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Vol 48. TORONTO, OCTOBER 16, 1903. No. 8.

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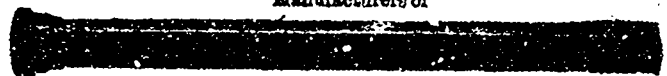
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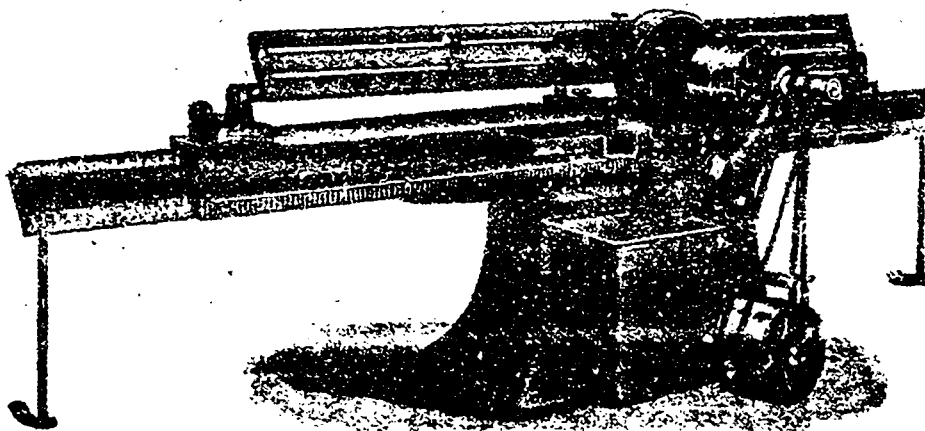
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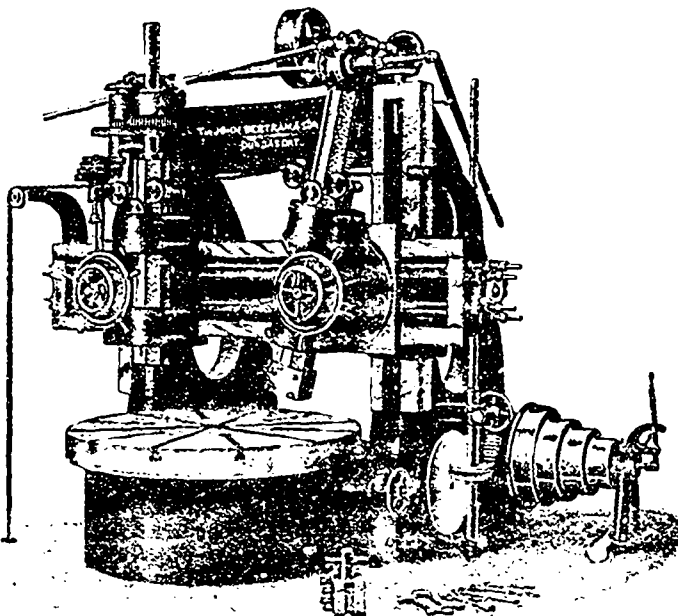
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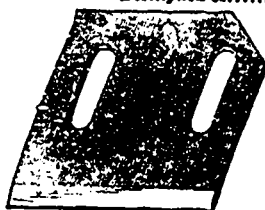
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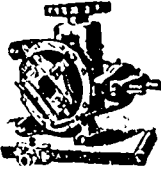

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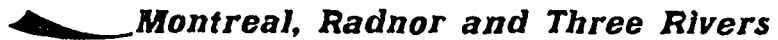
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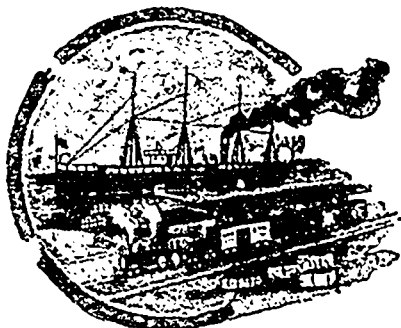
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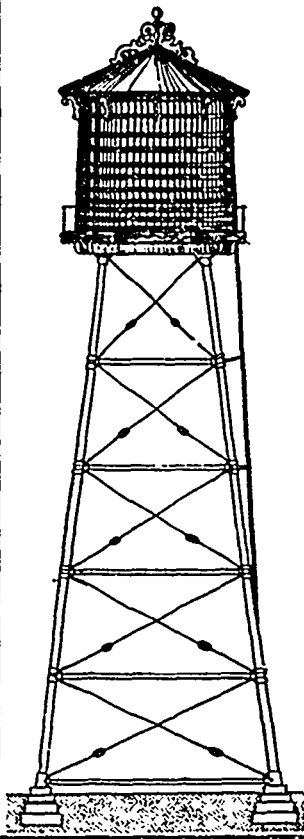
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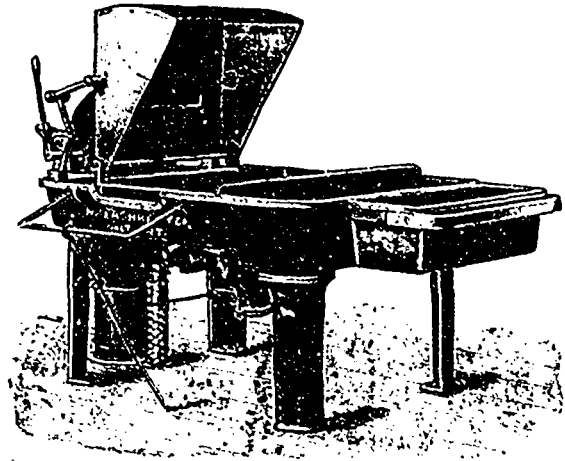
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The Syracuse Smelting Works shall have their name on every bar as a guarantee for the quality. Price is to be the lowest in Canada. Also every plumber or manufacturer who has any use whatever for any kind of solder must use the Syracuse Smelting Works' for their own protection.

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Everybody who is not using "Syracuse" Babbitt Metal or Solder, in fact any metals they manufacture, is working against their own interests. A word to the wise is sufficient.

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MANUFACTURE "RATHBUN'S STAR" BRAND

THE LEADING CANADIAN PORTLAND CEMENT

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Made at SHALLOW LAKE, ONT.

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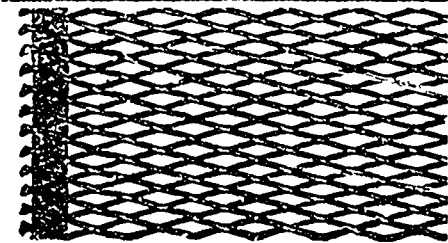
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BLAST FURNACES, STEEL WORKS and ROLLING MILLS.

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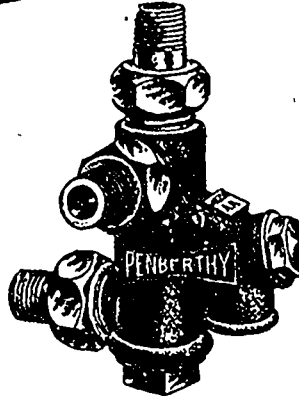
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WORKS LOW AT 10 LBS. PRESSURE.
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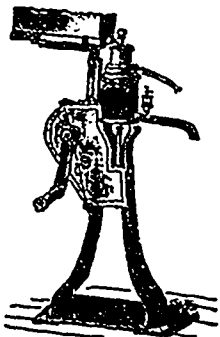
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THE BEST CREAM SEPARATOR MADE

Write for Illustrated Catalogue and full particulars regarding territory. To investigate is to want the U. S.

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YOU MAY NOT NEED A LATHE OR PLANER NOW

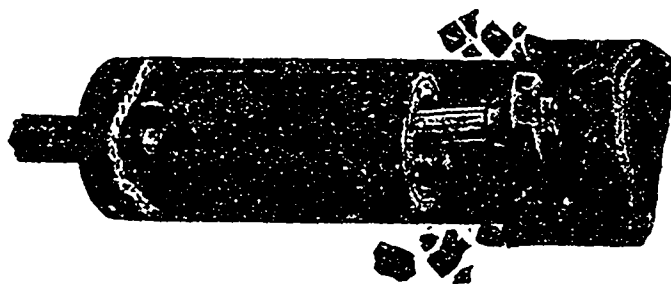
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The Original Dean Boiler Tube Cleaner.

WE WILL SEND THIS CLEANER FREE

and loan it to you for a complete test. You place yourself under no obligations to buy.

THIS IS THE ONLY DEVICE MADE

that will remove the scale from the tubes of a water tube or return tubular boiler, and we make this extraordinary offer to show the superiority of this cleaner over the inefficient counterfeits that are being hawked about in the Dominion.

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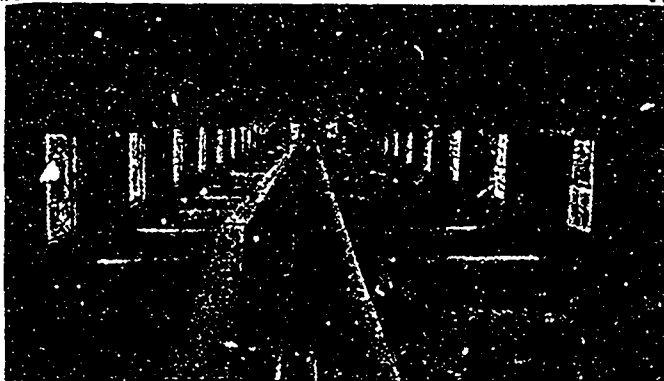
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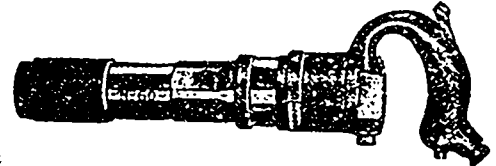
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The World's Standard.

The . . .

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The “LITTLE GIANT” and “BOYER”
pneumatic tools have been adopted every-
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They are manufactured in sizes and styles suitable for
every variety of work and will **save both time and
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The Dodge line leads the world in efficiency, durability
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Dodge wood split pulleys, friction clutches, shafting, rope
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are the best that can be produced.

Our engineering experts are ready to figure out any pro-
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We make a specialty of complete installations.

WRITE TO US BEFORE PLACING ANY ORDER.

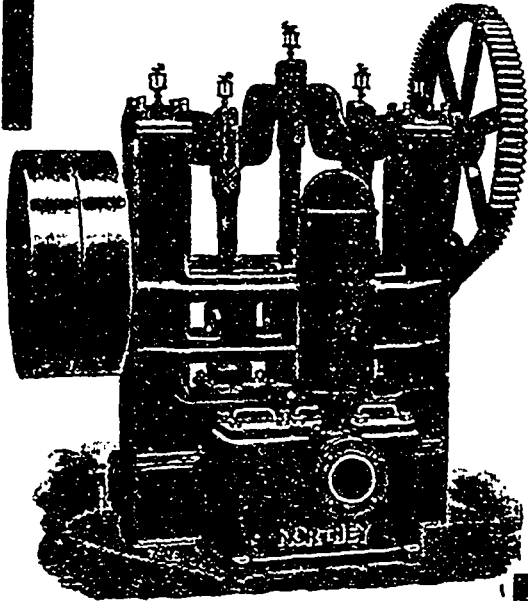
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**THE NORTHEY
TRIPLEX POWER PUMP**

Is a high class serviceable machine; it offers the best means of applying either steam, water or electrical power for pumping purposes. A special feature is the use of three cranks 120 degrees apart—ensuring a practically constant delivery. This pump, for Boiler Feeding, etc., and especially in connection with an electric motor, gives excellent results.

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a handy and economical
motor.

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"Say Friend"

Your aim should be to start up for yourself.

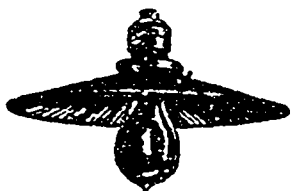
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J. J. CASSIDY, Editor and Manager.

OUR TARIFF EDITION.

In the last issue of this journal was quoted the expressions contained in letters received from some of our correspondents regarding our recently published tariff edition of **THE CANADIAN MANUFACTURER**. Following are more of the same sort:

O. P. Austin, Esq., Chief of United States Bureau of Statistics, Department of Commerce, Washington, D.C.: I have your letter indicating that you had forwarded to me another copy of **THE CANADIAN MANUFACTURER** of September 4 containing the tariff of Canada, United States, Great Britain, Australia and South Africa, for which I thank you. I had already noted the publication with interest. I have one copy carefully filed for use in the library and one for use in the consular division of this office, and I am glad to have the third copy for use in my own library at home. I congratulate you on your enterprise in bringing together the tariff of the principal English speaking countries of the world.

Dominion Dyewood & Chemical Co., M. J. Taylor, manager, Toronto: Your tariff edition will certainly prove very useful for reference and be appreciated by us and all manufacturers and business houses.

Wilson Bros. Bobbin Co., Liverpool, England: Your tariff edition is certainly very seasonable. We shall keep it for reference.

Ryrie Paper Co., Toronto: It is of exceeding interest, especially at this time when Canada is endeavoring to enlarge her foreign trade.

The Foreign Buyer Publishing Co., New York City: The tariff edition of **THE CANADIAN MANUFACTURER** is undoubtedly a very valuable publication which cannot fail to be of great service to importers and exporters in the countries covered by it.

James A. Cantlie, manufacturers' agent, Montreal: I consider the tariff edition of **THE CANADIAN MANUFACTURER** an admirable production, and reflects much credit upon the publishers for the care bestowed on such a complicated work. It is a ready reference for those engaged in the importing and exporting business, and it will, I have no doubt, find its place in every important business office in the Dominion.

T. D. Wardlaw, Toronto, Canadian agent for the Geegy Aniline & Extract Co., New York: I am delighted with the tariff edition of **THE CANADIAN MANUFACTURER**. It is complete and easy for reference. In my travels I find it prominently displayed in the offices of most of the manufacturers on whom I call, and it is referred to as an authority in tariff matters.

The Intercolonial Coal Mining Co., Charles Fergie, general manager, Westville, N.S.: Your tariff edition is most conveniently arranged, and you are to be congratulated on the enterprise and ability displayed in giving the trade a publication of this sort.

The Crown Cork & Seal Co., Baltimore, Md.: We are very much pleased with your tariff edition, and find it very useful to us.

The National Reciprocity League, Chicago, Ill.: The infor-

THE CANADIAN MANUFACTURER

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

mation contained in your tariff edition makes it a very valuable reference book. We are satisfied that our importers and exporters will value it as a book of complete information on the tariffs of the countries alluded to.

J. Castell Hopkins, editor, **The Canadian Annual Review**, Toronto: The tariff edition of **THE CANADIAN MANUFACTURER** is a most valuable publication, and you are to be congratulated upon its appearance and usefulness. I have preserved your previous tariff editions and find them very serviceable.

The Freyseng Cork Co., Toronto: Your tariff edition contains very valuable information which should make it welcome in importing and exporting houses. We know it will give satisfaction.

The Vermont Farm Machine Co., Bellows Falls, Vt.: It is a valuable publication for those who have occasion to refer to the tariffs of the countries alluded to.

Canada Wood Mfg. Co., Farnham, Que.: We appreciate your tariff edition. It will be of value to us, and we consider the publication of value to all business men.

The Lowell Crayon Co., Lowell, Mass.: It will be of much value to us in our business.

Bracebridge Woolen Mills, H. J. Bird, proprietor, Bracebridge, Ont.: We have hung up your tariff edition in the place of the old one, which we found very useful; and the present one will more so because of its wider scope.

The Sydenham Glass Co., Wallaceburg, Ont.: We feel that we would be remiss in our duty were we not to express our appreciation of your tariff edition. It is just the thing needed by busy men.

Otterville Mfg. Co., Otterville, Ont.: We are much pleased with it, containing as it does such a great amount of valuable information for both importers and exporters.

Sawyer & Massey Co., Hamilton, Ont.: We appreciate your tariff edition very much as every business man will do. We prize our copy very highly.

Empire Mfg. Co., London, Ont.: We consider your tariff edition a very valuable publication, especially to those doing an import and export business.

Montreal Electric Co., Montreal: Your tariff edition has evidently been compiled with great care, involving much labor. It will be found a most useful book of reference in the office of any concern engaged in importing and exporting. We certainly intend to preserve our copy for reference purposes.

(Other chapters of this interesting story will be published in our next issue.)

PREMIER BALFOUR ON THE SITUATION.

The London Daily Graphic contains a summary of Mr. Balfour's famous pamphlet on British free trade, from which we quote:

The ocean we are navigating is smooth enough, but where are we being driven by its tides? Does either theory or experience provide any consolatory answer to this

question? Consider some of the points on which I have commented in these notes—the injury which foreign protection is calculated to inflict on a free-trade country, its need for open markets, the threatened contraction of existing free-trade areas, the increasing severity of tariffs in protectionist areas, the building up of vested protected interests in new countries, which may be discouraged now but not hereafter, the effect of the protection on our future corn supply, the uncertainty and loss which tariff-protected trusts are inflicting, and may hereafter inflict, upon British capital invested in Britain. One and all of these evils, actual and prospective, are due to protection. The man who says that their cumulative effect is so small as to be negligible, can hardly describe himself as a free trader; at least, he can attach but a very small value to free trade. The man who, admitting their reality, does not anticipate their increase, has (it seems to me) not learned the lesson which theory and experience agree in teaching. The man who admits their present reality and the probability of their increase, and yet is too contentedly prosperous even to consider whether any mitigation is practicable appears little short of reckless. It seems to me clear that we are bound to seek for some mitigation, and that in one direction only. Can we hope to find it?

The source of all difficulty being protective tariffs imposed by fiscally independent communities, it is plain that we can secure no concession in the direction of a freer exchange except by negotiation, and that our negotiators can but appeal to self-interest, or, in the case of our colonies, to self-interest and sentiment combined. Now, on the free-trade theory, self-interest should have prevented these tariffs being originally imposed. But it did not, and if argument failed before powerful vested interests were created, it is hardly likely to be effective now. The only alternative is to do to foreign nations what they always do to each other, and instead of appealing to economic theories in which they wholly disbelieve, to use fiscal inducements which they thoroughly understand. We, and we alone among the nations, are unable to employ this means of persuasion, not because in our hands it need be ineffectual, but because, in obedience to 'principle,' we have deliberately thrown it away. The 'principle' to which we pay this strangely incongruous tribute is, of course, the principle of free trade.

A curious view of free trade is implied, Mr. Balfour continues, simply because fiscal inducements may, if it fails of its effect, and not otherwise, involve duties not required for revenue purposes, or in certain cases even carry with it some element of protection to home industries. The nation is invited, he says, to turn away from it as from an accursed thing. This has always seemed to him extraordinarily foolish, and quite inconsistent with rational free trade. By only one standard can the free trade merits of a policy be judged, and that is the degree to which it promotes free trade. "Thou shalt not tax except for revenue" is held by some to be a moral imperative, and could it be proved to those who took this standpoint that by risking the imposition of the most trifling protective tariff at home it was possible to secure the greatest relaxation of protective tariffs abroad, they would only answer, "We must not do evil that good may come." To the writer this attitude of mind seems absurd. Mr. Balfour holds himself to be in harmony with the true spirit of free trade when he pleads for freedom to negotiate, that freedom of exchange may be increased. It ought not to be difficult to devise a method of turning it to the most useful account.

