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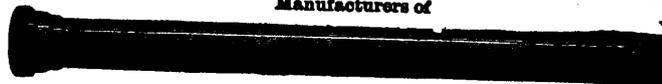
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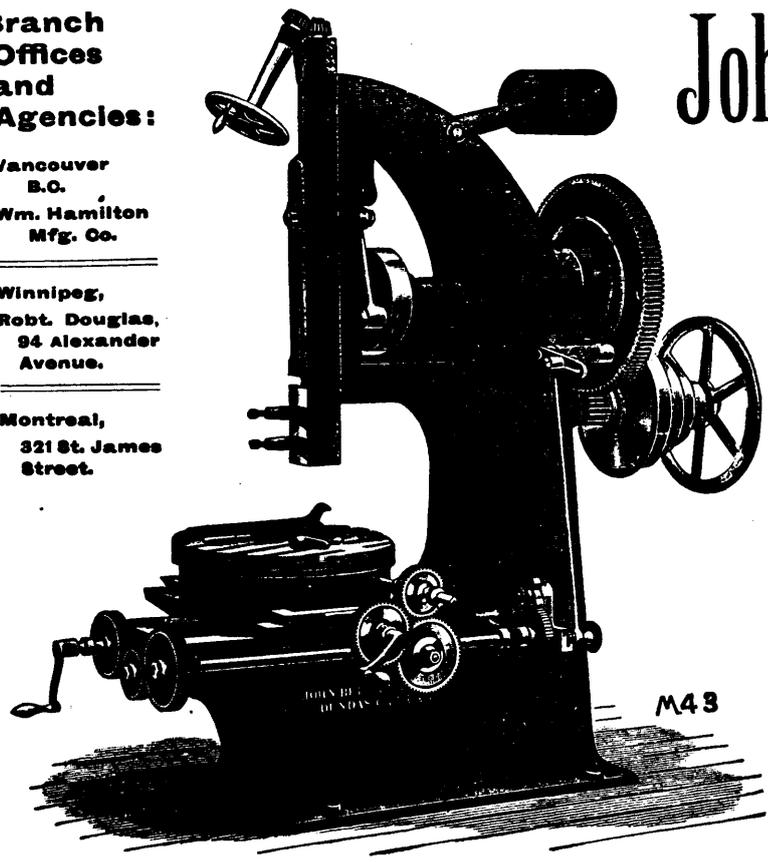
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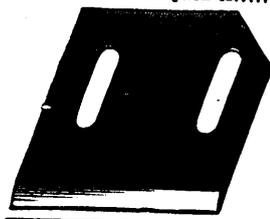
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We Manufacture—

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

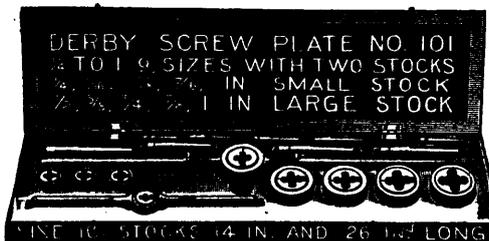
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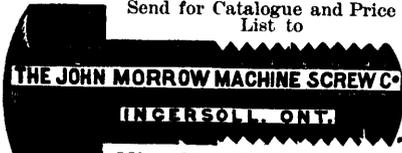
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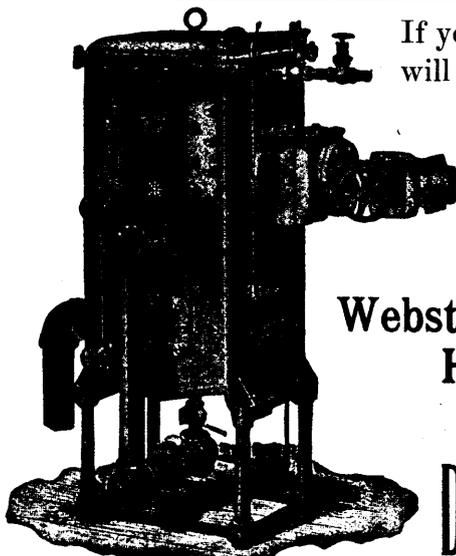
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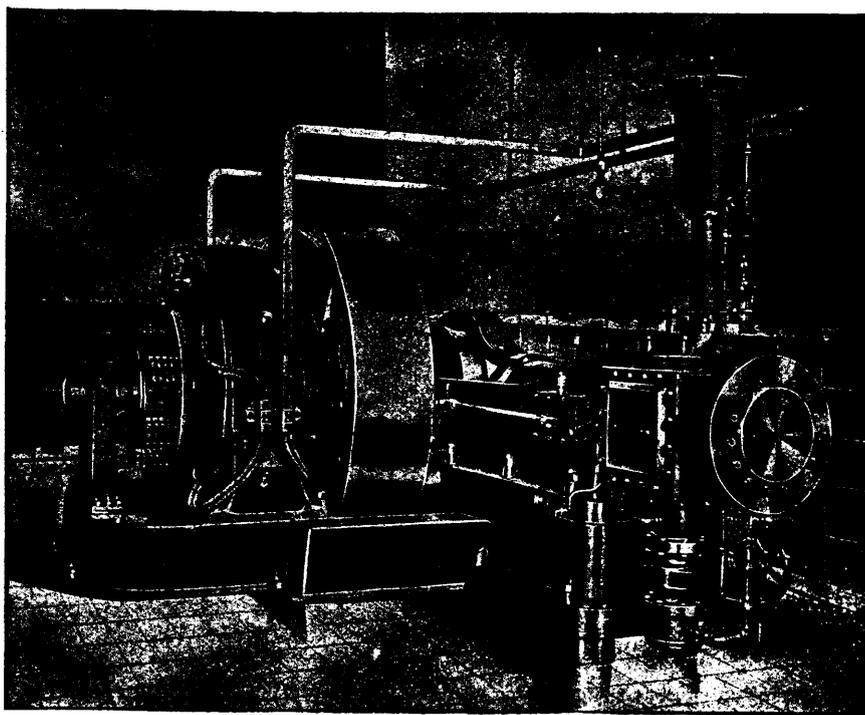
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Anilines, Dyestuffs & Chemicals

DELIVERY MADE AT NEW YORK, MONTREAL OR HAMILTON.

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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.

The Generator are extensively used in Europe, and are on exhibit at the Paris Exposition. Particulars by applying to

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Acetylene GAS Generators

WRITE FOR PARTICULARS

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THE RATHBUN COMPANY."

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Book 8 x 10 inches. 488 Pages.

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

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FOR STEAM, WATER OR AIR

Speed Governors for Pumps. Water Pressure Regulators.
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The Mason Regulator Co., - 6 Oliver St., BOSTON, MASS., U.S.A.

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Long Distance Telephone.



Reflectors, Shades, Lamps

We Stock a Large Variety of SHADES
and REFLECTORS in

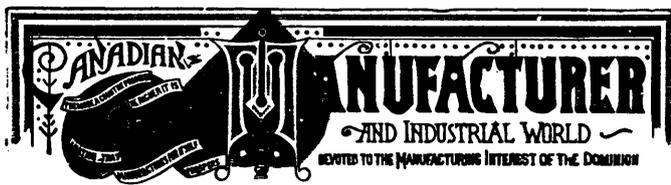
ALUMINUM, MIRROR, CELLULOID, PAPER, PORCELAIN,
FOR FACTORY AND OFFICE.

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

Write us about Lighting
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JOHN FORMAN, 708 and 710 Craig St., MONTREAL

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ESTABLISHED IN 1890.

PUBLISHED ON THE FIRST AND THIRD FRIDAYS OF EACH MONTH

SUBSCRIPTIONS:

CANADA AND UNITED STATES, - - - \$1.00 PER YEAR.
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MESSRS. DAVISON & CO.,

164 Federal Street, - Boston, Mass.

AGENTS FOR UNITED STATES.

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J. J. CASSIDY, - - Editor and Manager

A SPECIAL EDITION.

THE CANADIAN MANUFACTURER of June 21 will be enlarged with special reference to the textile and allied trades, and will contain a number of interesting articles and statistics relating thereto.

THE CANADIAN MANUFACTURER has always been in close touch with the textile industries of Canada. It has always been a persistent advocate of their interests, and has always kept the attention of its readers directed to the importance of them as compared with the other industrial enterprises of the country.

There is no other Canadian industry as widely diffused as that which produces materials for clothing the people. There are many large mills which convert the cotton of the South into yarns and cloth; and there are many other large mills which produce the warmer woolen fabrics, but there are hundreds of smaller concerns where the fleeces of Canadian sheep are carded and spun into yarns for knitting, and woven into blankets and other textiles for warming and comforting the inhabitants of the land. In every section of the land, from the Atlantic to the Pacific, these carding, spinning and weaving establishments exist. They provide a close-at-hand home market for the wool of the farmer, and they afford employment to thousands of men and women, boys and girls. Like many other manufacturing industries, the larger of our cotton and woolen mills imply large congregations about them of operatives and their families—unlike them the smaller woolen mills are to be found in almost every neighborhood, and they are not affected to the extent their larger congeners are by labor and other social questions.

All these mills require to be equipped with modern, up-to-date machinery and appliances to enable them to produce goods of acceptable quality, and at prices which can withstand the competition of imported goods. Natural advantages in many directions are strongly in favor of these Canadian enterprises, but they cannot operate to the best advantage without the use of first-class machinery, and, where required, of the best qualities of modern dye stuffs; and the demands in this direction open up a market of very great value to manufacturers of and dealers in such articles. It is to bring these two

elements of trade into close touch each with the other—the buyer and the seller—that our efforts are directed.

This special edition of THE CANADIAN MANUFACTURER will go to every textile establishment in Canada. It will reach every cotton mill, every woolen mill, every yarn mill, every knitting mill, every carding mill and every dye house in the Dominion. It will go to every manufacturers' agent who handles textile fabrics, to every manufacturer of textile machinery, to every machinery and supply house, and to all who manufacture or handle dye stuffs. In this way it will be possible for every buyer of such goods in Canada to learn just where and from whom such goods can be bought.

To those who are interested in supplying goods to the Canadian textile industry, who do not already advertise their business in this paper, we suggest that it would be to their advantage to make their announcements in this special edition. Every number of it will be provided with a loop by which it can be suspended in the office and kept as reference for the information it will contain.

THE PAPER COMBINE.

At the meeting of the Canadian Press Association held in Toronto in March, complaints were made that a combination existed among the manufacturers of news paper, the effect of which was to unduly enhance the price of the article, and the following resolution was passed:—

Resolved:—That this association respectfully urges the Dominion Government to review the subject of the tariff's relations to paper and pulp. The newspapers of Canada at present labor under the exactions of a paper-making combine that we believe comes under the meaning of the tariff statute, and which, under shelter of the heavy duty of twenty-five per cent., has raised prices of print paper to the highest practicable limit, Canadian newspapers being obliged to pay prices exceeding those prevailing in the United States by about the cost of duty and longer freight haul. This association has two objects in view in this representation—first, relief from the combine by removal or reduction of the duty under the powers vested in the Government; second, the rearrangement of the tariff on those subjects, with a view to encourage the manufacture in Canada of the finished paper. The latter should be one of our chief exports, in view of our lavish resources in pulpwood and water power, and our possession in unrivalled degree of the elements of cheap manufactures. The prevailing condition is a loud reproach both to the companies engaged in paper making, and to our public policy on the question. This association therefore begs to press upon the Government the desirability of adopting means whereby Canada may, as is being attempted in regard to the iron and steel industry, reap the benefit of its vast resources, and rise from a backward position to that of a leader in the making of the world's paper. That the executive be instructed to bring this resolution early to the Government's attention, with our petition for prompt investigation and remedy of complaint in respect to the combine.

This matter was brought to the notice of the Government, and a commission has been issued to Judge Taschereau, of Montreal, to investigate the charge, and now it will be in order for the Press Association to produce its proofs.

This action is taken under a clause in the customs act of 1897, giving the Government power to deal with trusts or combinations, and the present is the first case of the kind which has yet been instituted in Canada. The clause in question reads as follows:—

Whenever the Governor-in-Council has reason to believe that with regard to any article of commerce there exists any trust, combination, association or agreement of any kind among manufacturers of such articles, or dealers therein to unduly enhance the price of such articles or in any other way to unduly promote the advantage of the manufacturers or

dealers at the expense of the consumers, the Governor-in-Council may commission or empower any Judge of the Supreme Court or Exchequer Court of Canada, or of any Superior Court in any Province of Canada to inquire in a summary way into and Report to the Governor-in-Council whether such trust, combination, association or agreement exists. The Judge may compel the attendance of witnesses and examine them under oath, and require the production of books and papers, and shall have such other necessary powers as are conferred upon him by the Governor-in-Council for the purpose of such inquiry. If the Judge reports that such trust, combination, association or agreement exists, and if it appears to the Governor-in-Council that such disadvantage to the consumers is facilitated by the duties of customs imposed upon a like article when imported, then the Governor-in-Council shall place such article on the free list or so reduce the duty of it as to give to the public the benefit of reasonable competition in such article.

COMMERCIAL INVASION.

There are other things than chickens and curses that come home to roost, and free trade as they have it in England is one of them; and while it may answer the purpose of an argument to say that Mr. Chamberlain would consider no proposition looking to Imperial preferential trade that did not include free entry for British goods into all Colonial ports, all intelligent people know that there has always been an element in that country averse to free trade as they have it there; that these "fair traders" as they call themselves, work for and look forward hopefully to the time when their ideas will prevail, and that at this time a reversion to a protective policy is quite imminent. According to the Manchester Textile Mercury, one of the strongest elements working in this direction is the Associated Chambers of Commerce, of Great Britain, and our contemporary tells of their aims and desires.

It says that these chambers since their somewhat recent organization, are attaining to something like the influence that ought to be theirs all through their history. During the period immediately succeeding the adoption of free trade in that country, they fell into insignificance, and practically became extinct. This arose from the fact that, owing to Britain's monopoly of the mechanical industries, at the time that country carried everything before it in foreign commerce, which the free trade party attributed to their policy. They therefore appealed to statesmen to be let alone—that they could do better without than with their assistance. Chambers of Commerce were not even wanted, so they fell into neglect and practically became extinct. All was left to private enterprise. This was all very well for a time, or until Continental and other countries whose markets Great Britain had invaded, gathered their scattered wits together and began to devise means to resist the commercial invasion which they concluded was depriving their people of their industries. Their first step was to procure British machinery and to imitate British procedures. They employed skilled British workmen to teach their own; but this did not suffice. They were wanting in knowledge and experience. They called upon their Governments for protection against the British invasion, and it was accorded by the imposition of tariffs, at first light, then heavier, and then heavier still, almost to prohibition.

It was through this period that efficient Chambers of Commerce would have been useful, but they had ceased to exist. There was no organization among merchants and manufac-

turers. British trade on the Continent ceased to expand, and had it not been that the markets of India and the East were open, the pressure of over-production, which began to show itself about 1860, would have been sooner and much more keenly felt. The outbreak of the American war staved off disaster for a time, but ultimately made matters worse, as it resulted in the loss of the American market, particularly for manufactures of cotton. It was not until the denunciation of the commercial treaty with France, and the attempt that country made in 1882 to impose an impassable barrier against the importation of British manufactures, that the necessity for commercial organization became apparent. The struggle thus entered into against the French policy lasted for months, during which time there was an awakening and revival of the Chambers of Commerce. The British Government under its free trade policy was helpless. It could do nothing, having no knowledge of, and caring little for industrial and commercial interests. It had to the fullest accepted the dicta of the free traders and left commercial matters severely alone. The professional politicians of both parties agreed in this, for it saved them much labor. Since that time a fair degree of progress has been made in increasing the number and developing the usefulness of these Chambers of Commerce.

An important question now claiming the attention of these bodies is how best, if possible, to resist the commercial invasion of other countries by which Great Britain is being overwhelmed. It may be said that Ephraim, being joined to his idol, should be let alone; but those who have the best interest of their country at heart are not willing to have things continue as they are, and allow the free trade Old Man of the Sea to ride them to death. Stubborn pride inclines some to hold back, but common sense impels many to revolt and advocate a policy of fair trade, which means tariff protection, to which, without doubt, sooner or later that country will come.

CANADIAN—AUSTRALIAN PREFERENTIAL TRADE.

The British Trade Journal, discussing the question of preferential trade between Canada and Australia, says:—

Canadian manufacturers produce many classes of goods which the new Australian Commonwealth could exchange for its own special commodities, and such business would no doubt be facilitated by a tariff giving Canadian manufacturers an advantage in Australia, and Australian farmers and mine-owners similar advantages in British North America. The proposal must, however, be also considered from an international and a British point of view. United States manufacturers, who are building up a considerable hardware and machinery trade at the Antipodes, would not quietly submit to a preferential treatment there of Canadian hardware and machinery; and any tariff advantages which Canada may obtain from Australia would certainly in such an important market also be claimed by the United Kingdom.

Advices which reach us from Canada indicate a growing dissatisfaction among manufacturers there with the effects of the 33½ per cent. preferential tariff. Canadian firms must feel acutely the competition of British makers which is favored and stimulated by such a preference, and they naturally ask themselves and their agricultural friends what advantages have been secured for them in return. The Canadian manufacturer has received no direct benefit, but the farmer and dairy-owner of British North America has most decidedly benefited, not as the result of any discrimination in his favor on the part of Great Britain, but as the natural effect of a greater importation of manufactures from this country, and of his determination and "push" to develop his trade. The Canadian producer has successfully met the competition of the United States, of Australasia and of European countries in finding markets in the United Kingdom for butter and cheese, poultry, meat and cereals; and it is far more creditable to him that he should

have accomplished this without any fiscal aid, than the growth of British manufactures imported under a preferential duty by Canada is creditable to our producers.

By putting forward a proposal for preferential treatment of Canadian manufactures in Australia, Canada will discover that the markets of the United Kingdom are as zealously regarded by the Australian as by the Canadian British subject. Australia is closely watching the progress made by Canada as a source of food supplies for this country, and she will hardly care to give tariff concessions to so keen a competitor without first sounding the Government at home and without making sure that Canada can give an equivalent. Australia will thus have an opportunity of raising an important constitutional question. She may choose to exercise her new power as a Commonwealth by extending tariff favors to her North American sister—favors not bestowed on the United Kingdom. She may even use such a movement as a lever to obtain preferential treatment for her wool, meat and grain in the Mother Country, and thus bring forward the general question of Imperial Commercial Federation. Canada and Australia together could bring an influence to bear on the British Government, which, whether it succeeded or not, would undoubtedly advance the question a stage further. At present all indications point to the adoption by Australia of the preferential tariff system in force in Canada. Whatever the action of Canada may be with regard to the Australian trade the preferential trade movement cannot fail to develop. Political and commercial affairs are tending in that direction. The rising tide of foreign competition; the growing cost of Imperial defence; the increased facilities for communication throughout the Empire; the need of the Colonies for inter-colonial markets; the absolute necessity of making sure of markets, such as South Africa, for which the home country and the Colonies have made enormous sacrifices—all point to the advent of commercial federation for the British Empire. Should Canada, Australia and New Zealand (whose military services in the war can never be forgotten) point to the South African markets under Imperial control and ask for more favorable treatment for their grain and meat than that given to similar commodities from the United States and the Argentine, could the Imperial power refuse?

THE COMING AUSTRALIAN TARIFF.

Our Australian cousins are speculating concerning the forthcoming tariff of their Commonwealth. The Australasian Hardware and Machinery, late the Australasian Ironmonger says:

When the Federal Premier spoke at Maitland on January 17, the passage which attracted most attention was that dealing with the Customs Tariff of the Commonwealth. A cloud of eloquent phrases left many in doubt as to the intentions of the Prime Minister at least. He seemed to be astride the fence, so that he could come down on either side as the cat jumped, or circumstances dictated. He speedily showed that this was not his intention, and declared himself a protectionist, with the qualification that under the urgent necessities of the Commonwealth, duties, even if protective, must not be so high as to be prohibitive. Later on, Sir William Lyne declared that duties must be something like ten per cent. to fifteen per cent. in order that a large revenue might be secured. Sir William Lyne has since explained that this is only an average, and that his ideal tariff would include a free list, specific duties, and ad valorem duties, as in Victoria. But Mr. Barton immediately remarked that it was impossible at present to state what the duties would be, and, beyond the knowledge that Mr. Kingston, the Minister of Customs, is in consultation with the Customs officers of each State, nothing further can be learned.

Some seem to have the idea that the Federal Ministry, without waiting for the assembling of Parliament, may prepare a Customs tariff, and proclaim it, so that one morning within the next few months, merchants may wake up to find new duties imposed. Questions put to constitutional authorities confirm the first impression that this is impossible.

