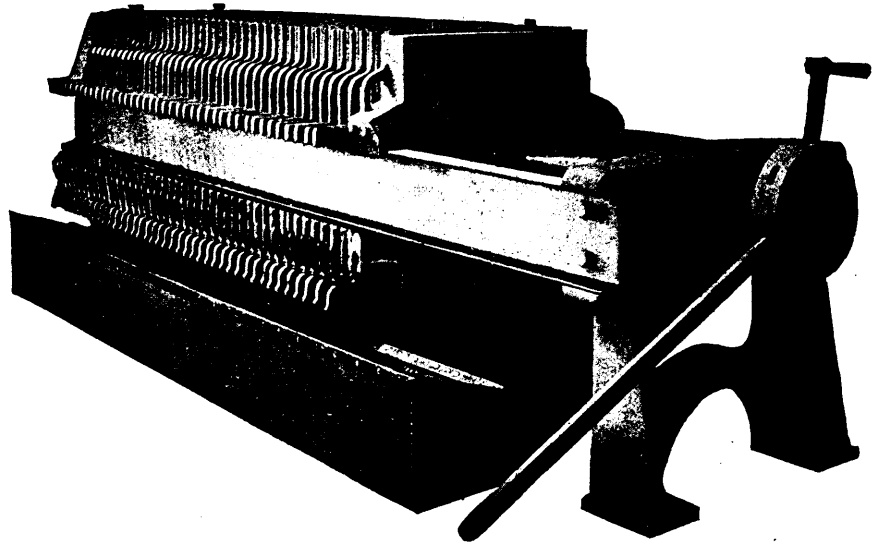
Messrs W. R. Perrin & Co., manufacturers of beet sugar machinery, Toronto, have presented us with a copy of "The Beet Growers Manual and Text Book for the Investor in Beet Sugar Enterprises," by C. W. Hamburger, Chicago, which is described as a complete system of instruction embodying the best methods how to raise sugar beets; condensed data regarding the sugar beet industry; history of beet sugar in Europe and the United States; its past, present and future; how sugar is made; hints how to secure, build and equip a sugar beet factory, etc., with illustrated descriptions of beet farming machinery and implements. It also embodies a directory of manufacturers of sugar machinery and apparatus; beet farming tools and implements; growers and dealers in beet seed; manufacturers and dealers in fertilizers and chemicals, etc.

Mr. Hamburger in his preface states that the growing interest manifested in the development of the beet sugar industry, and the rapid strides it has made within the past few years, leave no doubt that it has come to stay. The permanent establishment of the industry calls for reference books, and this manual was written in the hope that it may prove a valuable help to those on whom it primarily depends, viz., the farmer who raises the beets, and the capitalists who furnish

the money for building and operating factories.

The book is divided into three parts. The first is devoted to a brief history of the industry in Europe and the United

States, and its economic features; the second deals with beet culture, and the third covers a description of the process of sugar making, hints how to establish a factory, and other information of interest to all concerned. The sources from which Mr. Hamburger obtained the most of his data were, he tells us, the publications of the United States Department of Agriculture, State experimental stations, Sta-



BEET SUGAR FILTER PRESS.

MANUFACTURED BY WILLIAM R. PERRIN & COMPANY, TORONTO.

(Messrs. Perrin & Co. make all technical and other necessary machinery employed in the manufacture of Beet Sugar).

States, and its economic features; the second deals with beet culture, and the third covers a description of the process of sugar making, hints how to establish a factory, and other information of interest

tistical Sugar Trade Journal, and others, and his observation during many years of close study of his subject.

This manual cannot but be of great interest at this time, seeing that Canada

"Our Country's Welfare is Our First Concern."

MANUFACTURERS'

WILL MISS A

GRAND OPPORTUNITY

IF THEY FAIL TO EXHIBIT

This Year

AT.....

CANADA'S GREAT EXPOSITION, TORONTO
 August 26th to Sept. 7th, 1901

Increased Accommodation

VISITORS FROM ALL PARTS of the WORLD

APPLICATIONS FOR SPACE

SHOULD BE MADE

AT ONCE

ENTRIES CLOSE AUGUST 3rd

FOR PRIZE LISTS, ENTRY FORMS, AND ALL PARTICULARS, ADDRESS

ANDREW SMITH, F.R.C.V.S.,

PRESIDENT.

W. K. McNAUGHT,

Chairman Manufacturers' Committee.

H. J. HILL,

MANAGER, TORONTO.

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

is now about entering upon the establishment of the beet sugar industry; and we have no doubt interested parties could obtain copies of it upon application to Messrs. Wm. R. Perrin & Co., Toronto.

We will have occasion to again refer to this very useful book, and to direct attention to some of the facts contained in it.

NEW ANILINE COLORS.

Rhoduline Heliotrope 3 B and Rhoduline Blue R are two new additional products to our series of Rhodulines, the Heliotrope B brand of which was offered towards the end of last year. Rhoduline Blue R produces a bright blue shade of a reddish hue, remarkable for its good fastness to light, alkalies, washing and acids. With reference to the application

of these new products in dyeing, what has already been mentioned concerning the old brand equally applies to these. Like the older brand, they are chiefly adapted for employment in all branches of printing, including oiled and unoled cotton cloth. Good results can also be obtained in dyeing cotton cloth previously treated with tannic acid and discharged with caustic soda. Dyed shades cannot be discharged with oxidising agents, but they can be mercerised very well. Both products are adapted for discharging aniline black, as well as for the printing of wool, half-wool, silk and linen.

Naphthole Black 2 B.—This color is dyed in the usual way with bisulphate of soda or Glauber's salt and sulphuric acid, and produces a bright blue black shade. It is easily soluble, penetrates

well and dyes easily level, and its fastness to alkali, acid, rubbing and perspiration is good. The principal features, however, of this product are its excellent fastness to water and light, and its fastness to milling on the other hand answers moderate demands. Naphthole Black 2 B is chiefly to be recommended for piece dyeing, but it can also be suitably employed for dyeing woolen yarn and hats as well as for braids and cords. Dyed in light shades, this color is well adapted for working in combination with soluble blue, acid violet or acid green for the production of cheap navy blues on cheviot and worsted cloth.

Mercerised Velveteen.—Our latest pattern card illustrates a range of shades on mercerised velveteen which have been dyed in the yarn with the fastest Benzidine colors to light-Katigen colors, and some with Alizarine Sapphire S.E. according to recipes given. Owing to the splendid appearance and cheapness of the article for upholstery goods, curtains, etc., it will undoubtedly meet with general favor and adoption; and as the patterns in this card marked with a square have been dyed with colors especially remarkable for their fastness to light, and the others with products sufficiently fast in this respect, we think it will be of interest not only to velveteen and plush dyers but also to dyers of mercerised yarns.

Samples, instruction circulars and any of the above new shade cards mailed gratis to interested dyers by the Dominion Dyewood & Chemical Co., Toronto, Canada, sole agents in Canada for The Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany.

ESTABLISHED 1823.

WILSON BROS. BOBBIN CO., LIMITED

(1900)

LARGEST MAKERS IN THE WORLD

45 GOLD MEDALS AND DIPLOMAS



BOBBIN AND SHUTTLE MANUFACTURERS



Address, - CORNHOLME MILLS, TODMORDEN

TELEGRAMS:

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ABC and AI Codes.

BRANCH WORKS—LIVERPOOL AND ST. HELENS

Office and Showrooms—14 Market Place, Manchester.

The Canadian Heine Safety Boiler Co.

JOHN J. MAIN,
MANAGER.

ESPLANADE (Opp. Sherbourne St.)

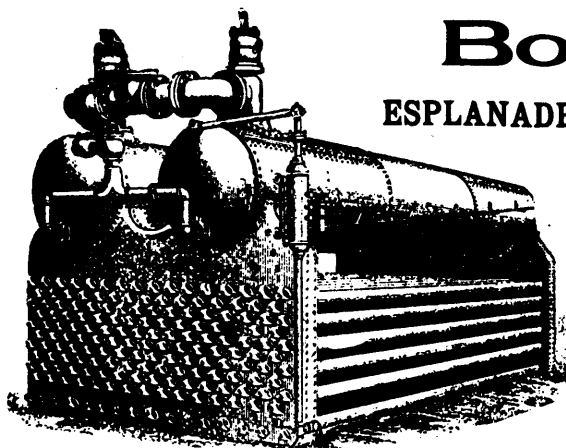
TORONTO

HIGH-CLASS

Water Tube Steam Boilers.

FOR ALL PRESSURES
DUTIES AND FUEL

From 75 to 600 H.P. Each



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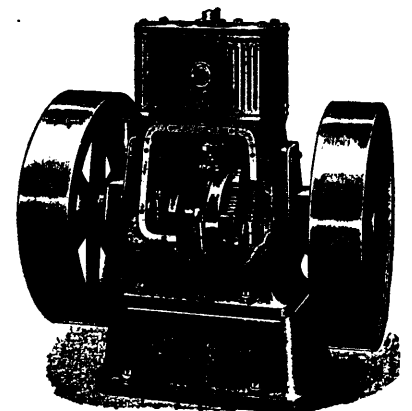
The Toronto Electric Light Co., Limited; The T. Eaton Co., Limited; The Massey-Harris Co., Limited; The Gutta Percha Rubber & Mfg. Co.; The Wilson Publishing Co., Limited; Sunlight Soap Co., Dominion Radiator Co., Central Prison, Foresters' Temple, Toronto City Hall, Canada Biscuit Co., Confederation Life Co. (all of Toronto, where Boilers may be seen working), also Orillia Asylum, Orillia, Ont., and LaPresse Publishing Co., Montreal.

N.B.—We do not make small Boilers

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

A COMPACT DOUBLE ENGINE.

The first cut herewith shown depicts a compact little engine which embodies a number of interesting points of design. It is a two cylinder single-acting machine representing one of a great many different types turned out in the engine depart-



BUFFALO AUTOMATIC CUT-OFF ENGINE.

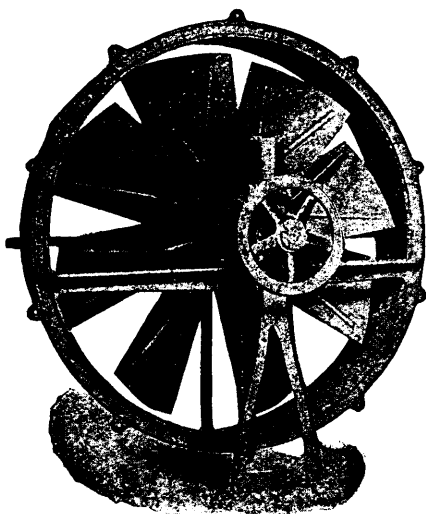
Double Single-acting Upright Type on Cast Iron Sub-base. View with Frame Broken Away Showing Enclosed Reciprocating Parts (Including Governor) Running in Oil.

ment of the Buffalo Forge Co., Buffalo, N.Y.

The two cylinders, in each of which the diameter is equal to the stroke, are placed side by side, and are cast in one piece with the valve chest. This is bolted

to the cast-iron frame, the addition of removable side-plates to which serves to wholly enclose the rotating and reciprocating parts to afford an entirely dust-proof and oil-tight construction, and also to give ready accessibility to the moving parts.

The valve gear is under the control of



BUFFALO DISC WHEEL,
with Vertical Disc Engine.

a centrifugal governor, placed, not in the fly wheel, but on a disc within the bed. The swinging eccentric of this governor actuates a single valve, which admits steam to both cylinders on the downward strokes, the cranks being set 180 degrees

apart. Forged steel shafts are used exclusively, while the piston rods are of the best machine steel. A sub-base of appropriate design is furnished, and this may be arranged if desired for dynamo direct connection.