Finally, says Mr. Balfour, were I proved to be wrong, my opinion on the fundamental principles would remain unchanged. Where we fail others may succeed. It cannot be right for a country with free-trade ideals to enter into competition with protectionist rivals, self-deprived of the only instrument by which their policy can conceivably be modified. The first and most essential object of our national efforts should be to get rid of the bonds in which we have gratuitously entangled ourselves. The precise manner in which we should use our regained liberty is an important, yet, after all, only a secondary issue. What is fundamental is that our liberty should be regained.

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THE RECIPROCITY MOVEMENT IN THE UNITED STATES.

Mr. Campbell Shaw, chairman of the National Committee on Reciprocity with Canada, has addressed an open letter to Senator Hoar, of Massachusetts, in which he says:

In a published report of an address given recently by you in Massachusetts it is stated that you declared that reciprocity with Canada must wait until the general elections of 1904 are over. It is fair to assume that you believe reciprocity with Canada is advisable, and that you advise delaying final action in the matter until after the autumn of 1904, because earlier action is regarded by you as injudicious.

The workers in this country for reciprocity with Canada would not press for a ratification of a treaty before the general elections were they not convinced that delay beyond that time would very probably cause us the loss of our control of the Canadian market. We have put ourselves closely in touch with the situation in Canada, and there has been brought home to us the fact that the strongly organized movement there for higher protection to their industries has now attained an influence which has considerably weakened the desire of the Laurier Administration to accept our invitation to reopen negotiations for a treaty. This very day there is assembled in Toronto representative manufacturers from all sections of Canada for the purpose of solidifying their organization in a campaign for a higher protective tariff. These manufacturers are allied with the Conservative party, now out of power, and are making extraordinary efforts to secure the labor vote.

In their campaign for a high protective tariff the manufacturers and Conservatives have very favoring conditions. The great inpouring of American capital for the establishment of industries promises to continue for several years. This gives much additional strength to the organized effort for a high protective tariff. The rapid development of the wheat lands of the West assures a vast increase in wealth. All these conditions conspire to develop a sentiment for a high protective tariff, and to give confidence in maintaining an independent attitude towards our country in trade relations.

Putting over the matter of reciprocity with Canada until after our general elections in 1904 means a delay of nearly two years, and in that time the manufacturers of Canada, and the Conservatives, will have spread their organization for a high protective tariff from the Atlantic to the Pacific and will have thoroughly throttled the sentiment for reciprocity with this country. This fact will doubtless be more generally realized in this country when the next regular session of Congress opens, and I doubt very much if then there will be any of the leading Senators willing to face the responsibility of aiding the abandonment of the control of the Canadian market because of political expediency.

Opposition in this country to reciprocity with Canada rests mainly upon the contention that (1) the tariff question would be opened up at an improper time if a treaty is pressed for before the general elections in 1904; and (2) that by the form of treaty proposed, we would build up Canada at our own expense. In the first part of this contention there is the choice of abandoning our control of the Canadian market, or dealing tenderly with political expediency. In the second part of the contention there is little consideration, for in the past few years we have been building up Canada at our own expense, and will go on doing so, while that convenient field for development and investment of capital continues profitable. For many years Canada sent thousands of her best men to help build up our country at their expense. We are returning that favor now, and neither reciprocity nor a higher tariff will stop our overflow into the Northern country.

C. A. S. E.

The Canadian Association of Stationary Engineers is composed, as the name implies, of engineers to whom is entrusted many of the steam plants in manufacturing establishments, and large office and public buildings, and who are, as might be supposed, in close and important touch with their employers. As a class they are men of good standing in all

ways, and who deserve more consideration at the hands of their employers than is usually accorded them. The Association is maintained chiefly for educational purposes, an important feature of it being to increase the knowledge of the members in the practical and technical requirements of their positions; and while it may be true that there may be good engineers who are not members of the Association it may be said that all the members of it are good, efficient and reliable engineers. Another and exceedingly important feature of the association is that it is not in any manner affiliated with trades unionism; and for this reason if for no other it should receive the encouragement of manufacturers. It stands as a bulwark between and in defence of manufacturers and the destructive influences of trade unionism; and for that alone it would be in the interest of manufacturers to render the association tangible support and encouragement, and to see that it does not languish and perish for the lack of money to continue its existence and carry on its educational work.

At the recent annual convention of the association held in Berlin, Ont., in August, President Oelschlager, in his address, suggested that the members appeal directly to their employers for contributions for the support of the association; and it is now for the manufacturers to respond to the request. It certainly has a strong claim upon them in this respect.

We suggest that this matter be taken up and investigated by the Canadian Manufacturers' Association. There can be no line of divergence between it and the C. A. S. E., and the engineers should be promptly supplied with the money they require.

TORONTO ANTI-SMOKE BY-LAW.

The Toronto City Council has passed a by-law compelling manufacturers and others creating a smoke nuisance to use smoke consumers or similar appliance for the abatement of the same. It will go into effect on July 1, 1904, and is as follows:

All manufacturers and others in the city of Toronto using combustible material to produce heat or power and thereby creating smoke in such quantities as to foul the atmosphere, or that may be carried by the wind or otherwise to other shops, house or premises to the inconvenience or injury of the neighboring premises or residents therein, shall have such chimney or other apparatus as shall consume the smoke, or prevent the same from fouling the atmosphere, or being carried by the wind or otherwise to other shops, houses or premises, to the inconvenience or injury of the neighboring premises or residents therein.

Any person convicted of a breach of any of the provisions of this by-law shall forfeit and pay, at the discretion of the convicting magistrate, a penalty not exceeding (exclusive of costs) the sum of \$50 for each offence, and, in default of payment of the said penalty and costs forthwith, the said penalty and costs, or costs only, may be levied by distress and sale of the goods and chattels of the offender, and, in case of there being no distress found out of which such penalty can be levied, the convicting magistrate may commit the offender to the common jail of the city of Toronto, with or without hard labor, for any period not exceeding six calendar months, unless the said penalty and costs (if any), including the costs of the said distress and of the committal and conveyance of the offender to the said jail, are sooner paid.

EXPORT FACILITIES.

Canadian manufacturers and exporters will be gratified to learn that the Grand Trunk Railway Co. has completed negotiations for a new through traffic arrangement by which it will ship freight right through to Australia and New Zealand.

The new arrangement has become possible through the organization of the Canadian Australasian & Puget Sound

Steamship Co., which will run from Tacoma to different ports in Australia and New Zealand.

By the arrangement it is intended that freight for the far east shall be handled by the Grand Trunk as far as Chicago and there handed over to the Northern Pacific Railway to be carried through to Tacoma.

Freight from the far east will in turn be taken from the steamship company at Tacoma, brought by the Northern Pacific to Chicago and then to Canadian eastern points by the Grand Trunk Railway. By the new through freight arrangement the new steamship company will give direct competition to the fleet of the Canadian Pacific.

The Grand Trunk has been advised that the first sailing will be made from Tacoma December 20.

It is expected that on through shipments there will be a saving to shippers in freight charges of from 5 to 15 per cent, and will reduce the time required for delivery in New Zealand to 36 days, as compared with 60 days via New York.

The Canadian Export Co. will act as Canadian agents in securing outward business and developing import trade from Australia and New Zealand to Canada.

NOW WILL YOU BE GOOD?

Absolute prohibition of gambling in any form, particularly by betting on the races, and also of drinking, cigarette smoking and dissipation, has been announced by the Western Electric Co. of Chicago. The company's announcement was couched in these terms:

Playing the races and all other forms of gambling, immoral conduct, and the excessive use of liquor or cigarettes greatly impair one's usefulness.

The best business houses in the city do not desire the services of those who practice any of these things.

Notice is hereby given that any employe so abusing himself is subject to dismissal.

The Western Electric Co. employs nearly a thousand men in the various departments and shops of the plant. The notice applies with equal rigor to all of them.

One phase of the matter which has attracted considerable attention is the part which the young college graduates, over 300 of whom are employed by the company, play in the matter. The college men, most of whom are fresh from their alma mater, are pronounced by the officials of the company to be all that could be desired in the matter of conduct and efficiency.

The college men employed in the plant are representatives of a number of well-known Western and Eastern institutions. The Universities of Chicago, Michigan, Wisconsin and Illinois, Cornell and Amherst have the largest representation, although graduates from half-a-dozen other schools are among the number.

In discussing the notice and its influence on the employes, Superintendent Mitchell said:

We found, much to our regret, that the habit of playing the races was developing to an alarming extent in the ranks of our employes, and decided to give everyone fair warning of our attitude in the matter—an attitude which, by the way, we have always held. After discharging some of the worst offenders we thought it best to reinforce the point by posting the notice, which includes not only gambling, but all other forms of dissipation.

The company's position in the matter is not Puritanical. It is evident, on the face of it, that a man's value is greatly lessened by these practices. It is a part of any good business policy. And, again, the desire is that the men who are employed by them and who represent them shall be gentlemen in every sense of the word, which is perfectly natural, is

it not? No man can indulge in the practices against which notice is directed and remain morally unspotted.

As for cigarette smoking to excess, it clouds a man's intellectual powers. Against cigarette smoking in moderation there is no complaint, although they allow no smoking whatever within the building during working hours.

THE BRITISH PREFERENCE.

An open letter has been published in some of the newspapers addressed to Sir Wilfrid Laurier, in which the Prime Minister is urged to come out with a declaration in favor of inter-Imperial tariff preferences. The best answer to this appeal is to be found in the reprint of the Colonial Conference of 1902, wherein the Canadian Government, in a clear and unmistakable manner, put themselves upon record in regard to this matter. From the memorandum, which was submitted by the Canadian delegates to the conference, the following excerpt is taken :

The Canadian Ministers stated that if they could be assured that the Imperial Government would accept the principle of preferential trade generally, and particularly grant to the food products of Canada in the United Kingdom exemption from duties now levied or hereafter imposed, they (the Canadian Ministers) would be prepared to go further into the subject, and endeavor to give to the British manufacturer some increased advantage over his foreign competitors in the markets in Canada. Meanwhile, the Canadian Ministers determined to present to the conference a resolution affirming the principle of preferential trade, and the desirability of its adoption by the colonies generally, and also expressing the opinion of the Prime Ministers of the colonies, that His Majesty's Government should reciprocate by granting preferential terms to the products of the colonies in the markets of the Mother Country. The Canadian Ministers desired to have it understood that they took this course with the strong hope and expectation that the principle of preferential trade would be more widely accepted by the colonies, and the Mother Country would at an early day apply the same principle by exempting the products of the colonies from customs duties. If, after using every effort to bring about such a readjustment of the fiscal policy of the empire, the Canadian Government should find that the principle of preferential trade is not acceptable to the colonies generally or the Mother Country, then Canada should be free to take such action as might be deemed necessary in the presence of such conditions.

The British Government and the British people are, as the foregoing shows, well informed as to the attitude of the Canadian Government, and they will shortly pronounce upon it.

EDITORIAL NOTES.

The Allan Line has ordered at Belfast a 12,000 ton turbine steamer, the first of this kind to be used on the Atlantic. The new steamer is intended for the mail service between Liverpool and Canada, and will have a speed of 17 knots.

The editor of the Montreal Commercial Gazette is disgruntled because a Mr. J. P. Murray had written him a personal letter of advice on what appeared to be society note paper, dragging the editor on the carpet because he had used the word "American" instead of "United States" or "Yankee." The editor says that in his enthusiastic Canadianism Mr. Murray tackled the wrong person—that the word had been used in a letter issued by the Department of Agriculture at Ottawa, and therefore Mr. Murray had better set to work to instruct the Minister and the whole staff of officials that he objects to that form of language. We beg the editor to keep cool, as the criticism is a form of jimmurrayism with which all

Toronto is familiar. It amuses the critic. King Edward frequently uses the word "American" meaning the United States, and perhaps Mr. Jimmurray will call him down if ever he hears of it. It would be just like him.

A notable feature of the present economic situation in the industrial world is, according to Commercial Intelligence, the migration of industries from one country to others in order to neutralize protective tariffs or antagonistic labor movements by starting factories within the zone covered by the hostile tariff. Thus many English firms have recently opened branch factories in the United States, and from Germany comes the news that several of the great German chemical industrials are negotiating with the Russian authorities to obtain permission to set up works in Russia itself. Of course this movement, on the part of the German manufacturers is the direct outcome of the new Russian tariff, and if the result is that Russia succeeds in attracting to herself any considerable number of industries, she will get considerable advantage.

The new patent law bill presented by the Hon. Sydney Fisher, minister of agriculture, which received its first reading May 28, 1903, became law on August 13 last. The new law makes the term of Canadian patents heretofore granted, or to be granted, entirely independent of corresponding foreign patents (Sections 2 and 16); it allows the placing of patents under the Compulsory License System in lieu of the actual manufacture of the patented article (Sections 7 and 10); and it permits the revival of certain patents which were not worked or manufactured as required by the old law. The condition of Canadian inventors is much improved by the new law, and it is expected that the number of patents applied for will greatly increase in the near future.

Mr. William Denton, of the firm of Swan, Hunter, Wigham & Richardson, a large shipbuilding concern at Newcastle-on-Tyne, while in Toronto a few days ago said that his company were about to build one of the largest boats in the world for the Cunard Company. It will have a displacement of 37,500 tons, and will be 785 feet long. The turbine engine, which, the Allans have adopted, is likely to be used in this immense Cunarder.

The New York World gave prominence the other day to an interview with a prominent capitalist. His outlook was unmistakably gloomy. He said :

We are now at the very beginning of industrial hard times. This country will sweat blood before many months, and before the year is over it is likely that hundreds of thousands of men who are now employed will be idle. We are manufacturing more than we can sell. Gigantic industrial corporations are beginning to realize that they cannot pay dividends on hundreds of millions of stocks that represent nothing but wind. Close down this furnace or that mill? How can they dare do it? It may depress the price of their securities in Wall Street. Pig iron was selling for \$17 last year. You can buy it for \$11 or less now. Wages must be lowered and mills must be shut down. It is only the fear of speculative consequences in Wall Street that prevents prompt action now. It is a crime to deceive the country any longer with false hopes of returning industrial prosperity. The only door of relief must be cut right through the tariff. By that door alone we can reach the markets necessary to support our overgrown industries. Before this time next year the country will have suffered enough to put it in a thinking condition. Dark days are at hand for the "standpatters," for the real situation can no longer be concealed.

Amongst the schemes on foot for the promotion of trade within the British Empire is a proposal for the organization of a floating exhibition of British manufactures which is to make a tour of the colonies and dependencies. The movement, it is said, has the support of prominent shipping and manufacturing firms, but it has not yet taken final shape. The plan is to fit out a large ship with samples of all classes of manufactured articles which Great Britain supplies, or can supply to her colonies, including even fairly heavy machinery. From fifty to one hundred firms are expected to exhibit, and a representative of each firm will accompany the ship, which, in the course of a voyage extending over some six months, will call at every port of importance in the British Colonies and dependencies, as well as in Japan, China and other specially selected places. It is the intention of the organizers to be in a position to sail in the early part of next year. The dates for tying up at the Yonge Street Dock, Toronto, and at Winnipeg, have not yet been announced.

A despatch from Chicago says that the great activity among Canadian and English shipbuilding industries, which are building vessels for the export grain trade on the great lakes, is causing much alarm among American vessel owners. Canadian capitalists are making swift strides toward controlling transportation of grain from the head of the lakes, and in time from Chicago and other important shipping ports. They have been quick to see the advantages of the Canadian routes to the seaboard as compared with the American routes, and no time is being lost in building boats to carry out the purpose. Large steel steamers are being turned out by the Canadian yards as rapidly as they can be built. The Bertram Shipbuilding Co. have orders for a number of Welland Canal size steamers, especially constructed to carry 100,000 bushels of grain through the locks, and these are to be put into commission just as fast as rush work will complete them. Back of these new steamship ventures are said to be some of the wealthiest Canadian marine interests. John Waldie, of the Victoria Lumber Co., Toronto; Crangle & Hagarty, Toronto, and Thomas Marks & Co., Port Arthur, are among those now deeply interested in the plan of diverting American export grain via Canadian routes to Europe. There evidently is ample ground for anxiety among American vesselmen, since they are helpless to remedy the combination of circumstances which has prompted the foreign interests to aggressively seek their commerce. The American rates for transportation to the seaboard are prohibitive as compared with figures the Canadians are prepared to offer. The latter are said to have the advantage because they are not compelled to submit to excessive demands of labor unions and can carry the grain at much lower figures.

The German press continues to urge all manner of objections to the adoption of a protectionist tariff by England. The Chamber of Commerce at Chemnitz, Germany, reports that the increase in import duties into Canada has hit the Saxon textile industry very hard, especially cotton woven gloves and stockings, which were largely exported from Saxony to Canada. The additional increase of 33½ per cent. will completely prevent the continuation of the Saxon export to Canada. The toy industry is also seriously affected, and the whole of this export trade to Canada will be lost if the increase of 33½ per cent. duty becomes permanent. The German Chamber of Commerce urges a friendly arrangement with Canada on the basis of mutual concessions. It points out

the serious consequences of a customs war with Canada, as it would endanger German commercial relations with England, and German industries could not stand the consequence of a customs war with Canada.

A Montreal correspondent, who is Canadian agent for several important British manufacturers of different forms of iron and steel, writing of the low rates of duty imposed upon some of these articles, some of them being in the free list, and remarking upon the effects of the surtax upon German goods, suggests that it would have been more consistent if the discrimination against German goods had been a duty equal to that imposed by the United States upon such articles. No surtax is imposed upon articles that are upon the free list; and the preferential tariff in favor of British goods, and the surtax upon German goods, allows the import of the latter at only double the duty paid on British goods but there is no difference in the matter of non-dutiable goods.

The entire business world is indebted to Secretary Shaw, of the United States Treasury Department, for the clear distinction drawn by him between speculation and legitimate enterprise in his recent speech at Newport News, Va. Nothing could be more admirable than this: "Go home," he said to the bankers, "and tell your merchants and your manufacturers and your railroad people that you are still doing business at the old stand and expect to remain. Stand by the business interests of the country and all will be well. The prosperity of the people is not measured by the price of stocks and bonds, but by the output of their farms and factories and the profitable employment of labor."

Arrangements have been made for holding a colonial products exhibition in St. George's Hall, Liverpool, during the second week of January.

The Chamber of Commerce of Chemnitz, Germany, declares that the increase in import duties into Canada has hit the Saxon textile industry very hard, especially in cotton woven gloves and stockings, which were largely exported from Saxony to Canada. The additional increase of 33½ per cent. it says, will completely prevent continuation of the Saxon export to Canada. The toy industry is also seriously affected, and the whole of this export trade to Canada will be lost if the increase of 33½ per cent. duty becomes permanent. The German Chamber of Commerce urges a friendly arrangement with Canada on a basis of mutual concessions. It points out the serious consequences of a Customs war with Canada, as it would endanger German commercial relations with England, and German industries could not stand the consequences of a Customs war with England. Of course the "friendly arrangement" which the German Chamber suggests is a lowering of the Canadian tariff to a point which will admit German goods on equal terms with British, a result of which would be to close Canadian mills. If Germany desires to trade with Canada it should admit Canadian products on equal terms with American products; and when that is done Canada will not enforce the surtax on German goods.

The Cornwall Mfg. Co's property at Cornwall, Ont., has been sold to the Canadian Colored Cotton Mills Co., and it is the intention of the purchasers to use it in connection with the cotton business. This will involve the sale of all the woolen machinery which the company has purchased.

CAPTAINS OF INDUSTRY.

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

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

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

The Geo. B. Meadows Wire, Iron & Brass Works, Toronto, have been awarded the contract for the fittings for the new bank building of the British North America Bank, Toronto.