In each State the Customs duties are collected under authority of an Act of Parliament. Nothing but an Act of the State Parliament, or an overriding Act of the Federal Parlia-

ment can alter this. If the Federal Ministry ventured to proclaim a tariff on their own responsibility, merchants would be justified in refusing to pay any regard to it. It would not be law; it would mean no more than if we, the proprietors of this journal, ventured to take the same step.

It will, therefore, be necessary to wait until the Commonwealth Parliament passes a new Customs Act, and not merely a Customs regulation. The latter will deal with the internal organization of the Customhouse, and the forms to be observed, and will not touch the amounts of the duties.

The legal mind seems to regard it as impossible that a Customs tariff can be passed during the first session of Parliament. But those who hold this view are quick to acknowledge that if public opinion demanded the introduction of the tariff in the first session, the Ministry would not disregard this. The extreme confusion and interruption of business that will be caused if the commercial community is held in suspense for another year will probably make it imperative on the Federal Government to introduce its tariff measure at an early date. The fact that such an active and energetic man as Mr. Kingston has been appointed Minister for Customs, is another reason in favor of this view, for he will hardly be content to allow a whole session to pass without showing that he has done better work than merely pass uniform regulations.

If the Government introduces a tariff it will almost certainly be in accordance with the practice adopted for many years in these colonies, and also in the Mother Country. At the close of this Budget, the Treasurer will bring forward a schedule of duties, and the House, by resolution, will authorize their collection from the following morning. It is open to the Government to fix a future date when the tariff will come into force, but this makes possible so much chicanery, and leads to so great confusion, that it is hardly probable that such a course will be adopted.

When the tariff is introduced the forms of Parliament would allow of debate, division, and even the defeat of the Government. Should the Government be defeated, and turned out of office on the Tariff Bill, the resolution that duties should be collected from the date of introduction might still remain in force, and probably would, yet business will be badly hampered. It would be known that the duties would only be temporary, and there would be the delay of the appeal of the new Ministry to their constituents before they could take their seats, and the further delay in preparing a fresh tariff. If, however, the first Federal Ministry is to be challenged, the natural instinct of the politician will be to get this challenge fought out before such a detail as the Customs tariff is touched. Heads will have been counted, and the "numbers" will practically "be up" before the tariff is introduced. In one line of the last Victorian Tariff one duty was collected from the introduction of the measure till a few weeks later. Then Parliament increased the duty some ten per cent., and this was collected for a period of days. Then at another stage of its passage through the Legislature this line in the Bill was again reduced, and a half-way duty has been collected ever since.

SHOULD CANADIANS ACCEPT GIFTS FROM MR. CARNEGIE.

It is announced that the City Council of the City of Ottawa have decided to inform Mr. Andrew Carnegie that they will, in behalf of their city, accept a substantial gift of money from him for the establishment of a public library. Application will be made to the Ontario Legislature for authority to divert the necessary amount of funds of the city for the maintenance of the library.

Mr. William Robbins, of the Hiram Walker & Sons Co., Walkerville, Ont., one of the largest manufacturing concerns in Canada, has published a pamphlet in which he states why Canadians should not accept gifts from Mr. Carnegie. Mr. Carnegie was born in Scotland, and foreswore his allegiance to Great Britain by becoming a citizen of the United States, where he acquired more money than he knows what to do with.

Mr. Robbins, showing that self-respecting individuals are very careful about accepting presents, says :

I know no reason why communities should be any less particular ; and I venture to ask whether self-respecting Canada should take money from Mr. Carnegie. It is very natural that offers of free libraries, etc., should at first sight appear praiseworthy in every way ; and the fact that Mr. Carnegie was born under the British flag, though now an American citizen, seems a sufficient explanation of his proposed contributions to Canadian objects. I submit, however, that we cannot accept his benefactions without forfeiting all claims to independence of character and proper self-esteem, for reasons which I will proceed to give. There are certain things which we Canadians, in common with all true British subjects, hold very dear, and of which we feel we may be justly proud. They are our own fair country ; the splendid Empire to which we belong ; our form of government, a constitutional monarchy under which we enjoy a freedom unsurpassed since the world began, and the navy and army, whose glorious achievements no words could over-state. Upon all these Mr. Carnegie has aired his opinions in print, so it is easy to ascertain what they are.

As the day is approaching when Englishmen all the world over gather to do honor to their Motherland (always heartily joined by their fellow-subjects of every race), and soon follows the anniversary upon which for more than sixty years Britain's sons and daughters have voiced their devotion to our late deeply lamented Queen, it occurs to Mr. Robbins that the facts might be most forcibly presented by compiling a "toast-list" appropriate to such occasions, substituting for the usual quotations from the great poets and authors extracts from the writings of Mr. Carnegie, and this is the way that gentleman does it :

Toast—Our Gracious King.—Of course men can kiss the hand of the Queen, but how will it be when the Prince of Wales holds out his hand, and Messrs. Chamberlain and Morley, Collins and Broadhurst, Trevelyan and Fowler, and others, are required to kiss that? I am not sure but that even these Radicals may find it no stain upon their manhood to incur this degradation. But the first man who feels as he ought to feel will either smile when the hand is extended, at the suggestion that he could so demean himself, and give it a good hearty shake, or knock His Royal Highness down.—From Andrew Carnegie's *Triumphant Democracy*.

The vulgarity and uncharitableness here displayed are, Mr. Robbins thinks, probably a key to Mr. Carnegie's character.

Toast—Our Late Queen—1. The Royal mother of her people cannot be induced to support her own children during life, or even to bury them decently at death, as long as the public can be further bled.

2. Even the Queen, a woman, who should shudder at war, and not publicly parade her interest in slaughter, would publicly congratulate him.

3. If any man believes that Queen Victoria, or the Prince of Wales, could receive more welcome news than that of the downfall of the Republic (meaning the United States), his estimate of human nature differs from mine.—From Andrew Carnegie's *Triumphant Democracy*.

Comment :

1. Her Majesty's sex and universally recognized virtues were not thought by Mr. Carnegie a sufficient protection against so coarse an accusation. He might at least have had the honesty to remember that the money grants made by Parliament to the Queen were largely, if not entirely, offset by the revenue from the Crown Lands surrendered by her to the nation, which Crown Lands were as fully Her Majesty's private property as is any foot of land owned by Mr. Carnegie the property of that gentleman.

2. This is as malicious a representation of the Queen's character as it would be possible to make.

3. The general and generous tribute to the Queen's friendship for the United States paid by the American press of all shades of politics during her illness and after her death, abundantly proves that Mr. Carnegie's estimate of human

nature does differ, and that very materially, from the estimates of his fellow-citizens.

Toast—The Royal Family.—These Royal people are only excrescences upon the State, the setters of bad examples, and the very core round which the worst vices of English life gather and fester.—From Andrew Carnegie's *Triumphant Democracy*.

Comment :

Common decency and a sense of fair play would prevent ordinary men from making charges of this sort without offering proof. If one should allege that Mr. Carnegie's home circle is a hot-bed of vice, he would doubtless consider it an outrage.

Toast—The Motherland.—The man born abroad, like myself, under institutions which insult him at his birth.

The insult inflicted upon me by my native land at birth.

To the beloved Republic under whose equal laws I am made the peer of any man, although denied political equality by my native land, I dedicate this book, with an intensity of gratitude and admiration which the native-born citizen can neither feel or understand.—From Andrew Carnegie's *Triumphant Democracy*.

Comment :

These are remarkable statements regarding a land which for generations has been conspicuous for freedom and justice ; which has been the asylum of political refugees of almost every nationality. No one will find fault with the warmth of Mr. Carnegie's devotion to the country where he has been able to accumulate one of the colossal fortunes of the day ; but that could have been as well expressed without false accusations against the land of his birth ; and to show how unjust the comparison is, it is permissible to mention that there were in the United States millions of human slaves long after there had ceased to be one on British soil.

Toast—Canada.—1. Canada's hypocritical and ungrateful conduct merits and inspires only contempt.

2. Canada, subject and dependent, contrasts unfavorably with the Republic in every way.

3. But why talk of Canada, or of any mere colony? What book, what invention, what statue or picture, what anything, has a colony ever produced, or what man has grown up in any colony who has become known beyond his own local district? none. Nor can a colony ever give to mankind anything of value beyond wood, corn, and beef.—From Andrew Carnegie's *Triumphant Democracy*.

Comment :

1. These may be dismissed with the simple remark that very few Canadians will admit their correctness until some evidence much more substantial than Mr. Carnegie's mere assertion is forthcoming.

2. It would seem hardly worth while to dignify these wild statements with any specific reply. Their ridiculous character could be abundantly shown on behalf of Canada and every other considerable colony of Great Britain, if that were needed. It will suffice, however, to ask Mr. Carnegie what he thinks of those colonial products, George Washington, Thomas Jefferson, John Adams, John Jay, Benjamin Franklin, and the many other great men who were born and developed in the American colonies before their independence was asserted.

EDITORIAL NOTES.

A feature of THE CANADIAN MANUFACTURER which is highly appreciated, is that department in which "Business Changes" are recorded. They have reference chiefly to those in which our readers are interested, and constitute a brief history of the mutations of manufacturing and commercial life as we have it in Canada. They are collated from Bradstreets' reports, and cover all the provinces of the Dominion. No other trade journal or newspaper in Canada has ever undertaken to supply such information to its readers.

Two large grain carrying steamers will leave Chicago for Liverpool by way of the Canadian lake and canal route this month. The first of these, named the North-Western, will leave on May 24, and the second, the Northman, on May 25. Both vessels are owned by the North-Western Steamship Co. New York, and if the trip by the Canadian route proves successful, it is believed much of the grain trade from Chicago and Duluth will in consequence be delivered via the Canadian route. The Department of Railways and Canals will afford every facility for the swift and easy passage of the vessels, and in this matter will have the co-operation of the Department of Marine. The Chicago vessels will be the first ocean grain vessels to use the canals of this country, and will be the largest vessels that have ever been locked through.

The Canada Atlantic Railway Co. will this season fully test the capabilities of the port of Quebec. The company has undertaken to deliver 5,000,000 bushels of grain at the ancient capital before the close of navigation.

Mr. W. G. McNeill Thompson, consulting engineer, St. Catherines, Ont., who is connected with a number of large Canadian enterprises, and is constantly in touch with manufacturers who can supply such articles as are required in his business, speaks most highly of the usefulness of The Buyer's Guide of Canada. He says that in works under his charge he always give the preference to home products, considering it the duty of every Canadian to do so, and in awarding this preference he finds The Buyer's Guide of great value in giving the names of the manufacturers with whom he desires to deal.

Owing to the success of the recent expeditions in search of the North Pole all nations are alert. In all parts of the world scientists have arisen to the emergency, and now with victory in sight it will be a struggle to the death to plant the flag at the earth's axis. No less than seven expeditions are being fitted out and will sail from as many ports. Practically unlimited means have been placed at the disposal of the explorers in other lands. Russia has placed unlimited means at the disposal of Admiral Makaroff, William Zeigler, a millionaire of New York, is willing to spend one million five hundred thousand dollars to enable Evelyn B. Baldwin to plant the stars and stripes at the pole. The Duke of Abruzzi who spent five hundred thousand dollars on his first expedition, is prepared to spend twice as much, if necessary, to accomplish his purpose. Probably the greatest factor in the world's race for the Pole is the expedition of Captain J. E. Bernier, of Quebec, a Canadian by birth, who has offered his services gratuitously. The Captain's plans have been endorsed and approved by the Geographical Society of Quebec, the Colonial Institute of London, England, the Dominion and Provincial Governments, and have received the commendation of such authorities in arctic research as Sir Clements Markham, Dr. Bell of the Dominion Survey, J. W. Tyrell, chairman of the committee on Polar research of Toronto, and the late Dr. G. M. Dawson, of the Geological Survey. In view of the great interest manifested by Canadians in the Canadian Polar Expedition, it has been decided by the committee in charge of the Expedition, of whom His Excellency the Earl of Minto is Patron and Lord Strathcona and Mount Royal, President, to immediately appeal to the Canadian public for assistance in the shape of a popular subscription to supplement the grant given by the Dominion Government.

Subscription lists have been opened in all the banks and

newspaper offices in Canada, and it is earnestly requested that the necessary funds be supplied with as little delay as possible; our readers are, therefore, asked to subscribe now, and any amounts they may feel disposed to contribute will be most acceptable. Funds will be deposited as received in the Bank of Montreal, Ottawa, and every sum received will be duly acknowledged, and the name of the subscriber will be recorded in the official records of the undertaking. Subscriptions may be sent to the nearest bank, or may be mailed direct to the Polar Expedition Committee, 117 Bank Street, Ottawa.

In the April 19 issue of this journal, in an article having reference to the value of imports of leather belting into Canada in the year 1900, it was shown that such imports were as follows:

From Great Britain.....	\$38,690
" United States.....	33,474
Total.....	\$72,164

It might have been added that the value of these imports was increased by those from Germany to the extent of \$18, making the grand total \$72,182. In answer to an inquiry from a correspondent we would state that the provinces into which these imports were made were:

Ontario.....	\$16,246
Quebec.....	39,379
Nova Scotia.....	915
New Brunswick.....	2,422
Manitoba.....	2,212
British Columbia.....	6,389
Prince Edward Island.....	26
North-West Territories.....	230
Yukon.....	4,373
Total.....	\$72,182

It will be noticed that the imports into the province of Quebec exceeded the imports from Great Britain by \$689.

We are in receipt of a letter from Mr. J. L. Richardson, Toronto, representing D. K. McLaren, Esq., manufacturer of leather belting, Montreal, in which he alludes to an article in the April 19 issue of THE CANADIAN MANUFACTURER having reference to the imports of leather belting into Canada. He says that the article is a most conclusive argument in favor of British preferential trade, but the facts show that a great injury is being done to Canadian manufacturers of belting, a reason for which condition being that the increase of importation of belting in 1900 over previous years was not because of the superior quality of British or United States goods, but because at a meeting of Canadian belt manufacturers, held in February of last year, a price list was adopted which was high enough to allow foreign competitors to sell their goods in the Canadian market, to the great demoralization of the trade of the home makers. We learn that the Canadian belting combine has been disrupted; but at the same time the industry, like that of the woolen industry, has been, and is being very severely injured, by the operation of the preferential tariff.

The English China Manufacturers' Association have communicated with the North Staffordshire Chamber of Commerce respecting the marking of foreign goods imported into this country. It is stated that until quite recently it has been usual to mark all china goods imported into this country from the Continent "Made in Germany," or whatever the country of origin, but we are now informed that if these words are printed or stencilled on the packing-cases containing the goods, the requirements of the Customs Department are sufficiently complied with. People importing these goods are then in a

position to sell them either in home or foreign markets as British-made goods, and a very serious blow is thus dealt at our home industry. The Association appealed to the Chamber to assist them in getting the rule in this respect altered if possible. The Chamber unanimously decided to support the China Manufacturers' Association.—British Trade Journal.

It is quite evident that Canada's preferential tariff in favor of British goods is of material benefit to German and other Continental manufacturers.

Serious efforts are being made to pass a bill through the Illinois Legislature prohibiting "the insurance or indemnification of persons or corporations against loss or damage resulting from accident to or injury suffered by an employee or other person." The intention of the bill, in plain language, is to prevent all employers of labor engaged in hazardous business from insuring their employees in employers' liability casualty insurance companies. The member who introduced the bill, in a speech supporting it, claimed that the insurance system conduced to carelessness, both on the part of the workers because they are insured and on the part of the corporations because they are protected, and further argued that it forced upon injured employees settlements which work much hardship. This line of reasoning, if exclusively maintained, would have made the bill appear to be conceived for disinterested purposes, with the public welfare as the main consideration. Even then, the proposition would have contemplated a step backward, as the insurance feature is regarded by those who have adopted it as a most satisfactory arrangement, working equitably between employer and employed, saving much annoyance to the former and likewise greatly reducing the amount expended for damages. In recent years prosecutions for damages have multiplied amazingly. Suits for damages are brought on the slightest pretext, and if the employing party should be a corporation with a fair capital a jury will usually award ample compensation to help along "the poor man fighting the rich company." Those who are using casualty insurance state that they have found that the attorneys regularly employed by the insurance companies have acquired such a degree of experience in handling the cases coming before them for disposal that they are enabled quite speedily to determine the real merits of each one and thus secure much better settlements than could be effected by a lawyer inexperienced in business of this character. The retention of such lawyers appears to be the real reason for the attempted passage of this bill. The business of numerous local lawyers who bring personal damage suits is seriously interfered with. They find that contesting a suit with a man familiar with all the points likely to arise, and trained in the business of developing overdrawn injuries is a very different matter from trying one with an opponent not versed in the arts employed in personal damage litigation. This point has been exposed, and probably may lead to the defeat of the bill, as it is thus clearly shown to be inspired for the benefit of a certain class and not for the public welfare.—The Iron Age.

At a recent meeting of the Council of the Sydney, N.S., Board of Trade the following resolution was passed:— "Resolved: That this council endorse the suggestion of the Canadian Board of Commerce, which provides that a Customs rebate of 33½ per cent. on goods manufactured in Great Britain be allowed only when said goods are landed at Canadian ports, and pledges itself to use every means in its power to urge the adoption of this measure by the Government." Where is the Halifax branch of the Canadian Manu-

facturers' Association, instituted recently by Mr. J. P. Murray, that it does not declare itself in this matter?

Canadian newspapers are worrying the Government with demands that printing paper be put upon the free list. They allege that there is a combination of manufacturers in Canada which is squeezing publishers in the matter of price, and go so far as to assert that some publishers find it to their advantage to import American news paper, and pay the freight and duty thereon. It is very doubtful if this is done to any considerable extent, for it does not seem possible, in view of the claim made in behalf of the Canadian industry, that it can manufacture news paper cheaper than it can be made in any other country, that the price of news in Canada should be marked so high as to allow of the importation of American paper under a heavy duty. Possibly the Canadian press is as illogical in its demands as is the American daily press when the pockets of the publishers are concerned. The daily newspapers in this country have said so much that is unreasonable and unwarranted regarding the price of news paper, and the operations of the manufacturers, that their utterances do not command serious attention. However logically they may discuss the tariff and the operations of "trusts" in general, they are no longer logical where the price of white paper is concerned. It may be that the Canadian press, in its demand for free paper, is as unreasonable as the American press has been, in its outcry about "the paper trust."—The Paper Mill.

A deputation representing the publishing and printing interests of Toronto waited on Hon. Sydney Fisher, Dominion Minister of Agriculture, last week, to urge upon him the necessity for certain changes in Lord Monkswell's copyright bill, now before the House of Lords. The object of the delegation is stated as follows:—

The Monkswell bill, which is in a sense a consolidation of British copyright law, provides that the Legislature of any British colony, in cases where a book has been copyrighted in any other British possession, may grant to the holder of that copyright or to whom he may designate, the exclusive right either to print the book within its borders, or to import the same. It is apparent, however, from the wording of the Act, that the right of election between these two choices rests not with the colony, but with the holder of the copyright, and therefore as these two rights are interwoven into one clause, a colony such as Canada cannot avail itself of the right to grant a license to print, without also being compelled, if such is demanded, to grant a license for exclusive importation. The delegation pointed out that such a right was tantamount to granting a Canadian copyright. The Canadian copyright law provides that copyright shall only issue in Canada by virtue of actual printing here. This provision of the Monkswell bill therefore would afford for the copyright holder in England, for instance, a method by which he could secure practically a Canadian copyright, simply by granting an exclusive license to import, and without any obligation upon him to print in this country. The delegation asked that the clause in Lord Monkswell's bill, containing the above provisions, should be made to clearly provide that a colony should have the right to grant the license to publish without also being compelled to grant a license to import, and a draft clause was submitted to the Minister containing this provision. Mr. Fisher promised full consideration. It was also urged by the delegation that in view of the position of the bill in the House of Lords, immediate action would be necessary in order to protest the interests of Canada.

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 in these pages, and to every concern in Canada interested in any manufacturing industry whatever, this interest extending to supply houses also.

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

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

The National Packing Co., Victoria, B.C., has been incorporated with a capital stock of \$25,000.

The Empire Canning Co., Vancouver, B.C., has been incorporated with a capital stock of \$20,000.

The World Printing & Publishing Co., Vancouver, B.C., has been re-incorporated with a capital stock of \$50,000.

The Lardeau Light & Power Co., West Kootney, B.C., has been incorporated with a capital stock of \$15,000.

Messrs. Schmidt & Co., Winnipeg, Man., brass founders, will erect a new factory to cost about \$40,000.