Lubrication is most thorough, owing to the feature of enclosing the engine to run in oil. By the motion of the rotating parts, all rubbing surfaces are continuously supplied with oil from the bottom of the bed. This system, which may almost be said to have rendered possible the splendid performance of present day high speed horizontal engines, has been applied with equal success by the above mentioned company to engines of the vertical type.

The features of automatic regulation, dust proof enclosure and copious lubrication are coupled with excellent steam economy for a small unit, so that the engine recommends itself for a variety of uses, on land and shipboard. It is built in a range of sizes to develop from one to fourteen horse-power on eighty pounds pressure.

In the second cut is illustrated one of these engines direct attached to a large Buffalo disc wheel. In this case a hand wheel is attached to one end of the engine shaft, while the other end is connected to the fan wheel. In view of the fact that the load increases with the speed, and that the load is always constant when the engine is running at a given speed, no governor is needed, and hence it is dispensed with in this construction. The fan wheel is surrounded by a slightly

conical rim, which is affixed in the wall or partition where the fan is to operate, and to this rim is attached the cast iron brackets which support the engine and bearings. The wheel itself consists of steel plate blades bolted to spider arms which are themselves attached to a cast-iron hub. Great care is exercised to secure a perfect running balance, so that vibration at high speeds is imperceptible.

This piece of apparatus is applied to a large variety of uses. It is employed for instance in removing impure air, bad odors, steam moisture, smoke and gases from apartments of various sorts, and is in addition frequently used in conjunction with a heater for drying purposes on a small scale. The design and construction of the apparatus shown herewith is such as to insure smooth running for long periods with minimum need of attention.

THE WALKERVILLE MATCH COMPANY.

Robert Barber, Esq., Ontario Factory Inspector, in his recently published report has the following to say concerning the Walkerville Match Co.:

An industry new to this Province, on a large scale, has been started, viz., the manufacture of matches at Walkerville, Ont., by the Walkerville Match Co. This, so far as I am aware of, is the only industry of this kind, large or small, in the Province, though I believe there is in the Central District a factory for prepar-

WE MANUFACTURE ONLY
HIGH GRADE
STEAM AND WATER GOODS



Headquarters for the Celebrated... **J. M. C. Valves**
—AND—
Heintz Steam Saver

INTERESTING BOOKLET MAILED TO ALL STEAM USERS UPON REQUEST.

The Jas. Morrison Brass Mfg. Co.
LIMITED,
TORONTO

WHY NOT YOU

The Midvale Steel Co., Philadelphia, have ordered eight

BURT EXHAUST HEADS

in the last four months.

They prevented dripping, rotten roofs on their buildings, saved them steam, saved them money. Why can't we give you equal service?

Shall we send catalog?



THE BURT MFG. CO.
Akron, Ohio, U.S.A.
LARGEST MFRS. OF OIL FILTERS IN THE WORLD

PERSISTENCE IN ADVERTISING..

In the expansion of business now bringing profit to so many manufacturers, advertisers who have made themselves regularly prominent in past years have been notable in reaping the rewards of persistent publicity by advertising in

The Canadian Manufacturer.

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ing the wood for matches, but it is then sent to Britain to be completed. Many years ago, when friction matches were a novelty and people's minds were emerging from the transition state of flint and tinder for a light, there was a very good phosphorous tipped match made in Toronto by an old negro named Sampson, who peddled them through the country on foot, a basket on his arm, at a quarter of a dollar a package, which contained a quarter gross of bunches; each bunch was composed of eighty-one matches, split by hand, but all held together till torn apart. The contrast between that primitive style of manufacture and that adopted by the modern factories of the present day shows a wonderful advance. The factory at Walkerville can turn out a large quantity of matches. It is built and equipped to avoid the objection of phosphorous fumes so usually incidental to this business. Ventilating tubes are placed over the tables where the females handle the matches. I noticed no fumes but those of melted sulphur, and they were faint. The factory is also well equipped with appliances for extinguishing fire, which sometimes occurs from the friction of the matches while being boxed, but such an occurrence here causes no concern, for it is at once extinguished. They make matches here from the rough log brought in from the woods, cutting it up in match splints and by an ingenious device each splint is fastened by one end to a tray; these trays filled with match splints, which have the sap yet in them, are taken to the drying room, heated by

steam. After being dried they are dipped on the melted sulphur, then in the preparation of phosphorous; then the trays are placed in an ingenious machine which releases at once all the matches that were held fast by one end. The matches are then taken to the table where they are packed in boxes of different kinds; the boxes are made of paper on the premises by very cunningly contrived machines, a separate machine for each different size or style. There is a nice dressing room for females. The productions of this factory are well received in the market.

This factory was destroyed by fire a few days ago but is being rebuilt as rapidly as possible.

THE ATIKOKAN IRON MINES.

Announcement will be made in a few days, in all probability, of the completion of negotiations for the purchase of the Atikokan iron deposits, lying along the river of that name north of Minnesota in Algoma. These ores outcrop for several miles in a high ridge and are continuous for a long distance. Explorations made the past six months by the American Mining Co., which has had an option at \$500,000, have shown the surface promises of the deposits to be maintained for a depth of some 200 feet at least, which proves the ore lenses for a depth of 300 feet from the outcrop which is on a bluff. Analysis after analysis has shown iron sixty-six and better, phosphorus .020 and under. There has been fear of sulphur, but the recent borings disprove this, it is stated. By a

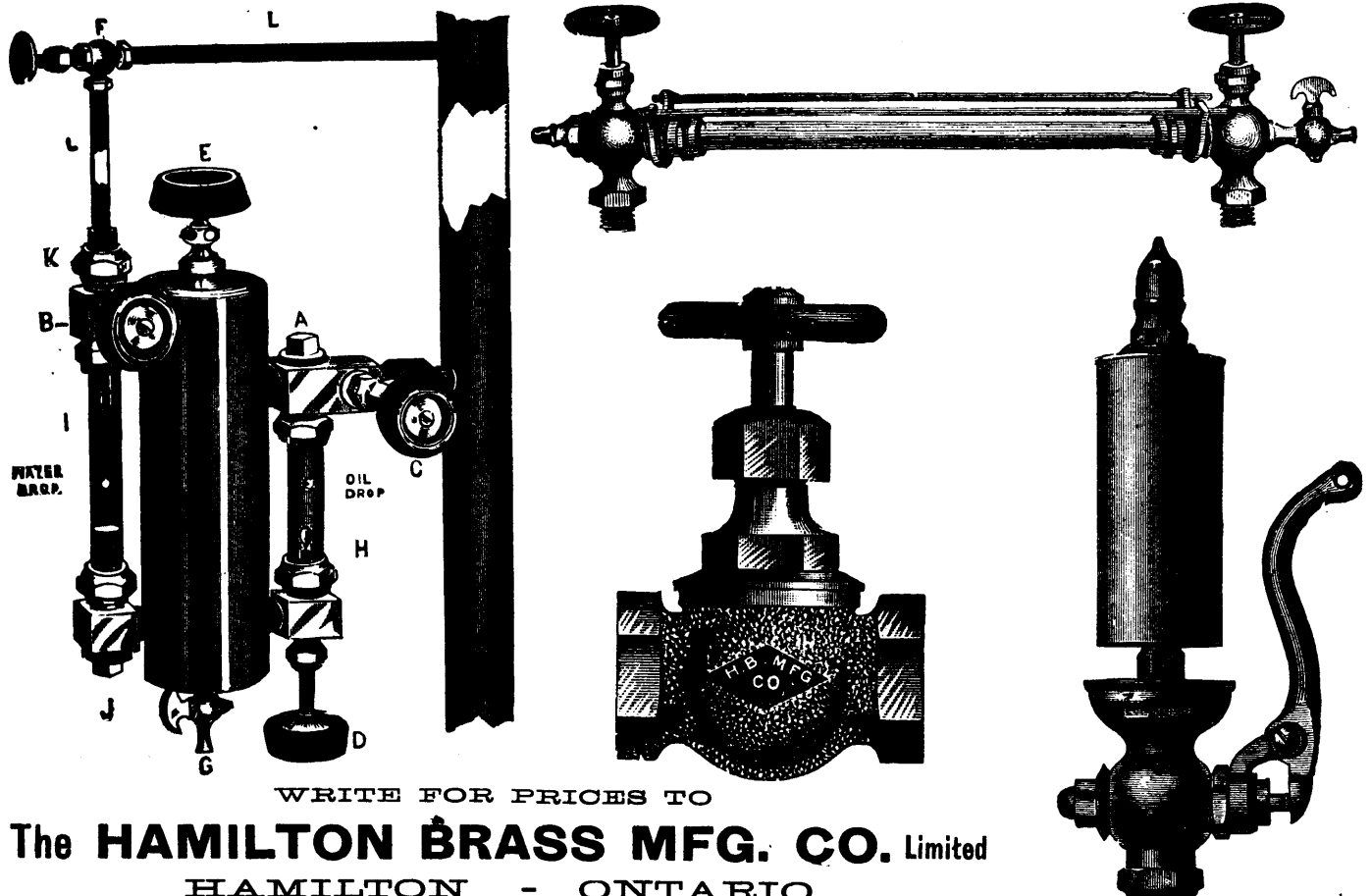
tunnel and 1,800 feet of borings, done the past winter, several million tons have been shown up. The mine will be opened this year and will ship via the Canadian Pacific Railroad to Fort William, where docks must be erected.

The largest steam shovel ever taken into the lake mining field has been delivered at the Stevenson, a new mine west of Hibbing, Mesabi range. It is of steel frame and weighs 105 tons. It was built by the Marion Steam Shovel Co., Marion, O. This mine has about 75,000 tons of stocked ore from a shaft and will have its open pit in use in July.

The Sharon mine of the Sharon Steel Co., which is being opened for a milling proposition, will be ready for shipments in July or August. It has a pit 250 by 350 feet to within fifteen feet of the ore. Much of the stripping has been in quicksand and delay has resulted. The mine will ship very heavily from the start.

A new mine is being got ready for shipments in the Michipicoten district, the Josephine belonging to the Clergue syndicate. It is twenty-five miles from Lake Superior and the railroad will reach it soon. Its ore is probably a bit better than that of the Helen mine.—Iron Trade Review.

The Hedley Shaw Milling Co., Toronto, has been incorporated with a capital stock of \$150,000, to manufacture flour, cereal foods, etc. The provisional directors include Hedley Shaw and George Andrews, both of Oakville, Ont., and C. W. Band, Toronto.



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HAMILTON, - ONTARIO

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THIRTY DAYS AFTER THE STURTEVANT FIRE.