J. C. Wilson & Co., Glenora, Ont., report a continuance of the activity that has prevailed in their business all along during this season. The demand for Little Giant turbines still keeps up, and from the inquiries coming in, it is to be inferred there will be no falling off in shipments towards the end of the year as is usually the case. Late shipments include a 12-inch wheel to Thos. Hammond, Hill Head, Que., a 16-inch to A. Le Blanc, Grand Pabos, Que., a 38-inch to Corey & Campbell, Bedford, Que., a 24-inch to the Goldie & McCullough Co., Galt, Ont., a 28-inch to the Spring & Axle Co., Gananoque, Ont., a 28-inch to W. Kuechtel & Son, Hanover, Ont., a 24-inch to Wm. Seigler, Singhampton, Ont., a 24-inch to A. Billodeau, St. Patrice de Beaurivage, Que.

The Engineering Co. of America, 74 Broadway St., New York, who are in charge of the work of installing the Copper Cliff smelter of the Canadian Copper Co. at Copper Cliff, Ont., are making rapid progress. The work is in charge of C. R. Guertler and his assistants are Edward Forrey and C. W. Weller.

J. C. Wilson & Co., Glenora, Ont., have under construction for the Westport, Ont., Milling Co., a 33-inch Little Giant turbine. They recently shipped to the same company the necessary iron flumes for supplying water to this wheel and their present 24-inch Little Giant.

The Martin Electric Supply Co., St. Catharines, Ont., have just completed a very fine electric sign for the James D. Tait Co. of that city.

Wm. Corey, Upper Bedford, Que., who recently installed a Little Giant water wheel in his knitting needle factory, has just procured from the same makers, J. C. Wilson & Co., Glenora, Ont., a Walsh improved double acting water wheel governor.

Four of the largest factories of St. Catharines, Ont., held their annual lacrosse tournament a few days ago in aid of the Orphan's Home. There was a parade, headed by the 19th Regiment

Band, through the principal streets, over 1,000 men being in the line. Immense crowds of people filled every available space at the lacrosse grounds to witness the different games. The R. H. Smith Co. defeated the Welland Vale Mfg. Co. 2 to 1. In the second contest the McKinnon-Dash & Metal Works Co. defeated Whitman & Barnes Mfg. Co. 6 to 0. The two winning teams then played off and at full time the score was a tie—2 to 2. They played eight minutes each way, the Smith Co. winning 3 to 2, and carried away the silk banners.

Messrs. J. P. Tett & Bro., Bedford Mills, Ont., have placed an order with Messrs. J. C. Wilson & Co., Glenora, Ont., for a 33-inch Little Giant water wheel, together with all the shafting, gearing, bearings, etc., necessary to complete the improvements they are making in their plant.

Messrs. Read & Kilmer, Hamilton, Ont., recently appointed Canadian agents for the Fuller Wenstrom Electrical Mfg. Co., London, England, have received an order from the Hamilton Iron & Steel Co. for an 850 h.p. induction motor and a number of smaller motors for installation in the rolling mills at Hamilton. The large motor will be wound for three speeds, 200, 250 and 275 revolutions. This will be one of the first rolling mills in the country to be equipped with electric power. Messrs. Read & Kilmer also carry a full line of other electrical machinery and supplies.

The Brant Milling Co., Brantford, Ont., have ordered a 10-inch Little Giant turbine from J. C. Wilson & Co., Glenora, Ont., for their flour mill at St. George, Ont., making the sixth Little Giant installed by this firm.

The Canada Corundum Co., Toronto, purchased two 150 h.p. return-tubular boilers from the Toronto Street Railway Co., and will install them at their new plant at Craigmont, Ont.

The Canadian Furniture Manufacturers, Ltd., Toronto, have secured an order to supply the entire office furniture for the new offices which the Canadian Corundum Co., of Toronto are opening in Paris, France.

Numerous orders for Little Giant turbines to go abroad are being received. The makers, J. C. Wilson & Co., Glenora,

Ont., report the demand for export far in advance of any previous season. Recent shipments include one 16-inch and six 12-inch wheels to London, England, and they have also under construction a double 44-inch wheel for Liverpool, England.

Messrs. Cadenas & Coe, New York City, exporters, have recently purchased from J. C. Wilson & Co., Glenora, Ont., for a client abroad, the complete outfit for the equipment of a power their customer is developing. The outfit consisting of an 8-inch Little Giant water wheel, the necessary iron flume, shafting, gearing, couplings, flat and upright bearings, etc.

The Martin Electric Supply Co., St. Catharines, Ont., are making a number of improvements to their offices and sales rooms which will give them considerable more floor space.

The Paper Goods Co., Toronto, have opened a factory on Front St. West and will manufacture a line of goods indicated by its name.

Not many years ago asbestos was scarcely known except in the cabinets of mineralogists. To-day it is constantly required for engineering and electrical purposes, in jointing, packing and insulation, for engines and locomotives, for perfect filtration, and is largely used in making numerous articles because of its fire protection qualities. With the new uses to which asbestos is being put comes a constant increase in the demand for the mineral, and in order to meet this demand new sources of supply must be found and developed from time to time. Ledges of rock carrying great quantities of asbestos fiber have been found in Ontario, and the American Asbestos & Fireproofing Mfg. Co., Lewiston, N.Y., owns about 760 acres of the lands containing the mineral. This company has been incorporated, with a capital of \$500,000, and will install a complete modern plant to excavate the rock and transport it to Lewiston, where a mill will be built to reduce and separate the fiber and put it in condition for market. The company's officers include Herbert P. Bissell, president, and Charles Swoger, manager, with office at 702 Ellicott Square, Buffalo, N.Y.

The Blue Print & Copying Co., 100 King Street West, Toronto, announce the opening of their establishment which includes a complete electric blue-printing apparatus and a thoroughly equipped copying office. They inform us that in their blue-printing department they are independent of weather conditions, and are prepared to make prints by night or by day. Their facilities in all departments, they say, are the best, and they guarantee clean, accurate and prompt work. Mr. E. Howson is manager.

The McLennan Paint Co., Buffalo, N.Y., have decided to open up a Canadian branch and if suitable inducements are offered, it would like to come to Hamilton, Ont., so as to be close to the International Harvester Works. It is the intention to spend \$1,000,000 on the Canadian branch and to employ 100 skilled men.

Mr. John Dick, of the John Dick Co., Toronto, has purchased what is known as the Davies brewery property, near the Don River and Queen Street, this city, and the buildings upon it are to be remodelled and equipped as a textile mill for the manufacture of jute and other bags, etc. Since the above was written it has been reported that Mr. Dick has resold the above property to the Davies' Brewery Co.

Mr. R. J. Fleming, Toronto City Commissioner, has recommended the erection of a new fire hall in Berkeley Street at a cost of about \$25,000.

Concerning the reports in the newspapers that the Canada Atlantic Railway Co. is to put two passenger steamers in the lake trade, Mr. E. J. Chamberlain, the superintendent says that the announcement is unauthorized and that the company does not contemplate doing anything of the kind, at least for another year.

Messrs. Abbey Bros., Owen Sound, Ont., have under consideration contracts for building five small tugs. Should they secure all five the winter months will be lively for the local shipbuilders. It is not improbable that the firm will have all the work they can attend to after navigation closes.

At Kingston, Ont., a few days ago the steamer Westmount with 70,000 bushels of wheat, barge Melrose with 50,000 bushels, and barge Selkirk with 50,000 bushels, or 170,000 bushels in all, were discharged of their cargoes by the Montreal Transportation Co's elevator in exactly 8½ hours. From the beginning of the discharging until the last pound of grain had been discharged occupied just 10½ hours, but two hours of this was used up in shifting, etc.

The tugs Harrison, Maitland and Magnolia arrived in Owen Sound, Ont., a few days ago from Byng Inlet with a raft of logs valued at \$40,000, for the John Harrison & Sons Co. It consists of the company's cut on their limits up the Magnetawan river, and includes pine, hemlock and cedar. The raft consists of approximately 3,500,000 feet and is the largest ever brought into Owen Sound harbor.

The St. George Wagon Co., St. George, Ont., have been incorporated with a capital of \$40,000, to manufacture wagons, carriages, sleighs, etc. The provisional directors include D. Burt, John Kay, Jr. and F. K. Bell, St. George.

The Toronto Automobile Mfg. Co., Toronto, have been incorporated with a capital of \$50,000, to manufacture automobiles, bicycles, motors, engines, etc. The provisional directors include Chas. Trow, J. W. Siddall and J. R. Snow, Toronto.

The Miller Carriage Co., Hensall, Ont., have been incorporated with a capital of \$50,000, to manufacture carriages, vehicles, etc. The provisional directors include G. M. McEwen, Geo. Joynt, Hensall, and R. McMordie, Hay, Ont.

The Star of the East Gold Mining & Milling Co., Peterborough, Ont., have

been incorporated with a capital of \$1,500,000, to carry on a mining, milling and reduction business. The provisional directors include Jas. Cowain, Cloyne, Ont., S. Sager, Cobourg, Ont., and A. O. Kidd, Peterborough.

The Antiseptikos Chemical Co., Toronto, have been incorporated with a capital of \$40,000, to manufacture drugs and medicines. The provisional directors include J. K. Patton, Vancouver, B.C., A. McFadgen, and W. Miller, Stratford, Ont.

The Zions Cheese Mfg. Co., Thurlow, B.C., have increased their capital from \$2,800 to \$4,800.

The Peter Hay Knife Co., Galt, Ont., have been incorporated with a capital of \$100,000, to manufacture machine knives, etc., and to acquire the business of Peter Hay. The provisional directors include Peter Hay, R. Macgregor and Thos. Vair, Galt.

The McLennan Paint & Color Co., Hamilton, Ont., have been incorporated with a capital of \$100,000, to manufacture paints, oils, varnishes, etc. The provisional directors include P. J. McLennan, W. H. Kestin, Buffalo, N.Y., and C. A. Birge, Hamilton.

The Eagle Lake Gold Mining Co. have been licensed to do business in Ontario with a capital of \$50,000, J. B. O'Brian, Toronto, to be their attorney.

The Dominion Linseed Oil Co., Toronto, have been incorporated with a capital of \$500,000, to manufacture linseed oil, oil cake, etc. The provisional directors include Jas. Livingston, Baden, Ont., J. McGowan, Sr., Elora, Ont., and S. J. Parker, Owen Sound, Ont.

The King Edward Oil Co., London, Ont., have been incorporated with a capital of \$100,000, to carry on a mining, milling and reduction business, etc. The provisional directors include J. R. McDowall, Jas. Hutcheon, Guelph, Ont., and D. S. Robb, London.

Messrs. S. Price & Sons, Toronto, have been incorporated with a capital of \$50,000, to manufacture foods, etc. The provisional directors include S. Price, A. Price and Y. Price, Toronto.

The Collingwood Furniture Co. of Ontario, Collingwood, Ont., have been incorporated with a capital of \$90,000, to manufacture iron beds, caskets, etc. The provisional directors include H. Trott, W. A. Hogg and Wm. Carmichael, Collingwood.

The International Harvester Co. of Canada, Hamilton, Ont., have been incorporated with a capital of \$1,000,000, to manufacture agricultural machinery, harvest tools, etc., and to acquire the business of the Deering Harvester Co., and the J. W. Maun Mfg. Co., of Hamilton. The provisional directors include H. Carscallen, J. H. Tilden and R. L. Hoskins, Hamilton.

The D. F. Jones Co., Gananoque, Ont., shovel manufacturers, have about completed an addition to their works and the installation of new machinery. These additions consist of enlargement of their rolling mills and an increase of 3,000

square feet floor room to their finishing shops. They have also put in a steam plant in both their shops.

The Eclipse Office Furniture Co's factory at Ottawa, Ont., was destroyed by fire October 2. Loss about \$60,000. The company will rebuild at once.

The receipts of the Toronto Railway Co. for the month of September showed an increase of 21 per cent. over those of last year. The figures for the two months are as follows:—September, 1903, \$237,009.91; September, 1902, \$195,610.37; increase, \$41,399.54.

James Randle's woolen mill at Meaford, Ont., was partially destroyed by fire October 7. Loss about \$10,000.

The Sutherland Wire Fence Co., of Minneapolis, Minn., will build an extensive Canadian branch factory at Windsor, Ont.

Large numbers of men are now going into the woods at Fort Francis, Ont., for the winter's cut of logs, which will exceed anything ever attempted before. It is estimated that over a million ties, one hundred million feet of logs, one hundred thousand posts, two hundred thousand piles, and fifty thousand telegraph poles will be cut and ready for shipment when the season opens next spring. This will mean to this district about one million dollars for a winter's work in the woods.

The town council of Dundas, Ont., have passed a by-law granting a loan of \$10,000 to the Empire Carpet Co.

The Canadian Cordage Co., Peterboro, Ont., after only fifteen months' operation, find that their business has outgrown the capacity of their extensive buildings and plant, and tenders are invited for large additional buildings.

Woodside Bros. foundry, known as the Port Arthur Iron Works, at Port Arthur, Ont., were destroyed by fire recently. Loss about \$40,000.

The Ontario Government will give \$10,000 towards the erection of a new building for boys in Toronto, in connection with the Industrial School.

The improvements now being made in the power house of the Toronto Street Railway Co., will cost about \$750,000.

Messrs. Sutherland, Innes & Co., Chatham, Ont., are considering the removal of one of their stove factories to Thamesford, Ont.

The Peat Board Co., Toronto, have been incorporated with a capital of \$250,000, to manufacture cardboard, paper, etc. The provisional directors include W. G. A. Lambe, G. Fensom and Thos. Symington, Toronto.

The Keenan Bros. Co., Owen Sound, Ont., have been incorporated with a capital of \$50,000, to carry on a general lumber business and to acquire the business of Keenan Bros. The provisional directors include J. E. Keenan, J. C. Keenan and R. T. Keenan, Owen Sound.

The Phillips & Wrinch Co., Toronto, have been incorporated with a capital of \$40,000, to manufacture smallwares, etc. The provisional directors include J. E. B. DeWynter, H. Wood and John Ellis, Toronto.

The growth of Toronto this year industrially, as evidenced by the amount expended in the building of new factories and the enlargement and improvement of existing ones, is no less marked than the general growth of the city as indicated by the aggregate building operations. During the nine months of this year to October 1 the amount so expended was \$291,050. The following table shows the amount so expended each year during the past decade:

1893	\$111,210
1894	69,900
1895	121,925
1896	69,400
1897	80,770
1898	360,165
1899	416,650
1900	209,920
1901	270,780
1902	236,390
1903	291,050

More than a third of the large expenditure in 1899 was due to the erection of Lever Bros.' soap factory, the cost of which was stated in the permit to be \$140,000. This year to date the largest single expenditure was \$60,000, and the total number of permits was 45. Last year the number of building permits issued relating to factories was 60; in 1901, 37; in 1900, 32; in 1899, 50; in 1898, 58; in 1897, 19; in 1896, 17; in 1895, 28; in 1894, 16, and in 1893, 30.

The Mack Mineral Springs Co., St. Catharines, Ont., have been incorporated with a capital of \$100,000, to manufacture carbonated, mineral, and distilled beverages, etc. The provisional directors include R. B. Hamilton, J. T. Groves and A. H. Malcolmson, St. Catharines.

The Toronto Peat Fuel Co., Toronto, have been incorporated with a capital of \$40,000, to manufacture peat, peat fuel and peat manufacturing machinery. The provisional directors include A. A. Dickson, Jas. Brebner and W. S. Jackson, Toronto.

The Parisian Laundry Co., Toronto, have been incorporated with a capital of \$100,000, to acquire the business of the Parisian Steam Laundry Co. The provisional directors include J. Stevenson, Glasgow, Scotland, H. K. Lorimer, Philadelphia, Pa., and D. Morton, Toronto.

The Lumbermen's Supply Co., Toronto, have been incorporated with a capital of \$50,000, to manufacture lumbermen's supplies, etc. The provisional directors include C. A. Johnson, J. S. King and P. J. Loughrin, Toronto.

The Saginaw Lumber & Salt Co., Saginaw, Mich., have been licensed to do business in Ontario with a capital of \$100,000, to manufacture salt, barrels, etc.

The Griffin Curled Hair Co., Toronto, have been incorporated with a capital of \$50,000, to manufacture curled hair and to acquire the business of the Griffin Curled Hair Co. The provisional directors include P. J. Griffin, T. C. Tracy and J. B. Harris, Toronto.

The Renfrew Mfg. Co., Renfrew, Ont., have been incorporated with a capital of \$40,000, to manufacture lumber, etc.

The provisional directors include S. Moffatt, T. Logan and M. J. O'Brien, Renfrew, Ont.

Messrs. A. E. Rea & Co., Toronto, have been incorporated with a capital of \$50,000, to manufacture fancy goods, etc. and to acquire the business of A. E. Rea & Co. The provisional directors include A. E. Rea, J. B. Rea and W. C. Cliffe, Toronto.

The Canada Corundum Co., Toronto, have purchased from the Canadian Rand Drill Co., Sherbrooke, Que., an air compressor with a capacity of 1,700 cubic feet per minute for installation at their new corundum plant at Craigmont, Ont.

The Canada Foundry Co. have purchased an air compressor with a capacity of 2,000 cubic feet per minute from the Canadian Rand Drill Co., Sherbrooke, Que.

The Jenckes Machine Co., Sherbrooke, Que., have supplied the crushers and rolls for the new plant of the Canadian Corundum Co. at Craigmont, Ont.

The directors of the Intercolonial Coal Co. have decided to erect at Windmill Point, Montreal, coal accommodation with a capacity to handle 200 tons an hour, at a cost of \$75,000. The general manager, Mr. Charles Fergie, says that the demand for Nova Scotia coal had been so great during the present year that all the coal companies have increased their output to a large extent. At the Intercolonial mines at Westville, N.S., the output this year will be over 40,000 tons greater than last year, while at the Acadian mines, adjoining the Intercolonial, the output will be at least 60,000 tons greater.

Several hundred feet of snow-sheds along the line of the Intercolonial Railway at Harlaka, Que., were destroyed by fire October 7.

F. R. Masse's saw and grist mill at St. Agathe, Que., was destroyed by fire October 7. Loss about \$30,000.

Mr. H. L. Frank, owner of the mine at Frank, Alberta, which was largely injured by the land-slide last spring, who is in Montreal, states that there is no truth in the report of a recurrence of the previous disaster. There has been no slide at Frank, since the one which took place in the spring. Six hundred tons of coal per day are being mined and in a few weeks, by the opening up of two new shafts, the quantity will be increased to 2,000 tons. The old tunnel, covered by the slide in the spring, has been opened up.

The Corona Rubber Co., Montreal, have been incorporated with a capital of \$100,000, to manufacture India rubber and gutta percha goods. The provisional directors include A. V. Roy, J. J. McGill and G. Gravel, Montreal.

The Philipsburg Milling Co., Philipsburg, Que., have been incorporated with a capital of \$20,000, to erect and operate a grist and cider mill and to manufacture foods, etc. The provisional directors include F. C. Ireland, F. B. Wells and A. Somerville, Philipsburg.

The Nova Scotia Steel & Coal Co. are now in possession of an abundance of

water supply at Sydney Mines. The pipe line, tapping the North Sydney water system, extending to Sydney No. 1 colliery was tested in the presence of the company's officials and Contractor Sutherland who expressed themselves satisfied with the results obtained. A stream of water was easily carried over the highest part of their colliery bank head, nearly one hundred feet above the level. The pressure upon the square inch was estimated at 75 pounds. The main line is four and one-half miles, not including the branch to the blast furnace and machine shops, where it is intended to set up a complete system of hydrants and connections for fire purposes.—Industrial Advocate.