The Victoriaville Shoe Co., Victoriaville, Que., has applied for incorporation with a capital stock of \$25,000, to manufacture boots and shoes, etc. The applicants include Paul Tourigny, Achille Gagnon and J. N. Poirier, all of Victoriaville.

The Windsor Bent Goods Co., Windsor, Ont., employ fifty hands at present, but expect to increase this number to seventy-five in the near future.

The A. Henderson Furniture Co., Woodstock, N.B., has been incorporated with a capital stock of \$20,000, to acquire business formerly carried on by Alex. Henderson.

The Midland Towing & Wrecking Co., Midland, Ont., has been incorporated with a capital stock of \$100,000. The incorporators include J. S. Playfair, James Playfair and D. L. White, Jr.

The Boundary Auto Traffic & Trans-

portation Co., Victoria, B.C., has been incorporated with a capital stock of \$25,000, to manufacture automobiles and other kinds of vehicles.

Toronto Chief of Police Grasett has made a report as to the inspection of fire escapes in factories. He says that only about one place in four is provided with a fire extinguisher of some kind, and only one in eight has an external fire escape. In some factories a good deal of expense has been incurred in providing the means to ensure safety of employees, but in others the conditions are distinctly unsafe.

The St. Thomas City Council has awarded the contract to the Dominion Bridge Co., Montreal, for a steel superstructure to take the place of the Wilson Bridge, to cost about \$27,000.

The Montmagny Light & Pulp Co., Montmagny, Que., has been incorporated with a capital stock of \$100,000. The incorporators include Wm. Price, P. G. Owen and J. D. Stewart.

The J. F. Hartz Co., Toronto, has been incorporated with a capital stock of \$25,000, to manufacture chemical, medical, and surgical merchandise. The incorporators include J. F. Hartz, R. W. Campbell and C. C. McNamara.

The Plum Coulee Farmers' Elevator Co., Plum Coulee, Man., has been incorporated with a capital stock of \$10,500, to operate elevators.

La Compagnie de Pulp de Metabetchouan, Quebec City, has applied for incorporation with a capital stock of \$150,-

000, to manufacture pulp from wood, chemical pulp, paper, etc. The applicants include A. E. Vallerand, L. H. Gaudry and F. X. Drolet, all of Quebec City.

The Northern Lumber Co., Dauphin, Man., has been incorporated with a capital stock of \$90,000, to carry on a lumbering and pulpwood business. The incorporators include T. A. Burrows, J. E. Hedderly and W. J. Osborne.

The capacity of the British Columbia Electric Railway Co., Victoria, B.C., will be doubled by the installation of considerable new machinery in its power house.

The Sackville Free Stone Co., Sackville, N.B., has been incorporated with a capital stock of \$24,000. The incorporators include A. M. Bell, J. W. Lowe and P. J. Mooney.

Messrs. A. T. Mohr and J. B. Scovell, Buffalo, N.Y., and J. W. Munro have laid proposals before Premier Ross for the construction of a large pulp mill at Pettawawa, Ont. There is a fine water power there, and if pulp lands can be obtained, work will begin at once.

The Knechtel factories at Hanover, Southampton, and Walkerton, Ont., have been formed into one company on account of not being able to reach a satisfactory arrangement with the Canada Furniture Manufacturers, Limited, in regard to the rebuilding of the Knechtel factory, at Hanover, this concern has dropped out of the former syndicate, and with the other establishments been merged into a single concern.

The Glasgow Exhibition, which was opened May 2, was unique in that everything was practically in place awaiting the opening. The bulk of Canadian exhibits were removed from Paris, where they gained very high awards and have been distributed between two buildings—the main industrial hall and the special Canadian building. The latter is of Grecian design, the material being of fibre plaster or staff, as it is more commonly called. It is beautifully located on the rising ground in Kelvingrove Park in front of the university. Between it and the university are the Russian buildings, which, with their towers and minarets in Oriental style, form a very effective background. The Canadian building is devoted chiefly to the machinery dis-

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

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play of the Dominion, while in the main building manufactures and mining exhibits are shown. In ores and food-stuffs Canada will probably sweep the board. The specimens of gold, copper, silver and other ores are the best the country could send, while the fruit exhibit, Mr. McClelland says, will without doubt be as successful as Canadian fruit was at Paris. Glasgow has made great preparations for the exhibition, one of the most important being the substitution of electric street cars for the old horse cars, which were started up immediately before the opening of the exhibition. The feeling towards Canadians in Glasgow is very warm, and many visitors are expected from the Dominion.

Tenders are being asked for a new plant by the Amherstburg Electric Co., Amherstburg, Ont.

The International Steel Iron & Pipe Co., is being organized at Philadelphia, Pa., with a capital stock of \$50,000,000. Steel mills will be built on both sides of the "Soo" Canal, to have a capacity of 600,000 tons. English and Canadian capitalists are interested.

The Pressed Steel Car & Wheel Co., Perth, Ont., has been incorporated with a capital stock of \$700,000, to manufacture

pressed steel cars, car wheels, etc. The provisional directors include J. H. Mitchell, Neil McLean and A. C. McMaster, all of Toronto.

The new vessel for Capt. Jos. Bernier's north polar expedition will be built at Vancouver, B.C., and cost about \$80,000. It will be unique in some respects. It will have a perpendicular double stern-post rudder to permit of unshipping the rudder or propeller at any time. She will also have a flush deck, so as to avoid frequent flooding of the forward deck. She will have three masts, with a sail area of 7,000 square feet, her rig resembling that of a three-masted topsail schooner. The masts will be about 100 feet high, but the topmasts are made to take down, reducing the length to 60 feet when desirable. The vessel will be provisioned for a five-year voyage with a crew of fourteen, including six scientific men, consisting of a surveyor, an astronomer, geologist, biologist, artist, photographer and doctor.

The Cleveland-Sarnia Sawmills Co., Sarnia, Ont., has applied for incorporation with a capital stock of \$500,000, to manufacture timber and lumber, to construct and operate steam and sailing vessels, to manufacture salt, to generate

electricity for lighting, heating or motor purposes, to construct railroads, wharves, docks, elevators and warehouses, to build and operate telegraph and telephone lines, to buy and sell lands, to deal in ice, coal and wood, to conduct a general trading business, and establish and maintain stores and trading posts. The provisional directors include L. D. Holden, Cleveland, Ohio, J. M. Diver and F. F. Pardee, both of Sarnia, Ont.

The Wallaceburg Sugar Co., Wallaceburg, Ont., has been incorporated with a capital stock of \$300,000, to manufacture beet sugar. The provisional directors include Benjamin Boutell, Bay City, Mich., and D. W. Gordon and H. A. Stonehouse, both of Wallaceburg.

The Massey Station Mining Co., Copper Cliff, Ont., has been incorporated with a capital stock of \$300,000. The provisional directors include R. M. Thompson, New York City, J. J. Thompson, Bayonne, N.J., and Major R. G. Leckie, Truro, N.S.

The E. B. Eddy Co., Hull, Que., have just placed their order for Zanzibar anti-rust paint with the Garfield Paint Co., Cleveland, Ohio. Zanzibar paint is now being used by a large number of representative firms in Canada.

Transfer Ornaments, AMERICAN MADE.

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Sketches and samples submitted free of charge. Being American manufacturers enables us to make prompt delivery. Write us.

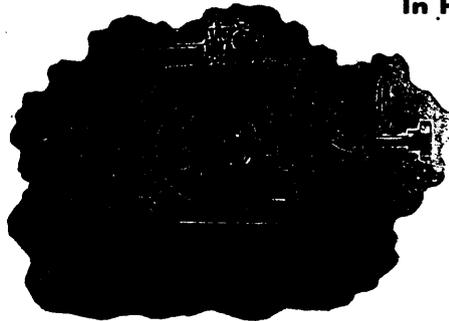
THE MEYERGORD CO., Inc., —MAIN OFFICE— CHAMBER OF COMMERCE, - CHICAGO,

Canadian Travelling Representative,
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Largest Makers in the World of Guaranteed Decalcomania Transfers.

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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.

A large interest has been secured by New York capitalists in the Montreal Bridge Co., Montreal, which intends building another bridge across the St. Lawrence from Montreal, which is expected to cost between five and six million dollars.

The Commercial Development Co., of Liverpool, London and New York, have closed a deal which will result in the formation of the International Steel, Iron & Pipe Co., which will build immense steel mills at Sault Ste. Marie, both on Canadian and American sides, with a capacity of 600,000 tons annually and employing about 10,000 men.

The Dominion Government will loan the harbor commissioners of Montreal \$1,000,000 for the construction of grain elevators.

The landing site for the Pacific cable has been bought. One hundred acres of land slightly timbered has been secured on Barclay Sound, Vancouver Island, B.C. The land will be immediately cleared and otherwise prepared for the new service to which it is to be applied. The operations thus begun will not end here, for when the property is ready, streets are to be laid out and graded, drains are to be provided on the most modern sanitary lines, cottages are to be erected, and a water supply obtained from the lake in the near locality. Houses are to be furnished for forty men, and as each is to have a house of his own, the extent of the building can be surmised. Adjacent to each cottage a plot of land will

be left for fruit trees and for garden purposes. This work is to go on without delay. The clearing of the land will consume much time in the commencement of the operations. Mr. Peake, the Pacific cable engineer, stated that he hoped to see the work above outlined carried out with all rapidity. The exact location of the property is Kelp Bay, near Banfield Creek, and about six or seven miles up from the entrance to Barclay Sound, a place described as splendidly adapted for the station, from the fact that it is surrounded by perfectly smooth water, is well sheltered, and its harbor has a bottom of ooze that will furnish good protection for the wire. Twelve fathoms of water is found close in shore, and ships of deep draught, even up to 10,000 tons, the size of the vessel now building for the laying of the cable from Vancouver Island southward, can find safe anchorage. The island is land-locked, and in case of an emergency, such as has been mentioned by those looking to have the station located at Port Renfrew, would accommodate a fleet of warships. As a barrier to the heavy rolls of the sea, the islands lie as in an archipelago. At the entrance to the sound is one of the Pelham mountains, and the whole locality is in every respect a beautiful spot. It is situated on Grappler Creek.

The vast injury done the trade of Cape Colony by the war has perhaps not been fully realized. The ordinary business of the colony has been all but destroyed, and now that the plague is upon them in

addition to the other causes for worry, their lot is indeed an unhappy one. From the Board of Trade Journal we obtain some interesting figures. As to the imports there was a slight increase in the Cape's trade. The totals for the year were £19,678,000, as compared with £19,208,000 the year before. The increase was largely in leather and provisions, both probably due to the demands created by the presence of so large a body of soldiers in the Colony. It is when we look at the export tables that we see how destructive the effect of the war has been upon the productiveness of the Colony. The returns show the exports for the past year were £7,043,000, as compared with £22,832,000 the year before. This is chiefly accounted for by the decrease of thirteen and a half millions in the export of unmanufactured gold. There was also a million and a half fall-off in the value of the wool export.

There is no more reason why an advertiser should stick to antiquated methods than there is why he should insist upon serving his customers with goods which were in style half a century ago. And, furthermore, the merchant or manufacturer who persistently refuses to make his advertising conform to methods which prevail to-day, will sooner or later meet the fate which would be his if he refused to keep his stock up-to-date or make whatever commodities he manufactures comply with the requirements of the day instead of those of years ago.—Current Advertising.

W. A. FLEMING & CO.,

771 CRAIG STREET, - - MONTREAL.

THE STRONGEST AND MOST DURABLE



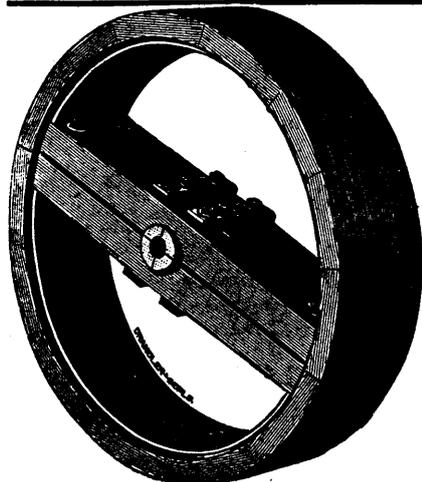
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 MOST DURABLE THE BEST FOR MAIN DRIVES

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BALATA BELTING

STRONG, DURABLE AND NOT AFFECTED BY DAMPNESS.

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A HIGH GRADE

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BUILT HONESTLY
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It Does the Work. No Trouble. No Worry.

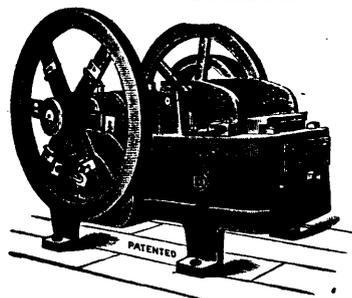
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14 Pearl Street, - Toronto, Ont.

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ROLL JAW CRUSHER.



Crushes

Large Rock

to

4 inch.

Send for Circular.

STURTEVANT MILL CO.,

104 Clayton St.
Boston, - Mass.

Two great passenger steamers costing \$650,000 each are building at Detroit. Francis J. Clergue, who has planned to spend \$25,000,000 in various enterprises at the Sault and on the north shore of Lake Superior, and who has already spent a very large part of that sum, says he will soon open up the beauties of the north shore to tourists from all parts of the world. All of the existing passenger lines are badly in need of new ships. The passenger business of the lakes is entering upon a period of great development. It will be a natural and substantial growth. There's nothing in this wide world so fascinating as the romance of the great lakes. Some day it will be fixed in pigment and prose. The great American novel never will be written until it is written against the background of these lakes. There's nothing so distinctly American as these unsalted seas. Niagara is only an infinitesimal part of them; and yet an innumerable caravan of poets and painters have each taken their separate fall out of Niagara. There's nothing which so fitly illustrates the industrial greatness of the United States as the commerce of these lakes. It is the country's great workshop. People are just beginning to grasp the advantages which the lakes have to offer for summer cruising. Those who have put hundreds of thousands of dollars into passenger boats might think that they have fairly realized them already. But they have not. They are only just beginning. When one man grasps a great principle it is seized upon by thousands of minds in all parts of the country almost simultaneously. This alacrity of comprehension is so instantaneous as to lead one to believe in the existence of a universal

mind, that things are never discovered but merely interpreted and that it is quite possible that two may interpret at the same time. Such reasoning may account for the fact that Gray and Bell reached the patent office the same day with the same invention. As soon as a great central fact is revealed to one man it is communicated to thousands. They seem to resolve its essential qualities from the very air itself. That's it, it's in the air. The picturesque quality of these lakes is just beginning to be understood. They were picturesque when the waters lapped nothing bigger than the sides of the Indian's birch bark canoe; they are fully as picturesque yet. Nothing stirs the primitive instinct of man as to be given a new land to explore. The north shore of Lake Superior is an untrodden wilderness. A passenger boat has just begun to nose along its bays and native harbors. There are thousands of persons who are eager to spend money to see these sights. Not alone the north shore of Lake Superior, but the beauties of connecting rivers, thousands of islands and natural harbors in all parts of the upper lake region.—Marine Review.

Charles H. Kathan, Rock Island, Que., has commenced the manufacture of dowels, etc.

The Canadian Yukon Lumber Co., Montreal, has applied for incorporation with a capital stock of \$150,000. The provisional directors will include R. W. Smith, G. H. Meldrum and J. W. Pike, all of Montreal.

The Vancouver City Iron Works, Vancouver, B.C., will erect a foundry 100x80 feet, a machine shop 100x60 feet and a boiler shop 100x60 feet.

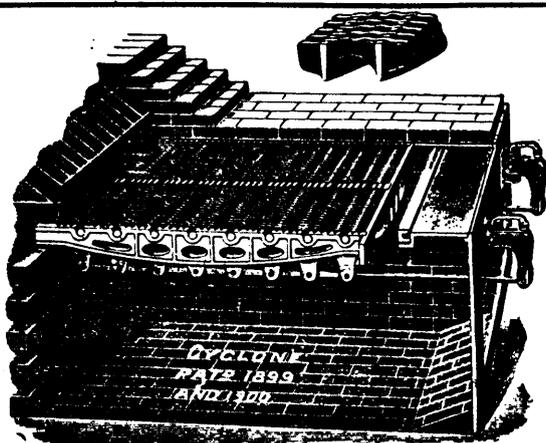
It is estimated by Factory Inspector Barber that upwards of two hundred factories in Toronto will have to be provided with fire escapes under the provisions of the recent act. The inspectors are now enforcing the law, and state that, while some owners object to it, yet on the whole the disposition of those affected is to meet the requirements promptly. The penalty for not erecting the fire escapes within six months of the passing of the act is \$500 fine. One of the clauses in the amendment act provides that no new factory shall be operated without being first inspected and certified to by one of the Provincial inspectors.

The Robb Engineering Co., Amherst, N.S., has purchased five acres of land adjoining their present property, and, during the summer, will erect additions to their buildings. The moulding shop extension is already under construction, and work will be commenced on the boiler shop and machine shop in a short time.

The Garfield Oil Co., sole manufacturers of Zanzibar anti-rust paint, has transferred that part of their business to the Garfield Paint Co. This was necessary on account of the heavy and steady increase in their paint business. Any orders for or enquiries about Zanzibar paint should be sent to the Garfield Paint Co., Windsor, Ont., or to the Garfield Paint Co., Cleveland, Ohio.

Mr. Andrew A. Schmidt, Winnipeg, Man., will erect a brass foundry 100x29 feet to cost about \$40,000.

The Baxter-Galloway Milling Co's flour mill, Burlington, Ont., was destroyed by fire April 26. Loss about \$20,000.



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.

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404 TEMPLE BUILDING, - - TORONTO, ONT.

PHONE 8682

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Sydney, N.S., will vote a large bonus for establishing a steel ship-building plant there.

The proper design of a satisfactory system of heating and ventilation is no simple matter. It is neither a question of theory nor of practice, the one independent of the other, but such a comprehensive knowledge of the entire matter is necessary that certainty of result may be assured. As the demands for improved ventilation have increased, the problem has grown more and more complicated until it has become an evident fact that no public building of reasonable size should be trusted to other than an expert of established reputation. As a consequence, the architect looks either to an expert engineer, or to a reputable and experienced house, to develop the plans for the heating and ventilation. The B. F. Sturtevant Co., Boston, Mass., has been directly connected with this class of work for over a third of a century, has fostered and established the general system of heating and ventilation by a forced circulation of warm air, and undoubtedly stands to-day in the forefront of those who are prepared and qualified to undertake the largest contracts wherein the fan is an essential feature. The Sturtevant System has been upheld because it is theoretically, logically and practically the best, and because the sincere desire of this house has always been that the system should win upon its merits. The remarkable growth of its

business certainly testifies to the fact that such has been the case.

The Packard Electric Co., St. Catharines, Ont., announce that owing to ill-health, Mr. E. E. Cary, has resigned his position as manager of the company, which position has been accepted by Mr. R. B. Hamilton, who, during Mr. Cary's illness of the past two months has been acting manager. Mr. Hamilton's technical education and practical experience are a guarantee that the excellence of the Packard product will be fully maintained and advanced, and important improvements have already been inaugurated with most satisfying results. Mr. Geo. A. Powell who has been absent for the past four months, has returned, and will assume the management of the sales department.

The Rhodes, Curry Co., Amherst, N.S., have received an order for 600 coal cars for the Dominion Coal Co., Sydney, N.S.

The Jenckes Machine Co., Sherbrooke, Que., have recently shipped about eighteen carloads of mining machinery to British Columbia and other points in the west. They have recently made large additions to their factory and now employ about 350 hands.

The Canadian Rand Drill Co., Sherbrooke, Que., have shipped the last of three large compressors for the Dominion Coal Co., Sydney, N.S.

The daily output of the plant of the Sissiboo Pulp & Paper Co., at Weymouth,

N.S., just completed, is thirty tons of pulp. The dam at these works is among the largest in Canada, viz, seventy-four feet broad at the base, 450 feet long, and sixty feet high. The hydraulic power consists of two pair of McCormic turbines. The company's other mill is situated at Sissiboo Falls, three miles above Weymouth, Falls, the site of the new mills.

Mr. James Ross, Montreal, who has recently returned from London, England, has made the interesting announcement that an English firm has contracted to take 150,000 tons of pig iron yearly, from the Sydney, N.S. works.

Messrs. Hodd & Cullen's flour mill and elevator at Stratford, Ont., was destroyed by fire April 21, together with about 11,000 bushels of grain. Loss about \$40,000.

The Newell & Higel Co., Toronto, have purchased the large factory building of the Toronto Lithographing Co., and land adjoining, upon which they will build an addition to the present factory at a cost of about \$25,000. When the new building is completed about 300 hands will be employed.