Thirty days after the fire in the engine and electrical departments of the B. F. Sturtevant Co., at Jamaica Plain, Boston, Mass., this enterprising concern had established new shops with a complete equipment of new tools as is shown by a photograph of one of these departments taken on May 14. The fire, which occurred on the morning of April 14, was, fortunately, confined to the building in which it originated, and the fire wall about the power plant served to protect the same and the remainder of the buildings. The only damage resulting to the engine room was that due to wetting of the belt by water in the wheel pit. Fortunately, the fire did not reach the patterns, and left the entire shipping facilities together with the blower, heater, forge and allied departments, including the foundry, entirely undamaged. The large fire-proof vaults on the three floors of the office building preserved intact all of the valuable drawings, correspondence, records, catalogue plates and cuts, so that by the next day business could be continued as usual, although in new quarters which were immediately secured. The floor space affected by the fire

aggregated more than an acre in area, but as this represents only about one-fourth of the total floor space within the entire plant it was a comparatively simple matter by a process of re-arrangement to establish new shops for the injured departments in other buildings. Immediately after the fire rush orders were placed for large quantities of new high

electricity greatly simplified the work of installation. Three new shops have thus been established, one for heavy machine work, another for lighter work of a similar character, and a third devoted to the uses of the electrical department. The offices have been repaired and are again occupied. Open available spaces within the



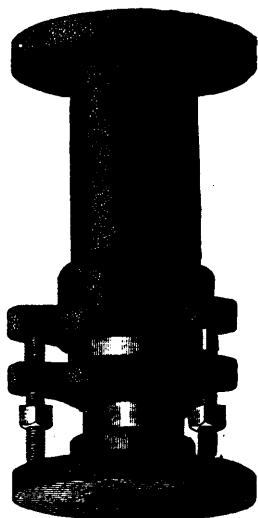
Thirty Days After the Fire.

grade machine tools and within a week these began to arrive. They were at once installed in their respective shops and belted to shafting line already in place and driven by local electric motors. This feature of power transmission by

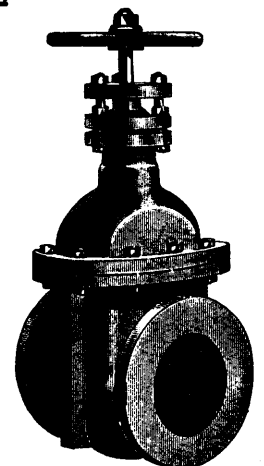
damaged buildings have been roofed over and work is now progressing much as though no fire had occurred. In fact, the fire brought with it some advantages, in that it compelled the replacing of many tools and enabled this company to

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equip its plant throughout with only those of the very latest design. Work will hereafter be turned out with even more accuracy and higher economy than before.

The Cosgrave Brewing Co., Toronto, will erect an addition to their brewery.

CANADIAN ORES.

It is quite evident that the product of Canadian iron mines is to play a more important part in ore business of the lakes this season than was expected. M. A. Hanna & Co., Cleveland, Ohio, who have the agency for the Helen mine at Michi-

picoten, just above Sault Ste. Marie, which is controlled by Francis H. Clergue of Sault water power fame, have sold ore up to the limit of what can be spared from that mine after the requirements of Canadian furnaces at Midland, Ont., are provided for. A couple of cargoes from Michipicoten were among the first to be delivered at Lake Erie ports this week. Four steamers of the Algoma Steamship Co. (a Clergue organization) which went to Europe when navigation closed on the lakes last fall, are again on their way up from Montreal to the Sault with cement and other materials that will be required in the construction of manufacturing plants under way at that point. The vessels are the Monkshaven, Leafield, Theano and Paliki. They will be used during the present season in carrying ore from Michipicoten to Midland and other Canadian ports. The Clergue railway to the Helen mine, twelve miles north east of Michipicoten, is being extended twelve miles more to reach the newer Josephine mine, which has been opened the past few months. It is a bessemer ore said to be of better grade than the Helen. Some ore will very probably be shipped from this second mine during



Inmediately After the Fire.

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Docks: Esplanade, Foot of Yonge

the present season. It is not improbable that a second ore dock will have to be built at Michipicoten.

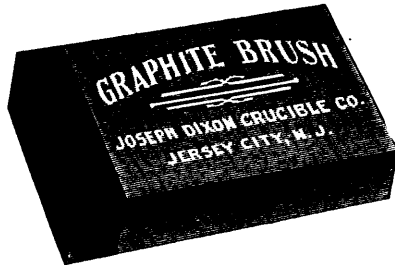
At Fort William, Ont., (head of Lake Superior), an ore dock will probably be built next spring, if not during the present season, for the transfer of ore that is to come over the Canadian Pacific railroad from the Atikokan range, just across the Minnesota border. These mining properties will probably be controlled by the United States Steel Corporation, as they were taken under option last fall by the American Mining Co. (American Steel & Wire), now a part of the steel corporation, at a price understood to have been \$500,000. If the ore is carried by the Canadian Pacific it will be necessary to construct about forty-five miles of road in addition to the ore dock at Fort William. It is understood that a rate of less than seventy-five cents a ton has been guaranteed by the road, and the lake rate will be about equal to that from Duluth.—Marine Review.

James McCue will erect an elevator at Melancthon, Ont.

DIXON'S GRAPHITE BRUSHES.

The accompanying illustration is of Dixon's perfected graphite brushes for motors, dynamos and generators, manufactured by The Joseph Dixon Crucible Co., Jersey City, N.J.

Graphite brushes are not new in the electrical field, as pure graphite possesses the qualities of low resistance, wonderful



smoothness and freedom from grit, and as it is the best solid lubricant known, there would seem to be no good reason why a graphite brush, if properly made, should not find a ready market.

The company makes daily use of generators and motors in its factories, and

for the past three years has made use of graphite brushes of its own make.

Electrical engineers who have seen the commutators on which the Dixon graphite brushes have been used for two or three years, have expressed great surprise at the slight wear of the brushes and commutators, and at the general perfect condition and freedom from burns and sparking.

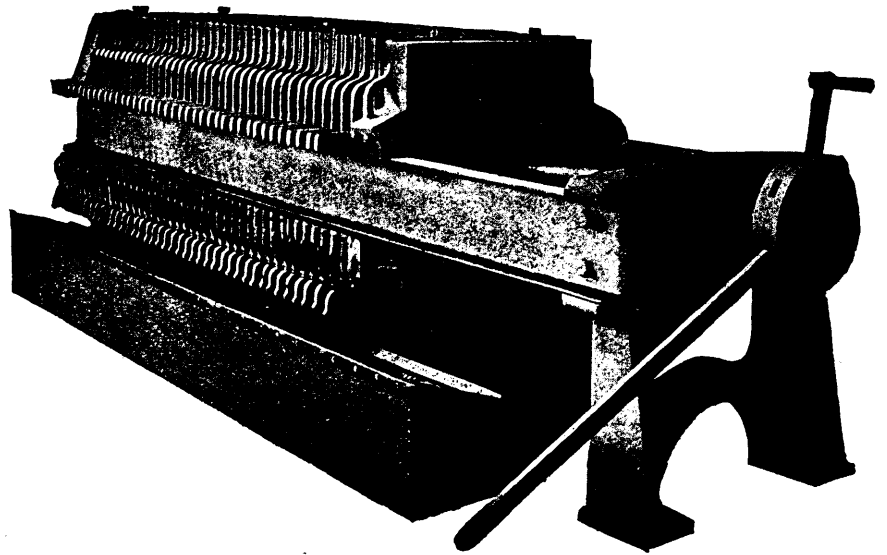
It is for this experience that the company has no hesitation in offering the Dixon graphite brushes to electricians generally.

The company is sending out price lists indexed under the names of makes of motors, showing sizes and prices of brushes. This list is indexed under the names of the makes of motors, etc., and by referring to the names of the makes, which are in alphabetical order, sizes and prices of brushes for that make will be found.

For further information apply as above.

Messrs. John Inglis & Son, Toronto, will erect an addition to their foundry at a cost of about \$1,200.

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 Output of Shot in 1899 exceeded 1897 by 4,040 cwt., or equal to the loading of (at 1 oz. per load) 9,031,680 Cartridges.
 The winner of the All-England Championship Cup in December, 1898, fired with our shot, and speaks highly of it.

ARTIFICIAL STONE.

A few days ago Mr. W. Owen, a civil engineer of London, Eng., who proposes the establishment of a plant in Montreal for the manufacture of artificial stone, delivered a lecture in that city upon that subject which is exciting considerable interest. Mr. Owen calls his product Owen stone, and, presenting several specimens of it, stated that a number of plants for the manufacture of it were in operation in England, Australia, South Africa and on the continent of Europe. He described the process as follows:

Quartzose sand is first dried by being heated; it is then thoroughly mixed with hydraulic lime in the proportion of about 12 per cent. of the latter to 88 per cent. of the former. This mixture, still in a dry condition, is packed into very strong moulds of any desired shape, the filled moulds being subsequently built up in a steel frame or box. The latter is conveyed by tramway to an immense steel cylinder, inside of which it is placed, the cylinder now being closed and the door strongly bolted. Water near the boiling point is then admitted until the cylinder is full, and an indicated pressure of from sixty to seventy pounds maintained. The water is kept in a highly heated condition by steam coils running along the length of the cylinder inside.

On the admission of the boiling water, the hydraulic lime in the moulds commences to slake, and the pressure maintained assists in forcing the water into the sand and lime mixture so as to bring about complete slaking throughout the mass. The mixture being confined in strong moulds, it follows that the expansion of the material consequent on slaking is not allowed free play, so that immense pressure is set up within the material itself, which tends to render it much more compact than might otherwise be the case.

It is important that as little air as possible should be admitted into the cylinder during the slaking; this is why the water is admitted at boiling point and the temperature kept up by steam coils instead of live steam being injected direct into the water.

When the lime is thoroughly slaked, the pressure and temperature are gradually lessened and the material is allowed to cool slowly. When the cylinder is opened, the mixture is found to be converted into solid stone. The latter is in a wet condition and becomes harder in the course of twenty-four hours. The whole operation, from the packing of the cylinder to the withdrawal of the moulds, occupies about fifty hours.

The manufactured stone and bricks may be moulded into any form and are of a handsome gray color.

Mr. Owen says that a large demand exists for this artificial stone in London and in other large cities. It can be manufactured much more cheaply than natural stone can be furnished from the quarry.

The shoddy mill of Cluthe & Co., Doon, Ont., was destroyed by fire May 18. Loss about \$10,000.

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AND DOES THEM THOROUGHLY

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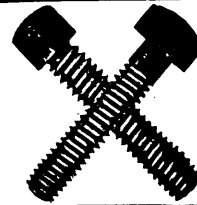
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ONTARIO'S UNEXPLORED WEALTH

The report of the Government exploration parties who covered new Ontario last summer has just been published. Although portions of it have from time to time been made public, the full magnitude of the resources of that vast region have scarcely been comprehended. The volume contains nearly 300 pages, and is made specially interesting by the presence of scores of photographs, revealing the wealth of many forests, the abundance of water powers and examples of good farming discovered in unexpected places. The report of the various parties is summarized as follows:

The great clay belt running from the Quebec boundary west through Nipissing and Algoma districts and into the District of Thunder Bay, comprises an area of at least 24,500 square miles, or 15,680,000 acres, nearly all of which is well adapted for cultivation. This almost unbroken stretch of good farming land is nearly three-quarters as great in extent as the whole settled portion of the Province south of Lake Nipissing and the French and Mattawa Rivers. It is larger than the States of Massachusetts, Connecticut, Rhode Island, New Jersey and Delaware combined, and one-half the size of the State of New York. The region is watered by the Moose River, flowing into James Bay, and its tributaries, the

Abitibi, Mattagami and Missinabic, and by the Albany and its tributaries, the Kenagami and Ogoke. Each of these rivers is over 300 miles in length, and they range in width from 300 or 400 yards to a mile. They are fed by numerous smaller streams, and these in turn drain numberless lakes of larger or smaller size, so that the whole country is one network of waterways, affording easy means of communications with long stretches fit for navigation. The great area of water surface also assures the country against the protracted droughts so often experienced in other countries. The southern boundary of this great tract of fertile land is less than forty miles from Missinabic Station, on the Canadian Pacific Railway, and the country north of the height of land being one immense level plateau sloping off towards James Bay, the construction of railways and wagon roads through every part of it would be a comparatively easy matter.

In the small part of the District of Rainy River which was explored, the proportion of good land is not so great, but the clay land in the townships around Dryden was found to extend north in the valley of the Wabigoon River, with an area of about 600 square miles, or 384,000 acres. There are also smaller cultivable areas at various other points.