Mr. Amos Purdy, Westchester, N.S., we are informed, recently discovered at Williamsdale, Cumberland County, N.S., in the channel of a brook, a lead of gold quartz. Dr. A. E. Porter, Mr. A. S. Knight and Mr. Purdy have leased the property. It is reported that the quartz assayed \$8 per ton. In the same neighborhood a coal seam has been found, which promises to be rich. Mayor Wilson, of Springhill, and Mr. Albert Gayton, of Jackson, have leased the grounds with a view of developing the property.

The New Brunswick provincial government have decided to grant a lease of the Grand Falls water power for thirty years to the Electro Manganese Co., an American concern in which local men are interested. The company is one of very large capital and will endeavor to reduce bog ores and produce ferromanganese. They already have a plant in operation at Shawinigan Falls, Que. The company will deposit \$50,000 with the government as a forfeit in case of failure to operate, and the rental is to be \$500 a year for ten years, \$1,000 a year for the next ten, and \$1,500 for the next ten. This arrangement is made possible by the expiration of the lease held for eight years by the Senator Proctor-Sir William Van Horne syndicate. The company's capital is \$1,500,000.

A company of New York people has been formed to operate plaster quarries at St. Ann's, N.B. A railway five miles long will be constructed from the plaster deposits to tide-water at North River; a large pier containing pockets is to be built; steamers will be chartered to convey the product to New York, where the company expect to dispose of all they can ship. Early next summer it is claimed that 200 tons per day will be shipped.

The Hampstead Steamship Co., Oak Point, N.B., have been incorporated with a capital of \$24,000, to build steam and tug boats, etc. The provisional directors include F. S. Mabee, R. K. Jones, St. John, N.B., and H. E. Palmer, Oak Point, N.E.

The Maritime Engineering Co., Moncton, N.B., have been incorporated with a capital of \$80,000, to manufacture brass and iron castings, machinery, etc. The provisional directors include J. P. Weir, P. S. Archibald and G. Baxter, Moncton.

The Sackville Hay & Feed Co., Sackville, N.B., have been incorporated with a capital of \$10,000, to manufacture acetylene gas machines and appliances, etc. The provisional directors include W. C. Milner, Halifax, N.S., F. A. Dixon and S. E. Dixon, Sackville, N.B.

Messrs. Smith Bros., Central Blissville, N.B., have been incorporated with a capital of \$24,000, to carry on a general lumber and milling business. The provisional directors include Geo. McKean, St. John, N.B., L. B. Smith and P. J. Smith, Central Blissville.

The McGregor-Gourlay Co., Galt, Ont., have purchased the extensive business of the Stuart Machinery Co., of Winnipeg, Man.

The Lassalle, Carey Co., St. Pierre, Man., have been incorporated with a capital of \$30,000, to manufacture grain machinery, agricultural implements, etc. The provisional directors include A. Lassalle, P. Chenard, and Geo. Sicotte, St. Pierre.

The Manitoba Lumber Co., Carman, Man., have been incorporated with a capital of \$100,000, to manufacture furniture, lumber, doors, sashes, etc. The provision directors include J. E. Campbell, H. Aylwin and R. McKinney, Carman.

The Brandon Machine Works will build a new foundry, 75x50 feet, at Brandon, Man.

A by-law will be submitted to the ratepayers of Winnipeg, Man., to raise \$200,000 for a civic gas plant.

At a recent meeting of the Winnipeg City Council, the fire, water and light committee recommended that the offer of the Canadian General Electric Co., Toronto, for supply of electrical apparatus at \$16,895 be accepted, on condition that the city is absolutely released from existing contract for direct current apparatus. The sum of \$12,295 to be charged to water works account, the balance, \$4,600, to be charged a rental for that portion of the apparatus used for that purpose. That the offer of the Eugene F. Phillips Electrical Works for the supply of twelve miles of triple braided water-proof wire at 16½ cents per pound f.o.b. Montreal, be accepted.

Custom returns for Winnipeg, Man., for the month of September show that the

amount collected at that port was greater by \$16,515.08 than for the corresponding month a year ago. The returns are as follows: September, 1902, \$200,379.97; September, 1903, \$216,895.05. The inland revenue receipts for the division of Winnipeg for the month of September showed an increase of \$21,087.87 over September, 1902, or slightly more than 33½ per cent. The figures are as follows: Spirits, \$45,971.79; malt, \$3,111.09; tobacco (mfd.), \$27,309.50; snuff, \$86.30; raw leaf tobacco, \$1,858.65; cigars, \$3,670.80; licenses, \$95; bonded manufactures, \$109.68, methylated spirits, \$86.58; guarantee fund, 96c.; officer's salary in bonded factory, \$10.05. Total September, 1903, \$81,870.65. Total September, 1902, \$60,782.78. Increase for 1903, \$21,087.87.

The proprietors of the Winnipeg Hotel, Winnipeg, Man., will greatly enlarge their building.

The building inspector of Winnipeg, Man., has issued permits for new buildings to be erected in that city to the number of 1,127, as against 888 at the same date last year. These permits represent an investment of \$5,285,700.

Messrs. H. Telke and M. Finklestine, Winnipeg, Man., are interested in the establishment of a fur dressing, tanning and manufacturing business in that city. They have purchased a site and buildings will be erected at once.

The Canadian Otis Elevator Co., Hamilton, Ont., will establish a repair shop in Winnipeg, Man.

The North-West Casket Co., Winnipeg, Man., recently incorporated with a capital of \$100,000, will erect a large factory in that city.

The Morden Pump & Novelty Co., Morden, Man., have been organized to manufacture iron pumps, clothes reels, etc. The promoters of the company are A. E. Little, C. R. Dunsford and A. M. Stewart.

A. H. Snelgrove will rebuild his flour mill at Carman, Man., which will have a capacity of 100 barrels.

The Canadian Pacific Railway station at Gladstone, Man., was destroyed by fire October 5.

S. V. Halstead, manager of Summit Lake Mining Co., was in Winnipeg, Man., recently and reports the little

Master Mine, which this company is now working as developed beyond the experimental stage. This mine, which is about 28 miles from Wabigoon, Ont., is being opened up to a depth of 300 to 500 feet before the installing of a stamp mill. A compressor plant and saw mill are to be built immediately.

Messrs. A. L. MacIntyre, Morden, Man., and J. A. MacIntyre, Winnipeg, Man., will establish a marble works in Winnipeg.

The Acetylene Construction Co. have about completed the work of laying their pipes to Moosomin, N.W.T., and will be ready for operation shortly.

The Grenfell Milling Co., Grenfell, N.W.T., are erecting a large two storey building in that town which, when completed, will be utilized as hardware and harness stores respectively, and in addition, will contain the offices of the company.

The town of Lethbridge, N.W.T., have let a contract for the construction of a system of waterworks and sewerage. Lamoine & Fortin, Pembroke, Ont., were awarded the contract for the excavation at \$39,725. The Canada Foundry Co., Toronto, will supply the iron piping and the Illinois Mfg. Co. the sewer pipe. Work will begin at once and will be completed within a year.

Tenders are invited for the installation of a hot water heating system in the court house at Yorkton, N.W.T.

The Union Bank of Canada are inviting tenders for the erection of a new banking building at Lethbridge, N.W.T.

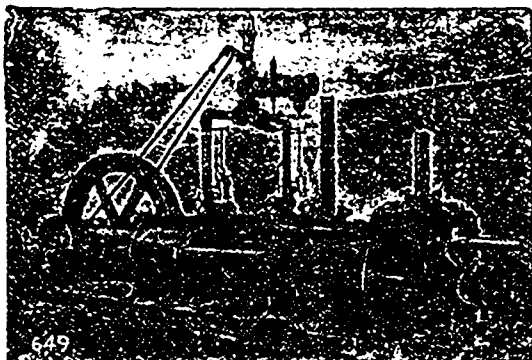
The North American Soap Co., have been incorporated at Victoria, B.C., with a capital of \$250,000, to manufacture soap, chemical compounds, etc.

The Walworth-Rolston Co., Vancouver, B.C., have been incorporated with a capital of \$30,000, to acquire the business of J. L. Walworth & Co., and to manufacture carriages, agricultural implements, etc.

The Hastings' Shingle Mfg. Co's No. 1 mill at Vancouver, B.C., was destroyed by fire October 4. Loss about \$75,000.

Messrs. Bell & Co. are erecting a cedar sawmill at False Creek, Vancouver, B.C.

The rebuilt plant of the Sligo Iron & Steel Co., which was dismantled in Pittsburgh in order to make room for the Wa-



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bash railroad and moved to Connellsville, Pa., has just turned out its first iron. Fifty men are now employed and when the plant is completed 500 men will be given work.

It is announced that a company in which H. M. Whitney, Boston, Mass., a director of the Dominion Iron & Steel Co. and the Dominion Coal Co., is the prime mover, has been formed to establish a dry dock at Sydney, N.S. Advantage is to be taken of the recent legislation of the Dominion Parliament, guaranteeing 3 per cent. on a dock costing \$1,000,000 or upwards. The cost of the proposed Sydney dock is \$1,250,000. Work is to be resumed at once at the Dominion Iron & Steel Co's quarters at Georges river, which were closed down some time ago, throwing 300 men out of employment. About 200 men will be employed. The Dominion Iron & Steel Co. is rushing work on their steel rail mill.

The Adonis Co., Wolfville, N.S., have been incorporated with a capital of \$18,240, to build vessels, etc. The provisional directors include C. R. Burgess, R. E. Burgess, Wolfville, and N. V. Muoro, Bridgetown, N.S.

Messrs. Patten & Co's shoe factory and E. A. Doty's carriage works at Hebron, N.S., were destroyed by fire October 10.

Messrs. William Jacks & Co., London, England, under date October 1, 1903, write as follows:

Since writing you last, prices of warrants have slumped chiefly owing to the weakness in the American position, and dear money. To-day's prices are as follows:

No. 1 Gartscherrie.. 62/6 p. t., f.o.b. Glasgow, including dues.

No. 3 " .. 55/6 p. t., f.o.b. Glasgow, including dues.

M/Nos. West Coast

Hematite.....61/6 p. t., f. o. b. Liverpool.

No. 3 G.M.B., Mid-

dlesbro.....44/- p.t., f.o.b. makers wharf, including dues.

HAMILTON, ONT.

Cities and industrial centres find it as much to their advantage as do manufacturers and commercial enterprises, to advertise their opportunities and inducements, and Hamilton is, and has been for years, doing that sort of advertising, an example that is observed by some other cities, and should be followed by many others. The natural advantages possessed by the city are no greater than those of many other Canadian cities; and the acquired advantages are of a character that might be acquired by other places; and what Hamilton is to-day may be fairly attributed to the foresight of its business men and municipal officers in the adoption of a system of judicious advertising, and in the employment of capable men whose business it is to elevate the horn of Hamilton and blow it with constant and unrelaxing vigor.

One of the greatest inducements, perhaps, the greatest, to manufacturers to establish works in Hamilton is the abundance and cheapness of electrical energy

to be obtained there, supplied by the Hamilton Cataract Power, Light & Traction Co., the development of which is an interesting bit of Hamilton history that dates back only six years. In 1897 the Cataract Power Co. began the construction in a very modest way of a canal near Decew Falls intended to convey water from the Lake Erie level of the Welland Canal to the brow of the Niagara escarpment overlooking the Twelve-mile Creek. The possibilities of this stream and the Beaver Dam Creek had been examined by one of the promoters the year before and were approved of by the original promoters of the company after a personal inspection. The completion of the company followed, but it was some time before the original intentions of the company was consummated. Mr. John Patterson, the man who conceived the idea of bringing the power to the city from Decew Falls, was at first regarded as a visionary by citizens generally, but Mr. Patterson is a man of exceptional confidence and tenacity, and he was not easily to be discouraged in his purpose. But success was at last achieved and a syndicate known as the five "Johns" purchased the Hamilton Light & Power Co., the Electric Power & Mfg. Co., the Hamilton Street Railway Co., the Hamilton Radial Electric Railway Co., the Hamilton & Dundas Street Railway Co., and these, together with the Cataract Power Co., were amalgamated under the name of the Hamilton Electric Light & Cataract Power Co. The five "Johns" were Hon. John Morrison Gibson, John Dickenson, M.P.P., John Moodie, John A. Kammerer, Toronto, and John Patterson. Later this company acquired the Ontario Electric Light Co. and the Dundas Electric Co., and is supplying light and power to the surrounding towns and villages. The name has been recently changed to the Hamilton Cataract Power, Light & Traction Co. The company is supplying current for power purposes in and around the city to the extent of 25,000 to 30,000 h.p.

The largest and most important concern that has recently located in Hamilton is the International Harvester Co. The Hamilton plant comprises 125 acres of ground, water facilities and docks, and the entire product will be built from raw materials, as the equipment comprises ore mines, blast furnaces, rolling mills, and the company has also acquired 100,000 acres of timbered lands, with two sawmills in full operation. The Hamilton works will employ about 5,000 people when in full blast, and to accommodate these, large numbers of dwelling houses are being erected in the eastern section of the city. The shipping facilities are all that could be desired, and the company can handle all its shipments, either by rail or water, and the finished machines can be shipped from the docks to all parts of the world.

The works are operated by electricity, the Hamilton Cataract Power, Light & Traction Co. furnishing 10,000 h.p. Already plans are being prepared for further addition to the plant, and to provide for this the Cataract Power Co. will arrange to deliver if necessary 20,000 h.p. more.

Next in importance to the International Harvester Co. Works, established in Hamilton by American capitalists, will be, when completed, the plant of the Canadian Westinghouse Co. It was in 1896 that the Westinghouse Air Brake Co., of Pittsburg, Pa., gave to the Westinghouse Mfg. Co., the control in the Dominion of Canada of the privileges connected with the manufacture and sale of the Westinghouse air brakes. The establishment of an air brake factory in Canada was particularly momentous to Canadian railways at that time, as strong efforts were being made to equip the rolling stock in keeping with the Railways Safety Appliance Act. Since the inception of the company's works more than 60,000 freight cars have been equipped, and the company's annual capacity of 10,000 freight equipments, exclusive of passenger cars and engines, is taxed to its utmost. About 150 men are constantly employed.

In June of this year Mr. P. J. Myler, the local manager of the company, gave out the information that at a conference of the officials of the Westinghouse Mfg. Co. it had been decided to form a new company, to be known as the Canadian Westinghouse Co. The new company would absorb the present air brake factory, and would in addition establish a plant along the lines of the one in Pittsburg, for the manufacture of all kinds of electrical devices and machinery. The establishment of the new factory would cost at least \$1,000,000, and would give employment, when completed, to 1,000 persons.

This plant, like the International Harvester Co., will be run by electricity. In this connection it might be said that in Hamilton, no longer ago than three years, only one or two factories had a motor in use, but to-day the factory not using electric motors is an exception. Their use has become so general that the city is noted all over Canada for this one fact.

Other concerns that have been established in Hamilton since the completion of the Cataract Power Co. are:

The Canadian Otis Elevator Co., which was established one year ago. A handsome brick factory was built and is now giving steady employment to 125 men. The amount of capital invested is \$400,000. Elevators and hoisting machinery of all kinds are manufactured. In Toronto its elevators are installed in such buildings as the City Hall, Board of Trade, Parliament Buildings, and the large departmental stores.

The Imperial Cotton Co. has been established two years, and is a fitting companion to the old-established Canadian Colored Cotton Mills and the Hamilton Cotton Co. The cotton industry in Hamilton gives employment to over 2,000 hands.

The Imperial Cotton Co. has erected a large up-to-date brick factory within a stone's throw of the International Harvester Co. It gives employment to about 300 hands, and the amount of capital invested is \$750,000.

The Dominion Belting Co. is an adjunct of this factory, but the work is carried

on in a separate building. About 25 hands are employed, and some \$50,000 is invested in the business.

The Canadian Steel & Wire Co., established about eighteen months, manufacture wire fencing of American types. The capital invested is \$100,000, and 40 hands are employed.

A Canadian branch of the celebrated Force Food Co. was established in Hamilton a few months ago, which employs about 100 hands.

About a year ago the Swift Co., of Chicago, acquired control of the Fowler's Canadian Co., formerly the Lawry & Son firm, pork packers, and at an early date intend to enlarge the premises very considerably. At present 150 hands are employed there.

That the Pittsburg Steel Co. mean business in connection with the establishment of a branch of their business on a large scale in Hamilton is shown by the fact that President Howo, of Pittsburg, has given instructions to secure a suitable land site for the permanent Hamilton works. He states that about 20 acres of land will be needed. It is expected that within a year the company will be ready to vacate its temporary quarters for the permanent ones.

A branch of the Chipman Hosiery Co., of Easton, Pa., has been opened this year, under the name of the Chipman-Holton Knitting Co., and gives employment to about 100 hands. There are no less than four knitting factories in Hamilton, employing about 500 people.

Among the older American concerns established are the Norton Mfg. Co., which manufactures tin cans of all kinds. Employment is given to 150 hands, and the amount of capital invested is \$100,000.

The Meriden Britannia Co. has been established for some years, and employs 125 hands, and has \$250,000 invested in the business.

The Canada Screw Co., employing 225 hands and having \$200,000 invested, was originally a branch of the American Screw Co.

THE CANADIAN WESTINGHOUSE CO.

Following are the particulars regarding the organization of the Canadian Westinghouse Co., Limited, of Hamilton, Ont., furnished to THE CANADIAN MANUFACTURER by Mr. Paul J. Myler, general manager and treasurer:

At a meeting held in Hamilton, October 8, presided over by Mr. George Westinghouse, the Canadian Westinghouse Co., Limited, was organized with a capital of \$2,500,000.

Mr. George Westinghouse, the founder and head of the great industries which bear his name, accompanied by H. H. Westinghouse, vice-president of the Westinghouse Air Brake Co.; John Caldwell, treasurer of the same company; Frank H. Taylor, vice-president of the Westinghouse Electric & Mfg. Co., and George C. Smith, president of the Security Investment Co., all of Pittsburg, ar-

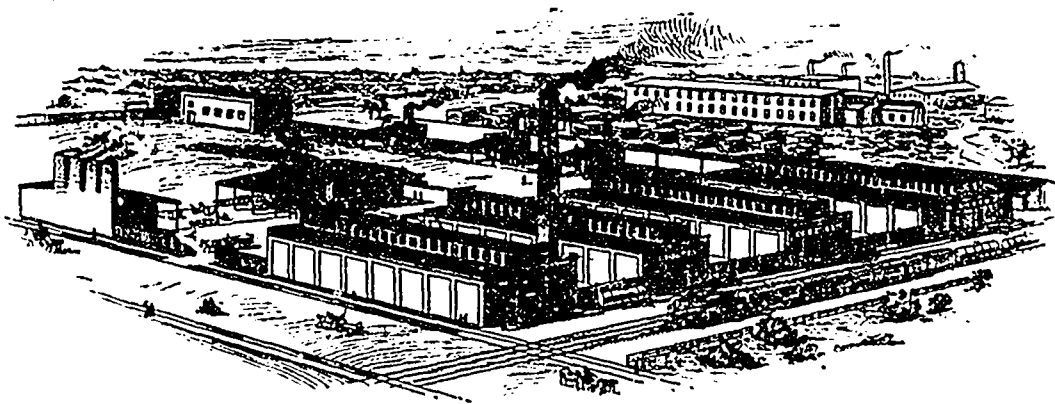
rived in Hamilton on October 8. They were met by Paul J. Myler, of Hamilton, who has been manager and secretary of the Westinghouse Mfg. Co., Limited, which the new organization succeeds.