The Kingston School of Mining, Kingston, Ont., will erect two new buildings with money granted by Ontario Government. Toronto architects are preparing plans.

The Dodge Mfg. Co., Toronto, have sent us a circular, containing testimonials from a number of prominent Canadian

The A. R. Williams Machinery Co., Limited

HEAD OFFICE:

SOHO MACHINE WORKS, - TORONTO.

MANUFACTURERS AND DEALERS IN

High-Class Iron Tools
Wood-working Machinery
Engines, Boilers
Motors, Water Wheels
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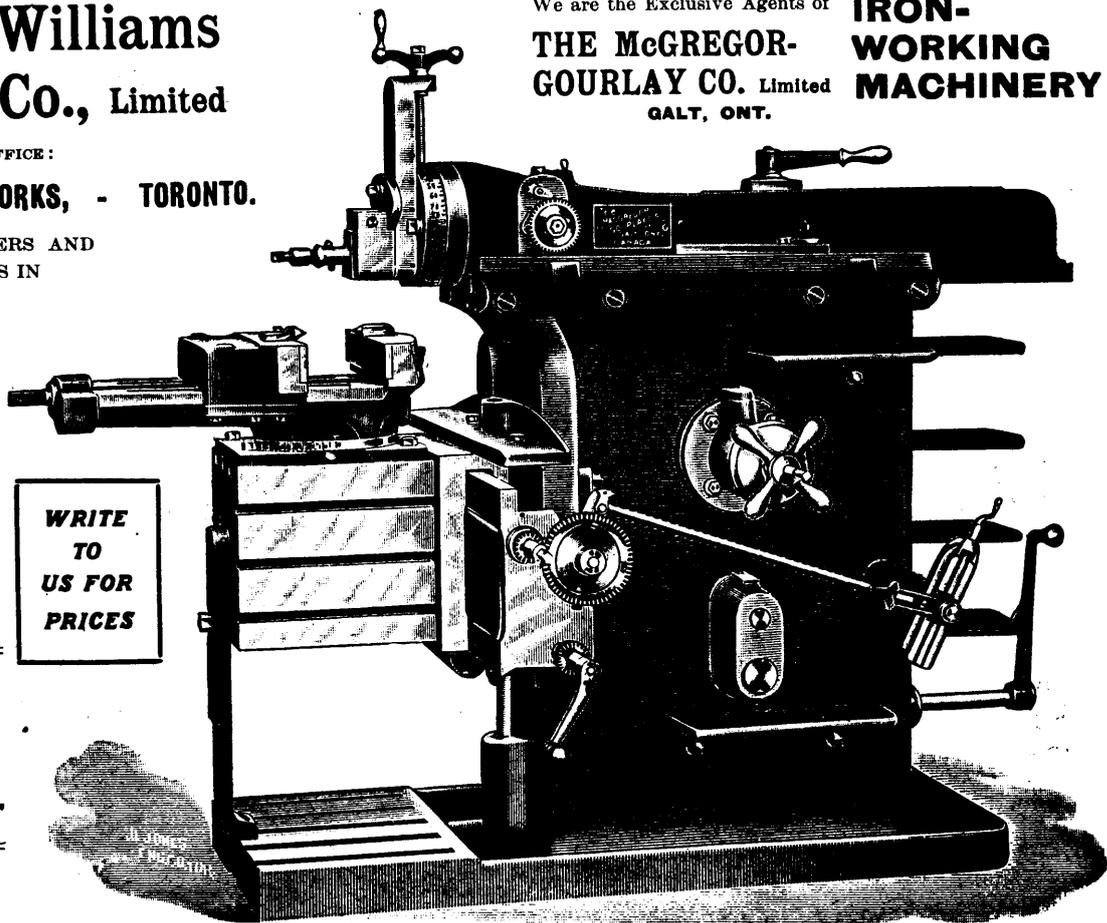
WRITE TO US FOR PRICES

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SEND FOR CIRCULARS,
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We are the Exclusive Agents of
THE MCGREGOR-GOURLAY CO. Limited
GALT, ONT.
IRON-WORKING MACHINERY



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THE CUMMER DRYERS.

FOR Mechanically Drying Everything

THE F. D. CUMMER & SON CO.,

HUNDREDS IN OPERATION.

CLEVELAND, OHIO.

firms, regarding the Dodge Split-friction Clutch, among whom are the following: London Electric Co., London, Ont.; Canada Cycle & Motor Co., Toronto Carpet Mfg. Co., Beardmore & Co., Merchants' Dyeing & Finishing Co., Christie, Brown & Co., Heintzman & Co., Northey Co., Toronto; Palmerston Pork Packing Co., Palmerston, Ont.; Wm. Cane & Sons Mfg., Newmarket, Ont.; Ottawa Car Co., Ottawa; Hiram Walker & Sons, Walkerville, Ont.; John Fisher & Son, Dundas, Ont.; Gillies Bros., Braeside, Ont.; Robb Engineering Co., Amherst, N.S.; Willson Carbide Co., St. Catharines, Ont.; Canada Machinery Agency, Montreal; Northrop Loom Co., Valleyfield, Que.; Mickle, Dymont & Son, Gravenhurst, Ont.

A machine which is attracting a good deal of attention in mining circles is the Wetherill magnetic separator. This is a machine for separating and purifying such ores as are attracted by an electro-magnet. The principal is not, of course, at all new, but this machine, by the great power of its magnets, and concentration of the magnetic field, attracts many substances which are not affected by an ordinary magnet. Even gold is sometimes slightly attracted, though that is not usual. One of the best machines of this type in existence forms part of the equipment of the mining department of McGill University, Montreal. In this machine the two magnets have a strength of 40,000 ampere-turns, and by the peculiar shaping of the pole-pieces, all this force is concentrated into a space the size of half a lead-pencil. The powdered ore is carried on a belt under the poles of an electro-magnet. Just over the belt, and under the magnet-pole, is a second belt, running crosswise. When the ore passes under the magnet, the mag-

netic particles of it rise and are held by the magnetic force to the under side of the upper belt. This belt carries them out of the field of the magnet, and they then drop into an appropriate receptacle. Meanwhile unmagnetic ore goes through the same treatment again, to insure a thorough separation, and is dumped into another receiver. It is thus possible to separate minerals, which are attracted by a magnet, from those which are not, and even to separate those which are attracted in different degrees.—Electricity.

Captain Inman, of Duluth, has steadily persevered in his plan to construct an ice-crushing steamer that will admit of all winter navigation between the Great Lakes, and now has sufficient financial backing from American and Canadian sources to make a fair start on the first boat. The general plan includes a stem and forefoot extending twenty-five feet ahead of the perpendicular, feeling its way under the ice and cutting and throwing it on either side like the nose of a snow-plough. The vessel will be constructed on entirely different lines from the ordinary freighter, and will have sufficient breadth at the forequarters to open a way for the remainder of the vessel, and so that the widest part of the hull will be abreast of the foremast, fish shaped. The propeller wheels will be so placed as to have no interference from the broken ice, and the whole hull will be designed with a view of reducing the friction to an extent that will bring the coal bills down to reasonable limits. The progress thus far indicates that something practical may be developed, and primarily to keep open the Gulf of St. Lawrence.

The large stove mill of Steinhoff & Gordon, Wallaceburg, Ont., was destroyed by fire April 18.

Lafleur & Decarrie's shoe factory and Boldric's carriage factory, Montreal, were destroyed by fire April 19. Loss about \$60,000.

The corporation of Brockville, Ont., recently purchased the plant of the Brockville Light & Gas Co., and are asking for authority to expend \$25,000 to put it in up-to-date condition.

The steamer Alladin sailed from Sydney, N.S., April 18, for the United Kingdom with 2,400 tons of pig iron, the first shipment to Great Britain from the works of the Dominion Iron & Steel Co.

The Cape Breton Electric Co., Sydney, N.S., held a meeting April 17, and capital was subscribed to ensure the building of an electric street railway in Sydney within a year.

The Canadian Fire Engine Co., London, Ont., has been incorporated with a capital stock of \$40,000, to manufacture steam fire engines, ladder trucks, water towers, hose reels, etc. The provisional directors include J. H. McMechan, J. B. Angus and J. W. Jones.

The Ottawa Mica Mining Co., Ottawa, Ont., has been incorporated with a capital stock of \$100,000. The provisional directors include T. G. Coursolles, Ottawa; Edward Wallingford, Perkins' Mills, Que.; and L. W. Kingsley, Elizabeth, N.J.

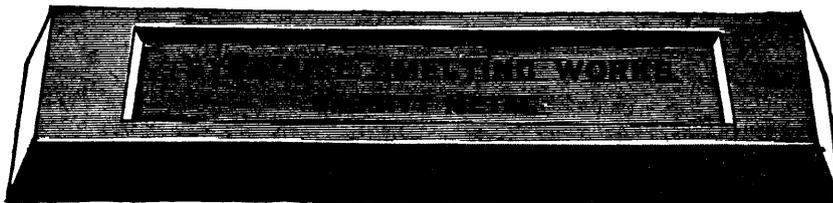
Mr. Charles Fergie, consulting engineer for McKenzie, Mann & Co., has ordered an engine from the Robb Engineering Co., Amherst, N.S., for the mines at Broad Cove, C.B.

The St. Lawrence Power Co. is applying for incorporation to manufacture electricity, pulp wood, calcium carbide, acetylene gas, etc. The company already

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.

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INGOT COPPER
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IRON AND STEEL
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Manufacturers of
BABBITT METALS, SOLDER
TYPE METALS
COLUMBIA PHOSPHOR TIN
AND
ALL OTHER WHITE METAL MIXTURES

SYRACUSE SMELTING WORKS

WILLIAM AND ST. THOMAS STREETS, - - MONTREAL

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SYRACUSE

BABBITT

BEATS
THEM ALL

has a New Jersey charter under which it is developing 150,000 h.p. at Messena, N.Y., by means of a canal connecting the St. Lawrence with the Grass River. This concern will prove a rival to the Heat, Light & Power Co., Montreal.

A by-law has been passed at Southampton, Ont., granting a loan of \$22,500 to Messrs. Bowman, Zinkman & Knetchel, to start a furniture factory.

The Dominion Iron & Steel Co., Sydney, N.S., will build a number of cottages for their workmen this season, and the Dominion Coal Co. will do the same for the miners in the vicinity of some of their collieries.

The lumbering outlook at Halifax, N.S., is exceptionally good. More lumber will be shipped this spring than for any previous year. Twenty-three vessels are under charter to load deals in May for the United Kingdom, and thus far seven steamers have been engaged.

The Honor Bright Gold Mining Co., Berlin, Ont., has been incorporated with a capital stock of \$1,000,000. The provisional directors include F. D. Mackay, New York City; H. H. Marden, Boston, Mass., and E. C. Ring, Auburn, N.Y.

Messrs. Dowsley & Sons, have been granted a loan of \$20,000 by the rate-payers of Chatham, Ont., to establish a carriage spring factory.

The Rhodes, Curry Co., Amherst, N.S., have received an order for a large number of thirty ton coal cars for the Inverness & Richmond Collieries Co.

The Canadian Fire Appliance Works Co., formerly Ronald Fire Engine Co., Brussels, Ont., are advertising for a suitable factory site at London, Ont.

The Windsor Bent Goods Co., Windsor, Ont., will increase the number of their employees from fifty to seventy-five.

T. N. Hibben & Co., Victoria, B.C., are putting in a plant for the manufacture of paper boxes.

The Cornwall Electric Railway Co., Cornwall, Ont., will operate their road by water-power. They have purchased the property of the Cornwall Milling Co., which includes a valuable water-power.

The Robb Engineering Co., Amherst, N.S., are building for the Dominion Iron & Steel Co., Sydney, N.S., a 100 h.p. engine, and two 100 h.p. boilers for their works in Cape Breton, also four 60 h.p. boilers for their iron mine at Bell Island, Newfoundland.

The advisability of establishing flour mills at Sydney, N.S., the grain to be transported from Montreal as a return cargo for the coal boats, is meeting with a great deal of earnest thought. Such a project would mean the erection of adequate grain elevator facilities at that port, and the erection of mills with a sufficient capacity to manufacture flour for practically the entire population of Cape Breton, besides extending the trade into other sections of Nova Scotia and throughout the Maritime Provinces. With elevator facilities at each end of the line the coal boats could load a return cargo of grain

from the port of Montreal, and unload it at Sydney within a very short space of time. As the vessels practically carry nothing on the return voyage to Cape Breton at the present time, a grain cargo, even at a low rate of freight, would be a source of considerable profit.

The Maitland River Power Co., Goderich, Ont., will expend about \$100,000 in building dams at various points along the river, and will develop and sell to factories the water power of the river.

Negotiations are on foot which may lead to the establishment of a factory for the manufacture of rifles for the militia in Canada. Six months ago a proposition was received from an English firm looking to this result, but nothing came out of it. The probability is that the firm referred to is seeking to have the matter reopened. Last year when the Minister of Militia was in England he left an order for Lee-Enfield rifles with the War Office, but the execution of the order has been deferred until certain improvements in the breech block, which the Imperial authorities are considering, have been decided upon.

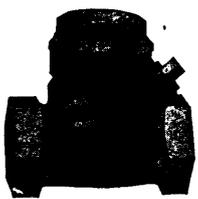
Two tanks, containing about 300,000 gallons of coal tar, belonging to the Dominion Steel Works, Sydney, C.B., were destroyed by fire April 28.

The Emerson Incandescent Oil Light Co., Ottawa, has been incorporated with a capital stock of \$800,000, to manufacture light, heat and power machinery. The incorporators include V. L. Emerson, E. W. Clark, and S. R. Poulin.

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Heintz Steam Saver

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NOT A LUXURY

The money you spend in repairs on your buildings, the loss of steam to your boiler system, the time, trouble and annoyance caused by dripping exhaust pipes makes the purchase of a



BURT EXHAUST HEAD

a necessity, not a luxury. Write us to-day for 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.**

THE ADVANTAGE OF MECHANICAL DRAFT.

In a recent issue of the Engineering Magazine, Mr. W. W. Christie shows advantages of mechanical draft in place of a chimney when economizers are used. He states that from four tests made by Mr. G. H. Barrus, we have results showing that the evaporative efficiency of the boiler may be increased from 7 to 12.8 per cent. by the use of an economizer, as follows:

	1	2	3	4
Temp. of gases lost in economizer, deg. F.	145	107	104	156
Temp. of feed water raised in economizer, deg. F.	80	66	58	92
Temp. of gases leaving economizer, deg. F. .	231	254	299	279
Per cent. of increase in evap. due to economizer	10½	7	9.3	12.8

The temperature of the gases leaving the economizer, it will be noticed, varies from 231° F. to 299° F. If the gases passed immediately to a chimney the intensity of draft would be in proportion to the absolute temperatures, or for the 500° F. case 961° F.; for the 231° F., 692° F.; and for the 299° F., 760° F. In a general way the intensity of the draft is diminished by the economizer by about thirty per cent. of what it would

have been had the gases gone direct to the chimney; so that to produce the same draft in the economizer plant we should need a chimney say forty-one per cent. taller than with the economizer omitted.

On account of this loss of heat, mechanical means are frequently used when economizers are installed, to bring the draft up to what it should be, without increasing the height of the chimney. Sometimes the chimney is cut out entirely, as would be done by some in designing a new plant. The Cheney Bros., South Manchester, Conn., having a chimney ninety feet high, wished more draft than it would produce; they installed a forced-draft outfit, to be used in connection with it, and an economizer, the gases enter the economizer at 475° F., and leave it at 275° F.

USES OF TURF FIBRE.

Speaking of the use of turf, or peat, for paper making, and the increasing use of turf fibres in the production of various other articles, United States Consul Mahin, at Ruchenberg, Ambria, says:

The early experiments with turf—some ten years ago—were unsatisfactory. The fibres then obtained were not good spinning material, being hard and brittle and not easily bleached or colored. Later, a civil engineer named Zschorner, in Vienna, succeeded in extracting threads from turf which proved to be good spinning material. He worked by a dry process, unaided by chemicals, and succeeded in producing a kind of wool,

which, though not adapted to the spinning of fine yarn, is yet so flexible and elastic that large fabrics can be made therefrom. It is characterized also by great absorptivity, is a poor heat conductor, does not burn readily, and is moderately firm and very cheap.

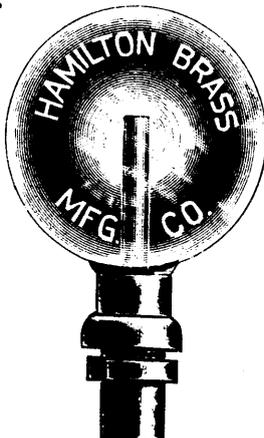
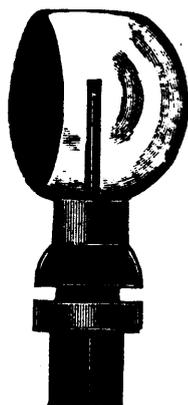
Zschorner next produced turf wadding. This is used as bandages for men and animals, in cases of wounds and the like, and also as a filling for pillows and bed coverings. Then he wove turf yarn into ropes and rugs. The remnants which resulted served for the production of paper and pasteboard.

Karl Geige, in Dusseldorf, has gone still further. He has secured from turf fibre a fine spinning material, which has absorptivity, and which also may be bleached or colored. After extracting the vegetable substance, Geige treats it with acids and alkalies, and then boils the resulting liquid, whereby the cells are disorganized and useless substances released and washed out, so that the turf wool consists of almost pure cellulose.

It is affirmed that the Geige turf wool is soft and elastic, with all the good properties of rival products, and in its spinning capability resembles sheep's wool. Clothing materials and different kinds of yarn are made out of this turf product in combination with cotton or sheep's wool. Turf cloth, it is claimed, absorbs perspiration in summer and is warm in winter; felt hats are made out of the turf wool. It is further stated that Geige makes Smyrna and other rugs out of turf wool, which are bleached and colored. In

Improved Needle Lubricators

On a PATENT PNEUMATIC and SELF-ACTING PRINCIPLE, IN GLASS

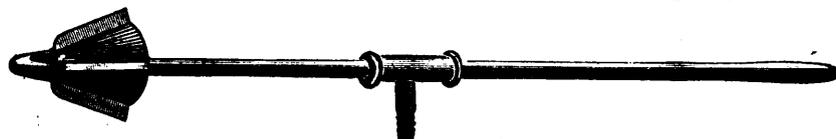


INSTRUCTIONS for FITTING and ADVANTAGES

The Lubricators being carefully fitted by enlarging the oil hole to fit the plug part of stopper, or otherwise by reducing the plugs to fit existing oil holes, the needle must be perfectly round, smooth and clean, so as to work freely in the tube, the flatted end reaching about half-way up the inside of Lubricator, while the other end rests on the shaft or axle, will produce the following results, viz:—

- 1st. Free working of the machinery by perfect lubrication.
- 2nd. A saving of more than 75 per cent. in oil.
- 3rd. Corresponding economy in steam-power and coals.
- 4th. Cleanliness, and consequent saving in labor, engineers' stores, etc.

IMPROVED STEAM TUBE CLEANER



THE CLEANER THAT CLEANS CLEAN

- No Moisture
- No Scale
- Saves Cost Quickly

When writing to Advertisers kindly mention THE CANADIAN MANUFACTURER.

ALL OUR LUBRICATORS ARE FITTED WITH BRASS TUBES
WRITE FOR PRICES TO

The Hamilton Brass Mfg. Co., Limited,
HAMILTON, ONT.

addition to all this, the Geige turf wadding, it is maintained, is not only a cheap, but a very useful bandage material, because it readily absorbs the secretions of wounds, which are therefore kept always dry and clean. It is further recommended as a substance for laying under very ill persons and as a padding for splints.

If all that is told of this material is true, it will vanquish the oldtime sheep's-wool stuffs in the textile field.

LUBRICATING WATER.

D. R. Munro, of Wolfville, N.S., at the request of a St. John engineer, furnishes the Sun the following account of his experience in running an engine with water as a lubricant.