Another important fact established by

the explorations is that the climate in this northern district presents no obstacle to successful agricultural settlement. The information obtained completely dispels the erroneous impression that its winters are of Arctic severity, and its summers too short to enable crops to mature. The absence of summer frosts, noted by the explorers, and the growth of all the common vegetables at the Hudson Bay posts, must disabuse the public mind of this erroneous impression. The 50th parallel of latitude passes through the centre of the agricultural belt, and the climate is not much different from that of the Province of Manitoba, lying along the same parallel, with this exception, of course, that the winter is tempered by the great spruce forests and the presence of so large a proportion of water surface. The country, too, has an abundance of wood for fuel, building and commercial purposes, and plenty of pure water everywhere.

Another point equalled only in importance by the existence of a vast area of agricultural land in this country and its moderate climate is the fact that it is largely covered with extensive forests of spruce, jackpine and poplar. The value of this class of timber, as everybody knows, is increasing every day, and the market for it is widening, and rich, indeed, is the country which has bound-

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less resources in these varieties of woods. In the District of Nipissing, north of the C.P.R. line, there is estimated to be at least 20,000,000 cords of pulpwood; in the District of Algoma, 100,000,000 cords; in the District of Thunder Bay, 150,000,000 cords; and in the District of Rainy River, 18,000,000 cords; a grand total of 288,000,000 cords. The pine region does not seem to extend much beyond the height of land, but on this side, in the country around Lakes Temagaming and Lady Evelyn, and to the north, an area of red and white pine of fine quality was explored and estimated to contain about three billions of feet b.m.

A feature of this region, which it is well to note from an industrial point of view, is the existence of many falls on the rivers and streams. These will no doubt be utilized with advantage in the creation of economical power when the country comes to be opened up.

It was expected that the parties would be able to make a thorough and exhaustive exploration of all the territory assigned to them, and the estimates here given of what has been reported are very conservative. Totalling up the figures quoted, however, we have over 25,000 square miles of good fertile land, or over 16,000,000 acres, and 280,000,000 cords of spruce or other pulpwood. There is also numerous smaller areas, both of timber and land, which are not included in these figures, but which will all be available when the development of the country takes place.

"REGIONS CÆSAR NEVER KNEW."

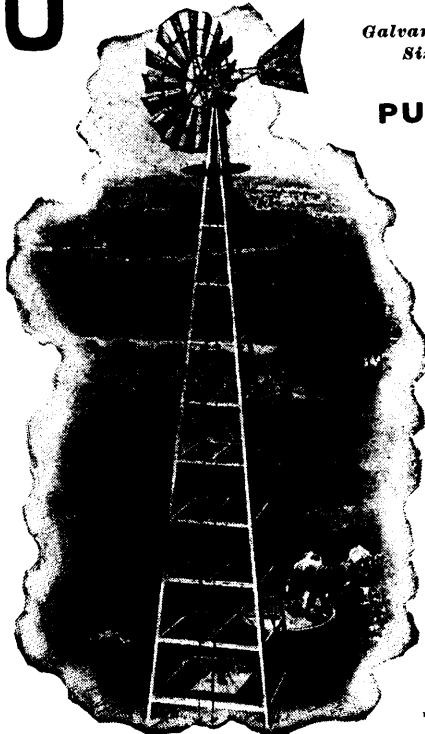
Ontario, Quebec and Manitoba are racing to see which will have a railway to James Bay first, says The Toronto World. Mr. Clergue has made the statement that his railway will be extended to that point within three years. The Ontario Government has also a James Bay project. A survey party is to explore the country this summer, with a view to projecting a route from Toronto to Ontario's great inland sea. While these schemes are under way in Ontario, the province of Quebec is making steady progress in actual railway construction towards James Bay. The distance from Quebec to James Bay is 550 miles, over 190 miles of which a track has already been laid by the Quebec & Lake St. John Railway Co. to Roberval. Among the items of the supplementary estimate is a grant of \$192,000 for a sixty-mile extension of the line from Roberval towards James Bay. It is proposed to go ahead with the construction of this section at once. The line will run through valuable territory, well timbered and watered, with good farming lands, and with a waterfall about half way on the first section, that is, about thirty miles north of Roberval, that is equal, if not superior, to the famous Shawengana Falls, so that it has every prospect of being a paying line from the outset. From the terminus of this section the projected line runs to the mountainous region which slopes upwards through a hundred miles to the dividing crest, or height of land, from which to

the shores of James Bay is a further stretch of 200 miles. The first sixty miles is level ground, in the Mistassini Valley; the mountainous region is easy of access, hollowed out into deep gorges by the tributaries of the Ashuapmouchouan and Mistassini, having terraces of from ten to twenty miles of good farming land, and rising to a maximum height of 1,200 feet above the level of the sea; from the dividing crest to the shores of James Bay is a region of 200 miles in length, watered by large rivers, with a soil as fertile as that of Manitoba, a pleasant climate and extensive pine forests.

These facts are taken from an editorial in The Quebec Chronicle, which also tells of extensive iron deposits in the islands of the Straits of Nastakopa, which is distant 600 miles from the southerly end of James Bay. These islands are rich in spatic iron ore, which forms a covering at least twenty feet thick all over the islands of the group. The rock is much disintegrated by the frosts of that region, and the ore can be gathered in inexhaustible quantities, while there are good harbors on the islands, and the mineral can be easily loaded in several places. This mineral is regarded as of first quality for the production of iron and steel and gives bar iron of unequalled strength, which can be readily changed into steel. The Chronicle foretells of the erection of iron works at Rupert or Moose Factory, near which are available beds of lignite or brown coal for smelting. According to Prof. Bell, these iron mines

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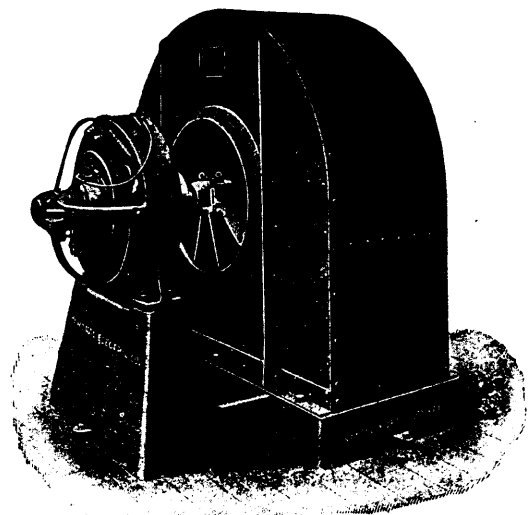
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Buffalo Electric Induced Draft Fan.

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Canadian Representative.

E. A. WALLBERG, 410 Temple Building, - TORONTO.
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are richer and more extensive than the sources from which the steel works of Sydney are supplied. They are 1,200 miles from Quebec divided into nearly equal parts of land and water transportation. The whole distance, says The Chronicle, is not greater than that between Mesaba range, a hundred miles north of Duluth, from whence the Carnegie Steel Works draw their crude ore, and Pittsburg, where it is smelted. From thence the steel and iron are sent to the ports of Lake Erie, and from there by canal to the Atlantic sea ports and shipped to England, where they compete with the steel manufacturers of that country. It is evident, therefore, that, once the line to James Bay is completed, it will promote the establishment of extensive mining industries in the far north, whose products will swell the list of the articles which seek Quebec for shipment to Europe.

GRAPHITE.

The use of graphite in the manufacture of lead pencils is the oldest, and is now its most common one. The use of the lead pencil itself is universal. The first lead pencils were made from blacklead mined near Barrowdale, Cumberland County, England, and the first mention of these pencils occurs in Conrad Gessner's work on Fossils, dated 1565. The method of manufacture was to cut strips of blacklead out of larger pieces of mineral and insert them in grooves cut in small bars of wood. The product of this mine be-

came extremely valuable, and it is stated that at one time its product sold for as much as thirty shillings per pound, this being not far from the present price of silver. Royal acts were promulgated, making robbery of blacklead pits a felony; and military escorts were furnished for the carts on their way from the mines to the shops.

This method of manufacture continued until Conte, of Paris, in 1795, devised the method of manufacture which is now universally followed. In this process the graphite and the clay are ground to the finest possible state of division, mixed together, and filtered and caked by hydraulic filters, and then again mixed by repeated forcing through plates perforated by many minute holes. It is then placed in hydraulic presses and forced through dies into the shape and size required. As it issues from the press, it resembles nothing more strongly than a long, round, black cord. It is laid out straight on boards, and when dry it is cut up into proper lengths. It is then packed into plumbago crucibles and fired in kilns.

Red cedar is the wood most universally employed in pencil making, although poplar is sometimes used for cheaper grades, and for slate pencils. The cedar logs are sawed up in small slabs of the proper length for a pencil, and of a sufficient width for four, five or six pencils. This is grooved lengthwise, the groove being exactly the diameter of the lead which it is to receive. The leads are laid

in the grooves and another similar block is glued firmly to it. The resulting slab is then run through shaping machines, which cut each individual pencil from the larger block. The pencils are then ready for the further operations of varnishing, polishing, stamping, etc. The grades of hardness of pencils are dependent upon the relative percentage of clay contained in the mixture, the larger the amount of clay, the harder the grade. Colored and slate pencils are made much in the same manner, other pigments being substituted for the blacklead.

The lead used in the manufacture of lead pencils is of the amorphous form, and is supplied principally from the mines of Austria and Mexico; the latter product having only recently come into the market for this purpose, but seems to be rapidly taking the place of that from other sources. The pencil making industry, although not using very great quantities of blacklead, is a very considerable one; probably 15,000 people being employed in the industry in this country, Germany and Austria.—Stevens Institute Indicator.

The permit for the erection of the new Russel Theatre, Ottawa, has been taken out. It will cost about \$45,000 and have a seating capacity of 1,850.

The managers of the nickel mine at St. Stephen, N.B., will procure a diamond drill and sink a shaft to the depth of five hundred feet.

THE BEST PIPE THREADING and CUTTING-OFF MACHINES

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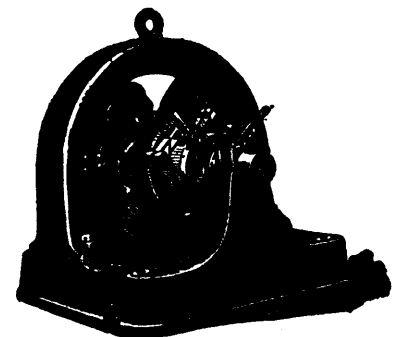
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TO DEVELOP ST. LAWRENCE COMMERCE.

A recent despatch from Ottawa regarding new interests that are said to be connected with the plans for diverting the export commerce of the lakes down the St. Lawrence to Montreal is as follows:

Hon. J. Israel Tarte, minister of public works, intimates that important developments are on foot in regard to the transportation problem. The minister says that in addition to the employment of grain carriers of the largest size on the upper lakes, a fleet of steel barges, each costing \$100,000, would soon be placed on the route between Port Colborne and Montreal. About these matters I am unable to speak at present, Mr. Tarte said, but something definite will be devolved. Closely following the minister's statements comes the important announcement of C. F. Desola, the Canadian representative of the Cockerell works, Belgium, and of Swan & Hunter, ship builders and ship owners, of Tyneside, England, who says that his companies are planning to put a big fleet of grain carriers on the Canadian canals as soon as the two primary projects become definite undertakings. These projects are the equipping of Montreal with an elevator system and the fitting of Port Colborne

for the handling of grain. The Montreal project has already been made a reality, as the Dominion government has decided to loan the Montreal harbor commissioners \$1,000,000 to carry it into effect. The government also intends to at once thoroughly equip Port Colborne, and has asked parliament to grant an appropriation of \$470,000 for that purpose, so that both the required projects are now assured.