The new company, to be known as the Canadian Westinghouse Co., Limited, is a consolidation of all the Westinghouse interests in Canada, which heretofore have been conducted separately. It will take over all the property, patents and other interests of the succeeded companies, including the sales organization and business of Ahearn & Soper, of Ottawa.

The organization committee elected the following board of directors: Geo. Westinghouse, Pittsburg; C. F. Sise, Montreal; H. H. Westinghouse, Geo. C. Smith, Frank C. Taylor, L. A. Osborne, all of Pittsburg; Thos. Ahearn, Ottawa; Hon. J. M. Gibson, Hamilton; W. Y. Soper, Ottawa; Paul J. Myler, Hamilton. The executive, as formed, will consist of the following gentlemen: H. H. Westinghouse, F. H. Taylor, L. A. Osborne, Geo. C. Smith and W. Y. Soper. The officers as elected are: George Westinghouse, president; H. H. Westinghouse, vice-president; F. H. Taylor, vice-president; Paul J. Myler, general manager and treasurer; John H. Kerr, secretary.

While only the ten directors named were elected, the board, when complete, will consist of fifteen members. The remaining five will be named from among the Canadian gentlemen interested.

Ground is to be broken for the new



It is nearly Half a Century

since we commenced to make Varnish. During this period we have acquired a knowledge not only of Varnish, but of the varied needs of varnish consumers that nothing but time can impart, and have also learned how to cater successfully to every varnish want.

Our experience belongs to those who use and sell Berry Brothers' Varnishes. Safest goods to handle, surest and most reliable goods to use.

WRITE FOR CATALOGUE.

BERRY BROTHERS, Limited - Walkerville, Ont.



works in that city within the next two weeks, and the erection of the buildings will follow as fast as possible. It is expected that at least a thousand employes will be serving the company within a year as soon as the plant is completed.

When it is considered that the Westinghouse Mfg. Co. alone has had sales in the Dominion amounting to about two million dollars annually, the importance of this addition to Canadian industry cannot be overestimated. With George Westinghouse as the mainspring and directing power, all the Westinghouse companies have grown to large proportions and without doubt the same will prove true of the Canadian company. It is bound to become one of the largest manufacturing establishments in Canada, and in the not distant future should rival in size and importance the other companies across the border.

The output of the aggregated manufacturing of the Westinghouse companies in the United States alone is over fifty million dollars per year in actual shipments and it is confidently expected that the establishment of this Canadian company will increase this amount considerably as it is to be a Canadian company for Canadians.

It will be remembered that in addition to his American undertaking, George Westinghouse has successfully established large companies in Europe, the largest of which is the British Westinghouse Electric & Mfg. Co., capitalized at about \$15,000,000, and employing 5,000 workmen at Manchester. This company has constructed most of the important electrical installations in Great Britain, such as the underground railways of London, and the electrification of the Mersey railway. In addition there are the Westinghouse companies of France, Germany and Russia, each with large and prosperous manufacturing establishments.

The business in Canada of late years has grown to such proportions that in line with the policy of George Westinghouse to establish works in the countries served, this Canadian company was essential to the proper care and conservation of the demands and interests of the Dominion.

At the annual meeting of the stockholders of the Westinghouse Air Brake Co., held in Wilmerding, near Pittsburg, Pa., October 7, President George Westinghouse outlined a plan for the consolidation of all the Canadian interests of the corporation, together with those of the Westinghouse Electric & Mfg. Co., each of which is now being conducted individually in Canada. Their plan is to have the air brake company dispose of its Westinghouse Mfg. Co., Limited, Hamilton, Ont., to a new corporation, which was formed recently and known as the Canadian Westinghouse Co., of the same place. The \$650,000 stock of the older company is to be sold at par and paid for in stock of the new company. In addition, the Air Brake Co. is to underwrite \$200,000 in stock in the new company for Canada.

The Westinghouse Electric & Mfg. Co., which has been carrying on an extensive business in Canada from the

local plants, will also underwrite \$450,000 in stock of the new Canadian company, and will sell its business rights and patents to the new company for \$500,000 in stock of the new corporation, thus making the two local companies own \$1,800,000 of stock in the Canadian company. The new Canadian company is to be capitalized at \$2,500,000, and the remainder of the stock has already been sold to Canadian corporations and capitalists. The plan was ratified by the Air Brake Co. stockholders.

AN UNUSUAL ELECTRICAL CONTRACT.

Messrs. Woodman Bros., electricians, Hamilton, Ont., have undertaken an important and somewhat unique contract from the Hamilton Cataract Power, Light & Traction Co., that city. It consists in changing the wiring on the line from Decew Falls to Hamilton, a distance of 35 miles 174 yards. The change, which is one of the largest of its kind ever undertaken in Canada, has become necessary owing to the growth of the company and the demand for electric power made by new companies becoming established in the city.

Some idea of the rapid strides made in the adaptation of electric power in this locality may be had when it is stated that six years ago four wires transmitted all the power needed. Two years ago, by the use of a system not known six years ago, one wire less transmitted one third more power than previously.

By the system at present being constructed twice as much power can be transmitted as could be done by that installed two years ago. Thus if the unit of power six years ago were 1,000 by four wires, two years ago on three wires it would show 1,333, and by the one under installation it would indicate 2,666. This last change is being put into effect by the substitution of aluminum for copper wire.

The importance and risk of the undertaking may be understood when it is stated that Grimsby, which is half way on the line, is guaranteed a 24 hours' service, uninterrupted, of 24,000 volts while the work is being carried on, and Beamsville, six miles nearer the powerhouse, is to have a night service of the same voltage. To provide for this high voltage transmission it has been necessary to instal special apparatus for manipulating these high tension currents.

Portable telephones are necessary on the work both to facilitate the construction and to guard against accidents; for while every man employed has had special training and experience, every step forward is a challenge to danger, which is avoided by the interception of every message along the length of line from Decew Falls to Hamilton. At Grimsby are situated a number of marble slab, high voltage switches where this interception takes place, and if a wrong message is sent it is blocked and correct ones only allowed to pass.

The electricians are under contract to allow the full current to be turned on the whole line in receiving one hour's notice, and under no circumstances is there to be

any interruption of transmission. When it is understood that the same poles are being used, the same insulator cross bars, that the old wires are to remain, until the current can be turned on the new, and that the barbed lightning arrester wire is not to be taken down some idea can be formed of the care necessary to prevent confusion and loss in life and property.

The wire is being drawn along the line through porcelain insulators by a team of horses, which, by the way, are also veterans in the business, and is nipped up by men following, while a gang proceeds ahead to bore the cross bars and attach the insulators.

The three wires, each 35 miles 174 yards long, mean the stringing of 185,322 feet of wire over 2,000 poles, with the ever present possibility of being electrocuted.

THE EXPORT TRADE OF TORONTO.

The full importance of Toronto's export trade is not always recognized. This trade has been steadily on the increase for a number of years, and Toronto may now be fairly said to occupy an important position in the British Empire as purveyor of manufactured articles to British and colonial markets, and to those of several other foreign countries as well. No statistics are available to show the total exports from this city, but as Toronto is one of the two chief manufacturing centres of Canada, its exports may be taken to bear a fair proportion to the exports of manufactures from the Dominion. For the fiscal year, 1903, Canada exported altogether \$20,624,967 worth of manufactured goods. This, compared with \$2,432,750 in 1871, and represented an increase since then of not less than 750 per cent. Truly a remarkable growth, and one shared in a large measure by the city of Toronto! There is just one reason why Toronto manufacturing concerns are not doing even more than they are in the way of export: the fact that they are too busy supplying the expanding home demand.

In order to form somewhat of a comprehensive idea of the export trade of Toronto, it will be well to survey briefly some of the leading lines exported and note what is being done in each.

Starting with bacon and hams, Toronto packing houses, including William Davies & Co., Park, Blackwell & Co., and Gunns, Limited, are doing a large and increasing export business, chiefly in Great Britain.

Toronto biscuits form an important item of export. Those of Christie, Brown & Co. have found their way not only to Great Britain, but to such diversified markets as Japan, Australia, New Zealand, India and the British West Indies. The great variety of samples offered and the purity and excellence of the goods enables them to win their way wherever they go.

The Canada Furniture Manufacturers, Limited, whose head office is in Toronto, have done considerable export trade. This concern has the advantage of being able to specialize in its different factories

so as to produce at the lowest cost, and is thus in a good position to compete in foreign markets. So far, Great Britain has been the largest purchaser of its furniture, although Australia, New Zealand, Newfoundland and the British West Indies have received consignments of considerable value. The Office Specialty Co. have also done something in exporting office furniture to Newfoundland and the West Indies.

Coffins, caskets and undertakers' supplies are articles which foreign buyers are learning to come to Toronto for. Of these, the chief manufacturers are the Eckardt Casket Co. and the Toronto Casket Co.

If there is one line in particular of which Toronto may be justly proud, and which has won fame abroad, it is pianos and organs. The instruments made in Toronto are fully equal in tone and finish to those produced anywhere in the world. Large exportations are being made to Great Britain, Australia, Germany, Holland, United States and South Africa. The designs for pianos in America at one time differed from those obtaining in England and Europe, but these styles are now being more closely reproduced.

Toronto factories can manufacture wooden pails, churns, and other hollow woodenware very cheaply. Chief of these is the United Factories, which exports considerable quantities to Great Britain. A fair trade is also being done in wood specialties, such as blocks for flooring, spools, checkers, turnings, banisters, handles, etc.

The bicycles of the Canada Cycle & Motor Co. have a wide market in outside countries. The greatest number are sent to Australia, where bicycling is very popular. In addition to Australia, the company ship to Japan, New Zealand, India, Great Britain, and Holland.

Perhaps the largest exporters of manufactured goods in Toronto is the Massey-Harris Co. There is scarcely a country to which this concern do not ship agricultural implements, and their export trade is constantly growing. One of their principle markets is Australia, where they have their own staff, including a secretary-treasurer and sales manager.

A very promising export trade has been worked up by the Metallic Roofing Co., which exports its metallic ceilings, etc., to Japan, Australia, New Zealand, South Africa, and the West Indies. The productions of this company are able to hold their own against those of the largest manufacturers in the United States.

Toronto wallpaper is quite popular abroad. Staunton's, Limited, have worked up a considerable export trade to the United States, Newfoundland and Australia. In shipping to points like Australia and South Africa, they met with some difficulty in adapting the styles of paper to the demands of these markets, but they have shown commendable enterprise in adapting their machinery and designs to the varied requirements of the foreign trade.

The Gutta Percha & Rubber Mfg.

Co. has branched out for colonial trade, and is shipping regularly to Australia and New Zealand. Their trade is one of considerable difficulty, owing to the trouble and expense involved in adopting standards for foreign business. The returns, however, have proved very satisfactory. They ship all classes of mechanical rubber goods, hose, tires, belting, etc.

Stoves and heating apparatus are shipped in large quantities from Toronto. The Gurney Foundry Co. find a market in Great Britain, Norway and Sweden, Russia and Germany, as well as the colonies and South Africa. The Dominion Radiator Co. lays claim to being the largest manufacturers of radiators under the British flag, and an extensive export trade has been built up.

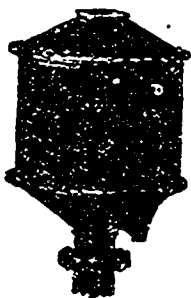
An industry which has reached large proportions in Toronto, and has begun to reach out for foreign markets, is the Kemp Mfg. Co., who make enameled, agate and granite ware for kitchen and household utensils. They ship principally to Great Britain and the colonies, and to the British West Indies.

The above brief summary is sufficient to indicate that the export trade of Toronto is of no mean proportions. In building it up, Toronto firms have encountered the same difficulties as other Canadian exporters. They have had to compete with export firms in the United States, who have had the advantage of much longer experience in export business, and far superior facilities.

Shippers are further hampered by the fact that Canada is too dependent on

THE BURT EXHAUST HEAD

is a good investment for any factory that has exhaust steam pipes.



It saves money for you, because no water or oil can get past it to rot your roof, or disfigure the walls of your building. It allows only the dry steam to escape.

All the latest improvements are embodied in the Burt Exhaust Head, and it is now the best of any Exhaust Head made, excepting none.

"The 10-inch Exhaust Head you furnished us is giving perfect satisfaction. Roof is 'dry as a bone.'" MISSISSIPPI LUMBER CO., QUITMAN, MISS.

SEND FOR BOOKLET.

THE BURT MFG. CO.,

LARGEST MFRS. OF OIL FILTERS IN THE WORLD.

AKRON, OHIO, U.S.A.

A complete stock carried by the FAIRBANKS CO., Montreal.

We are now prepared to ship promptly
Cold Rolled Strip Steel

All gauges and qualities.

Prices quoted on receipt of specifications.

THE BOURNE-FULLER CO.

IRON, STEEL,

PIG IRON,

COKE.

Cleveland, Ohio.

foreign countries for transportation facilities. At New York there is discrimination against Canadian goods, which are frequently set aside when there is not sufficient room in a vessel for all the United States goods to be shipped. Sometimes months elapse before the goods are loaded on the ships.

From this it may be seen that a successful export trade means a mastery of a great number of details. In this connection an important development has taken place in Toronto this year by the establishment here of the Canadian Export Co. The function of this concern is not only to look after all details of shipment, such as paying freight charges, customs charges, collecting payment, looking after warehouse storage, etc., but to find customers as well. The company has its own agents in the different markets, who canvass for orders and forward these to the headquarters in Toronto. The office here distributes them to the manufacturers and pays spot cash for the goods when delivered, thus saving the manufacturer all the trouble of attending to shipments, and bringing his customers right to his doors. The company receives its compensation in commission from the purchaser. It is also acting as import agents on the principle that a larger export trade can be worked up when there is a fair interchange of commodities. The company is able to secure cheap transportation rates owing to the large bulk it handles and has chartered special space on the ocean steamers at lower rates than would ordinarily be charged. A direct saving in freight charges to the small shipper by the assemblage of several shipments from different firms in car load lots.

DOMINION EXPENDITURES.

The supplementary estimates for expenditures by the Dominion Government were presented to the House of Commons October 1, and are now being discussed by that body. They amount to \$10,590,863, and adding this sum to the main estimates brought down several months ago, amounting to \$57,109,974, they give a grand total of \$67,700,837. This is an increase of \$8,638,903 over last year.

The following appropriations are to be voted in connection with the Welland Canal:

To deepen portions of long level (or summit level)	\$50,000
To complete rock cut. Port Colborne to Humberstone	20,000
To provide an electric lighting plant	45,000
To lower mitre sills of guard gate	11,000
To provide elevator foundations at Port Colborne	40,000

A new swing bridge is to be built over the Rideau Canal on the line of Concession Street, Ottawa: \$75,000 is voted for additional dredging at Port Arthur and Fort William. The judgment of the Exchequer Court in favor of Connolly and Co. in connection with the Kingston graving dock contract is to be met to the extent of \$48,000. Under the item of dredging, \$248,000 is to be voted, which

includes new dredging plant in nearly all the provinces.

Some time ago the lumbermen of the Ottawa Valley asked for an appropriation to make surveys of the head waters of the Ottawa River and its tributaries, with a view to devising a scheme for the regulation of the water levels of the upper reaches of these streams, so as to afford increased facilities for navigation purposes, and \$20,000 is now granted for this purpose.

Other items include a sum of \$294,000 for steam service between Canada and Australia, \$100,000 for a proper survey of the Arctic coasts of Canada, \$180,000 for improving lighthouses, and increasing the power of lights below Montreal and the establishment of a buoy depot for the upper lakes.

Wireless telegraph stations are to be established at, respectively: Point Amour, Heath Point, Anticosti, Fame Point, Cape Race, Belle Isle and Sable Island, and the appropriation is \$25,000. A new steamer is to replace the Petrel on the great lakes, and a substitute is also to be obtained for the Acadia, \$75,000 is voted for these two vessels.

Ontario items are as follows:

Amberstburg—Dredging	\$15,000
Blind River—Wharf	3,000
Barry's Bay—Madawaska River Wharf	1,500
Bracebridge—Wharf	5,800
Bronte—Harbor improvements	6,300
Burlington—Channel piers	10,000
Cobourg Harbor—Repairs to piers and dredging	2,500
Colborne Harbor—Renewals and repairs to wharf	3,500
Cumberland—Wharf	5,500
Christian Island—Repairs to wharf	400
Collingwood—Improvements in harbor	60,000
Depot Harbor—Breakwater	20,000
Gananoque—Dredging	7,000
Grand Bend—Breakwater, piers, etc	5,000
Goderich—Breakwater	20,000
Gore's Landing—Wharf	3,000
Honora—Wharf	4,000
Kingsville—Filling extension of breakwater	4,000
Lake Temiskaming—Wharfs	1,000
Little Bear Creek—Dredging	2,000
Little Current—Improvement of northern steamboat channel	15,000
L'Original—Wharf renewals and repairs	1,000
Leamington—Wharf sheet piling, etc	3,800
Meaford Harbor—New breakwater, piers	15,000
Midland—Harbor improvements	12,000
Oakville Harbor—Additional amount for dredging	3,500
Prescott—Dredging	4,000
Pembroke—Wharf	10,000
Port Dover—Piers, reconstruction and repair	10,000
Penelanguishene—Dredging, etc	4,800
Parry Sound—Wharf	8,000
Point Edward—Dredging	6,000
Port Burwell—Improvement of harbor	34,000
Port Stanley—Dredging	4,000
Port Perry—Dredging harbor	2,200

Port Arthur—Repairs to breakwater	\$17,500
Rosedale—Wharf	1,000
Rondeau—Dredging	13,000
River Sydenham—Improvement of	5,800
River Ottawa—Improvements of narrows at Petewawa, above Pembroke, to pay G. C. Poupore in full for work done previous to July 1, 1903	7,000
River Otonabee—Dredging at Peterboro	5,000
River St. Lawrence—Dredging channel at Wolfe Island	5,000
Spanish River—Dredging	10,000
Regulation of waters of Lakes.. Simcoe and Couchiching, repairs at Washago, etc	2,000
Sarnia—Dredging	6,000
Sault Ste. Marie—Harbor improvements (revote)	18,300
Thornbury Harbor—Breakwater	5,000
Thornbury Harbor—Dredging	3,550
Toronto Harbor—Works at eastern entrance	20,000
Toronto Harbor—Works at eastern entrance to pay Magann and Phin in full settlement of all claims, for extension of western pier	9,100
Victoria Harbor—Dredging	4,000
Warton—Wharf	10,000
Kingston—Customs House repairs, etc	2,300
Almonte—Public buildings improvements	1,000
Cornwall—Public building, repairs, renewals, etc	1,500
Belleville—Armory	10,000
Peterboro—Armory	10,000
Guelph—Armory	10,000
Chatham—Armory	10,000
Toronto—Drill hall, additional accommodation	20,000
Toronto—Military buildings, building for storage of wagons, etc., of Engineer Company	8,000
Ottawa—Departmental buildings western block, etc	6,000
Rideau Hall and grounds	4,500
Ottawa Departmental Buildings Equipment	63,000
Kingston—Royal Military College, drill hall	6,000
Toronto—Post-office	20,000
St. Catharines—Drill hall (revote \$10,000)	20,000
Sault Ste. Marie—Public building (revote \$10,000)	25,000
Woodstock—Public building	5,500
Brantford—Drill hall	15,000
St. Mary's—Public building	8,000
Oshawa—Public building	8,000
Toronto—Additional postal station	25,000
Deseronto—Public building	1,500
Bridgeburg—Public building	5,000
Hamilton—Public building, alterations and improvements for Inland Revenue purposes	5,000
Windsor—Public building, repairs, improvements, etc	1,300
Arnprior—Public building, improvements	700
Kingston—Royal Military College, addition	5,000

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Toronto—Military buildings, magazine	3,000
London—Military buildings, magazine	3,000
Port Hope—Public building, improvements.....	1,500
Windsor—Public building, contribution towards paving Ouellette Street north....	792
Ottawa—Public buildings, new coal shed	10,000
Ottawa—Post-office and Customs House, improvements.....	16,000
Kingston—Royal Military College, stable.....	5,000
Berlin—Public building, improvements (revote \$5,000).	9,000
Hamilton—Public building, improvements (revote \$2,000).	3,400
Sarnia—Public building (revote)	13,800
Toronto—Examining warehouse, addition to	25,300
Dundas—Drill hall (revote \$5,600)	6,600
Cobourg—Improvements (revote \$1,800)	5,000
Kingston—Barracks for R. C. F. A.	25,000
Hawkesbury—Public building..	5,000
Ottawa—Public buildings, paving in front of Parliament Building	6,900
Wingham—Public building.....	8,000
Stratford—Armory	10,000
Woodstock—Armory	10,000
Toronto—Assistant—Receiver-General's office, safe	2,200
Ottawa—Printing Bureau, fire-proof addition for storing standing matter.....	7,000
Toronto—Magazine per annum.	3,000
Dominion Exhibition.....	50,000

To these sums are to be added the following:—Under the Public Works Department, St. John drill hall, \$10,000; Quebec Citadel, drill shed for school of gunnery, \$10,000; Quebec military buildings, main store building at Dominion arsenal, \$11,000; St. Hyacinthe drill hall, \$18,000; Montreal, barracks for permanent corps, \$20,000; Quebec, drill hall, addition to building, \$20,000; Sherbrooke drill hall, \$10,000.