I have been running our 125 h.p. Leonard Peerless Compound Engine (self-oiling type) for over five months with nothing but water to lubricate the main working parts. It came about partly from experiment and partly from necessity, being short of oil at the time. The results have been most remarkable and satisfactory. Before using water I was obliged to adjust the engine occasionally, particularly the wrist pin, quite frequently (which is a weak point in any engine). Now since water has been used as a lubricant there has been no adjustment whatever for five months, and to-day the engine is running perfectly, although very heavily loaded. I am quite sure the idea is entirely original, and anyone using water instead of oil in this type of engine

will never use oil again, as water is so much less trouble. When using oil I found that the churning it got caused it to disappear in the form of vapor, I suppose. This is how I began to use water to raise the oil in the reservoir after it had become so low that the crank discs would not touch it. I kept on adding more water when necessary, until the oil entirely disappeared and left nothing but water. Another good feature is that while the oil continues to grow less, the water, on the other hand, accumulates, due to drip from piston rod, so there is no possibility of the engine running dry. I was somewhat anxious about rusting at first, but find all the parts remain perfectly clear and bright. I am sending the Sun a sample of water drawn from reservoir of engine.—St. John, N. B., Sun. A note from Messrs. E. Leonard & Sons, steam engine builders, London, Ont., inform us that the engine above alluded to was one of their "Peerless" self-oiling class and was sold to the user through George H. Evans, of St. John, N.B., agent for them in the Maritime Provinces.

THE RAILWAYS OF CANADA.

In whatever respect Canada may have fallen behind other countries in the march of progress or in efforts for developing its commercial opportunities, it must be admitted that in providing railway facilities, the Dominion has been in the front rank—far ahead, indeed, of some of the oldest of European nations.

On June 30, 1900, there were in Can-

ada 17,824 miles of railway, of which 466 miles had been built in the twelve months covered by the report of the minister lately presented to parliament. There were also 2,558 miles of sidings. Of the total, 17,694 miles were laid with steel rails and 591 miles were double tracked. The System was owned originally by 154 companies, but by amalgamations and leases the controlling influence is now in the hands of eighty-six companies and of the Government of Canada, which operates two roads—the Intercolonial and the Prince Edward Island.

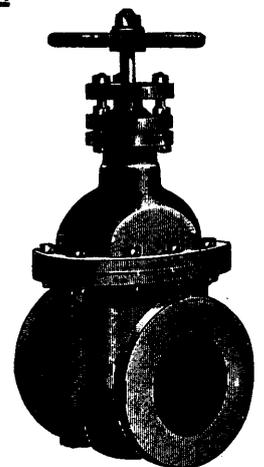
There is nothing, perhaps, which better shows the development of the country since Confederation than the statistics of the railways. Construction began in 1836, when there were sixteen miles of road in operation; and there was no increase till 1847, when thirty-eight miles were added. In 1850, the record stood at sixty-six miles. In the following decade the Grand Trunk was conceived and built, and, in 1860, 2,065 miles of road were in operation. In the next five years, 175 miles were added. In 1866, the total was 2,278 miles, and at this figure the system remained for three years. In 1870, the mileage was 2,617. About this time began the "battle of the gauges," and the reign of the subsidy hunter. The main systems were built on a gauge of five feet eight inches. The theory was developed that a narrower and more cheaply constructed road would serve the needs of the country as well as the most costly broad gauge. A system of narrow-gauge roads was planned by a Toronto

STEAM AND WATER FITTINGS

WE CARRY A COMPLETE LINE OF ENGINEERS' SUPPLIES.



Safford's Steam and Hot Water } RADIATORS.
 Steam Traps. Wrought Iron Pipe.
 Cast and Malleable Fittings, ALSO
 Galvanized Pipe and Fittings,
 Brass and Iron Body Valves, etc.,
 Boilers for Steam and Water,
 Expansion Joints, Brass and Iron Check Valves.



Can Ship Goods same Day as we receive Order. Write for Price List and Discounts.

THE DOMINION RADIATOR CO. Limited, TORONTO, ONT.

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syndicate, and, after much outpouring of words and printer's ink, the municipalities were got into proper form for voting aid; the Ontario Government was persuaded to begin the system of provincial subsidies, which was taken up by the Federal Parliament, and the Toronto and Nipissing and Wellington, Grey, and Bruce roads were begun and built on the narrow-gauge system. Events showed that the narrow-gauge men were not altogether right, while the broad-gauge advocates were partly wrong. In 1872-73, after a period in which its track had three rails and two gauges, the Grand Trunk, on its main system, adopted the standard 4-foot-8½-inch gauge of the continent, and later the narrow-gauge lines were absorbed and widened by the Grand Trunk or the new Canadian Pacific. The discussion had awakened the demand for railway advantages, and, between 1870 and 1880, 4,241 miles were added to the system. The next decade saw the Canadian Pacific syndicate born and the transcontinental line finished, and, in all, 6,293 miles of new railway built. Between 1890 and 1900, 4,506 miles were built, and the total of 17,657 miles reached.

In the operation of the systems, there are employed 2,282 locomotives, 2,166 passenger and 662 baggage and express cars, 64,979 freight cars, 1,928 cars for conductors and railway service, and 611 snowplows and flangers.

The traffic carried during the year ended June 30, 1900, comprised 21,500,175 passengers (only seven of whom were

killed) and 35,946,183 tons of freight. Passenger trains travelled 20,922,098 miles; freight trains, 24,662,906 miles; and mixed trains, 9,592,867 miles. The earnings of the roads during the year were \$70,740,270, an increase over the year 1899 of \$8,496,486. The working expenses amounted to \$47,699,798, an increase of \$6,993,581, leaving net earnings of \$23,040,472, or \$1,502,804 more than in the year ended June 30, 1899. The returns do not give the number of employees, but the figures of the operating expenses help to show how important the railways are in an industrial sense. The expenses of the railways in 1900 were: Maintenance of line and buildings, \$10,259,093; for the working and repairs of engines, \$15,097,108; for like service with cars, \$4,501,239; for general operating expenses, \$17,842,356; the total being \$47,699,798—nearly all going in wages or for material in the production of which wages were the greatest element.

The investment of capital in roads and equipment is put at \$998,264,404, or, roughly, \$54,000 a mile.

The following is a synopsis of a very comprehensive table published by the Department of Railways, in which the details of one hundred and sixty-nine railways are given, relating to the sources from which their capital was derived. The railways are divisible into several groups, as follows:

Government railways:	Miles.
Intercolonial.....	1,332
Prince Edward Island.....	210

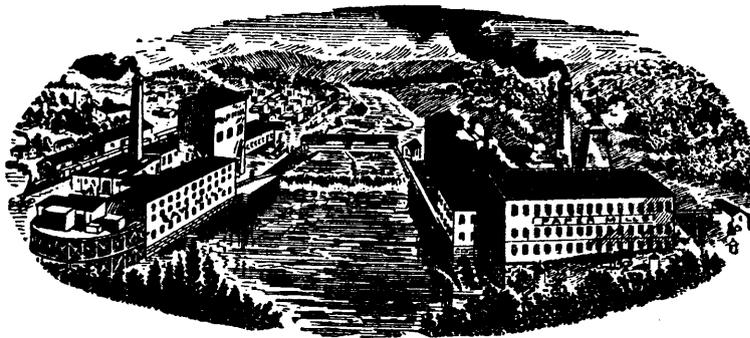
Grand Trunk Railway:	
Main line.....	884
Branch lines.....	2,270
Canadian Pacific Railway:	
Main line.....	3,628
Branch lines.....	3,244
Other railways.....	6,256
Total length of Canadian railways	17,824
Total share capital of all rail-	
ways paid up.....	\$410,326,094
Total bonded debt of all rail-	
ways issued.....	394,062,462
Total bonded debt of all rail-	
ways sold.....	373,716,703
Total Dominion Government	
aid to railways.....	159,565,770
Total Provincial Government	
aid to railways.....	31,310,170
Total municipal aid to rail-	
ways.....	15,884,542
Total capital from other	
sources.....	7,465,123
Total capital of the Govern-	
ment railways.....	63,849,840
Grand total of railway capital	
paid up.....	998,264,404

In regard to railway subsidies, the department report says:

The Federal Government expenditure on railways prior to and since the date of Confederation (July 1, 1867) amounts, on capital account, to \$127,636,988.07 (including \$25,000,000 granted to the Canadian Pacific Railway Co., which, together with \$296,872.90 expended on the Nova Scotia Railway and the European and North American Railway and transferred to the consolidated fund, and for

Royal Paper Mills Company, Limited

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52 and 54 Front St. W.
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F. P. BUOK, - - - PRESIDENT AND GENERAL MANAGER.



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ROYAL CANADIAN BRAND
Soda and Mechanical Pulp

Lumber

SPRUCE, PINE and HARDWOOD (Dressed and
in Rough.)
CLAPBOARDS and SHINGLES.

CABLE ADDRESS—"OBBAPER," EAST ANGLUS—A.B.C. and Lieber's Code.

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COAL JAS. H. MILNES & CO. COKE

WHOLESALE DEALERS IN
Best Grades of STEAM COALS.
Best Grades of BLACKSMITHS' COALS.
Best Grades of FOUNDRY COKES.
 Shipments made direct from Mines to any point in Canada. Write for quotations.

Head Office: 78 QUEEN ST. EAST

TORONTO.

Docks: Esplanade, Foot of Yonge

railway subsidies charged against the consolidated fund the further sum of \$23,227,562.51, makes a total expenditure of \$151,161,423.48. In addition, there has been an expenditure since Confederation for working expenses of \$81,391,472.11, covering the maintenance and operation of the Government roads, or a grand total of \$232,552,895.59, all of which, with the exception of \$13,881,460.65, paid out before Confederation, has been expended on railways during the past thirty-three years. The revenue derived from the Government roads during the same period amount to \$73,225,382.16.

The continued expansion of the subsidy system is awakening alarm among the taxpayers of the country. The population of Canada is hardly over 5,500,000, and the debt, almost solely created by the granting of Government subsidies in aid of public improvements, is becoming a very heavy burden to carry.

There are about 1,000 miles of new railway now under construction, mostly through wild and unsettled territory.

The result of the survey for a Canadian railway to the Yukon has so far progressed that the chief engineer is able to say that a practicable line can be obtained, on

which a road could be constructed at reasonable cost.

PAN-AMERICAN POSTAGE STAMPS.

A recent number of the United States official Postal Guide gives notice that the Pan-American series of postage stamps will be ready for delivery to postmasters the latter part of April. These stamps were ordered by the Postmaster-General at the instance of the authorities of the Pan-American Exposition. These series will include six stamps, and these will be, according to the statement of the Third Assistant Postmaster-General, "the most artistic series ever issued from the Department." The denomination, subject, color, etc., of each stamp are officially described as follows:

Denomination, one cent; subject, lake steamer; color, green; legend, fast lake navigation. Denomination, two cent; subject, railway train; color, red; legend, fast express. Denomination, four cent; subject, automobile; color, red brown; legend, automobile. Denomination, five cent; subject, steel-arch bridge; color, blue; legend, bridge at Niagara Falls.

Denomination, eight cent; subject, ship-canal locks; color, lilac; legend, canal locks at Sault Ste. Marie. Denomination, ten cent; subject, ocean steamship; color, light brown; legend, fast ocean navigation.

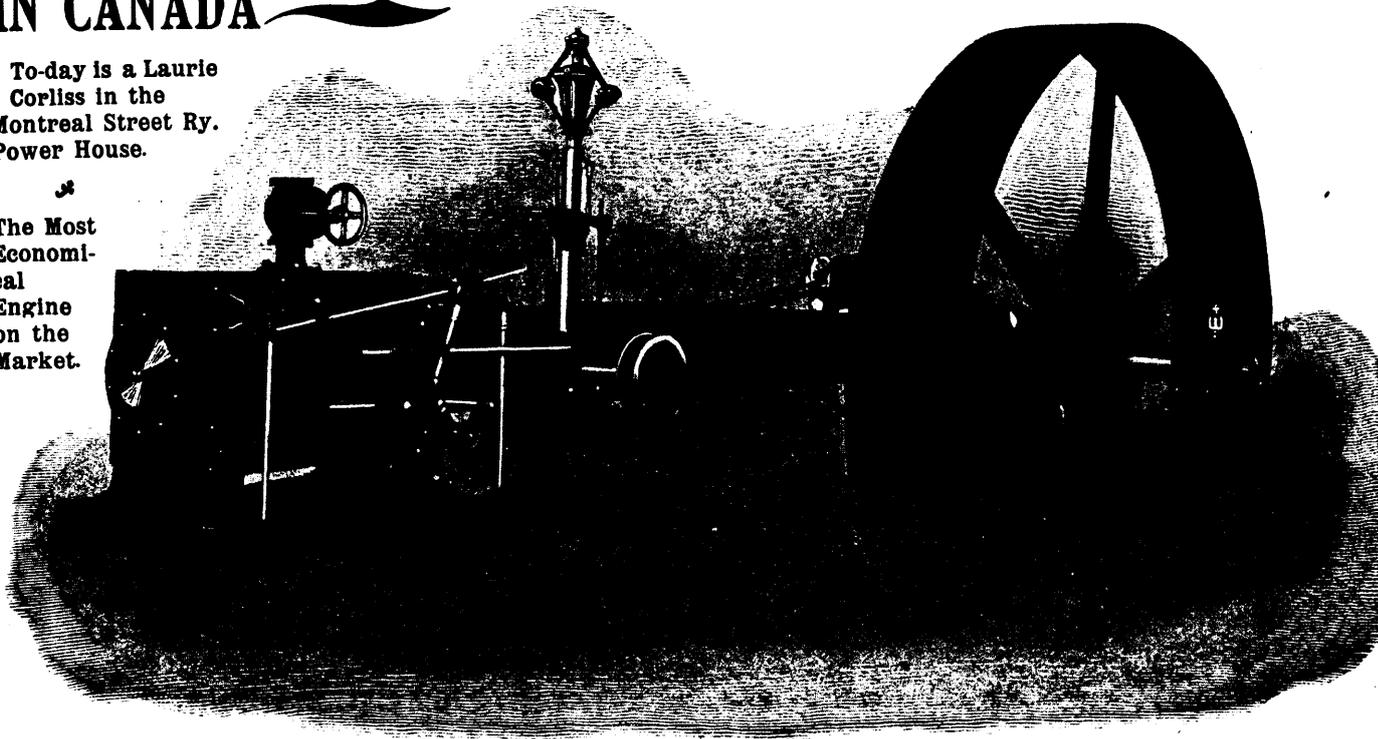
The stamps are of uniform dimensions, 0.76 by 1.06 of an inch, the longer side being horizontal. The borders take the colors of the regular series on the same denominations at this date. The words "Commemorative series, 1901," and "United States of America" next below appear above the vignette; the legend in a line next below the central opening, with the denomination in a line at the bottom, appears in the same order on all stamps of the series. All the lettering is in white Roman capitals. The numerals are all white-faced Arabic in the Roman type except the ten-cent, which is the block letter type of figure condensed to secure space for the two figures. The borders are well separated from the central pictures, and the words of denomination at the bottom are preceded on the same line by the word "Postage." All the central illustrations are from photographs as the objects represented appear to-day, and are to be printed in black.

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., 1012 and 1014 St. Catherine St., Montreal. 321 St. James Street,

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AT SYDNEY, N.S.

The people of Canada will be glad to learn that the Sydney iron furnaces are turning out a first-class quality of iron, and that it is finding a ready and profitable sale for its product, not only within

the Dominion, but abroad as well. Sixty foundries throughout Canada have given orders for the iron, and their reports as to its quality have been eminently satisfactory.

In answer to a press correspondent, Mr. Whitney, president of the company, said

he had read Mr. James Ross' statement regarding the export of pig iron to England, and had great pleasure in confirming all that gentleman had said. By August he thought they would be turning out 1,000 tons a day, as their second furnace would be completed quite soon, and in fact, 1,500 tons daily was the amount they were calculating on sooner or later, Mr. Whitney further stated that all the material for the construction of the steel rail mill had already been received on the ground at Sydney, and operations would be carried on with all possible energy during the summer, and he believed, in fact, that by next October steel rails would be produced at Sydney. Like Mr. Ross, he had no apprehension as to the quality and to the manner they would be received in the markets of the world.

The coal industry at Sydney appears to be in an equally flourishing condition. The company over which Mr. Whitney presides has practically all the business it can attend to.—The World.

DIXON'S

DOES 2 THINGS
AND DOES THEM THOROUGHLY.

STOPS THE BELT FROM SLIPPING.

PLEASES THE MAN WHO USES IT.

SOLID Belt Dressing.

NOTHING EQUALS IT.

SAMPLE SENT FREE. SEND FOR ONE.

Joseph Dixon Crucible Co., Jersey City, N. J.

The Diamond Machine and Screw Co., Limited

MANUFACTURERS OF

CAP AND SET SCREWS, STUDS, Etc.

Finished and Semi-Finished Nuts

TORONTO, CANADA



THE BUFFALO FORGE CO'S EXHIBIT.

Though not strictly a feature of the Pan-American itself, there will be located a stone's throw from the exposition grounds a plant which will be well worth the inspection of the visitor interested in mechanical subjects. We refer particularly to the large plant which is being constructed by the Buffalo Railway Co., for the purpose of furnishing power to aid in the operation of its street railway lines during the exposition period, when a great increase in its traffic is to be expected. One of the features of this plant will be the installation of a large mechanical induced draft fan to produce the draft, and handle the gases of combustion from a boiler plant whose nominal capacity will be in the neighborhood of 3,000 horse power.

The fan in question, built by the Buffalo Forge Co., Buffalo, N.Y., is twenty-four feet in diameter, of the three-quarter housing up-blast type, and rigidly constructed of steel plate, braced and stiffened with angle irons. The fan is designed as an exhauster with an inlet nine feet in diameter and will be driven by belting to a Buffalo 13x12 Horizontal Centre-Crank Class "A" Engine. In order to keep the bearings cool, a constant circulation of water will be maintained around them. The short stack into which the fan will discharge, will be of sheet steel.

This particular plant illustrates very nicely some of the inherent advantages of mechanical induced draft. For instance, there is no necessity for a tall heavy chimney, and again, since the whole construction is of steel plate it can be constructed and installed in a minimum length of time. Once in place, such an apparatus provides complete control over the conditions of combustion and renders the performance of the boilers independent of those conditions of weather, wind, temperature and the like, which influence plants served with chimneys. The intensity of the draft is in proportion to the fan wheel velocity, and hence can readily be altered to suit varying conditions.

"Zanzibar

Anti-Rust

.. Paint" ..

MADE TO ENDURE

GARFIELD PAINT CO.

WINDSOR, ONT.

Canada.

THE SMART-EBY MACHINE CO.

191 Barton Street East, Hamilton, Ont.

LIMITED,

High Speed Engines, Brown Automatic Engines, Boilers, Rogers' Patent Shaking and Dumping Grate Bars, Pumping Machinery, Electric and Hand Power Travelling Cranes, Shafting, Pulleys, General Machinery, Etc.

Western Office—419 Hasting St., Vancouver, B.C.

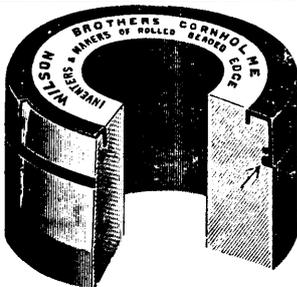


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CANADIAN PIG IRON FOR EUROPE.

An event worthy of notice was the sailing yesterday from Sydney, C.B., of the steamer Aladdin for Great Britain with 2,400 tons of Canadian pig iron. The future of Canada's iron industry, although now in its very infancy, looks remarkably promising. We have a large home market to supply, amounting to nearly one million tons per annum, with the demand rapidly increasing. Our own furnaces should soon be in a position to supply the total home consumption of iron and steel, and share, to some extent, in the foreign trade as well. It is gratifying to notice that the Dominion Iron & Steel Co. has made an effort thus early to place the product of its furnaces in the markets of the world. There is a shortage of iron in Great Britain and Europe, as well as a shortage of foodstuffs, and that continent is looking to America to make up its deficiency in the former as well as the latter. The United States, having overtaken the home demand for iron and steel, is reaching out to foreign markets. Its exports of iron and steel have increased very rapidly during the past few years. In 1895 the total of such exports was \$32,000,000, against \$130,000,000 in 1900. Mr. Andrew Carnegie recently said in London that the United States has not only supplied its wants, but is competing to supply the wants of the world, not only in steel but in the countless articles of which steel is the chief component part, and he expresses the opinion that the increasing demand from the world at large can be met only by the United States. The influence of our steel-making capacity, adds Mr. Carnegie, must be marvelous, for the nation which makes the cheapest steel has the other nations at its feet as far as manufacturing is concerned in most of its branches. The cheapest steel means the cheapest ships, the cheapest machinery, the cheapest thousand and one articles of which steel is the base.

What Mr. Carnegie says of the United States ought to apply to this country. While we are not as yet producing iron to any extent, we have all the requisites for the establishment of a great iron industry. As Mr. Moxham and Mr. Ritchie recently informed the people of Toronto, Canada has four great iron-bearing districts, each of which is as rich



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45 GOLD MEDALS AND DIPLOMAS

HIGH CLASS WORKMANSHIP.
SEVENTY YEARS' REPUTATION.