Designs for the boats and barges have already been decided upon. It is intended to build steamers and barges, in the proportion of one to two. Two barges will be towed by each steamer or propeller. Their dimensions will be the same, but the space in the steamer occupied by machinery makes the carrying capacity of it less than that of the barge. The boats will be about 160 feet long, 42 feet beam and will have a draught of 14 feet. With a number of these fleets in the canals, grain can be transported from Port Colborne eastward at a rapid rate, and very cheaply. There is no question as to the ability of foreign firms to float a fleet in Canadian waters if they once undertake the enterprise. Swan & Hunter are famed British ship builders. The Cockerell works are in the Belgian syndicate. It is an organization or combine similar to the United States Steel Corporation, and employs 14,000 hands. It introduced a method of smelting by which the blast furnace gas, which is produced in the

manufacture of steel, is burned, and the result is a great economy in fuel.

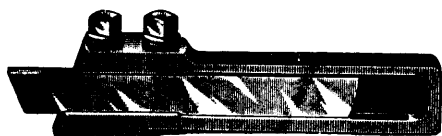
The capital stock of the E. B. Eddy Co., Hull Que., has been increased to \$1,000,000.

Scoville & Moore, Buffalo, N.Y., have bought a mill at Petewawa, Ont., their intention being to operate it as a pulp mill.

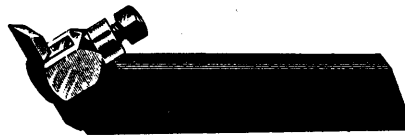
The Sandwich, Ont., Town Council, has granted a franchise to John A. Auld, M.P.P., to build an electric road from Windsor to Amherstburg, the road to be known as the South Essex Electric Co., and will be continued through Kingsville and Leamington.

O'Keefe & Orbison, Appleton, Wis., will furnish plans for the development of two water powers in Canada and the electrical transmission of their energy to the large factory to be erected at Durham, Ont., by the National Cement Co., Toronto. Two dams and a power house will be built. One dam will be forty-eight feet high and will be built on top of a natural fall thirty-two feet high, making a head of eighty feet, the stream being about 100 feet wide. The other dam will give a head of about thirty-five feet. The dams, power house, transmission line and other water power improvements will cost about \$100,000.

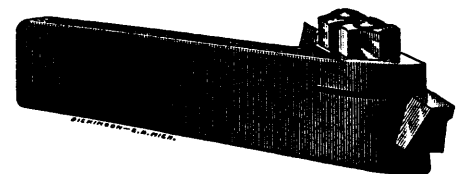
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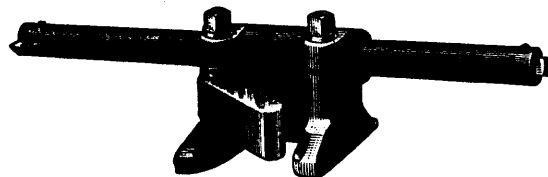
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OPPORTUNITIES FOR TRADE.

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 numeral opposite the enquiries.

484. A Belfast house invites quotations for birch chair seats 15x15x1½; birch squares from 1½ to 1¾ in short lengths for 3 to 7 inches for newels. All delivered at Belfast to which there is there is a direct service.

485. An enquiry has been received from Brisbane (Australia) for names of Canadian manufacturers of enamelled ware.

486. A Birmingham firm wishes to arrange for supplies of wood suitable for making boxes, or would act as selling agents for producer of same.

487. A firm manufacturing glass and flint bottles, jars, globes and chemists glassware asks to be placed in communication with Canadian importers.

488. Enquiry has been received for names of Canadian apple shippers.

489. The names of boot factors and of large retailers in Canada are asked by a Scotch firm who manufacture felt-lined wooden clogs.

490. A merchant in Paris invites correspondence from parties in Canada interested in the export of wood pulp.

491. The patentees of life jackets and buoyant clothing are anxious to dispose of their Canadian rights to a firm open to undertake the manufacture and sale of such goods in the Dominion.

492. A correspondent in Wales asks for the addresses of Canadian manufacturers of agricultural implements and machinery, radiators, lawn mowers, wind mills and pumps, wire nails, etc.

493. The names of tobacco manufacturers in Canada are asked for by a London firm.

494. A Canadian business house desires to correspond with German and Austrian manufacturers of toys.

495. Enquiry is made by a Canadian maker of brass parts for pianofortes respecting the opening that exists in the United Kingdom for such goods.

496. THE CANADIAN MANUFACTURER is in receipt of a letter from Messrs. Stanley & Summers, Durban, Natal, South Africa, in which they state their desire to get

into communication with Canadian manufacturers with a view to becoming agents for them in Natal and the Transvaal for the sale of their products of all descriptions appropriate for these markets.

497. We have received enquiries from a correspondent in Liverpool, England, for:—

Prices in doors in pine or spruce, sizes 6 ft. 4 in. to 7 ft. 3 in. high x 2 ft. 4 in. to 4 ft. wide, 1½ in., 1¾ in. to 1¾ in. thick, also cut for glazing f.o.b. Montreal or Halifax.

A Liverpool manufacturer of bedroom suites wants £200 to £300 worth of Canadian red wood cut full ¼ in., ½ in., ¾ in., ¾ in. thick, inside lining 9 to 12 ft. long x 10, 12 or 14 in. wide.

Also pressed wood chair seats, round, square and shaped 10, 11, 12, 13, 14, 15, 16 ins. diameter.

Quotations per cubic foot for birch wood in log f.o.b. Quebec, St. John's, or Halifax.

Quotations for birch planks 2 in., 2½ in., 3 in., 4 in. thick x 8, 9, or 10 in. wide by 9, 10 or 12 ft. long.

Box manufacturer open to buy 50 tons wood pulp boards, size 20x30 in., to weigh 20 oz. per sheet, send price and sample—quote f.o.b. Montreal; 800 tons brown leather boards, sizes 32x22 in., also 30x20 in. sheets, to weigh from 4 oz. to 30 oz.; white wood pulp boards 100 tons, sizes 32x22 in., also 30x20 in. sheets, to weigh from 4 oz. to 30 oz.

498. THE CANADIAN MANUFACTURER is in receipt of a copy of Alg. Nederl Exportblad, published at Amsterdam, Holland, of which O. Kamerlingh Onnes is editor. This unique little publication is, we are informed, sent free to buyers and exporters who wish to establish business connection with Holland. Concerns who desire to do business with Holland should correspond as far as possible direct with the firm mentioned in the publication, and apply to Mr. Onnes for the names of concerns exporting or importing only such articles as are not mentioned in the Exportblad. For further information apply to Mr. Onnes as above.

ARGENTINA.—The following extracts are from a report by United States Consul Mayer at Buenos Ayres:

The publication of the official trade statistics for 1900 has attracted the attention of those interested in studying the indications of a country's progress offered by her general trade movement.

In the year 1899, the value of the exports, roughly stated, amounted to some \$185,000,000, while those of the year 1900 stand only for \$154,500,000, showing an apparent shrinkage for the year 1900 of \$30,000,000. But this feature is

explainable when it is remembered that at the end of 1899, the prices of wools were so extraordinarily high that producers hurried their clip to market with all the expedition possible. In this way, about three-fourths of the wool clip was shipped in the last three months of the year, which is quite an unprecedented experience in the wool exports. In the year 1900, on the contrary, when there was so heavy a fall in the values, farmers and woolgrowers were in no hurry to send their wools to market, and not one-fourth of the season's clip was shipped.

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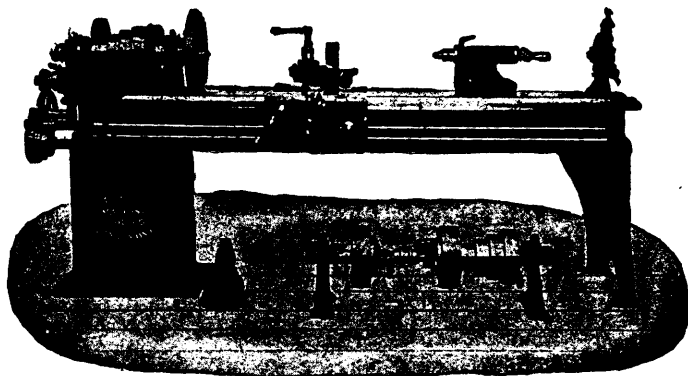
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Looking at these two factors, it is easy to find the reason of the falling off in the quantity of wool and the estimated value thereof in the exports of 1900; and it must also be taken into account that there are at present some 200,000 tons of wool with an estimated value of, say, \$40,000,000 gold unexported. Another item of export which has suffered is live stock, the shipment of which virtually ceased at the end of April of 1900. Sugar also shows a diminished exportation, but all the other products indicate progress. Had it not been, in short, for the heavy fall in the wool values and had the clip for 1900 been hurried forward as was the case with that of 1899, the returns for 1900 would have shown improvement over those of 1899.

The foot-and-mouth disease, the closing of the British ports, the immense fall in the values of wool, the bad result of the maize shipments, and the inundations in the province of Buenos Ayres, which meant a loss to farmers of something like 20,000,000 sheep, are causes sufficient to account for a year's bad trade. But even taking into consideration these items, the actual state of trade did not compare so badly during the first nine months of the year. It was when the wools began to arrive and it was seen that the looked-for reaction of prices in Europe was not to take place that the gravity of the situation was realized.

AUSTRALIA.—A correspondent of the Paper Trade Review, of London, writes from Sydney, N.S.W., as follows concerning the imports of news and printing paper into Australia during 1900: Taking the total for New South Wales and Victoria (and they represent practically 75 per cent. of the entire Australian trade), the British business has receded from £144,012 in 1898 to £119,086 in 1900, while the American has increased from £119,086 to £230,636 during the same period. This increase is remarkable, and is mainly the result of the enterprise of the Americans in manufacturing for Australian requirements. What the future prospects are it is difficult to say. Now that the Federation of the Australian colonies is an accomplished fact, the tariffs of the Commonwealth are to become uniform at the earliest possible time. A large revenue must be raised through the customs, and the country at the present time is in the throes of a general election, the main party cries being 'Low' or revenue tariff and 'High' or protective tariff. If the latter party gain the day, paper of all grades may be subject to a duty, but even at this stage there are indications of preferential rates being extended to British manufactures. It will thus be seen that Australians may yet have to look to Great Britain for their paper supplies.

GREAT BRITAIN.—We have referred to the matter before, but the point is so important that we take this opportunity of drawing attention to it again, namely, the fact that the Mother country is the only trading nation without official commercial agents in its colonies. A reference

to the map of Australia that we publish shows that our rivals are represented by consuls in the Commonwealth. Canada has that indefatigable commercial agent, Mr. J. S. Larke, whose admirable reports we frequently notice with pleasure; the United Kingdom alone has no official representative. Of course, it is very easy to see how such a state of affairs has arisen. The growth of the colonies has

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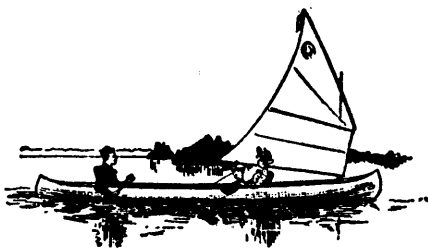
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JOHN DRYDEN, Minister of Agriculture.

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Manufacturers of **CANOEES and SKIFFS**
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been gradual, and while commercial duties have been grafted on to the consular system, already established in foreign countries, there has been no effort made to give similar assistance to British trade in British colonies—perhaps, even, it has been felt that such assistance was not required. However that may have been, it is certain that that time has passed. With increasingly vigorous competition in our colonial markets, it has become urgently necessary that there should be reform in this matter. We suggest to the Colonial Office that the present opportunity is favorable for the appointment of Commercial Agents to look after British business interests in all our important colonies and dependencies.—Commercial Intelligence.