Some of the larger provisions for Intercolonial Railway service are:—Additional sidings along line, \$63,500; double tracking parts of line, (re-vote, \$18,000), \$118,000; increased accommodation at St. John, \$5,000; increased accommodation at Halifax, \$125,000; increased accommodation and facilities along line, \$88,000; increased accommodation at Picton, \$61,700; improvements at North Sydney, \$20,000; increased accommodation at Moncton, \$14,000; improving ferry service, Strait of Canso, \$66,400; steel rails and fastenings (re-vote), \$530,000; rolling stock (re-vote), \$590,000; dredging at Point Tupper—to pay M. Connolly interest on \$61,429.07 and \$16,424.09 at 6 per cent., \$5,162; engine

house, etc., Chaudiere Junction (re-vote), \$33,500; new machine for locomotive and car shops, \$9,000; to compensate the Anchor Line for salvage services to ss. Scotia, \$16,072.

Prince Edward Island Railway.—Murray Harbor branch and Hillsboro' bridge, \$480,000; to increase accommodation at Charlottetown (re-vote, \$24,800), \$87,000.

On the Cornwall Canal \$56,000 is to be voted to complete electrical equipment for operating lock gates and workshops; Galops Canal enlargement, \$125,000; Lachine Canal, \$21,000; Soulanges, Canal, construction and equipment, \$15,000.

The local works in the Maritime Provinces, Quebec, and the West are subsidized to a generous amount. For dredging in all parts of the country \$248,000 is to be appropriated, twenty-five thousand goes to open a pack trail from the Peace River to the Pelly River.

FILTRATION PLANT.

The water supply of the City of Washington is shortly to be improved by the construction of a large filtration plant, work on which is now in progress under the supervision of Lieut. Col. A. M. Miller, Corps of Engineers, U.S.A., and Mr. Allen Hazen, consulting engineer. The contract for the centrifugal pumps and the engines has been awarded to the Worthington Co. of New York, who will supply three 36-inch pumps of the triple-vane impeller type, each direct connected to a Harrisburg, four-valve, tandem-compound, condensing engine. Each unit will be capable of supplying 30,000 gallons of water per minute at a total head of 35 feet. The Government specifications require an exceptionally high efficiency in the pumping equipment and every part of the plant will represent the latest and best practice. The company supplying the centrifugal pumps will also furnish the wash-water pumps, which will be of the direct-acting, compound, condensing type.

GROWTH OF THE CARBORUNDUM CO.

The Carborundum Co. is again making enlargements of its plant at Niagara Falls, N. Y. Carborundum was invented in 1891. The first commercial furnace of the company had a capacity of a quarter of a pound a day, and the first sale made was a little lot of twenty carats, sent out on an order from a jewelry house, at a price of 25 cents a carat, equal to \$450 a pound. These small furnaces sufficed to supply all demands for the new abrasive for nearly two years, when they were replaced by what seemed at that time to be enormous furnaces, requiring the use of 150 electrical h.p.

In 1896 the company built its plant at Niagara Falls, employing furnaces using 1,000 electrical h.p., with a capacity far in excess of the demands at that time. By 1900 the demand had more than caught up with the production, however, and the capacity was doubled. Last year another 1,000 electrical h.p. was added, but the growth of the business has been so rapid that even with 3,000 electrical

h.p. the company has been unable for months to fill its orders. A contract has now been made for 2,000 more electrical h.p., and this will be turned into the works by December of this year, giving the plant a capacity of about 10,000,000 pounds of carborundum per annum. To take care of this large amount of power the company has secured an additional factory site of four acres, making in all over eight acres of ground now covered by the plant.

On the new site is being erected a mixing and furnace building, 146x134 feet in size, so planned as to be capable of extension in two directions. The building will have two storeys and a basement, and will be of fireproof construction throughout. The new furnaces will be run by a current of 2,000 h.p. each, which is just double that used by the present furnaces.

FIRES FROM ELECTRIC WIRING.

One of the most difficult things an electrical insurance department has to do is to prove to the lay mind that an installation which has been in use for several years is in unsafe condition owing to the poor condition of the insulation. The claim is made, and perhaps rightly, that the equipment has not given any great amount of trouble, and it is, therefore, difficult to convince the assured of the possibility of fire from electrical causes, as they fail to appreciate the fact that the efforts of the fire department are directed towards the prevention of fires, rather than in determining the cause or origin of a fire after it has occurred.

The old saying that "familiarity breeds contempt" is most applicable to the average electrical equipment when under the supervision of persons who know nothing of the inherent danger of the system. As a rule, no sooner is an equipment completed, than more or less extensive changes and alterations are instituted, these additions and changes being made without any regard whatever to the ordinary precautions which are supposed to be taken in connection with electrical work.

It is a common thing to find on the average equipment, after it has been in service a short time, the panel-boards or cut-outs, which, for protection, were encased in cabinets constructed of, or lined with, slate, iron, or similar material, used as storage closets for waste, rags, paper and other combustible things. When the enclosures are too small for this purpose, the doors are either left open or removed, and material of the most combustible nature is stored in direct contact with open fuses, bare bus bars and switches.

The ease with which an electric light or fan can be installed at any point in a building, or with which changes can be made in the position of a lamp, using for this purpose a flexible cord and connecting it to the most convenient source of supply, is perhaps one of the most common and flagrant violations of prescribed rules. As it requires but a short time, usually, for the insulation on this cord to become abraded, or so dry and hard as to break at any point where it may be disturbed, it can be seen that this condition

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is likely to result in trouble at any place on the circuit.

The use of large copper wire and extraordinarily heavy fuses in cut-outs, after the fuse originally installed has operated, is on the same order. This can be compared in recklessness only to the tying-down of the safety valve on a steam boiler. A little knowledge of electricity and the laws which govern it in its application to power and lighting systems, well seasoned with ordinary common sense, would enable almost anyone to understand the average precautions necessary in the safe-guarding of electrical wiring and apparatus, and if this knowledge, so seasoned, were only occasionally applied, the fire losses from electrical causes would be largely diminished.—J. C. Forsyth, in *Cassier's Magazine*.

THE PEAT BOGS OF IRELAND.

The question as to whether the peat bogs of Ireland have a marketable value is discussed by Mr. William Gillam in an English journal; and it will be observed that the discussion and conclusions are of much interest to the Canadian industry. Mr. Gillam says:

At the moment when the possibility of a great industrial movement in Ireland is assuming large importance in the public mind, one may usefully be permitted to touch upon the subject of dealing with the extensive Irish peat bogs as a national asset for the benefit of the country, and the betterment of its population.

In past ages it is a matter of common knowledge that Ireland was famed for its iron industry, which has lapsed in consequence of the inability to obtain sufficiency of wood fuel, which was formerly used for smelting purposes, and the impracticability of commanding the proper quality of coal or coke at suitable cost.

The substitute for wood-charcoal practically exists in Ireland to an unlimited extent in the shape of peat if properly manipulated.

Hitherto all endeavors to treat peat economically and satisfactorily have failed, involving tremendous pecuniary losses, and the causes are now thoroughly understood; the main cause being the great difficulty in expelling moisture from the wet peat. It has been incontestably proved that purely mechanical means employing extreme pressure will suffice for this purpose. On this point I may adduce the statement of the *Colliery Guardian*, under date of January 5, 1900, viz.: The reason why compressing has failed is because no matter how much it is pressed, immediately the pressure is withdrawn the fibres resume their natural size again, absorb some of the water remaining in the peat and explode and crack the block when drying. Ordinarily air-dried peat has the property of falling to pieces in the fire, and is intrinsically much less valuable than coal, owing to its inferior density entailing twice the expenditure for carriage, twice the space for storage, and possessing half its thermal efficacy for all practical purposes. No method hitherto in force has conquered these disabilities, and no treatment practised brings the expense of production within the necessary limits.

A new economical process has been recently tried, which I want to bring before the attention of the initiated amongst your readers, whereby peat or similar carbonaceous substances can be intimately mixed with lime, nitrate of potash, soot and saccharine matter, by which means the water set free from the cellular tissue of the peat fibre by the action of the lime and the nitrate of potash is absorbed by the said lime, while the soot is enabled to absorb the oil of the peat and the saccharine matter, while strengthening the action of the lime, by rendering it more soluble in the moisture, also causes the blocks of treated peat to dry thoroughly from the centre throughout.

The chemicals used are estimated to cost about 9d. to 1s. per ton of dried peat, and the pressure employed is light (as opposed to the great pressure practice) and the result is a fuel of density and calorific value equal to the best coal with remarkable freedom from sulphur, suitable for household, steam raising, gas making, and, in an extended state of carbonization, a substitute for costly wood-charcoal for smelting purposes.

The above description has been accepted by the German and United States of America authorities as fully representing the action and reaction of the chemicals specified. Patents have been granted in both countries. It is well-known that the possession of patents granted in Germany and the United States is conclusive evidence of thorough research having been made as to novelty and utility. The cost of fuel produced by the new method is at the outside estimated at 5s. to 6s. per ton on the bog. On a very large scale of production cost would be sensibly reduced.

A new machine has been devised, which will allow of continuous automatic treatment from the dumping of wet peat into a hopper at one end of the machine successively mixing the chemicals, and after passing the material through a kind of enlarged sausage machine into a heated chamber, and then through cooling and compressing tubes on to the briquette cutter at the other end of the machine, and thence on to travelling bands on to trolleys for transport.

Perhaps these particulars will attract the attention of substantial people to a new industry of great prospective importance to the empire, and capable of immediate installation in many places in the United Kingdom.

IMPORTS INTO THE TRANSVAAL.

The value of the imports into the Transvaal for the first five months of 1903, as given in the official returns, was as follows: From and via Natal, £1,176,741 (\$20,326,305); from and via Cape Colony, £4,048,997 (\$19,704,444); from and via Delagoa Bay, £1,536,628 (\$7,477,802); total, £9,762,366 (\$47,508,554)—being an excess over the five months of 1902 of £6,284,201 (\$30,582,641).

Trade opportunities which the repairing of the waste of war is opening up in South Africa are important. The following leading articles in the list of Transvaal imports are selected as those wherein the United States can take a leading position. The values are given in round numbers.

Principal imports into the Transvaal first five months of 1903:

Article.	Value.
Agricultural implements	\$400,000
Animals (cattle, horses, mules and sheep, chiefly).....	1,850,000
Chemicals and toilet articles..	570,000
Cyanide of potassium.....	560,000
Apparel and slops	3,220,000
Boots and shoes	1,520,000
Butter.....	695,000
Cotton manufactures.....	860,000
Flour.....	1,095,000
Fruit, dried, fresh and preserved.....	360,000
Furniture.....	1,610,000
Haberdashery and millinery..	3,265,000
Hardware.....	1,995,000
Iron and steel (fencing ware and galvanized and corrugated iron, chiefly).....	1,830,000
Groceries	545,000
Jewelry.....	270,000
Leather manufactures.....	515,000
Machinery, agricultural, electrical, manufacturing, etc., but chiefly mining.....	5,100,000
Meats, preserved and fresh ..	3,210,000
Milk, preserved	695,000
Mineral oil.....	135,000
Spirits (liquors).....	965,000
Sugar.....	495,000
Vehicles (carts, carriages, wagons, bicycles, wheelbarrows, etc.)	1,465,000
Wood, rough and prepared ..	2,775,000
Total.....	\$36,005,000

INDUSTRIAL PUBLICATIONS.

The Curtis Pneumatic Tool Co., represented by S. A. Stephens, Montreal, have issued a booklet giving specifications of their air compressors, air hoists, travelling cranes, etc.

The Office Specialty Co., Toronto, have issued a mailing card on sectional filing cabinets.

The Ewart Carriage & Wagon Works, Toronto, recently incorporated with a capital of \$100,000, of which Mr. A. A. Reinhardt is president, have issued a prospectus outlining the plans of the company.

The Lobe Pumping & Machinery Co., Buffalo, N.Y., have issued a catalogue relating to their line of rotary pumps which are adapted to all purposes and have quite a large sale in Canada.

The Ohio Motor Co., St. Mary's Ohio, for whom Messrs. McQuain & Parkinson, Toronto, are Canadian agents, have issued a handsome catalogue illustrating and describing their line of interchangeable gas and gasoline engines.

The Canada Radiator Co., Port Hope, Ont., are sending to the trade a neat booklet containing many testimonials as to the efficiency of their radiators.

The Bracebridge Acetylene Gas Co., Bracebridge, Ont., have issued a new catalogue describing the "Brilliant Light" acetylene gas machine.

The Toronto & Hamilton Electric Co., Hamilton, Ont., have issued a bulletin in which are illustrated and described their new type of polyphase motors.

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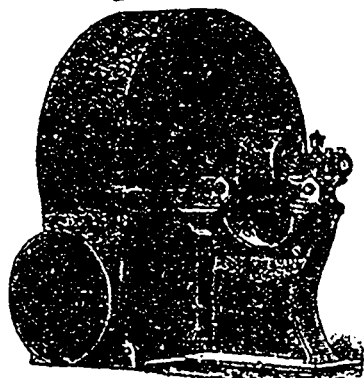
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A new catalogue issued by the Chapman Double Ball Bearing Co., Toronto, tells what the Chapman bearings have done and are doing.

The Draper Mfg. Co., Port Huron, Mich., and Petrolea, Ont., have issued a folder describing the McGrath pneumatic flue welders and cutters.

The Jas. Morrison Brass Mfg. Co., Toronto, have issued a new price of "J.T.M." globe and angle valves, check valves and discs for valves.

The Martin Electric Supply Co., St. Catharines, Ont., have issued a booklet describing the American Watchman's Time Detector. The company have installed a number of these time clocks in manufacturing establishments and would be pleased to furnish estimates and catalogues on application.

The Lowell Crayon Co., Lowell, Mass., have issued a card showing fifteen colors of mill crayons of which they are the original manufacturers. They will be pleased to send sample cards upon application.

The Cassella Color Co., New York, have issued a card showing the effect of dyeing with Anthracene Acid Black SR, also of mercerized goods dyed with Immedial Black NB.

The Jeffrey power drills for coal and rock are excellently depicted in a recent catalogue of the Jeffrey Mfg. Co., Columbus, Ohio. The pamphlet is not designed to offer an exhaustive description of the equipment made by the company but there is a wide range of variety exhibited and this is satisfactory as an indication of the further resources of the manufacturers.

A desk calendar comes from the Diamond Saw & Stamping Works, Buffalo, N.Y., and incidentally tells a few facts in regard to the cutting qualities of "Sterling" hack saw blades. A small catalogue is also to hand and goes more minutely into the merits of the saws frames and blades made by this firm.

PERSONAL.

The Canada Corundum Co., Toronto, who own extensive corundum deposits at Craigmont, Ont., and who now practically control the corundum business in Canada, and other countries, are opening offices and sales rooms in Paris, France, to meet the demands of the trade in that country and Belgium. Mr. A. Borit, of Paris, who was in Toronto recently conferring with the company, has been placed in charge of the Paris office as manager of sales and has returned to France to take charge of the business.

An interesting feature of the October meeting of the Engineer's Club, of Toronto, held on Wednesday evening, was a lecture on "The De Forest System of Wireless Telegraphy," by Jas. F. Thompson. The lecture was illustrated by working apparatus of the system.

Mr. E. C. Gillman, general manager of the Canadian Rand Drill Co., Sher-

brooke, Que., was among the prominent manufacturers recently in Toronto.

The Ontario Government have appointed Mr. R. P. Fairbairn to the position of Provincial Engineer, rendered vacant by the resignation of Mr. R. McCullum, who has since been appointed Toronto City Architect. Mr. Fairbairn has been in the Civil Service for some years in the capacity of architectural draughtsman.

OPPORTUNITIES.

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

NOTE.—Those who may wish to correspond with any of these enquirers can obtain the names and addresses by applying to the CANADIAN MANUFACTURER, Toronto. No charge for giving information. When writing refer to the numerals opposite the enquiries, and enclose 2c. postage stamp for reply.

1101. A London, England, house engaged in the manufacture of ladies costumes, dresses, shirt-waists, etc., are looking out for a capable agent to represent them in Canada.

1102. An agent proceeding to the East and intending to return by way of Australia and Canada, is desirous of taking samples of British manufacturers suitable for these markets, and will be glad to hear from firms interested.

1103. A London steel and iron merchant is open to act as buying or selling agent for Canadian firms or public corporations.

1104. A firm of importers in the north of England desires to hear from Canadian houses in a position to ship tallow, oils, greases, lard and other packing house by-products.

1105. Enquiry is made by a Cardiff, house in the fruit trade for the names of important shippers of Canadian apples who are looking out for an agent in their district.

1106. The addresses of Canadian furniture manufacturers have been asked for by a trading company desirous of obtaining their woodwork from the Dominion.

1107. A Scottish firm is enquiring for Canadian wood fibre, and will be glad to receive samples and prices.

1108. A Scottish firm is enquiring for the names of Canadian importers of worsted goods such as hosiery, sweaters, shawls, etc.

1109. A North of England firm is desirous of starting agencies in the principal cities in Canada for the sale of their tinplates, blackplates, galvanized sheets, etc.

1110. The agencies for Canadian houses are desired by a general agent in London, England, acquainted with the textile and building trades.

1111. An important manufacturing

concern in Liverpool, England, who are large consumers of crude wood naphtha, crude methylic, etc., requests the CANADIAN MANUFACTURER to place them in communication with producers of such goods.