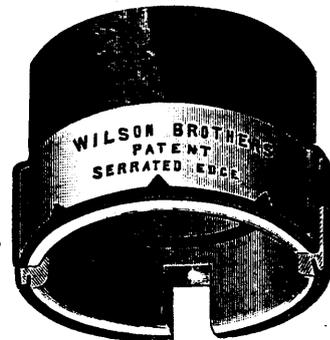
BOBBIN AND SHUTTLE MANUFACTURERS

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ADDRESS— A B C AND 'A' I CODES.

Cornholme Mills, - TODMORDEN.

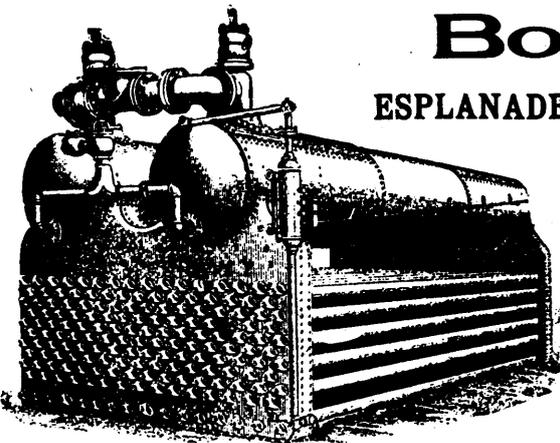
BRANCH WORKS—
LIVERPOOL AND ST. HELENS

OFFICE AND SHOWROOMS—
14 Market Place, Manchester, Eng.



The Canadian Heine Safety Boiler Co.

JOHN J. MAIN,
MANAGER.



ESPLANADE (Opp. Sherbourne St.)

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HIGH-CLASS
Water Tube Steam Boilers..

FOR ALL PRESSURES
DUTIES AND FUEL

From 75 to 600 H.P. Each

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N.B.—We do not make small Boilers

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 Lif. Co. (all of Toronto, where Boilers may be seen working), also Orillia Asylum, Orillia, Ont., and LaPresse Publishing Co., Montreal.

**"Every Factory in Canada
"should use the best Belting. Our
"EXTRA" brand.**

THE J. C. McLAREN BELTING CO.

FACTORY: MONTREAL. TORONTO. VANCOUVER.

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in ore and as economically situated as the corresponding iron districts of the United States. In fact, if we are to credit these gentlemen, there is an advantage of six dollars per ton in favor of pig-iron made at Sydney and intended for export over the same product made at Pittsburg and likewise intended for export. The demand for iron and steel is increasing in geometrical progression, and if our resources and facilities for the manufacture of iron are any way near the estimates which have been made of them we ought to be in a position to easily obtain all the business we can attend to.—The World.

MR. CLERGUE'S NEW STEEL RAIL PLANT.

Mr. E. V. Clergue, one of the officers of the syndicate conducting the great enterprises at Sault Ste. Marie, Ont., and vicinity, was in Toronto a few days ago, and while here, outlined the project of the large steel rail plant now being built by his syndicate at the Sault, which will be in operation in a few months. This plant will have capacity to turn out 600 tons of steel rails per day.

To this will be added another, having a capacity of 2,000 tons per day, work on which will be commenced this fall. The two plants will have a combined capacity of 2,600 tons per day, compared with the capacity of 1,200 tons at the furnaces of Sydney, Cape Breton. The syndicate will buy their iron from the blast furnaces at Midland and Hamilton, to whom they

sell ore from the Helen mine at Michipicoten. Later on, Mr. Clergue says, they will build their own smelter at the Sault.

The 600-ton mill now being constructed is 1,500 feet long and 300 feet wide. One thousand men are at work on it. Mr. Clergue was unable to say how many men would be employed in the new mills, nor how large the second establishment would be.

Reference was made to the despatches sent out from Detroit respecting a fifty million dollar mill at the Sault, promoted by Mr. A. R. Harvey of Liverpool.

"You may say," said Mr. Clergue, "that we have no connection whatever, with Mr. Harvey or his proposed mill. He is an Englishman who is promoting an entirely separate concern. He has been talking of buying ore from us. We will sell ore to him the same as to anyone else, if we have it to spare, but as yet we have not even made a contract with him to do that. We have all the money we want, and are not looking for any English capital for our industries."

Speaking in a general way of the syndicate's enterprises, Mr. Clergue said they were at present employing between 7,000 and 8,000 men on their various works between Sudbury and Michipicoten. Trains are now running on fifty miles of the Algoma Central Railway, and contractors are at work on the other 150 miles of the line, including the Michipicoten branch. Trains will also be running shortly on twelve miles of the Manitoulin railway, south from Sudbury.

A VALUABLE BOOK.

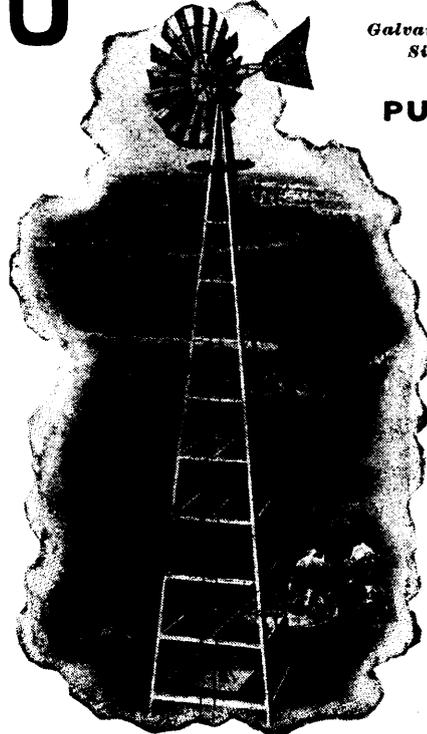
We are in receipt of the 1901 edition of the Merchants, Manufacturers' and Shipper's Directory of the World, published by Kelly's Directories, Limited, London, England, for whom Mr. W. P. Dent, 71 Victoria Street, Toronto, is manager for the Dominion. This valuable book contains nearly 4,000 pages and has reference to every commercial country in the world, giving classified trade lists of merchants, manufacturers, banks and bankers, and shipping agents in all cities and towns, alphabetically arranged under the respective countries. It contains also the custom tariffs of all countries, and much other information that cannot but be valuable to Canadian manufacturers and exporters, who desire knowledge regarding the conditions of the countries with which they may desire to do business. The shelves in Mr. Dent's Toronto office are loaded with copies of the more than a hundred directories of different character published by the Kelly's Directories, which, we understand, are open to the inspection of any interested.

MESSRS. E. LEONARD & SONS.

We have received a very beautiful illustrated catalogue from Messrs. E. Leonard & Sons, London, Ont., having reference to the engines and boilers manufactured by them. They state that in issuing this catalogue they do not illustrate all types of engines and boilers built by them, but

STAR WIND MILLS

FOR PUMPING OR POWER PURPOSES



Galvanized Steel or Wood, all Sizes, 4 to 26 feet in Diameter.

PUMPING MILLS

FURNISHED WITH OR WITHOUT TANK ELEVATED IN TOWER.

GALVANIZED Steel Towers

Any height, either Three or four post, with substantial ladder.

TANKS

Any Capacity, Any Purpose Made in Pine, Cypress, Fir or Galvanized Steel.

Our windmills are self-regulating and self-governing, and with our Hoosier Automatic Anti-Freezing Force Pump the windmill outfit takes care of itself, night or day, in calm or storm.

"Hoosier" IRON AND "Fast Mail" PUMPS.

Designs and Prices Furnished. Write for Catalogue.

Address **FLINT & WALLING MFG. CO.**

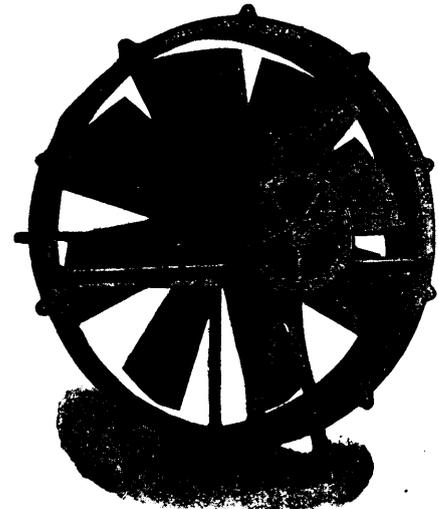
"STATION A"

KENDALLVILLE, IND.

Buffalo Disc Wheels

Steam-Pulley-Electric

FOR EXHAUST VENTILATING



Buffalo Disc Wheel, with Double Vertical Engine.

BUFFALO FORGE COMPANY
BUFFALO, N.Y.

E. A. WALLBERG, - 410 Temple Building, Toronto.

only those which constitute integral parts of those high grade plants where economy and efficiency are most sought after.

Among the engines illustrated are the vertical automatic of 300 h.p., and upwards, "Peerless" self-oiling automatic, single or tandem compound, 50 h.p., and upwards, Leonard—Ball simple automatic engine, pedestal base 10 to 75 h.p., same engine box base style 80 to 250 h.p., and Bates Corliss automatic engine, 50 to 1,000 h.p. Some of the boilers illustrated are:—

Standard stationary, 25 to 220 h.p., "Eclipse" semi-portable return tubular and Lancashire boilers.

Among the testimonials received are letters from London Electric Co., London, Ont., D. W. Karn, Co., Woodstock, Ont., Acadia Electric Light Co., Wolfville, N.S., Dundalk Municipal Electric Plant, Dundalk, Ont., Frederick Stearns & Co., Windsor, Ont., Telegraph Pub.Co., and W. H. Fowler, St. John, N.B., Kingston Penitentiary.

NEW COLORS.

Diazo Indigo Blue B R Extra.—This new product is possessed of equally as valuable properties as those of the older "M" quality, merely differing in concentration, the new product being almost double the strength. Diazotised and developed with Developer A, it is, like the "M" brand, above all conspicuous for its excellent fastness to light, being better even than that of Indigo. Diazo Indigo Blue B R extra can be recommended for

the dyeing of loose cotton, as well as for cops, yarns and piece goods. Diazotised and developed shades can be discharged well with tin crystals or zinc powder.

Diamond Black F B.—This new product has been put on the market to meet the want caused by the present tendency inclining towards blue-black shades. This dyestuff is Diamond Black F chemically pure, and has the same excellent fastness to light and milling, as well as the same good property of penetrating the material, working in combination with other dyestuffs and dyeing level. Experience has shown that this product is admirably adapted for the dyeing of loose wool, yarn, as well as piece goods, and cotton selvages are not tinged in the least.

Benzo Brown R C and D 3 G extra are two new additions to the well-known series of Benzo Browns, and are on account of their cheap price and great productiveness, deserving of special interest. Dyed on cotton with Glauber's Salt and Soda in the usual manner, the R C quality produces full red brown shades; the D 3 G extra quality, however, dyes a bright yellowish brown of great clearness. The former is moreover, adapted for diazotising and developing, producing a dark brown with developer H of tolerably good fastness to washing. Benzo Brown D 3 G extra is, compared to the ordinary brown qualities, of about double the strength. Both qualities are easily soluble and dye level, and can be employed to advantage as cheapest browns in all branches of cotton dyeing. The color is discharged only a cream shade with tin

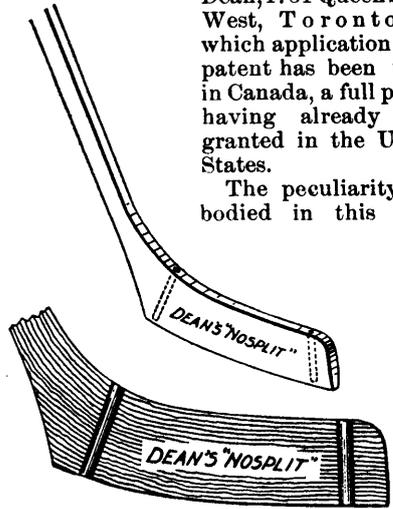
crystals, but discharges white fairly well with zinc dust.

Shade cards, circulars, dyed skeins and color samples of the above dyestuffs will be mailed to those interested on receipt of address by the Dominion Dyewood & Chemical Co., Toronto, Sole Agents in Canada for the Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany.

AN IMPROVED HOCKEY STICK.

The accompanying illustration is of Dean's "Nosplit" hockey stick, invented and manufactured by Walter Dean, 1751 Queenstreet West, Toronto, for which application for a patent has been made in Canada, a full patent having already been granted in the United States.

The peculiarity embodied in this stick



Dean's "Nosplit" Hockey Stick. Patent applied for.

THE BEST PIPE THREADING and CUTTING-OFF MACHINES

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

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

Send for Catalogue 27.

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MULTIPOLAR MOTORS & DYNAMOS

And Direct Connected Plants for Isolated Lighting.

Repair Work a Specialty.

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HARDWARE and METAL

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**MACHINIST TOOLS,
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COMPLETE STOCK OF

STOCKS and DIES. PIPE VICES.

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STEAM PIPE.

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TORONTO and HAMILTON ELECTRIC CO.



MOTORS and DYNAMOS

MODERATE and SLOW SPEED OF HIGH EFFICIENCY.
EITHER BELTED OR FOR DIRECT CONNECTION.
REPAIRS PROMPTLY EXECUTED ON ALL ELECTRICAL APPARATUS.

T. & H. ELECTRIC CO.

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ELECTRIC CRANES...



CANADIAN
REPRESENTATIVE—
E. A. Wallberg, TORONTO—
MONTREAL

Whiting Foundry HARVEY,
Equipment Co. ILL.,
(CHICAGO)

AIR... CRANES

consists of two or more hardwood dowels through the blade, as shown in the illustration, which renders it, as the name indicates, entirely non-splitable. As all hockey players know, a great drawback heretofore experienced in playing the game is in the liability of the blade to split and thus become ruined, which objection is very effectively overcome by the simple and inexpensive insertion of dowels.

Mr. Dean says that one stick thus made will, in one season, save the price of a dozen, and this is confirmed by all who use the "Nosplit" stick. We have frequently seen this stick put to more severe tests than it would ever have to endure in the most vigorous use on the hockey field, by having large nails and spikes driven through the blade without injuring it further than by the holes thus made. They disfigure it, but do not impair its usefulness.

Mr. Dean has built up a very large trade in this specialty, the article being in strong demand in all directions.

A SPECIAL MECHANICAL INDUCED DRAFT FAN.

In the accompanying engraving is illustrated a special steam driven steel-plate fan designed for mechanical induced draft by the Buffalo Forge Co., Buffalo, N.Y. The details of the construction of this apparatus present some interesting features which it will be our purpose to bring out in the following paragraphs.

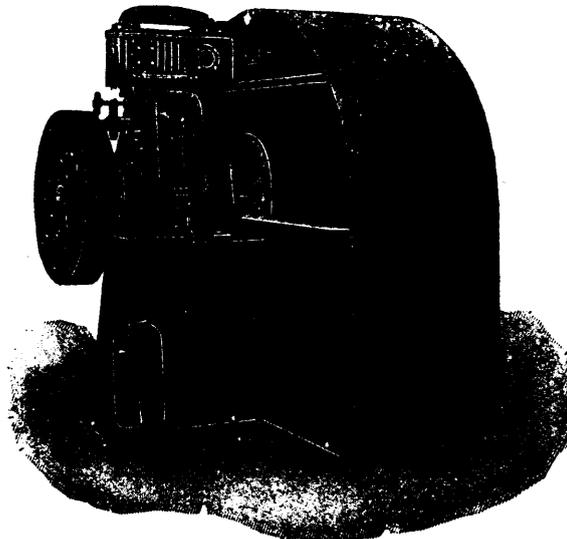
The direct connected fan shown herewith is one of two similar pieces of apparatus which together forms a duplex induced draft plant installed in a large electric power plant of Northern England. Each fan is capable of handling the gases from four Gallo-way boilers, each eight feet six inches in diameter and twenty-eight feet long, with a grate area of forty-eight square feet. The capacity of the fans was calculated on a basis of a coal consumption of

twenty pounds per square foot of grate surface, using a Durham coal locally known as "Small Bean." The steam pressure carried is about one hundred forty pounds per square inch. These boilers are arranged in conjunction with two economizers so that the gases are cooled to about 450 degrees Fahrenheit.

The fans in this instance are one hundred inches in diameter, and are driven at a speed of about four hundred revolutions per minute, equivalent to a pressure of two inches of water at the fan outlet. All gaseous products of combustion from the boilers after passing through the economizers, are drawn to the fans, which are situated on a platform above the boilers and discharged upward into the short steel stack.

The fans themselves are of the full housing up-blast steel plate construction, rigidly braced with angle irons. The fan wheel itself is built of steel plate blades, bolted to wrought iron spider arms and provided with conical side pieces, to lend rigidity to the whole. In order to insure cool running while handling the hot gases for long periods, the fan wheel shaft is supported in a water-cooled bearing, and in addition the main bearing of the engine on the side next the fan is likewise provided with a water-cooling device.

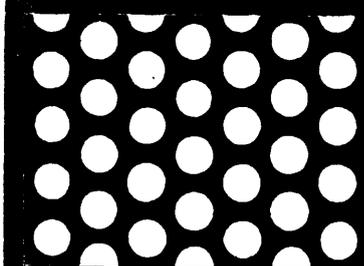
The blast wheel, which it should be



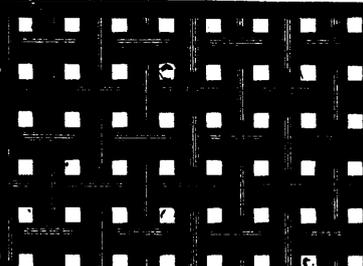
mentioned is overhung, is driven by a Buffalo Vertical Cross-Compound Engine which is supported upon a sheet steel base integral with the fan casing. The engine is designed with cylinders four and six inches in diameter with a common stroke of five inches, and running non-condensing on a steam pressure of one hundred thirty pounds per square inches, develops seventeen horse power. The various rotating and reciprocating parts work within the cast iron frame, which by the addition of a removable sideplate, is rendered oil-tight and dust proof. The engine is arranged to run in oil, and in this way the bearing surfaces within the frame are copiously supplied with lubricant. The crank shaft is carried in bearings of ample length affixed to the frame. The low pressure cylinder is fitted with a slide valve driven from a fixed eccentric on the crankshaft within the bed, and hence its cutoff is fixed. Steam distribution in the high pressure cylinder, however, is controlled by a balanced and adjustable piston valve which is itself actuated by the swinging eccentric of a sensitive shaft governor. In this way the fan is maintained at a uniform speed when serving one or all of the boilers without any alteration in the position of the dampers.

Excellent steam economy is attained for an engine of this size, and by the automatic oiling arrangement frictional losses are reduced to an almost impossible minimum. The feature of tightly enclosing the engine will be appreciated when the environment in which the engine operates is recalled. The many advantages resulting from the application of induced draft to the boiler plant cannot be dwelt upon here, but it might be well to mention the marked saving affected by such apparatus in that the lowest grades of fuel may be burned with facility.

The New Century Mfg. Co., Brantford, Ont., has been incorporated with a capital stock of \$5,000, to manufacture automatic measuring machines, etc. The provisional directors include W. G. Killmaster, E. C. Crompton and M. E. Harris, all of Brantford.



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



Wire Screens for
Every Class of
Material.

Perforated Metal
of Steel, Cop-
per, Brass, Zinc
for all pur-
poses.

Special Attention
given to Miners'
Requirements

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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.

466. Enquiry is made by a North of England firm respecting the import into Canada of new or second-hand sacks and bags, or the materials for making them.

467. An application has been received through the Canadian Government Agent in Dublin for the addresses of firms importing from Canada small boards suitable for making butter boxes.

468. A merchant in Amsterdam is open to take up agencies for Canadian firms.

469. The names of Canadian makers of trawl nets are asked for.

470. A correspondent in Nova Scotia states that he is in a position to supply hardwood, such as birch, beech and maple manufactured into squares. Also maple rollers and paving blocks.

471. The CANADIAN MANUFACTURER is in receipt of an enquiry for 1,000 tons of hay and 1,000 tons of straw, by Liverpool or Manchester, England, for September delivery.

472. The addresses of Canadian firms of good standing, handling English hardware and hardware specialties, are asked for by a company manufacturing a special line of goods.

473. A gentleman in Glasgow with a large trade connection in Scotland, is desirous of representing some Canadian firm or firms in canned fruits, meats, etc.

474. The managing director of a large pork packing establishment in Ireland makes enquiry respecting the importation of live hogs from Canada.

475. An Ontario firm ask to be placed in communication with reliable commission houses in London, Bristol and Liverpool, who handle black and white eye marrowfat peas, blue peas and Canada field peas on consignment.