RUSSIA.—In writing on Russia as a machinery market, the Engineering Magazine states that the English, following the example of the Germans, have gone about the work of securing Russian orders in a business-like manner. They publish a Russian business paper at Moscow, and give purchasers six months or a year in which to settle their bills. American business men seem content to rely on the exertions of the various consular agents, for it is only through the influence of their Minister at St. Petersburg that any progress has been made toward holding the proposed machinery exhibit in St. Petersburg next summer, and now that the likelihood of an international exposition at St. Petersburg in 1904 grows, the two may be merged. With the exception of France, other foreign nations seemed to have overlooked the importance of Russian fairs, especially that of Nijni Novgorod, as means of introducing what they have to sell. At Nijni Novgorod more than \$40,000,000 change hands annually; here the starosta, or chief of the village artel, comes to buy the supply of raw material on which the mujiks will work during the long winter days. Tons of iron, boilers and various kinds of machinery are sold here; turning lathes, and such machinery as the peasants can use in common, are in demand; machinery for cutting shingles, axe handles, and wood-turning tools would find a ready sale; but the Russian insists upon seeing a piece of machinery work before he will purchase.

SOUTH AFRICA.—A new line of steamers has been established to connect New York directly with South Africa and India, to be known as the Hansa Line. The proprietors of this line have occupied a commanding position in the carrying trade from Bremen, Hamburg and London to East Indian ports for many years. The New York agents are the well-known shipping house of Funch, Edye & Co. The steamers will call at Cape Town, East London, Mossell Bay, Delagoa Bay, Port Elizabeth, Port Natal and Port Alfred, South Africa, and Calcutta, India, stopping alternately at Colombo (Ceylon) and Madras, carrying cargo for all transshipping ports. The first steamer, the "Neidenfels," sailed June 5, to be followed by others on July 5, and August 5. The steamers are large, powerful and

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CARRIAGE, WAGGON, AND SLEIGH WOOD WORK.

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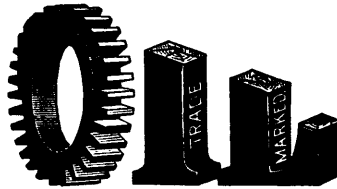
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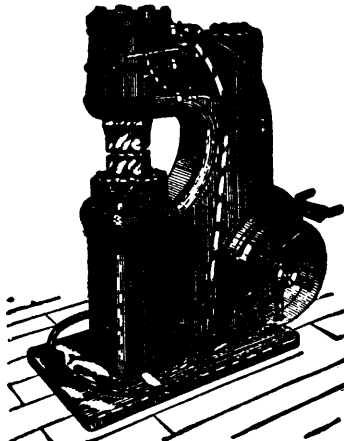
The Yeakley Vacuum Hammer.

Canadian Patent November 9, 1897.

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new, built especially for this service, some of the boats not being delivered yet. They are expected to reach Cape Town in twenty-six days, not stopping at Cape Vincent, Cape de Verde Islands, as the other boats do. It is believed Calcutta will be reached as quickly via Cape Town as the present East India line does via Suez, economizing time with faster boats and exceptional facilities for loading and unloading, the direct line stopping at Alexandria, Aden, Hodeida, Jeddah and Bombay before reaching Calcutta.

Mr. James Cumming, Canadian Trade Commissioner in South Africa, has written to the Department of Trade and Commerce, stating that "when the plague is over in Cape Town and the effects of the war quieted down, there will be large demands for dressed lumber and general housebuilding supplies, furniture, cooking stoves, etc." The goods, he states, required for this market are of a medium quality. The people, or rather, the natives, who do all the work, live on cornmeal and bread, and only require a little cotton for clothing, and neither boots nor hats. The goods imported are all consumed by the Europeans, as the natives only work until they can buy a few cattle. "Canadians," says Mr. Cummings, "would be heartily welcome in Durban when the mines in Johannesburg start up."

UNITED STATES.—In the course of a recent very valuable report Hon. Frank H. Mason, the United States Consul-General at Berlin, offered the following practical suggestions regarding the preparation of catalogues expressly for export trade: "In respect to size, beauty of print and illustration, the trade catalogues issued by American manufacturers are the most elaborate and beautiful, as well as the most expensive in the world, but for practical purposes they are often defective in several respects, the most essential of which are too many claims to superiority and too little definite and exact information concerning the weight, dimensions, and effective capacity of machinery; absence of metric weights and measurements, and prices in francs, marks, or other foreign equivalents; and translations, when given at all, made by persons who do not understand the goods, and which are often so incorrect and imperfect as to furnish no adequate technical description of the merchandise. As a result of these defects, intending purchasers are frequently obliged to open a correspondence with the exporting manufacturer in order to obtain clear and definite information. This entails a serious waste of time and often leads to the loss of orders, which are given to manufacturers of other nationalities, who make careful and complete catalogues specially for foreign markets, or, what is still better, send a capable travelling salesman to exhibit samples or photographs of the goods and make direct contracts in the office of the purchaser."

The Lake of the Woods Milling Co., Keewatin, Ont., will erect a large stave shed as an addition to its barrel factory.

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IRON, STEEL
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PIG IRON

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BUSINESS CONDITIONS.

THE OUTLOOK.

The first Manitoba bulletin of the crops indicating a total wheat yield of forty million bushels has slightly improved the feeling regarding North-West business. Wholesalers in the East feel that with a crop such as that in 1899, there will be a smart revival of business and a wiping off of old scores, which would greatly encourage people who have done business in that part of the country the past few years. There is a conservative feeling, however, touching North-West trade, and not much disposition to extend operations further till the crops are assured.

The demand for funds at all the principle trade centres of the country continues brisk. The large amount of contract work being carried on now in the way of railway labor and other public work, employing big gangs of men, and the activity of prospectors in New Ontario and the far West, the large movement of produce to the seaboard for export, and the activity now being displayed by the factories and mills, have been the means of circulating money through the country in large amounts. All this is expected to prove very advantageous for trade in the near future. The spending power of the people is now very large, and the coming fall sales are expected to be larger even than they were a year ago.

Throughout the country there is a buoyant feeling regarding the outlook for business. The recent rains have brought on the growth of the crops splendidly, the pasturage is in fine condition, and the dairying interests are expected to greatly benefit from the present conditions. The enquiry for cheese from the old country markets is a little slow at the moment, but it will take some time for business in the new product to get properly started.

Reports to local houses show that upwards of 1,000,000 pounds of the clip of fleece wool of 1900 are held by some twenty buyers in this province. There is still no demand for export, and owing to the greater competition of foreign countries, where more coarse wool is grown than formerly, owing to the demand for larger sheep for the mutton export trade, prices of Ontario wool in the United States are below a parity of local values. The new clip must begin to come on the Ontario markets within a month, and with large stocks of the previous clip still on hand, the outlook is far from encouraging.

Reports from New Ontario continue to tell of the great industrial activity going on in that part of the province. It is stated that Messrs. MacKenzie & Mann will spend one-half a million dollars on docks, etc., at Port Arthur, the coming summer. Mining men are exploring the country near Lake Nipigon, mostly in search of iron ore. An American company is prospecting a block of thirty-two miles on the St. Joe Railway. Difficulty is being experienced in finding surveyors

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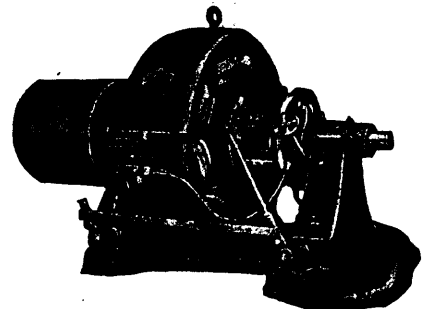
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to carry on the work. Mr. Clergue has awarded the contract for the new railway across Manitoulin Island.

Shippers complain of the detention of passengers and crews in quarantine on the St. Lawrence, and the loss that results. It is claimed that the regulations in such cases in the United States are much less severe, causing no serious detention, and that the tendency will be to induce the travelling public to patronize the American lines.

Winnipeg advices note a good demand for labor in the West, which is helping retail trade. Merchants throughout the West are anxiously watching the progress of the crops. A great deal depends this season on the result of the wheat crops.—Bradstreets.

TORONTO RETAIL HARDWARE TRADE.

The Toronto dealers in hardware, paints, oils, stoves, etc., have formed an association with Mr. E. R. Rogers as president; Mr. Russill, first vice-president; Mr. Albert Welch, second vice-president; Mr. John Caslor, treasurer; and Mr. Fred W. Unitt, secretary. Executive Committee—Messrs. R. Fletcher, Emery, Dale, Peacock, Watkins and J. T. Wilson. The object of the association is to enable the merchants to confer on all matters relating to the trade, to regulate the hours of closing, to assist in buying in the cheapest market, and selling, as far as possible, at a uniform rate. A committee was appointed to draft a constitution to be submitted for consideration at an early date.

AGRICULTURAL IMPLEMENT COMBINE.

The manufacturers of agricultural implements connected with the Canadian Manufacturers' Association have formed a section thereof, of which the following officers have been elected:—Chairman, Jas. Maxwell, St. Mary's; vice-chairman, H. Horsman, of the Frost & Woods Co. Executive Committee—H. Cockshutt, Brantford; W. F. Johnston, Noxon Mfg. Co., Ingersoll; W. E. H. Massey, of the Massey-Harris Co., Toronto, and H. P. Cockburn, of the Sawyer-Massey Co., Hamilton.

EXPORT OF PINE LOGS.

The Dominion Government has decided to extend the policy of the Ontario Cabinet, requiring the manufacture in the Province of pine and other timber cut on Crown lands, to Indian reserves and Indian lands. This will tend to enhance for the Indians the value of the reserves and Indian lands held in trust for them by the Government, and create occupations by which the aborigines may add to their present means of living. An order in Council has been passed establishing the necessary regulations, and these provide that every license or permit to cut pine on Indian lands or reserves issued on or after April 30, ult., shall contain and be subject to the manufacturing clause.

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CANADIAN LEAD REFINERY.

The silver-lead miners of British Columbia will be delighted to learn that the Government has decided to grant a bonus in aid of the refining of lead in this country. The deputation that waited upon the Cabinet some time ago asked for a bonus of \$5 a ton for five years. It has been thought best, however, to adopt a sliding scale of bounties. These are restricted to lead refined in the Dominion from materials produced in Canadian smelters from Canadian lead ore. The bounty begins at \$5 a ton and is reduced by a dollar each year until 1906, when it will be discontinued. The scale will thus be as follows:—Calendar year 1902, \$5 a ton; 1903, \$4; 1904, \$3; 1905, \$2; 1906, \$1. The bounties are to be paid half yearly, but the total sum so payable is not to exceed \$100,000 in any year. If the sum earned during any half year exceeds \$50,000 the bounties are to be reduced as regards that six months, so that the maximum payable shall not be more than the \$50,000. If the sum earned is less than \$50,000 the balance is to be carried to the credit of the next half year, and may be paid out in addition to the amount falling due for the latter period. The payments of bounties as well as the rates and charges for refining are to be made in accordance with regulations to be framed by the Government. The bounties are to cease on December 31, 1906.

FRANCO-CANADIAN STEAMSHIP COMPANY.

A contract has been signed at Ottawa by which the Franco-Canadian Steamship Co. will operate a service between Montreal and Havre, France, beginning in July with a steamer every two weeks. The company now have three steamers for immediate service and three others will be available without delay. The incorporators of the company include F. H. Clergue, Geo. E. Drummond, A. A. Ayer, J. R. Booth, L. M. Jones and other equally prominent gentlemen.