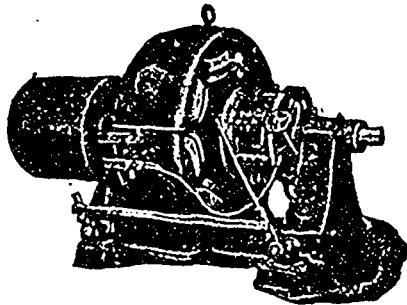
A native of Siam, Mr. Y. S. Sauiwongse, writes on the need of windmills in the Klong Rangsit rice district of Siam. He says:—A sample windmill, if sent to this country so that the farmers could see it working, should be made completely of galvanized steel, 16 feet in diameter, and should be suitable for transmitting power, so that it can be used for irrigation in the dry weather and for husking and milling rice for home consumption during the planting and wet season.

There is a good opening in the Orange River Colony and the Transvaal for farm tools and the cheaper kinds of agricultural plant. The agricultural development of the Colony, as soon as the railway extensions are completed, will be very striking, and as a clean sweep was made of agricultural implements and machinery, farmers have to start from the beginning. The demand is for cheap grades of machinery and implements—light ploughs, harrows, dairy appliances, etc.

CONCRETE BLOCK BUILDINGS.

Dwelling houses and factory buildings with concrete wall, in which the concrete has been moulded in place in large masses, have become comparatively common; but in recent years a species of hollow concrete block construction has been introduced, which, in some respects, appears to promise even greater advantages. Such hollow block houses are, in a measure, highly developed examples of the remarkably durable adobe houses of Mexico and the Southwest of the United States, which, though built simply of large sun-dried blocks of clay, appear as though hewn out of one solid mass, and have been found to successfully resist both great heat and heavy tropical rains. Walls built of hollow concrete blocks, with their enclosed air spaces, tend to keep houses warm in winter and cool in summer, and the only problem of satisfactorily building them has been that of cost. This, however, we are told, has now been solved by a machine which turns them out quickly and cheaply and in all desired sizes. The moulds are made with removable sides, and after the block of concrete has been formed, these sides are swung out of the way and the block can be lifted out and left to thoroughly set. Grooves and tongues can easily be formed in the blocks, enabling them to be rigidly tied together in building up a wall, and openings can also be provided in them to receive the ends of floor beams, the joints being subsequently filled with cement, if desired, to insure greater security. Many houses have of late been built with such blocks, and their popularity seems to be on the increase. In appearance such concrete block walls resemble masonry; in fact, the blocks can be fashioned after almost any desired pattern.—Cassier's Magazine.

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firm. He has just completed an ex-
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|---|---|
| <p>Lathes</p> <ul style="list-style-type: none"> 12 x 5 Reel 12 x 6 Pratico 13 x 6 P. & W. with taper 13 x 5 Blaisdell 13 x 6 Sebastian 13 x 6 Ames 14 x 6 Bogart 16 x 6 Porter 16 x 6 Perkins 16 x 10 Bridgeport 18 x 6 Perkins with chuck 18 x 6 New Haven 18 x 8 Lodge & Shipley 18 x 10 Lodge & Paris 20 x 8 Lathe & Morse 21 x 8 Blaisdell 25 x 20 Blaisdell 25 x 12 Wood Light 48 in. Pulley Lathe <p>Turret Lathes</p> <ul style="list-style-type: none"> 14 in. Pratt & Whitney 16 x 6 Universal, Lodge & H. 16 in. Warner & Swasey 16 in. Jones & Lamson 18 in. Pratt & W. 18 in. Hensley <p>Scrow Machines</p> <ul style="list-style-type: none"> 14 in. Garlin 15 in. Garlin 14 in. Warner & Swasey No. 2 Pratt & Whitney <p>Boring Mills</p> <ul style="list-style-type: none"> 60 in. Bickford, 3 heads 60 in. Niles, 1 head <p>Drills</p> <ul style="list-style-type: none"> No. 5 Plain Hand, Alfd Box 15 in. Lauer, adj. table 12 in. two-spindle, Foot-
-burt 36 in. Snyder <p>Planers</p> <ul style="list-style-type: none"> 21 x 24 x 5 ft. Geneva Ma-
-chine Co 14 ft. Plate Planer, Sellers 16 in. x 12 in. x 21 in. Brad-
-ford 22 x 18 x 5 Planer 30 x 30 x 10 ft. Gleason <p>Milling Machines</p> <ul style="list-style-type: none"> No. 2 Lincoln, P. & W. | <p>Shapers</p> <ul style="list-style-type: none"> 6 in. Boynton & Plummer 13 in. dbl. hd. trar. Sellers 18 in. Traverser Hd. Shaper 15 in. Hensley 30 in. Fox 10 in. Fitchburg <p>Hammers</p> <ul style="list-style-type: none"> 25 lb. Poppet Drop 25 lb. Scranton, power 50 lb. Baudry No. 900 Tretheway 250 lb. Bell, steam 10.0 lb. Board Drop Hammer Merrill, steam <p>Presses</p> <ul style="list-style-type: none"> 125 ton Wheel Press P 222 Foot Ferracite <p>Miscellaneous</p> <ul style="list-style-type: none"> No. 3 Clement tert. wood
-Boring Machine 1 in. Swaging Machine, Good-
-year, also Dayton 11 in. Keyseater, Mitts &
-Merrill No. 1 L. X. L. Pipe Cutter 1 to 4 in. Power Pipe Cutter,
-Armstrong 52 in. Fox Power Squaring
-Shear, Niagara 42 in. Power Squaring Shears,
-Niagara 14 in. Double Head Bolt Cut-
-ter, Adams Wire Former Horiz-ntal Keyseaters 50 in. Auto. Gear Cutter No. 1 Universal Grinder Diamond 13 in. Power Riveter, Adt. 14 in. Schlenker Bolt Cutter 18 in. x 7 ft. 6 in. Lead Rolls 5 in. Whiton Centering Ma-
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-Cutter, G. & E 4 in. Cutting-off Machine,
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-burt & Rogers Cock Grinder, Warner & S. No. 4 Fox Multiple Tube
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An English corporation having acquired vast holdings of high-grade canual coal in the United States, being in a position to deliver same to the market at a rare profit, having in fact a monopoly of the canual coal in the United States, invite Canadian capitalists to join their enterprise on a fair basis of representation. An extensive market has been established for this coal, and preparations are being made to export it to Great Britain and Europe. The construction of a short line rail-road is necessary to reach through this entire survey, and they will consider a Canadian contract for this work.

From this property we are able to deliver at tide-water high-grade coals for a century at a price not to exceed 86 cents per ton inclusive of all charges. This will put them in absolute control of the proposed Isthmuth canal trade and dictate the coal prices of the Southern Atlantic seaboard.

SHIP BUILDER, care CANADIAN MANUFACTURER, Toronto.

OPPORTUNITY FOR INVESTMENT.

A Scotch gentleman largely interested in the United States, wishes to float the bonds of a small railroad in Canada, or have some reliable institution to guarantee to take these bonds upon completion of the road, and with this in view, is desirous of opening up correspondence with some reliable broker or financial agent.

If, however, a contractor could arrange part of the finances of the line in Canada, he could secure the construction of this road. The branch road connects with the largest trunk system in America, and passes through a thickly peopled country, opening up the largest known beds of coal and iron on the continent.

Investigation will show that the road can be sold for twice its cost the day it is completed.

Half of the road is at present graded and one-fifth of the rails laid, all of which would be to the estimated benefit of the contractor.

Address: GLASGOW, care Canadian Manufacturer, Toronto, Canada, or Room 40, 130 Broadway, New York City.

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JEFFREY BARREL HANDLING MACHINERY FOR SUGAR FACTORY.

The accompanying illustrations, Nos. 1 and 2, show a system of elevating and conveying machinery for handling filled sugar barrels in the factory of the Canada Sugar Refining Co. at Montreal, Canada. The system consists of one incline elevator and conveyor, one combined elevator and conveyor and one horizontal platform conveyor which three are shown in part by Figure No. 1. The barrels are elevated up from the outside by means of a specially constructed elevator consisting of two strands of roller chain with saddles or arms at intervals. The first portion of this elevator is on an incline of about 60 degrees and the second portion practically level. The barrels are picked up automatically from skids and discharged over the head wheels on to the horizontal platform conveyor shown in Figure No. 1. As the barrels are discharged over the head wheels of the incline conveyor they are guided on to the platform conveyor by means of a swinging guide or check, suspended from the ceiling, which also prevents the barrels from travelling at more than a certain speed, and from striking the platform conveyor with too much of a jar. The platform conveyor consists of two strands of roller chain, covered completely with hardwood slats, forming an endless belt or apron. The two conveyors described, being of the roller type, will travel on a track with a minimum friction, wear and consumption of power. From the platform conveyor the barrels are rolled onto the trays of the combined elevator and conveyor which carries them down to any one of the several floors on the descending side. The special features of this combined elevator and conveyor are the swinging trays or saddles, and the loading and unloading devices. The barrels are rolled from the platform conveyor onto loading fingers, the swing-



FIGURE NO. 1.

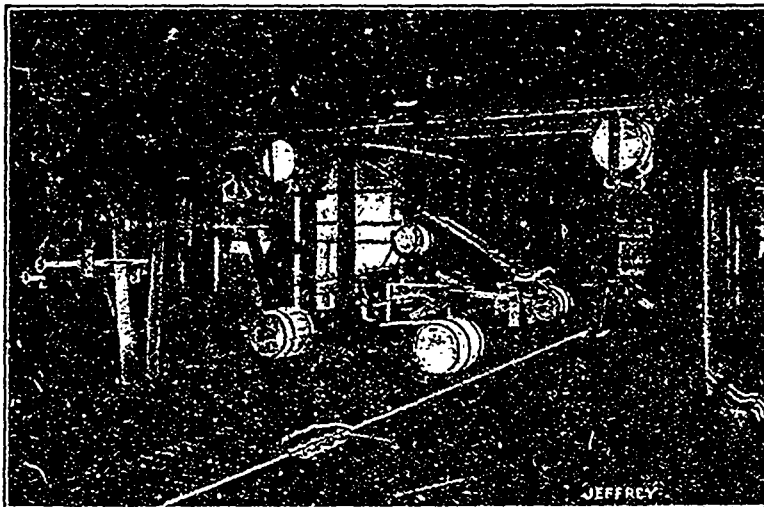


FIGURE NO. 2.

ing trays, coming up between the loading fingers, lift off the barrels, carry them upward across the room and down on the other side, depositing them on discharging fingers located at different floors, from where they roll off on to the floor, the loading and unloading being done automatically. The loading fingers are made to fold back out of the way in case it is desired to pass them without discharging the load. The elevator is made reversible so that it will elevate or lower on either side, and will, it is claimed, do more work in a limited space than any other device on the market. It can also be used for handling sacks, boxes and miscellaneous freight. This machinery is capable of handling from 500 to 600 barrels per hour easily with a minimum of power, and, being practically automatic in all of its operations, requires no hand labor to speak of. Parties interested in this class of work should address the manufacturers, the Jeffrey Mfg. Co., Columbus, Ohio.

IRON DEPOSIT ON VANCOUVER ISLAND.

A rich discovery of hematite is reported on the west coast of Vancouver Island. For over a year rumors that a body of bog iron existed there have been circulated. Two prospectors, T. J. Hick and C. W. Frank, had knowledge of it, but kept the exact location a strict secret up to the present. In the meantime local capitalists were interested under the name of the Iron Mountain syndicate and twenty

claims of about 1,000 acres were located. Seven of these were retained by Hick and Frank, while the remainder are in the hands of the syndicate. The deposit, which is said to be the only one, so far located, of commercial value in British Columbia, is on the west arm of Qlatsino Sound, a tract which has been but little explored.

The prospectors have taken samples to Seattle, Wash., and have announced the character of the find. A Government

assay gives 53.8 per cent. metal. A vein eleven feet thick has been uncovered for a considerable distance and 1,000 feet distant it has proved to be eight feet thick. But little earth covers it, and it is only half a mile from salt water.

TORONTO IRON & STEEL CO.

More American capital has been brought to Canada by the formation of the Toronto Iron & Steel Co., Limited, now in the process of incorporation. This

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WHEEL CO.
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concern is being formed for the purpose of buying and selling all grades and kinds of pig iron, scrap iron and other metals, and they will make a specialty of handling relaying and new light-section rails. They will also handle bar iron, pipe, spikes, bolts, washers and similar iron

and steel products, and will act as agents for a number of prominent American and European iron and steel manufacturers. The new company has been formed specially to handle the Canadian business of the United American Iron & Steel Co., whose headquarters are at Albany, N. Y.,

which is a very large concern in the lines mentioned. The general offices of the Toronto Iron & Steel Co. will be in the Temple Building, Toronto, in charge of Mr. Wm. E. Friedman, as general manager, who was formerly secretary of the United American Iron & Steel Co.

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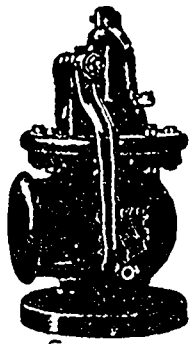
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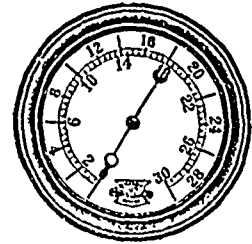
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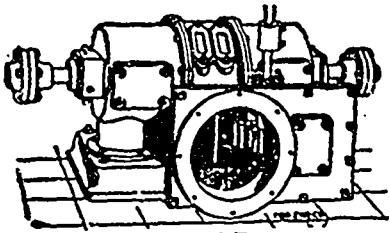
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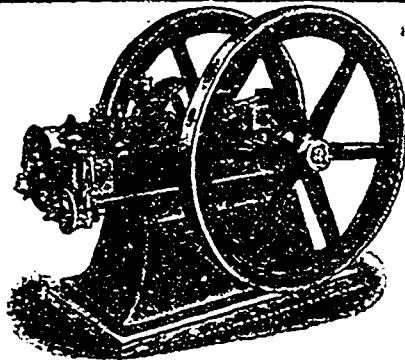
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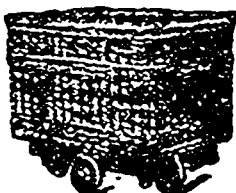
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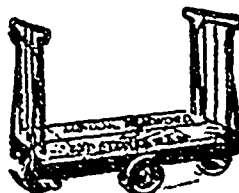
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Canadian Portland Cement Co., Deseronto, Ont.
 Owen Sound Portland Cement Co., Owen Sound, Ont.

Cement Machinery.

Wentz, R. F. Engineering Co., Toronto.

Chain Making Machinery

Turner, Vaughn & Taylor, Cuyahoga Falls, Ohio.

Channels

Bourne-Fuller Co., Cleveland, Ohio.
 Leslie, A. C. & Co., Montreal.
 Nova Scotia Steel & Coal Co., New Glasgow, N.S.
 Samuel, M. & L. Benjamin & Co., Toronto.
 Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Charcoal Pig Iron

Canada Iron Furnace Co., Montreal.

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Bellhouse, Dillon & Co., Montreal.
 Benson, W. T. & Co., Montreal.
 Brunner, Mond & Co., Northwich, England.
 Cassella Color Co., New York City.
 Gely, Anilino & Extract Co., New York City.
 Kilstein, A. & Co., New York City.
 McArthur, Cornelio & Co., Montreal.
 Winn & Holland, Montreal.

Chemists

Archbold, Dr. Geo., Prescott, Ont.
 Heys, Thos. & Son, Toronto.
 Metallurgical Laboratory, Pittsburg, Pa.
 Wentz, R. F. Engineering Co., Toronto.

Clay Working Machinery.

Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Coal and Coke

Milnes, James H., & Co., Toronto.

Coal Cutting Machines

Jeffrey Mfg. Co., Columbus, Ohio.

Coal Tipples.

Jeffrey Mfg. Co., Columbus, Ohio.
 Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Coil Chains.

Greening, B. Wire Co., Hamilton, Ont.
 Leslie, A. C. & Co., Montreal.

Conveying Machinery

Dodge Mfg. Co., Toronto.
 Jeffrey Mfg. Co., Columbus, Ohio.
 Perrin, William R., & Co., Toronto.
 Stevens, Alfred J., Toronto.

Copper Materials

Greening, B. Wire Company, Hamilton, Ont.
 Samuel, M. & L. Benjamin & Co., Toronto.
 Syracuse Smelting Works, Montreal.
 Wire & Cable Co., Montreal.

Corrugated Iron and Steel.

Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Corundum.

Canadian Corundum Wheel Co., Hamilton, Ont.
 Hart Corundum Wheel Co., Hamilton, Ont.

Corundum Wheels.

Canadian Corundum Wheel Co., Hamilton, Ont.
 Hart Corundum Wheel Co., Hamilton, Ont.
 Rice Lewis & Son, Toronto.

Covers.

McCullough-Dalzell Crucible Co., Pittsburg, Pa.

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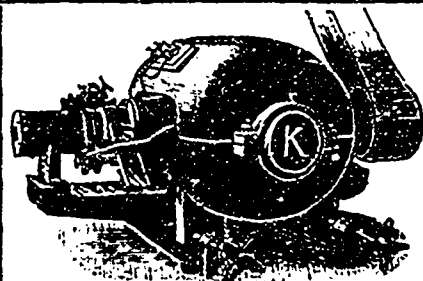
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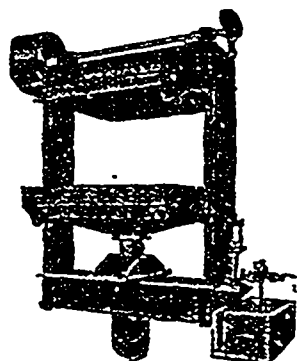


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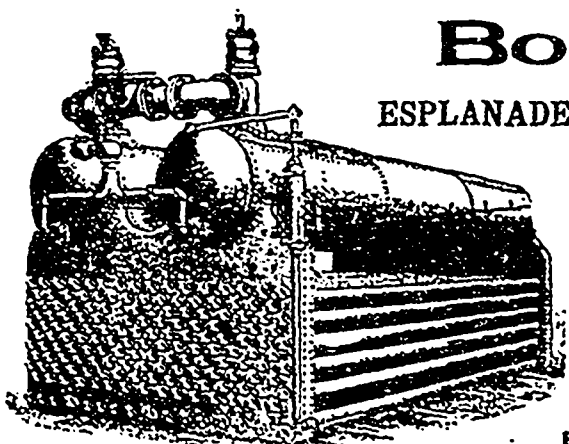
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Lowell Crayon Co., Lowell Mass.

Crucibles

Dixon, Joseph, Crucible Co., Jersey City, N.J.
McCullough-Dalzell Crucible Co., Pittsburg, Pa.
Samuel, M. & I. Benjamin & Co., Toronto.
Syracuse Smelting Works, Montreal.

Crucible Caps and Nozzles

McCullough-Dalzell Crucible Co., Pittsburg, Pa.

Crucible Covers and Stoppers

McCullough-Dalzell Crucible Co., Pittsburg, Pa.

Dies

Hamilton Stamp & Stencil Works, Hamilton, Ont.
Dies (Socket, Sewer Pipe and Tile—Clay.)
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Directories

Kelly's Directories, Limited, Toronto.

Draw Benches (Wire.)

Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Drills

Bertram, John, & Sons Co., Dundas, Ont.
Canadian Hand Drill Co., Sherbrooke, Que.
Cooper, James, Mfg. Co., Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
London Machine Tool Co., London, Ont.

Dry Kilns.

Buffalo Forge Co., Buffalo, N.Y.
McEachren Heating & Ventilating Co., Galt, Ont.
Stevens, Alfred J., Toronto.
Sturtevant, B. F. Co., Boston, Mass.

Dust and Shavings Separators

Buffalo Forge Co., Buffalo, N.Y.
McEachren Heating & Ventilating Co., Galt, Ont.
Sturtevant, B. F. Co., Boston, Mass.