476. THE CANADIAN MANUFACTURER is in receipt of a request for address of any concern in Canada who manufacture trunk tops for the trade. Is there any such?

AUSTRALIA.—Under date of February 15, 1901, United States Consul-General Bray, in reporting the arrival of the steamer Star of Australia of the Tyser Line, at Melbourne, says:

This steamer is said to have brought to Australia one of the largest shipments of American manufactured goods that has ever left an American port. Her cargo list covers 120 packages, in which is included every variety of manufactured goods produced in the United States. There are 400 tons of sewing machines alone. For Auckland, New Zealand, the vessel brought an entire gas plant weighing 500 tons. There are rifles, shotguns, revolvers, and ammunition sufficient to supply a brigade, while lawn mowers, reapers, wagons, wheels, coffee mills, patent medicines, etc., are reckoned by tons. Kerosene to the extent of 80,000 cases and 1,500 barrels, 1,000 tons of wire, 1,200 tons of bar iron, 400 tons of roll paper, hundreds of pianos and organs, together with an extensive array of miscellaneous articles, comprise a cargo which, for size and value, has probably not been exceeded in any vessel coming to Australia.

CHINA.—There is an excellent opening for the establishment of a sash, door, and wood-working establishment at Shanghai.

A number of very large modern buildings are always in course of construction in this city, and I have been advised by architects that they are constantly in difficulties about interior finishings.

There is not a planer, moulding machine or sawmill in China, so far as I have been able to learn. Logs are sawed into lumber by the whipsaw process, and in every city and throughout the country

men are engaged in this business of sawing lumber by hand.

Mouldings are made by hand work, and all lumber is dressed the same way. There is not a lumber dry kiln in China, and the most difficult problem in the construction of buildings is to get well-seasoned material for interior finish.

A proper wood-working establishment at Shanghai would command the trade of the entire Yangtze Valley and probably of points along the coast to the north, such as Tsintau, Wei Hai Wei, Tientsin, and Port Arthur.

The most important feature of the plant would be a first-class dry kiln of sufficient capacity to meet the demands for dry lumber. A good band saw for sawing native logs of small size and imported lumber up to eighteen inches would be required. Moulding machines, planers, and sash and door machinery for making special work, turning lathes, and general wood-working machines would complete the requirements.

A plant for making stock doors and windows would not be advisable, as proper material is not to be had and the demand is not heavy.

Most of the wood used for interior finish is hardwood, coming from countries south of here.

All building contracts are carried on by Chinese, and the lumber yards are also in their hands.

The best man to undertake this business would be one of good education and address, familiar with the details of the business and capable of taking the management of the concern; he should have some capital and first-class recommendations; he should spend at least three months here looking into the require-

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The International Head.



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FACTORY ?
MILL ?
STORE ?

IF SO have your buildings equipped with

Automatic Sprinklers

And save from 30 to 70 per cent. on your insurance rates. Insurance companies approve of our system and devices.

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Dominion Oil Cloth Co.

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OIL-CLOTHS of Every Description

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

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Protection Against Fire

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

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



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SPRINKLER
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No charge for estimating.

Endorsed by Insurance Companies

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Schoellkopf, Hartford & Hanna Co.,

BUFFALO, N.Y.

Aniline Colors, Manufacturers of Dyestuffs, Chemicals

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MAKE Gas or Gasoline Engines from 1 h.p. to 6 h.p.
Stationary or Marine and Electric Motors from 1/2 h.p. up.
Motor Carriages for Pleasure or Business. One cent spent for a postal will bring you any information you wish.

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Extra C is our best grade. We cannot make anything better than the best. You cannot buy anything better, try where you will. When you buy, see that our Trade Mark and grade are stamped on it and quality will be there.

D. K. McLAREN

Mfr. "GENUINE OAK" BELTING

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Factory, MONTREAL

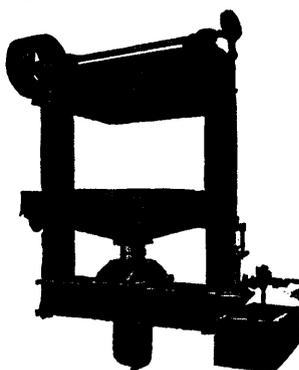
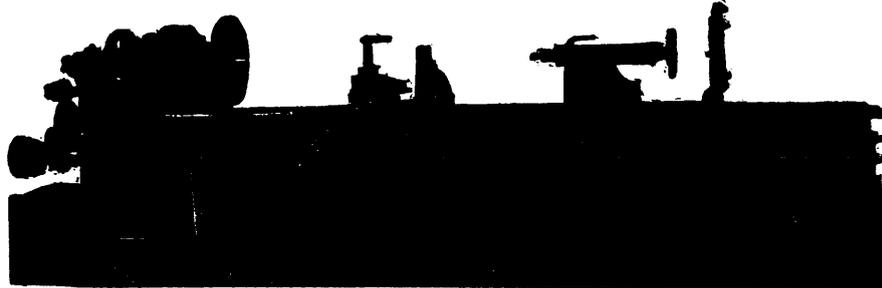
The London Machine Tool Co., LONDON, ONT.

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MANUFACTURERS OF

HAMMERS,
BULL DOZERS
PUNCHES,
PRESSES.

General Machinery



PRESSES

HYDRAULIC, POWER
and FILTER PRESSES

William R. Perrin & Company

TORONTO, ONT.

ments before ordering his plant; he should get the Chinese contractors and perhaps the lumber dealers to join him in the enterprise.

The Chinese have plenty of capital to engage in such enterprises and do not hesitate to invest therein, if they are presented by good and capable men and show chances for reasonable profit.

The architects will be glad to do all they can to encourage the institution, for all recognize the necessity of it.

For further information correspond with Atkinson & Dallas, architects, Shanghai, China.

Nobody displays less of the characteristics of the traditional grave and reticent Oriental diplomat than the very able representative of China in Washington, Minister Wu Ting Fang. His addresses on public occasions have been numerous, and he has never seemed to lack for willing auditors. An address delivered by him at a dinner given by the Southern Manufacturers' Club, at Charlotte, N.C., is noteworthy for the very clear and practical suggestions given by him to his guests relative to increasing American trade in cottons with China. He pointed out in the first place that the provinces of Chi Li and Manchuria, to which the bulk of the American goods are shipped, are not by any means the most thickly populated parts of the empire, and that there is no reason why American cotton goods should not find as ready a market in the provinces of central and southern China as in the north. The American manufacturer should, however, make goods suitable for the Chinese markets. The cotton cloth sent, he said, should be a strong, coarse unbleached material twenty-two inches wide, retailed at about five cents (gold) a yard, or thirty-six cents per piece of nine yards. There is a market also for a cotton cloth which could be made rain proof. One cannot help feeling a certain sense of unexpectedness at such detailed and practical suggestions coming from a foreign minister in an after-dinner speech, but Wu Ting Fang is a diplomat sui generis.—Bradstreets.

FRANCE.—Sir Richard Cartwright has given notice in the House of Commons of a resolution authorizing the granting of a subsidy to an amount not exceeding \$1,000,000 in aid of a steamship line between Canada and France. Our aggregate trade with France last year amounted to \$5,839,708. The French send us considerably more than we export to them. During the fiscal year ended June 30, 1896, the imports amounted to \$2,782,693. The following year they dropped to \$2,507,128. In 1898 they rose to \$4,090,506, but fell the next year to \$3,879,872. Last year there was an increase of over half a million, the exact figures being \$4,464,682. In the value of the goods exported from this country to France there was a steady increase each year from 1896 until 1900, when there was a slight falling off. The exports in 1896 amounted to \$581,540; in 1897 to \$690,696; in 1898 to \$1,025,262; in 1899 to \$1,557,722, and last year to \$1,374,770. In 1900 the imports from France ex-

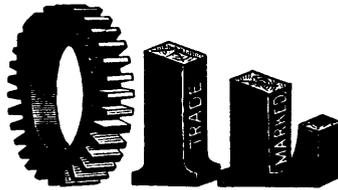
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"RENOWN" ENGINE

"ATLANTIC" RED

RELIABLE WELL-KNOWN BRAND

ALL ORDERS PROMPTLY FILLED



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CUSTOM HOUSE BROKER

GENERAL FORWARDING
and TICKET AGENT,

Correspondence Sought. **38 YONGE ST., TORONTO.**

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What better testimonials do sportsmen require than the following, viz.:
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.

THE EUGENE F. PHILLIPS ELECTRICAL WORKS

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BARE and INSULATED ELECTRIC WIRE

ELECTRIC LIGHT LINE WIRE,
INCANDESCENT AND FLEXIBLE CORDS,

RAILWAY FEEDER and TROLLEY WIRE

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ANNUNCIATOR WIRES.

CABLES FOR AERIAL and UNDERGROUND USE.

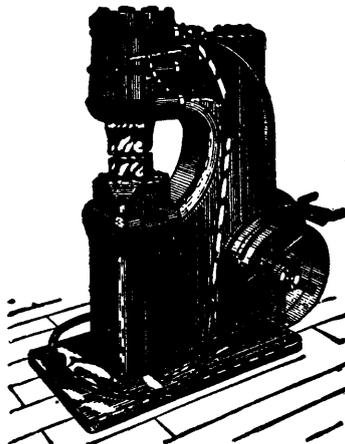
The Yeakley Vacuum Hammer.

Canadian Patent November 9, 1897.

Is now Manufactured and for Sale by
the undersigned Sole Proprietors
of the Canadian Patent:

George Brush

EAGLE FOUNDRY,
MONTREAL.



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YOUR OWN PAPER
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SHAPE.

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In all discussions on the present industrial crisis the importance of the colonies as a basis of supplies and as future fields of vast industries has hardly been touched upon. It is the duty of a Canadian writer to call attention to the inestimable natural riches of the great Canadian Dominion. One reason why the Canadians have been so enthusiastic in favor of imperial federation is because they realize that the hope of the British Empire lies in the development of the colonies.

It is to be regretted that the people of Great Britain and her public men have failed to awaken to the fact that a country as large, and, in many respects, as full of resources as the United States is theirs to develop. If the Briton is densely ignorant respecting the resources of Canada and other of the colonies, the American is not; he is casting covetous eyes upon the vast country to the north of him, and already some of the most important industrial enterprises in the development of the natural wealth of Canada are due to Yankee "push" and alertness. It is most humiliating to every Canadian that their country is being exploited by American capitalists, while British money lies idle at home or is being sent to the United States to build up the power of the commercial enemy. There is plenty of room in Canada for all efforts that can be put into operation by British capital during the present century, and the resources are simply illimitable.

If the worst should come, and Great Britain should be destined to lose half her population, those who are forced to emigrate need not go outside the empire, for Canada's greatest needs are British capital and British people. At present the Dominion Government finds the greatest difficulty in inducing Britons to emigrate to Canada, due partly to the widespread illusion that the Western colony is a land of snow and ice. When Great Britain begins to send gold and settlers, manufacturers and workmen to Canada, she will find a way out of her present commercial crisis, and the truth will strike her that it is possible to build up a new industrial Britain in the West which will keep pace with American expansion of trade, and will establish more firmly than ever before the industrial power of the empire.

RUSSIA.—Following is a translation of of an article published by the Chamber of Commerce, of Ludwigshafen, a Bavarian city of 50,000 population, which it should be of interest to manufacturers of agricultural tools and implements.

The condition of the trade in agricultural implements in Russia has experienced a change worthy of the notice of those interested. The domestic manufacture begins to offer strong competition to the foreign wares, and a knowledge of local conditions and of the changed demand is of advantage to foreign dealers.

The manufacturer is bringing to his aid active agents familiar with the country, whom he sends into every region where machinery is known. Machine storehouses are quickly opened at small but well-located railway stations, and

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machines are shown, in actual operation, at the yearly fairs taking place in the surrounding region.

The usual form of sale is on credit. The purchaser either gives security or signs a contract of loan, by which all rights in the machine are retained by the seller. Losses in this trade are extremely rare. The extension of trade into new fields, is, of course, for the most part closed to the smaller manufacturers; those of large capital are, on the other hand, in a position to become monopolists in certain localities, and to secure for themselves a steady enlargement of their market.

The native rural workshops, which have largely originated among the German colonists, furnish first of all the "Lobogreka," a simply built and cheap general-purpose mowing machine, and, in addition, grain-cleaning machines, horse powers, and plows, which last, are not suited to the demands. The manufacture of other implements is very unsteady. The greater city factories furnish plows, seed drills, and mills for grinding feed, and they are bringing about, it is said, considerable hardship to the foreign manufacturers. To some extent, it appears the plow market, in which Germany chiefly is interested, holds its own. The Russian farmers are, in great majority, against the native plow. The wish is universal to retain the somewhat dearer but approved German plow. It may fairly be stated that we can hold the market for our goods by being on hand in good harvests with the necessary supply.

In drills, machines for sowing broadcast, horse powers, and different cleaning and feed-grinding mills, the German wares likewise hold their ground.

In mowing and grain-binding machinery, the United States controls; in steam thrashing machinery, England controls.

France furnishes tools for the wine industry, and Austria-Hungary special machines for root crops. England maintains in Russia warehouses adapted to supply large demands.

The greatest difficulty is the necessity of giving credit.

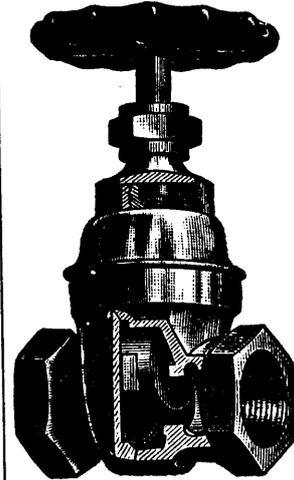
To give to the native commission house the agency for goods is an expedient which the present condition of business does not wholly favor.

If factories can arrange for the establishment of their own agencies, this is undoubtedly the better course; in any event, they should go into the business only if they are able to satisfy all reasonable requirements, otherwise, the reputation of their goods is injured for a long time.

The principal task will consist, in southern and middle Russia, in establishing direct connections and in extending as far as possible the provincial retail business; in eastern Russia and Siberia, on the other hand, the principal task is to secure a more extended market.

The German machine manufacturer has the advantage over the Russian manufacturer in better raw material and neater workmanship. For the great Russian business, he must bring both into requisition in the simplest possible models. Then we should take pains to hold our

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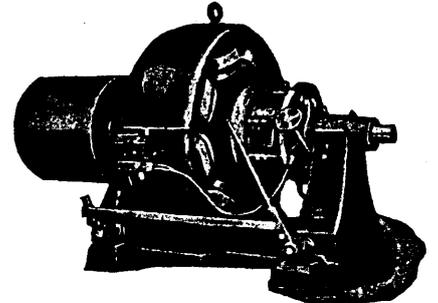
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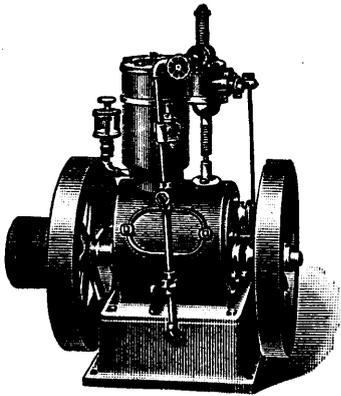
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SCHEEFFER RECORDING WATT METERS

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ST. CATHARINES, - CANADA

position in the making of special machines, For these, the market is broadening year by year.

Information comes from Montreal to the effect that the Canadian Pacific Railway Co., always on the lookout for new avenues of trade, has carefully watched the progress of the trans-Siberian road across Russia to Vladivostock, and now that it is nearing completion is taking means to reap whatever benefits to Canada there may be. Mr. William Whyte, who in the recent readjustment of officers was appointed assistant to the President, will leave shortly for St. Petersburg and take a trip over the road. Mr. Shaughnessy, who left for England yesterday, was anxious for Mr. Whyte to accompany him, but this was impossible, owing to some unfinished business in Winnipeg. Mr. Whyte left to-night for Toronto and Winnipeg, but will return at once and leave for Europe. Having been properly accredited at St. Petersburg, he will inspect the lines across Siberia to St. Petersburg and return by way of the Pacific. Mr. Whyte's long experience in western Canada will particularly enable him to judge the character of the Russian prairies, and the possibility of developing business there in agricultural machinery, and also of the mountainous districts, and the probability of Canadians finding there a market for mining machinery. He will be gone probably three months.

SOUTH AFRICA.—It is decidedly satisfactory to exporters to, as also to importers in South Africa, to learn that the revision of the Transvaal Customs is not to be unduly delayed. According to a recent statement made by the Premier of Natal, it will be carried out directly Civil government is again established in the conquered Republics, when a conference will be called of the present parties to the South African Customs' Union, in order to arrange for the admission of the Transvaal into the Union, and for the revision of the tariff itself. This statement makes it clear that the recent military proclamation that the old Transvaal duties would remain in force was only in the nature of a temporary measure, preliminary to the new dispositions to be arranged, as above described. A cable as we go to press announcing that Rhodesia had decided to withdraw from the Customs' Union, and that Natal would probably follow suit, shows that wider issues are involved. The industrial classes of South Africa, mining and other, are obviously uniting their forces against high duties on foodstuffs, with the object of forcing the hand of the Cape Colony.—British and South African Export Gazette.

NEW SOUTH WALES.—Mr. J. S. Larke, Canadian Commercial Agent, in his latest report to the Department of Trade and Commerce, gives some particulars of the trade of New South Wales with Canada in 1900. That colony imported goods to the value of £114,321, as compared with £92,710 the year previous. The exports amounted to £111,789, as against £166,403 in the preceding year. "The importations," Mr. Larke says, "show quite as fair an advance as could have been

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Davis Calyx Drill Co.
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anticipated under the circumstances of so large a proportion of the Canadian manufacturers having their output absorbed by the home market. The decrease in exports is due to the failure of the sugar crop of Queensland, a large proportion of that sugar sent to Canada having found its way from Sydney. The export of New South Wales produce advanced from £22,136 in 1899 to £43,331 this year." Some Canadian firms are waiting the passing of the Federal tariff before attempting this market, and wish to know its date. It is impossible to fix the probable date. The existing Ministry are in favor of its introduction at the first session of the Federal Parliament, if it can be done, but it has been intimated that this may not be possible. A more definite statement might be made a month hence, after the elections. Little attention has been paid to either a preferential tariff or reciprocal relations within the empire by the candidates for the Federal Parliament. After the allusions to it in the opening speeches of the Premier and leader of the Opposition, it has scarcely been mentioned. Mr. Larke intimates that the President of a leading newspaper company has, since his last report, gone to Canada with a contract of about a quarter of a million of dollars, which he would place in the Dominion if possible. The chief difficulty in the way of Canadian mills securing orders is the freight. The price of paper is too fine to permit of the long overland haul, and Canadian mills have hitherto been at a disadvantage with their United States competitors in delivering at New York. A line of steamers from Montreal would settle the difficulty, and enable Canada to compete in this market for the supply of three million dollars' worth of paper annually used in the colonies. The same gentleman has gone prepared to give large orders for printing machinery, if they can be obtained from Canadian makers. Canadian lines in which sales have been pushed with energy lately are watches, carpets, tweeds and soap. Considerable orders have been taken for watches and carpets. The objection taken to Canadian tweeds is that the goods are not soft enough. Mr. Larke states that he frequently receives letters from Canadians, asking him to look up the estate of deceased relatives in Australia, but he has had to make the disbursements out of his own pocket, a fact which the enquirers seem to ignore.

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UNITED STATES.—In the year 1900 there was a great increase in the aggregate and per capita consumption of sugar in the United States. The total is given by the "American Grocer" as 2,219,847 tons, against 2,078,068 tons in 1899. The per capita consumption in 1900 was 66.6 pounds, as compared with 61 pounds in 1899. The estimated quantity consumed in 1900 was divided as follows: Domestic cane sugar, 174,450 tons; domestic beet sugar, 82,736 tons; maple sugar, 5,000 tons; and 7,647 tons of molasses sugar, making the total consumption of the domestic product 269,833 tons, while the foreign product figured for 1,960,014 tons, divided as



Tenders for the Construction of a Twin Screw Steel Steamer.

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addressed to the undersigned and endorsed "Tender for Steel Steamer," will be received by the Department of Marine and Fisheries until 4 p.m. of

Saturday, 1st June, 1901,

for the construction of a

Twin Screw Steel Steamer

of the following dimensions:

LENGTH..... 160 feet.
 BREADTH, Moulded..... 30 "
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The contract to include hull, masts, rigging, engines, boilers and all other machinery and equipments complete and ready for sea.