The vessels of this line, under previous management several years ago, secured considerable shipments of oil cake, corn, canned meats, lard, buckwheat and flax from Chicago and the West, while from Canada was taken large quantities of lobsters. Deals, staves, headings, box shooks, flour, apples, cheese are expected to be shipped in some quantities, while large shipments of pulp, paper, iron and steel will be made. The latter will come from the works at Sault Ste. Marie, Midland and Radnor Forges.

In the latter connection it will be interesting to note that history is repeating itself. No less than two hundred years ago iron was shipped to France from the St. Maurice Forges, Que. At that period these forges were operated by the Imperial Government of France. The first steamship of the Franco-Canadian line, sailing from the port of Montreal in July, will carry to France a three hundred ton shipment of the same iron from the Radnor Forges, the successor of the St. Maurice Forges. Thus are the days of Louis XIV. linked with those of Edward VII.

From France will be imported canned and bottled goods, fancy groceries, wines, liquors, fancy French dry goods, dried fruit from the Mediterranean, sand for the manufacture of glass, chemicals, crockery and glassware.

In order to do business profitably with France it is necessary to take advantage of that country's minimum tariff. This can only be done by a line plying direct between a foreign port and France. If goods were shipped from Montreal to England and from there transhipped to France they would come under the maximum tariff, and therefore under a heavy handicap as compared with the same goods shipped direct.

The contract which has been made between the Franco-Canadian Line managers and the Canadian Government, is based upon a tonnage rate per voyage, and it is estimated that the subsidy which the Government will pay this year will amount to \$50,000. There is available, however, a clear \$100,000, which would be earned as a subsidy provided the line placed a weekly steamer on the Montreal-Havre route.

The line will also receive the sum of \$120,000 from the French Government in consideration of the building of two of the company's steamships in France.

WIRELESS TELEGRAPHY.

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- One set 48 in. Platt Cards, all clothed.
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- One 108 in. Crompton Cone Loom, 4x4 box, 4 harness.
- Two 92 in. Falsay " " 4x4 " 24
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- One Broad Warper and Beamer.
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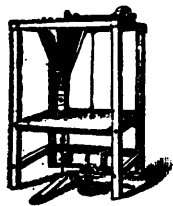
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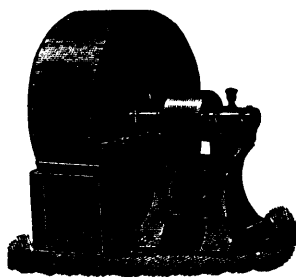
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with the new Marconi system of wireless telegraphy, arrived at Montreal this week. The installation of the apparatus was made under the direction of Captain Daly, who is marine superintendent of the Marconi International Marine Communication Co. The expert in charge of the experiment on the vessel was Mr. F. Stacey, of Signor Marconi's staff. The installation is of course only a trial one, but the results were most successful. When passing the coast stations at Holyhead, at the Lizard and at Rosslare, in County Wexford, the vessel got into communication with the stations and was as much in touch with the world as if she had been lying at her berth. After signals had been exchanged telegrams from passengers to their friends on shore occupied Mr. Stacey's attention for some hours, and a number of answers were received from shore. The ship was in communication with one station while approaching it and drawing away from it for something like six hours, all the time going at full speed. Messages passed between the shore stations and the steamer as long as there were any to transmit, and when the last one was sent there were sixty miles of ocean between the two points. It is understood that the installation on the Lake Champlain will be made permanent when she returns home, and the other vessels of the Elder-Dempster Line will probably be supplied with Marconi installations also. In order to make the use of wireless telegraphy of benefit to vessels entering the St. Lawrence, it will be necessary to have coast stations at Cape Race, Belle Isle or somewhere in that vicinity. While the Lake Champlain is in Montreal Hon. Mr. Tarte will be asked to have a look at the installation, and this matter will be brought to his notice. From the remarks which have fallen from the Minister's lips from time to time, it is thought he will be very willing to aid in the establishment of a Canadian station.



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THE EDISON STORAGE BATTERY.

Mr. Edison has given the world what promises to be another epoch-making invention.

This remarkable man has signalized his return to the field of electrical invention by the announcement of the long-sought and urgently needed light storage battery, and has accomplished his result after the manner that marks all really great inventions—through means of the greatest simplicity. In Dr. Kennelly's paper will be found an account of the method—iron and nickel-oxide plates in solution of potash—whereby the weight-efficiency of the accumulator has been increased two and one-half times. And this method has been almost under the hands of investigators for twenty years, yet has remained undiscovered!

To put it in plain English, this means that for the same weight the new storage battery should do two and one-half times as much work as present types. In addition to this signal achievement, the veteran inventor has also announced a battery having a high discharge rate, an

insignificant depreciation and a low first cost.

Mr. Edison has produced no invention of broader utility in the electrical field since incandescent lighting was evolved from the busy brain of the same pioneer of industry. It is hard to foresee all the meaning of this improvement. But we may look a little way and see the noiseless city, the suppression of the horse, and the automobile a factor of economic importance in general transportation. The perfected battery means the solution of many difficult traction problems, the betterment of electric lighting and the foundation of the new art of electric navigation. Electric tugboats will give new life to our canals, and with electric ferryboats will revolutionize our harbors. Electric torpedo boats of swiftness and secrecy will make present naval armaments of doubtful protection.—Electrical Review.

MR. CLERGUE REACHING OUT.

Mr. F. H. Clergue, Sault Ste. Marie, has a large body of explorers covering the whole of the north shore of Lake Superior and east as far as Sudbury during the present season. Mr. H. C. Hamilton, Mr. Clergue's representative, says there are probably 150 men employed in the work. They were not searching for iron in particular, though that was no doubt one of the objects. Asked whether this exploration meant more railway

enterprises, Mr. Hamilton said possibly it might. They were searching for whatever might be put to commercial use. Explorers are also locating a terminus for the Algoma Central Railway on the shores of James Bay.

INTERESTING EXPERIMENT.

At the Lucy Furnaces of the Carnegie Steel Co., at Pittsburg, Pa., a novel plant is to be installed for the purpose of freeing the air of moisture before the blast is sent into the furnace. A refrigerating plant is to be erected for this purpose. The moisture will be absorbed on coils of pipe through which brine will be forced, in the same way that refrigeration is carried on in large cold-storage houses. The moisture will freeze on the outside of the pipes and the air will then pass to the stoves and be ready for the blast with nearly all the moisture extracted. As is well known to blast furnace managers, it requires less coke to the ton of pig iron on a cold, crisp day when the air is dry than on a hot day when the humidity is very great. This experiment by the Carnegie interests will be watched by blast furnace operators all over the country.

RAILWAY SUBSIDIES.

The Dominion Government have granted \$88,884,557 and 39,725,130 acres of land to the railways of Canada.

Of these amounts, the Canadian Pacific has received 25,000,000 acres of land and \$62,742,816, the remainder being divided among other railroads. In addition, the various provinces have granted \$31,310,170 and the municipalities \$15,884,542, making a grand total of \$136,079,269 of public money paid in subsidies to Canadian railways, every mile of which is in private hands. Aid has also been granted by the Government of Ontario to the Manitoulin and North Shore Railway, which is said to be the boldest railroad scheme ever proposed in that province. The road will begin at Meaford (northwestern Ontario, run up the Bruce Peninsula, cross by ferry from Tober Moray to Manitoulin, and run through Manitoulin to Little Current, on the north shore. From the latter place, it will go north and west toward Lake Superior, with a branch line to Sudbury. It has also been proposed that the line be extended to form a connection with the transcontinental system at Port Arthur, car ferries being used along the northern shore of Lake Superior. The subsidy is in the form of a grant of 2,500,000 acres of land. The grant, however, does not include the pine timber. In return, the company is to build the railway and have it in operation by June, 1906; erect, within two years, a smelter of 300 tons capacity for nickel or other ores; export no spruce in an unmanufactured state; and, lastly, place at least one thousand settlers yearly on the lands granted.

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BUSINESS CHANGES.

FROM BRADSTREETS.

ONTARIO.

ADOLPHUSTOWN.—J. F. Chalmers, general store, advertising business for sale.
 ALEXANDRIA.—M. Simon, general store, compromised.
 ARNPRIOR.—Arnprior Creamery Co., obtained charter.
 AYR.—Robson Elevator Co., obtained charter.
 BERLIN.—Berlin Furniture Co., mfrs., stock advertised for sale.
 BLENHEIM.—Morse & Jack, general store, selling out.
 BONFIELD.—George Theriault, general store, giving up business.
 BRACEBRIDGE.—J. D. Shier Lumber Co., obtained charter.
 BRANTFORD.—Gibson Whitaker Co., obtained charter.
 CLIFFORD.—Gilbert Lewis, agricultural implements, assigned.
 CRYSLER.—J. B. Lafrance, general store, assigned.
 CULLODEN.—Herbert A. Bigham, general store, assigned.
 DOON.—Jacob Cluthe & Co., shoddy mill, burnt.
 DUNDAS.—John Bertram & Sons Co., mfrs. tools, etc., obtained charter.
 FORT FRANCIS.—J. E. Sanders & Co., general store, compromised.
 GORDON LAKE.—Gordon Lake Summer Resort & Improvement Co., obtained charter.
 HAMILTON.—John Calder & Co., wholesale clothing, stock to be sold by auction.
 F. A. Carpenter & Co., hardware, applying for incorporation.
 Wm. Evans, planing mill, effects advertised to be sold under chattel mortgage.
 HARROW.—Thompson & Co., general store, out of business.
 HUMBERSTONE.—R. H. Appleyard & Co., hardware, stoves, etc., dissolved, R. H. Appleyard continues.
 IROQUOIS.—Iroquois Electric Light & Power Co., obtained charter.
 LISTOWEL.—Samuel Bricker, hardware, offering to compromise.
 MARKHAM.—Silas Beebe, machinist, giving up business.
 G. R. Vanzant, hardware, closing out business.
 MITCHELL.—T. S. Ford Co., obtained charter.
 R. S. Hannah, hardware, sold to Robert Campbell.
 MOOSE CREEK.—Simon Johnson, general store, assigned.
 MOUNTAIN GROVE.—George Mills & Son, saw mill, burnt out.
 MYRTLE STATION.—W. G. Armour (estate of), general store, stock advertised for sale.
 NEWBURY.—Oliver Prangley, hardware and furniture, sold to Joseph Johnston.
 NIAGARA FALLS.—MacPherson Switch & Frog Co., obtained charter.
 OSHAWA.—Coulthard-Scott Co., mfrs. agricultural implements, sold to Frost & Wood Co.
 OTTAWA.—Capital Brewing Co., premises damaged by fire.
 PENETANGUISHENE.—Thompson & Lahey, general store, assigned.
 PINE GROVE.—Weigand & Kaiser, millers, dissolved, Henry Kaiser continuing.
 PORT ELSMLEY.—F. Falla, woolen mill, deceased.
 PORT ROWAN.—Pierce & Howey, stoves, tinware, etc., dissolved, J. N. Pierce continues.
 RIDGETOWN.—J. R. Owen (estate of), sawmill, to be sold by auction.
 RUSSELL.—John McDonald & Son, undertakers, sash and door mfrs., dissolved, business continued by Robert McDonald.
 RUTHVEN.—Thomas H. Norman, general store, admitted Thomas Dawson.
 ST. THOMAS.—George Oliver, mfr. pumps, deceased.
 SAULT STE. MARIE.—Algoma Steel Co., obtained charter.
 SPANISH RIVER.—Huron Lumber Co., obtained charter.
 STREETSVILLE.—Imperial Woolen Mills Co., Jas. P. Langley, Toronto, permanent liquidator.
 TORONTO.—British Canadian Gold Fields of Ontario, obtained charter.
 Coutie, Linton & Co., house furnishings, hardware, etc., stock sold.
 Cox & Baillie, obtained charter.
 F. Smith Pork Packing Co., obtained charter.
 Expansive Tree Protector Co., obtained charter.
 J. G. Gibson Marble & Granite Co., obtained charter.
 Hedley Shaw Milling Co., obtained charter.
 Massey Press, obtained charter.
 Toronto Navigation Co., obtained charter.
 Walker-Parker Co., obtained charter.
 Charles Wilson, obtained charter.
 Prince Piano Co., mfrs., Partnership dissolved, George Dodds continuing under same style.
 Consolidated Pulp & Paper Co., creditors resolve that company be wound up.
 Toronto Fence & Ornamental Iron Works, sold out to The Canada Foundry Co.
 Whaley, Royce & Co., mfrs. and dealers in musical instruments, dissolved, Eri Whaley continuing.
 Canada Brass & Electrical Co., obtained charter.
 Ditzel Metal Co., obtained charter.