Electric Mine Locomotives

Jeffrey Mfg. Co., Columbus, Ohio.

Electrical Supplies

Canadian General Electric Co., Toronto.
Electrical Construction Co., London, Ont.
Forman, John, Montreal.
Jones & Moore Electric Co., Toronto.
Kay Electric Dynamo & Motor Co., Toronto.
Packard Electric Co., St. Catharines, Ont.
Phillips, Eugene F., Electrical Works, Montreal.
Toronto & Hamilton Electric Co., Hamilton, Ont.
United Electric Co., Toronto.
Worth & Martin, Toronto.

Electro-Plating

Brantford Plating Co., Brantford, Ont.

Elevators

Canadian Otis Elevator Co., Toronto.
Darling Bros., Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.

Emery and Emery Wheels.

Canadian Corundum Wheel Co., Hamilton, Ont.
Forman, John, Montreal.
Hart Corundum Wheel Co., Hamilton, Ont.

Employers' Liability Insurance

Maryland Casualty Co., Toronto.

Engineers (Cement).

Wentz, R. F. Engineering Co., Toronto.

Engineers (Chemical.)

Hays, Thos. & Son, Toronto.
Metallurgical Laboratory, Pittsburg, Pa.

Engineers (Civil)

Kelsch, R. S., Montreal.
Parke, R. J., Toronto.
Vogel, C. H., Ottawa.

Engineers (Consulting)

Electrical Construction Co., London, Ont.
Kelsch, R. S., Montreal.
Parke, R. J., Toronto.
Perrin, Wm. R. & Co., Toronto.
Simpson, T. T., Deschenes, Que.
Vogel, C. H., Ottawa.
Wentz, R. F. Engineering Co., Toronto.

Engineers (Contracting)

Darling Bros., Montreal.
Electrical Construction Co., London, Ont.

Engineers (Electrical)

Canadian General Electric Co., Toronto.
Electrical Construction Co., London, Ont.
Electric Engineering & Supply Co., Montreal.
Jones & Moore Electric Co., Toronto.
Kay Electric Dynamo & Motor Co., Toronto.
Toronto & Hamilton Electric Co., Hamilton, Ont.
United Electric Co., Toronto.
Worth & Martin, Toronto.

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Engineers (Mechanical)

Carrier, Laine & Co., Levis, Quebec.
Darling Bros., Montreal.
Electrical Construction Co., London, Ont.
Kolsch, H. S., Montreal.
Rarr Engine Co., Walkerville, Ont.
McEachron Heating & Ventilating Co., Galt, Ont.
Northey Co., Toronto.
Robb Engineering Co., Amherst, N.S.
Wentz, R. F. Engineering Co., Toronto.

Engineers (Mill and Hydraulic)

Vogel, C. H., Ottawa.

Engineers (Mining)

Hoys, Thos. & Son, Toronto.
Metallurgical Laboratory, Pittsburg, Pa.
Mills, S. D., Toronto.

Engineers and Contractors.

Jeffrey Mfg. Co., Columbus, Ohio.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Engines and Boilers

Babcock & Wilcox, Limited, Montreal.
Buffalo Forge Co., Buffalo, N.Y.
Canadian Heino Safety Boiler Co., Toronto.
Cowan & Co., Galt, Ont.
Goldie & McCulloch Co., Galt, Ont.
Hyde Bros. & Co., Pittsburg, Pa.
Leonard, E. & Sons, London, Ont.
McDougall, R. Co., Galt, Ont.
Robb Engineering Co., Amherst, N.S.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.
Stratford Mill Building Co., Stratford, Ont.
Williams, A. R., Machinery Co., Toronto.

Engravers

Canadian Manufacturer, Toronto.
Jones, J. L., Engraving Co., Toronto.

Exhaust Hoops

Burt Mfg. Co., Akron, Ohio.
Darling Bros., Montreal.

Exporters

Canadian Export Co., Toronto.

Factory Sites

Central Ontario Power Co., Peterboro, Ont.

Films

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

Financial

Bradstreet's, New York City.
Dun, R. G. & Co., Toronto.
Neff & Postlethwaite, Toronto.

Filters

Burt Mfg. Co., Akron, Ohio.
Darling Bros., Montreal.
Perrin, Wm. R. & Co., Toronto.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Fire Brick

Hamilton Facing Mill Co., Hamilton, Ont.
Pennsylvania Fire Brick Co., Lock Haven, Pa.
Scioto Fire Brick Co., Sciotoville, Ohio.

Fluo Cleaners

Pierce, Wm. B. Co., Buffalo, N.Y.

Founders

Buffalo Forge Co., Buffalo, N.Y.
Canada Foundry Co., Toronto.
Cowan & Co., Galt, Ont.
Gartshore-Thomson Pipe & Foundry Co., Hamilton, Ont.
Karch, H. W., Hespeler, Ont.
McDougall, The R. Co., Galt, Ont.
Northey Co., Toronto.

Foundry Facing

Hamilton Facing Mill Co., Hamilton, Ont.

Galvanized Iron and Steel

Leslie, A. C. & Co., Montreal.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Galvanizing

Brantford Plating Co., Brantford, Ont.
Ontario Wind Engine & Pump Co., Toronto.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Galvanizing and Tinning Machinery and Furnaces (Clay)

Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Gas and Gasoline Engines


Dominion Motor & Machine Co., Toronto.
Goldie & McCulloch Co., Galt, Ont.
Morrison, T. A. & Co., Montreal.
Northey Co., Toronto.
Stratford Mill Building Co., Stratford, Ont.

Gas Plants

Sicho Gas Co., Toronto.

Gas Producers.

Morgan Construction Co., Worcester, Mass.

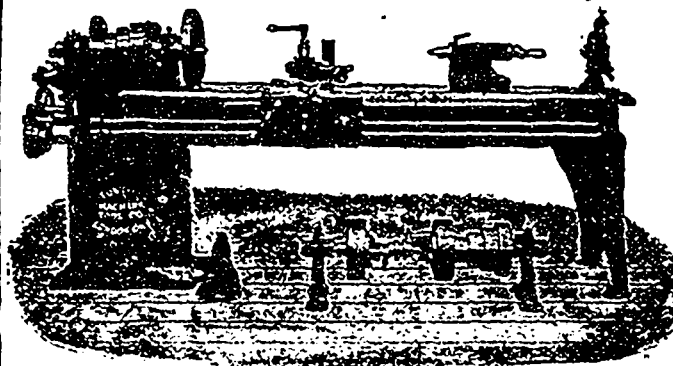


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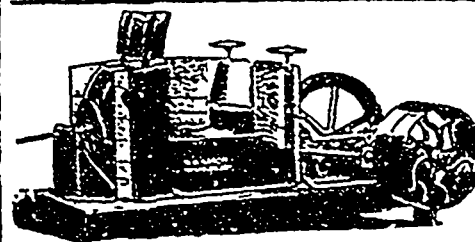
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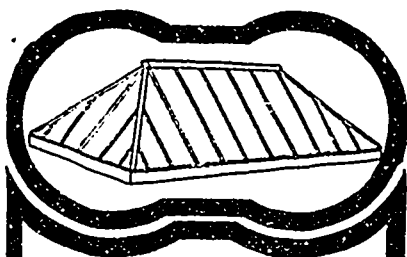
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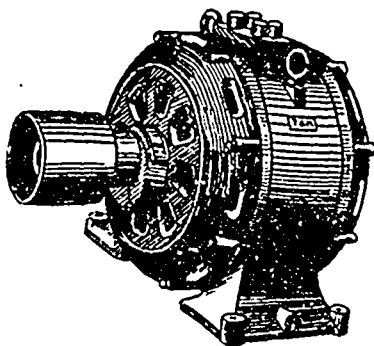
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Jones & Moore Electric Co., Toronto.
Kay Electric Dynamo & Motor Co., Toronto.
Phillips, Eugene F., Electrical Works, Montreal.
Toronto & Hamilton Electric Co., Hamilton, Ont.

Government Notices

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Minister of Agriculture.

Grinding Machinery

Hart Corundum Wheel Co., Hamilton, Ont.

Hardware

Butterfield & Co., Rock Island, Que.
Cooper, James, Montreal.
Empire Machine & Metal Stamping Co., Toronto.
Garshore, John J., Toronto.
Morrow, John, Machine Screw Co., Ingersoll, Ont.
Rice Lewis & Son, Toronto.
Samuel, M. & L. Benjamin & Co., Toronto.

Heating and Ventilating

Buffalo Forge Co., Buffalo, N.Y.
Darling Bros., Montreal.
Leonard, F. & Sons, London, Ont.
McEachren Heating & Ventilating Co., Galt, Ont.
Stevens, Alfred J., Toronto.
Sturtevant, B. F., Boston, Mass.

Hydraulic Machinery

Darling Bros., Montreal.
Jencks Machine Co., Sherbrooke, Que.
Northey Co., Toronto.
Perrin, Wm. R., & Co., Toronto.
Wilson, J. C., & Co., Glendon, Ont.

Iron and Steel Specialties

Abbott, William, Montreal.
Armstrong Mfg. Co., Bridgeport, Conn.
Bourne-Fuller Co., Cleveland, Ohio.
Brown & Co., Paris, Ont.
Dodge Mfg. Co., Toronto.
Karch, H. W., Hespeler, Ont.
Meadows, Geo. B. Wire, Iron & Brass Works Co., Toronto.
McDougall, R. Co., Galt, Ont.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Rice Lewis & Son, Toronto.
Samuel, M. & L. Benjamin & Co., Toronto.
Scaife, Wm. B. & Sons Co., Pittsburg, Pa.

Japans.

Berry Bros., Walkerville, Ont.

Lamps—Electric

Forman, John, Montreal.
Packard Electric Co., St. Catharines, Ont.

Lathes

Bertram, John, & Sons Co., Dundas, Ont.
London Machine Tool Co., London, Ont.
McDougall, R. Co., Galt, Ont.
Williams, A. R., & Co., Toronto.

Leather Bolting

Fleming, W. A. & Co., Montreal.
McLaren, D. K., Montreal.

Machinists.

Worth & Martin, Toronto.

Machinists' Supplies

Armstrong Mfg. Co., Bridgeport, Conn.
Butterfield & Co., Rock Island, Que.
Cooper, James, Montreal.
Goldie & McCulloch Co., Galt, Ont.
Jeffrey Mfg. Co., Columbus, Ohio.
Morrow, John, Machine Screw Co., Ingersoll, Ont.
Worth & Martin, Toronto.

Machine Tools

Abbott, William, Montreal.
Bertram, John, & Sons Co., Dundas, Ont.
Darling Bros., Montreal.

Malleable Iron Castings

McKinnon Dash & Metal Works Co., St. Catharines, Ont.
Ontario Malleable Iron Co., Oshawa, Ont.
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Empire Machine & Metal Stamping Co., Toronto.

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Metallurgical Laboratory, Pittsburg, Pa.
Mills, S. D., Toronto.
Wentz, R. F. Engineering Co., Toronto.

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Armstrong Mfg. Co., Bridgeport, Conn.
Cooper, James, Montreal.
Cooper, James, Mfg. Co., Montreal.
Cowan & Co., Galt, Ont.
Darling Bros., Montreal.
Fleming, W. A., & Co., Montreal.
Gartshore, John J., Toronto.
Goldie & McCulloch Co., Galt, Ont.
Jeffrey Mfg. Co., Columbus, Ohio.
Hamilton Brass Mfg. Co., Hamilton, Ont.
Hay, Peter, Galt, Ont.
Jenckes Machine Co., Sherbrooke, Que.
Karch, H. W., Hespeler, Ont.
Leonard, E. & Sons, London, Ont.
London Machine Tool Co., London, Ont.
McDougall, R. Co., Galt, Ont.
Morrow, John, Machine Screw Co., Ingersoll, Ont.
Rice Lewis & Son, Toronto.
Robb Engineering Co., Amherst, N.S.
Samuel, M. & L. Benjamin & Co., Toronto.
Sponco, R. & Co., Hamilton, Ont.
Stratford Mill Building Co., Stratford, Ont.
Wilson, J. C. & Co., Glenora, Ont.

Mining Machinery

Canadian Rand Drill Co., Sherbrooke, Que.
Cooper, James, Montreal.
Cooper, James Mfg. Co., Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
Jenckes Machine Co., Sherbrooke, Que.
Perrin, Wm. H. & Co., Toronto.
Williams, A. R. Machinery Co., Toronto.

Motors and Dynamos

Canadian General Electric Co., Toronto.
Electrical Construction Co., London, Ont.
Forman, John, Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
Jones & Moore Electric Co., Toronto.
Kay Electric Dynamo and Motor Co., Toronto.
Toronto & Hamilton Electric Co., Hamilton, Ont.
United Electric Co., Toronto.

Novelty Manufacturers.

Worth & Martin, Toronto.

Nozzles.

McCullough-Dalzell Crucible Co., Pittsburg, Pa.

Office Furniture and Supplies

Canadian Office & School Furniture Co., Preston, Ont.

Oils and Lubricants

Dixon, Jos., Crucible Co., Jersey City, N.J.
Fleming, W. A., & Co., Montreal.
Imperial Oil Co., Petrolia, Ont.
Queen City Oil Co., Toronto.

Oil Filters

Hurt Mfg. Co., Akron, Ohio.
Darling Bros., Montreal.

Paints and Colors

Bellhouse, Dillon & Co., Montreal.
Berry Bros., Walkerville, Ont.
Fleming, W. A., & Co., Montreal.
Geigy Aniline & Extract Co., New York City.
Kilpstein, A., & Co., New York City.
McArthur, Cornelio & Co., Montreal.

Paper Manufacturers

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

Patents

Budden, Hanbury A., Montreal.
Case, Egerton R., Toronto.
Folhorstonhaugh & Co., Toronto.
Patent Exchange & Investment Co., Toronto, Ont.

Perforated Metals

Greening, B. Wiro Co., Hamilton, Ont.

Phosphorizers.

McCullough-Dalzell Crucible Co., Pittsburg, Pa.

Pig Iron

Bourne-Fuller Co., Cleveland, Ohio.
Canada Iron Furnace Co., Montreal.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Samuel, M. & L. Benjamin & Co., Toronto.
Syracuse Smelting Works, Montreal.

Pipe Threading Machines

Armstrong Mfg. Co., Bridgeport, Conn.
Rice Lewis & Son, Toronto.

Pipe (Riveted Iron and Steel)

Scalfo, Wm. B. & Sons Co., Pittsburg, Pa.

Pipes and Tubes

Abbott, William, Montreal.
Bourne-Fuller Co., Cleveland, Ohio.
Canada Foundry Co., Toronto.
Gartshore-Thomson Pipe & Foundry Co., Hamilton, Ont.
Montreal Pipe Foundry Co., Montreal.
Rice Lewis & Son, Toronto.
Samuel, M. & L. Benjamin & Co., Toronto.

Plaster

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

Plates

Bourne-Fuller Co., Cleveland, Ohio.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Rice Lewis & Son, Toronto.
Samuel, M. & L. Benjamin & Co., Toronto.
Scalfo, Wm. B. & Sons Co., Pittsburg, Pa.

Plating

Brantford Plating Co., Brantford, Ont.

Plumbago

McCullough-Dalzell Crucible Co., Pittsburg, Pa.

Pneumatic Tools

Chicago Pneumatic Tool Co., Chicago, Ill.
Cooper, James, Mfg. Co., Montreal.
Jenckes Machine Co., Sherbrooke, Que.

Pointers (For Rods and Wire.)

Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Portland Cement

Canadian Portland Cement Co., Deseronto, Ont.
Owen Sound Portland Cement Co., Owen Sound, Ont.
Rathbun Co., Toronto.
St. Lawrence Portland Cement Co., Montreal.

Power—Electric and Water

Central Ontario Power Co., Peterboro, Ont.

Power Plants—Equipments

Canadian General Electric Co., Toronto.
Cooper, James, Mfg. Co., Montreal.
Darling Bros., Montreal.
Electrical Construction Co., London, Ont.
Goldie & McCulloch, Galt, Ont.
Jeffrey Mfg. Co., Columbus, Ohio.
Jenckes Machine Co., Sherbrooke, Que.
Jones & Moore Electric Co., Toronto.
Kay Electric Dynamo & Motor Co., Toronto.
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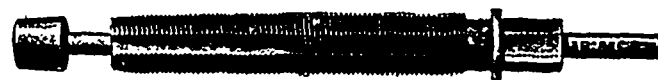
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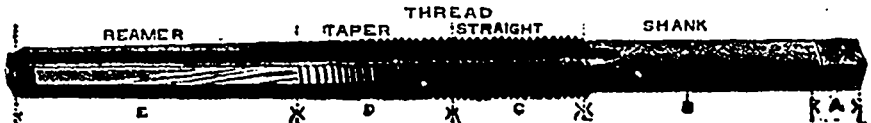
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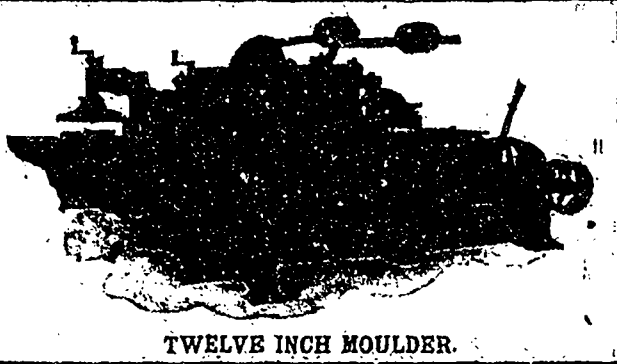
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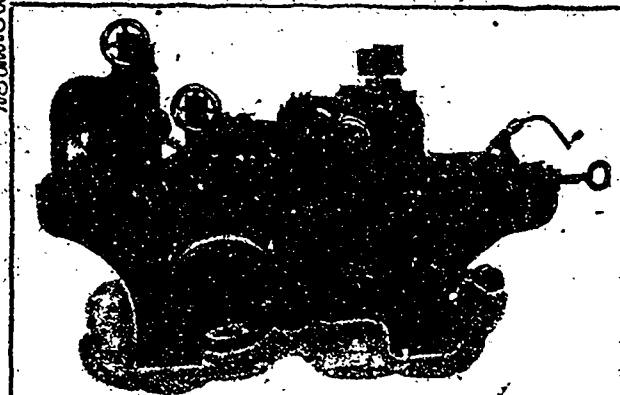
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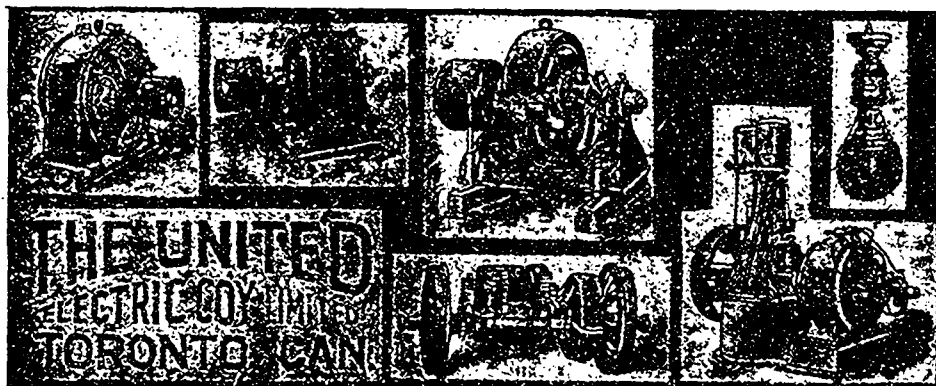
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