Plans and specifications can be seen in this Department at Ottawa, at the Halifax, St. John and Quebec Agencies of this Department, and at the Custom Houses at Montreal, Toronto, Hamilton and Kingston.

Each tender must be accompanied by at least the names of two good and sufficient sureties and an accepted cheque for ten per cent. of the amount of the tender, which sum will be forfeited should the tender be accepted and the tenderer refuse to enter into a contract and bond.

The cheque must be certified good until the contract and bond are duly executed.

The Department does not bind itself to accept the lowest or any tender.

F. GOURDEAU,
 Deputy Minister of Marine and Fisheries,
 Department of Marine and Fisheries,
 Ottawa, 12th April, 1901.

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We now offer as a going concern the property known as

The Vienna Woolen Mills

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- One Fraser's Card Grinder. One Yarn Spooler.
- One 60 Spindle Fly Twister.
- One 108 in. Crompton Cone Loom, 4x4 box, 4 harness.
- Two 92 in. Faisey " " 4x4 " 24 "
- One 48 in. Gilbert " " 3x1 " 4 "
- One 48 in. " " " 1x1 " 4 "
- One Broad Warper and Beamer.
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- Two Broad Up and Down Gigs.
- One Rotary Fulling Mill. One Cloth Washer.
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With Spools, Bobbins, Tools, etc., etc.

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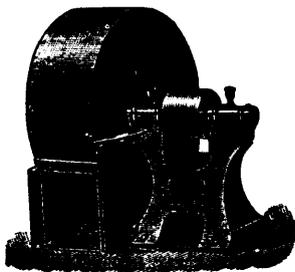
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ABOUT 2,000 NOW IN USE.

follows: 1,569,194 tons of cane sugar, 373,077 tons of raw beet sugar, and 17,743 tons of refined sugar. In the foreign total, however, 250,885 tons of Hawaiian sugar is included. The amount of refined sugar consumed in 1900 was 2,178,615 tons, as against 2,022,134 tons in 1899. The sugar crops of the world for 1900-1901 are estimated at 9,375,500 tons, an increase over the previous year of 1,037,170 tons, being the largest recorded total. During 1900 the domestic beet-sugar industry made further progress in the number of factories in operation and the amount of sugar produced. During the present year several new factories will be built, and the year opens with the prospect for the industry brighter than ever before. The domestic cane industry was retarded during the year by unfavorable weather conditions.

Much the greater part of the exports of agricultural implements from the United States consists of mowers and reapers, and while the statistics do not separate these articles in enumerating the exports, it is evident that reapers predominate. In South America the Argentine Republic is the best customer. The value of these exports received by that Republic from the United States amounted in 1896 to \$500,491, and in 1900 had more than doubled, the total value for the latter year being \$1,391,615. The value of agricultural implements going to Mexico in 1900 was \$543,022, increasing from \$120,827 in 1896. To the rest of South America these exports were valued in 1900 at \$335,813, against \$228,558 in 1896. British North America excepted, Mexico is the only North American country taking agricultural implements from the United States in large quantities. The valuation of exports of this character taken by British North America in 1900 was \$1,748,861 as compared with \$371,144 in 1896. The exports of all classes of agricultural implements to Europe in the past calendar year exceeded \$10,000,000 in value. The share of the United Kingdom was \$1,389,493; France, \$2,965,725; Germany, \$2,957,027; and all other Europe, \$3,019,874. The value of implements sent to British Australasia was \$1,101,720, and to Africa \$229,693. The total value of this class of exports, for all countries, from the United States was about \$16,000,000 in 1900, against less than \$5,000,000 in 1896.

As has been frequently pointed out in these columns, this country has very little



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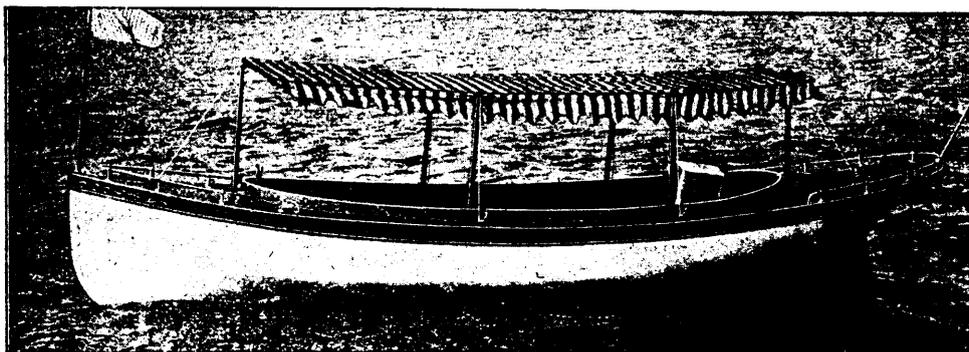
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to be proud as regards its export trade in dairy products, and this, despite earnest efforts by the Department of Agriculture's agents and others to remove bad impressions as to American butter and cheese existing in European countries. Our exports of butter and cheese, in fact, are steadily declining, and are now smaller than they were ten years ago. On the other hand, Canada's exports are steadily increasing, and her shipments considerably exceed those of the United States, while the margin in her favor is steadily growing. This country's exports of dairy products are only about one-third of those of Canada in value, the Dominion sending about one-fourth more butter, nearly four times as much cheese and twice as many eggs. Unfortunately, too, as above noted, our butter and cheese exports are losing ground, while egg exports alone are gaining. This latter fact may or may not be significant, but it is certainly curious to note that such purely natural products as eggs are increasing in favor abroad, while those products of man's skill, butter and cheese, are being rejected. It would seem to show a disposition to trust the American hen more than the American butter and cheese maker. —Bradstreets.

The Farmers' Co-operative Produce Co., Belleville, Ont., will apply for incorporation with a capital stock of \$150,000, to carry on a pork-packing business.

CANADIAN TANNERIES.

The current reports of the contemplated establishment of new tanneries in various parts of Canada draws attention to the important development which has been undergone in this industry during the past few years. It is not so many years since the exports of leather from this country were hardly worth mentioning; during the last five years they have increased fully one third; and more, especially sole leather, was sent away in 1900 than ever before. Most of this leather goes to London, where the institution of periodical sales has caused the trade to become more and more centered. But at these sales, buyers from all parts of England and the continent congregate, so that that city is merely a nucleus from which the leather is distributed in all directions. Since the Tanner's Association took hold of the Canadian trade there can be no doubt that very considerable benefit has accrued. One feature now is the absence of surplus stocks which always militate strongly against good prices. Whereas before the warehouses of Canadian dealers were almost constantly full-up, now on the contrary, they are kept fairly clear. The result is that the prices are very much steadier, and can be calculated upon a full season ahead, as a direct consequence of the increased export demand. Of course, leather for the English market has to be put up in quite a difficult manner than that intended for local consump-

tion, but this matter is understood now. One feature of the industry which tanners are beginning to realize more fully, is the importance of getting the hides as near to the bark as possible, and also to locate factories close to the seaboard. Another important matter for consideration is the fact that, generally speaking, the profits from running a tannery are closely dependent upon the extent to which it can be worked to its very fullest capacity. The cost of producing 1,500 sides is, proportionately, very slightly greater than that required for 1,000 sides. The larger the scale of production, the smaller the relative cost. This applies to all businesses, but in none to such a great extent as in the tanning industry.

On the 5th inst. a large meeting of merchants and tanbark dealers met at Elmsdale and formed an association, to be known as the Northern Bark Dealers' Association. The object is to protect themselves against the Ontario Bark Association and tanners generally throughout the whole Dominion of Canada in regard to the measurements and price of bark. The meeting was unanimous in condemnation of the methods of measuring bark at points of destination, low prices and the shortage in measurements. The head office will be located at Trout Creek.—The Monetary Times.

The Goderich Knitting Co., Goderich, Ont., has increased its capital stock from \$20,000 to \$60,000.

Northrop Iron Works

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FOUNDERS**

Heating and Ventilating Engineers,

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causes the water to be thrown outward with

1600 TIMES

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BUSINESS CHANGES.

FROM BRADSTREETS.

ANNAPOLIS, N.S.—McCormick, Wm. & Son general store, Walter McCormick deceased.
 ANDOVER, N.B.—Andover Creamery Co., Limited, applied for charter.
 AVONDALE, N.B.—Barter, J. E. & Co., woodwork, dissolved, succeeded by Barter Bros.
 BARWICK, Ont.—Thompson, T. W., general store, sold to C. R. Langstaff.
 BERLIN, Ont.—Honor Bright Gold Mining Co., of Ontario, Limited, obtained charter.
 BRANTFORD, Ont.—Havill & Whitham, builders, dissolved, S. F. Whitham, continuing; Whitney, Charles, furniture, sold to Mary E. Long.
 BRIGHTON, Ont.—Redfearn, Henry, coal, succeeded by D. C. Bullock.
 BURLINGTON, Ont.—Baxter & Galloway Co., Limited, millers and grain, burned out, insured; Baxter, R. G., banker and grain, burned out, insured.
 BEAULAC, Que.—Lakeside Wood Co., applied for charter.
 BEAVER HARBOR, N.B.—Beaver Harbor Trading Co., Limited, incorporated.
 BEDFORD, N.S.—Richardson, R., general store and lumber, registered consent for wife, Lydia P. Richardson, to do business in her own name.
 BRANDON, Man.—Snowflake Steam Laundry, succeeded by the Manitoba Steam Laundry Co.
 CLARENDON.—Collinsby Co-Operative Cheese & Butter Co., Limited, M. Wartman.
 COWANSVILLE, Que.—Buzzell Bros., general store, Henry R. Buzzell, deceased.
 CAMPBELLTON, N.B.—Adams, Currie & Co., general store, etc., succeeded Wm. Glover; Doherty, W. W., saw, grist & carding mills, sold saw mill W. C. Purves.
 DIDSBURY, N.W.T.—McCormick, W. R., general store, sold to J. Studer.
 DUNREA, N.W.T.—Mackie, W. D., general store, sold to J. H. Fawcett.
 DUNDAS, Ont.—Boden, N. H., printer, sold to E. V. Donnelley.
 DALHOUSIE, N.B.—Royal Bank of Canada, opened branch.
 DALHOUSIE WEST, N.S.—Harnish, Isaac, sawmill, burned out, no insurance.
 EEL RIVER CROSSING, N.B.—Currie, Wm. & Co., general store, etc., amalgamated with A. G. Adams, Campbellton.
 FOREST, Ont.—English, W. J. Co., Limited, obtained charter.
 FRASERVILLE, QUE.—Temiscouata Lumber Co., obtained charter.
 HILTON, N.W.T.—Brown, Charles, general store, sold hardware stock.
 HULL, Que.—Walters, Henry & Sons, axe mfrs., premises damaged by fire, insured.
 HALIFAX, N.S.—Smith & Proctor, produce, opening branch in Sydney.
 HAMILTON, Ont.—Copp Bros. Co., Limited, mfrs. stoves, etc., liquidator appointed.
 KEYES, N.W.T.—Hamilton & Sutton, hardware, succeeded by Hamilton & Thurston.
 LAKELET, Ont.—Dulmage, A., general store, sold to Wm. Bushfield.
 LONDON, Ont.—Canadian Fire Engine Co., Limited, obtained charter; Cottam Laundry, sold to Forest City Laundry Co.
 LAKE MEGANTIC, Que.—Bureau & Cie, hardware, Albertine Royer registered.
 LES EBOULEMENTS, Que.—Tremblay, N., saw mill, deceased.
 MEDICINE HAT, N.W.T.—Luno, George J., jeweler, sold to W. J. Brotherton.
 MONTMAGNY, Que.—Montmagny Light & Pulp Co., obtained charter.
 MONTREAL.—Aylmer Drill Mfg. Co., obtained charter; Baldwin Condensed Milk Co., registered; Beckham & Co., planing and box mills, J. F. Beckham, deceased; Beliveau, Henri, electrician, Mrs. Henri Beliveau, registered; Boisvert, F. & Co., importers, etc., Mrs. Onezime Boisvert registered; Bolduc, Cyrille, carriage maker, burnt out, insured; British America Import Co., Carl Rosenberg, registered; Brodie & Co., traders, Joseph J. Westgate registered; Canada Trust Co., registered; Canadian Salt Co., obtained charter; Canadian Yukon Lumber Co., applied for charter; Crevier & Fils, hardware, Henri Crevier registered; Dominion Mfg. Co., biscuits, assigned; Forest, Thomas & Co., plumbers, etc., Mrs. Thomas Forest registered; Fortune Potato Digger Co., Marie L. Jacques registered; Germain, H. & Co., blacksmiths, Hyppolite Germain, registered; Hamel & Bleau, sash and door mfrs., assets sold; Hotel Richilieu, registered; La Compagnie Des Pitules Vigorines, Gustave Tasse registered; Leach, N. P., Arms Agency, N. P. Leach, registered; Leroux, A., hardware, Mrs. A. Leroux ceased doing business under this style; Montreal Framing Co., assets sold; McDiarmid

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BUSINESS CHANGES—Continued.

& Elliott, dental surgeon's supplies, registered; Nantel, E. & Cie, biscuits, etc., Mrs. Emile Nantel registered; National Coal Tar Co., Mrs. Joseph Prosper Major registered; Old St. George (E. Lepage & Co.) departmental store, Alphonse Valiquette registered; Russian Fur Mfg. Co., registered; Standard Roofing Co. registered; St. Arnaud Freres, hardware, dissolved, new partnership registered; Timmis, Noble & Co., mfg. stationers, etc., demand of assignment; Union Dressed Meat Co., registered; Warden, King & Son, founders, dissolved.

MONTREAL AND DANVILLE, Que.—Danville Asbestos & Slate Co., dissolved.

NELSON, B.C.—Kootenay Electric Supply & Construction Co., registered dissolved.

OKOTOKS, N.W.T.—Wilson & Son, blacksmiths, Succeeded by Wilson Bros.

ORILLIA, Ont.—Cashman & Perry, clothing, boots and shoes, dissolved, J. O. Perry continues.

OTTAWA, Ont.—Lincoln Medicine Co., assigned to W. A. Cole; Ottawa Mica Mining Co., Limited, obtained charter.

OUTREMONT, Que.—Canadian Chicory Mfg. Co., dissolved, Joseph Beaubien now registered.

PILOT MOUND, N.W.T.—Endicott & Preston, general store, dissolved.

PRINCE ALBERT, N.W.T.—Russell, G. R. & Bro., general store, dissolved.

PARIS, Ont.—Chalmers & Co., furniture and undertakers, loss by fire, insured.

PAQUETVILLE, Que.—Paquet, F., general store, compromised.

PLESSISVILLE, Que.—Plessisville Electric Co., capital stock increased to \$60,000.

PORT GREVILLE, N.S.—Elderkin, H. & Co., general store and lumber, H. B. Elderkin, deceased.

QUEBEC.—Dominion Silk Waist Co., Ladies' Novelties, registered; Ellis, James & Co., coal, registered; Hygienic Dairy Co., applied for charter; Mendeloviz, L., leather goods, removing to Montreal; Quebec News Co., Frank Carrel, proprietor, registered; Talbot & Laroche, commission agents, registered; V. & B., Sporting Goods Store, Antoine Guilbault registered proprietor.

REGINA, N.W.T.—Brotherton, W. J., jeweler, sold to F. G. England.

ROSTHERN, N.W.T.—Klaassen, I. P., furniture, sold to Geo. E. Knechtel & Co.

ST. AUGUSTINE, Ont.—Baker, Margaret, general store, succeeded by Charles Moss.

ST. HENRI DE MONTREAL, Que.—Tetrault, John, Steel and Malleable Iron Works, registered.

ST. LIBOIRE, Que.—Girard & Co., general store, Compromised.

ST. THOMAS, ONT.—Mossop, L. C., wall paper, removing to London.

ST. THOMAS AND UNION, Ont.—Willson, S. V. (Estate of), woolen mill, assets to be sold by auction.

SINTALUTA, N.W.T.—Davidson, H., blacksmith, sold to D. Whitley.

STRATHCONA, N.W.T.—Duggan, J. J., lumber and agricultural implements, retired from lumber business.

SHELBURNE, N.S.—Bower, James R., planing mill, burned out.

SPRY BAY, N.S.—Leslie, G. A. & Co., general store and lobsters, G. A. Leslie deceased.

SYDNEY, N.S.—Cruise & Cummings, electricians and sporting goods, succeeded A. W. Cruise.

SHERBROOKE, Que.—Canadian Chrome Iron Co., Limited, applied for charter; Morency & Millet, boots and shoes, registered; Sherbrooke Steam Laundry, registered.

SARNIA, Ont.—Cleveland-Sarnia Saw Mills Co., Limited, applied for charter.

SPRINGFIELD, Ont.—Buggin, W. T., printer and publisher, sold to Stewart & Wade.

STRATFORD, Ont.—Hodd & Cullen Milling Co., Limited, burned out, insured; King, A. H., mfr. cigars, sold to J. D. Hamilton; Ward, Albert, tinsmith and plumber, admitted Jos. Myers.

TORONTO.—Boulter & Stewart, wholesale fancy goods and mfrs. ladies' wear, offering to compromise; Hartz, J. T. Co., Limited, obtained charter; Toronto Safe Deposit & Agency Co., Limited, obtained charter.

TRENTON, Ont.—Colborne & Williamson, stoves and tinware, assigned to George F. Hope.

THREE RIVERS, Que.—Provincial Light, Heat & Power Co., applied for charter.

VANCOUVER, B.C.—World Printing & Publishing Co., Limited, J. C. McLagan, president, deceased.

VICTORIA HARBOR, Ont.—Victoria Mercantile Co., Limited, obtained charter.

VIENNA, Ont.—Graves & McGuire, general store, removing to Wallaceburg.

VICTORIAVILLE, Que.—Victoriaville Shoe Co., applied for charter.

WELLWOOD, N.W.T.—Nesbitt, D., general store, succeeded by W. Nesbitt.

WINNIPEG, Man.—Moore Printing Co., Limited, incorporated; Western Packing Co., applying for incorporation; Winnipeg Grain & Produce Exchange Clearing Association, applying for incorporation.

WALLACEBURG, Ont.—Steinhoff & Gordon, mfrs. staves, partially burned out.

WINONA, Ont.—Secord, W. K., general store, succeeded by Budge Bros.

WATERLOO, Que.—Waterloo Knitting Mills Co., applied for charter.

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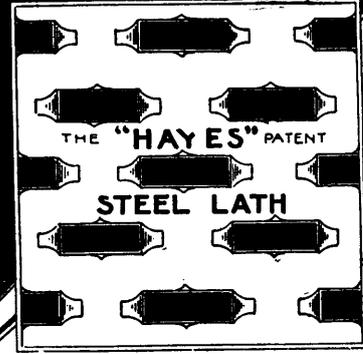
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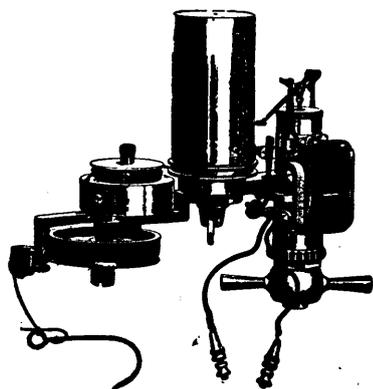
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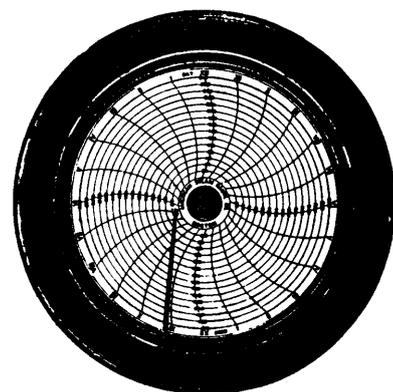
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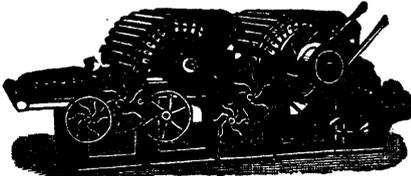
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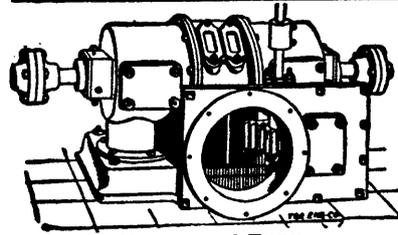
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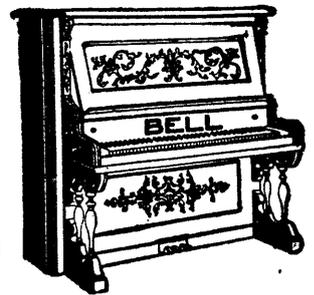
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