BUSINESS CHANGES—Continued.

Toronto Roller Bearing Co., obtained charter.
 York Laundry Machinery & Supply Co., winding-up order granted.
 VIENNA.—Graves & McGuire, general store, succeeded by C. M. Wilson & Co.
 WALKERVILLE.—Walkerville Match Co., mfrs., burnt out.
 WOODSTOCK.—Woodstock Box Co., obtained charter.
 WYEBRIDGE.—Thomas Robins, shingle mill, burnt out.

QUEBEC.

ANCIENNE LORETTE.—T. L. Alaire, mfr. shoes, G. Darveau appointed curator.
 COWANSVILLE.—Buzzell Bros., grocer, hardware, etc., dissolved, new partnership registered.
 FRASERVILLE.—F. Lachance & Fils, sash and door factory, burnt out.
 Quebec Peat Fuel Co., obtained charter.
 FRELIGHSBURG.—Wells & Frary, general store, dissolved.
 LAKE MEGANTIC.—Lake Megantic Furniture Co., applied for charter.
 LEVIS.—Laroche & Co., general store, dissolution registered.
 METABECHOUAN.—La Compagnie de Pulpe de Metabechouan obtained charter.
 MONTREAL.—Electric Engineering & Supply Co., dissolved, new partnership registered.
 Globulin Co., mfrs. baking powder, registered.
 Hudson's Bay Knitting Co., stock partially damaged by fire.
 Mattinson & Pope, plumbers, etc., registered.
 Prince & Dupont, pianos, etc., Mrs. Fred. Prince registered.
 J. & G. H. Young & Co., importers yarns, assigned.
 Canadian Spool Cotton Co., applied for charter.
 Canadian Bronze Co., obtained charter.
 Chagnon & Frere, sash and door mfrs., registered.
 Dulong & Grignon, plumbers, registered.
 A. Young & Co., felt mfrs., registered.
 Henry Rodgers, Sons & Co., hardware, cutlery, etc., registered.
 M. Alexander & Co., mfrs. hats and caps, registered.
 Diamond Light Co., applied for charter.
 Dominion Mfg. Co., assets to be sold.
 Fenlin Leather Co., applied for charter.
 G. H. Harrower & Co., mfrs. shirts, applied for charter.
 Aumond & Carriere, sash and door mfrs., dissolved.
 Baldwin & Brooks, millers, dissolved.
 Dreyfus Importing Co., leather, registered as incorporated.
 Empire Electric Co., dissolved.
 Montreal Light, Heat & Power Co., registered.
 Provincial Light, Heat & Power Co., obtained charter.
 St. Lawrence Furniture Co., obtained charter.
 Gysens, Devilliers & Co., drain pipes, etc., in liquidation.
 Masson & Carriere, sash and door mfrs., registered.
 Dominion Mfg. Co., assets sold.
 Sherbrooke Iron & Metal Co., junk dealers, registered.
 Wener & Margelius, clothing manufacturers, registered.
 NOTRE DAME DU LAC.—Joseph Morneau, saw mill, suspended.
 PETIT MECHINS.—Alp. Letourneau, general store, stock sold to P. L. Langlois, Matane.
 PLESSISVILLE.—Thomas Kelly, sawmill, registered.
 PORTNEUF.—C. Belanger, general store, suspended.
 QUEBEC.—La Compagnie de Pulpe Ouitchouin, Etienne Paradis, president.

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BUSINESS CHANGES—Continued.

RIMOUSKI.—Joseph Parent, general store, assigned.
 F. Perreault & Cie., general store, assigned.
 ROBERVAL.—Z. Paquet, general store, offering to compromise.
 ST. ANGELE.—H. Hudon & Co., general store, offering to compromise.
 ST. ANNE DE BELLEVUE.—J. E. Tremblay, general store, compromise.
 ST. COEUR DE MARIE.—David Jobin, general store, offering to compromise.
 ST. CYRILLE DE WENDOVER.—Lafontaine & Lavoie, general store, suspended.
 Pierre Dauplaise, sash and door mfrs., Lamarche and Benoit curators.
 ST. FLAVIEN.—Simeon Sevigny, general store assigned.
 ST. GEORGE DE WINDSOR.—Godbout & Rathier, general store, dissolved.
 ST. MOISE.—H. Cayouette, mfr., assets advertised to be sold.
 ST. SEBASTIEN.—Adelard Many, general store, assigned.
 ST. STANISLAS.—J. B. Donville & Co., general store, assigned.
 ST. TITE.—Jos. H. Frigon, general store, assigned.
 SHERBROOKE.—Quebec Asbestos Co., applied for charter.
 THREE RIVERS. La Compagnie de Telephone du Comite de St. Maurice, obtained charter.
 St. Maurice Foundry & Machine Co., dissolved.
 National Tool & Axe Works, registered.
 St. Maurice Tool & Axe Works, dissolved.
 VALLEYFIELD.—A. Trudeau, sash and door factory, meeting of creditors.

NEW BRUNSWICK.

BROWN'S FLATS.—W. L. Belyea & Co., general store, dissolved, W. L. Belyea continues.
 COAL BRANCH.—Canadian Coal & Magnanese Co., applying for incorporation.
 HARTLAND.—Keith & Plummer, general store, building cheese factory.
 MIDDLE SACKVILLE.—Joseph L. Black & Sons, general store, incorporated.
 MONCTON.—New Brunswick Anchor Wire Fence Co., applying for supplementary letters patent.
 NEWTON.—A. S. Pierce, grist and saw mills, deceased.
 PETITCODIAC.—Humphries & Trites (estate of) general store discontinued.
 RIVER LOUISON.—Nathaniel McNair, saw mill and lumber mill burned.
 STICKNEY.—A. L. Stickney, general store, burned out.
 TRACEY'S MILLS.—Miller & Sloat, sawmill, dissolved, Sloat retires.

NOVA SCOTIA.

KENTVILLE.—B. R. Bishop, general store, sold to Spurgeon L. Cross.
 MILFORD.—Mallman Bros., saw mill burned.
 PORT AU PORT.—H. H. Haliburton, general store, succeeded by Haliburton & Lervux.
 PORT HAWKESBURY.—Reeves Bros., general store, dissolved, succeeded by J. H. Reeves & Co.
 SYDNEY.—Archibald McCormack, general store, assigned.
 Sylvester Shannahan, general store, burned.
 Sydney Axe Co., opening business.
 Sydney Hardware Co., co-partnership registered.
 WOLFVILLE.—C. E. Starr & Son, hardware, registered.

PRINCE EDWARD ISLAND.

KENSINGTON.—R. Tuplin & Co., general store, offering to compromise.

BRITISH COLUMBIA.

PETERBOROUGH.—W. S. Santo & Co., general store, succeeded by Peterborough Trading Co.
 VICTORIA.—Muirhead & Mann, sash and door factory, dissolved.
 WELLINGTON AND LADYSMITH.—Leiser & Hamburger, general store, dissolved, Simon Leiser continues.

NORTH-WEST TERRITORIES.

ARCOLA.—J. A. Warner, general store, sold to McNeill & Scott.
 GRENFELL.—R. A. Copeland, & Co., general store, stock sold.
 MOOSOMIN.—T. Finklestein, general store, sold to Samuel Coppleman.
 RED DEER.—Burch & Co., general store, sold to W. Phillips.
 ROSTHERN.—J. J. Boese, general store, assigned.
 WAFELLA.—G. E. Nugent & Co., general store, deceased.

MANITOBA.

CARBERRY.—R. F. Lyons, elevator, burned.
 MINNEDOSA.—H. N. Halpenny & Co. (estate of), hardware, sold to J. H. Ashdown.
 PORTAGE LA PRAIRIE.—Morrow Bros. (estate of), general store, stock advertised for sale.
 STRATHCLAIR.—H. Roberts & Co. (estate of), general store, assets sold.
 WINNIPEG.—Manitoba Spring Bed & Mattress Co., stock sold.
 SUMMITT CITY.—J. W. Stout, sawmill, given up business.

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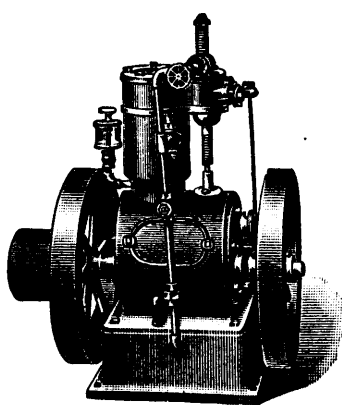
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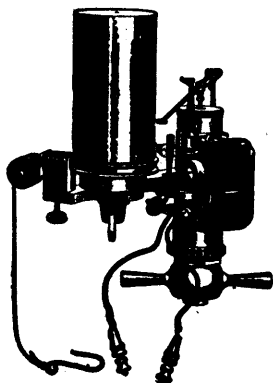
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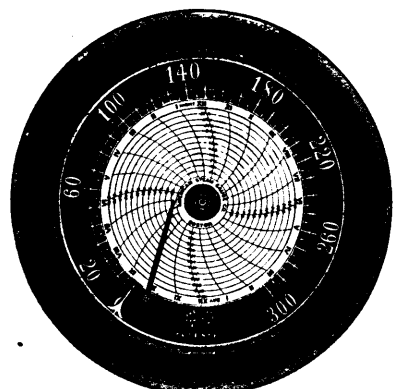
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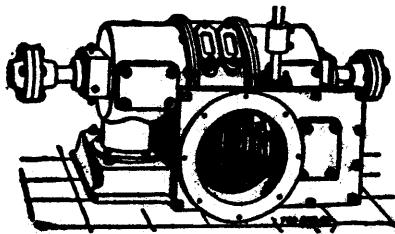
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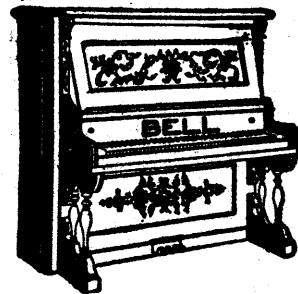
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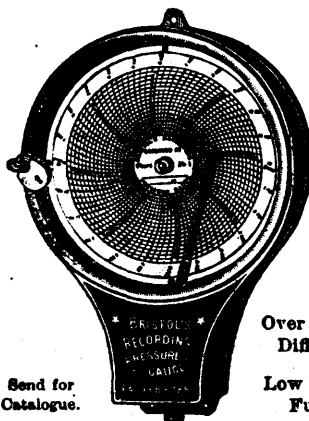
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