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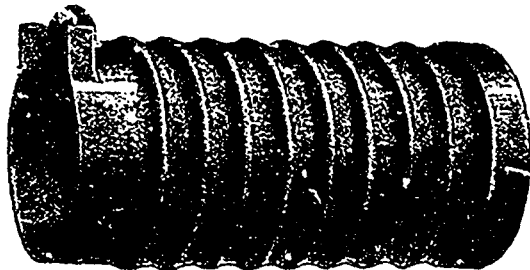
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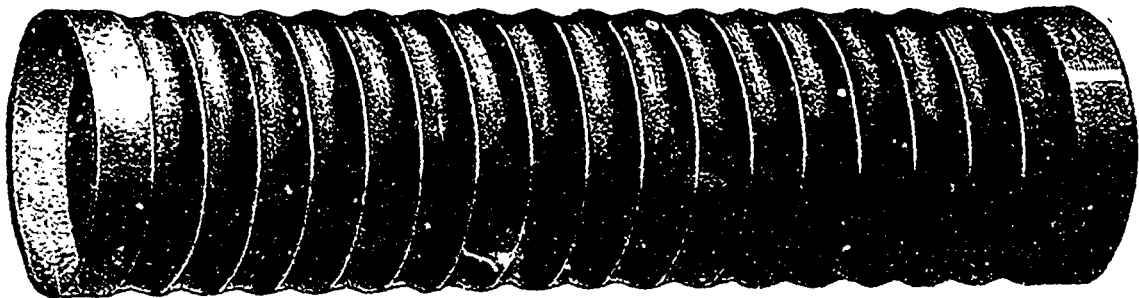


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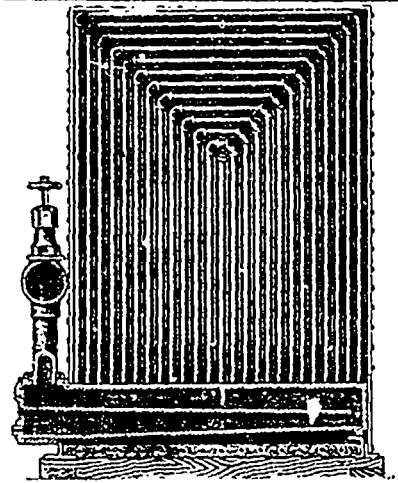
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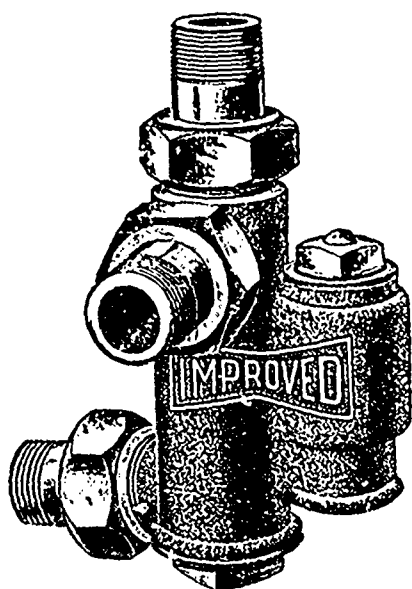
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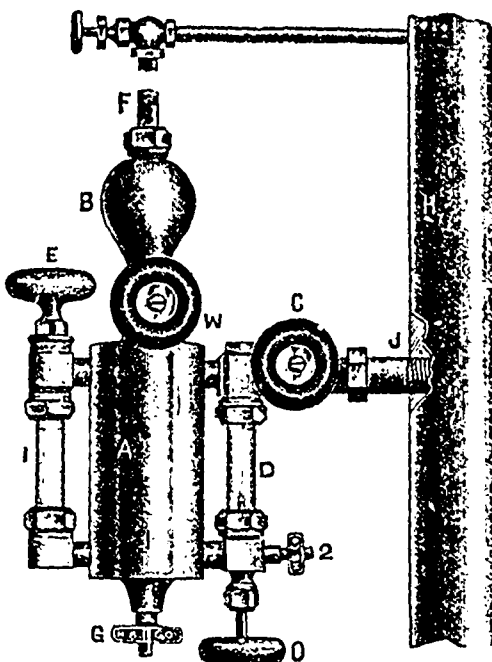
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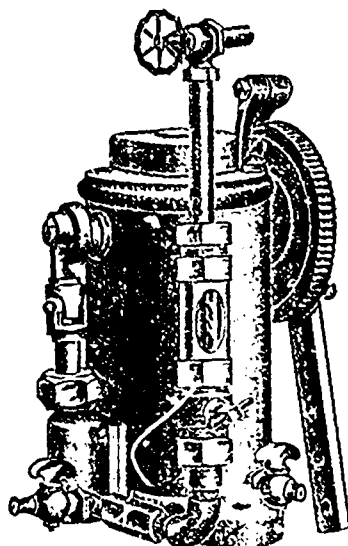
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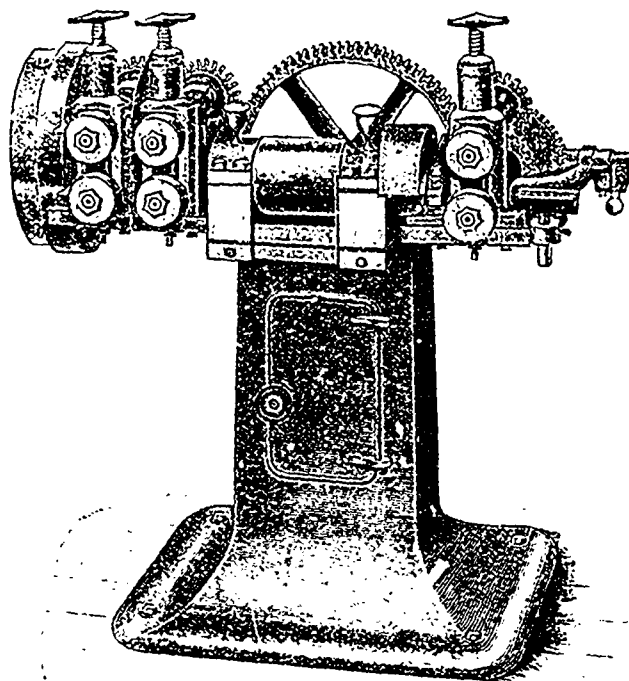
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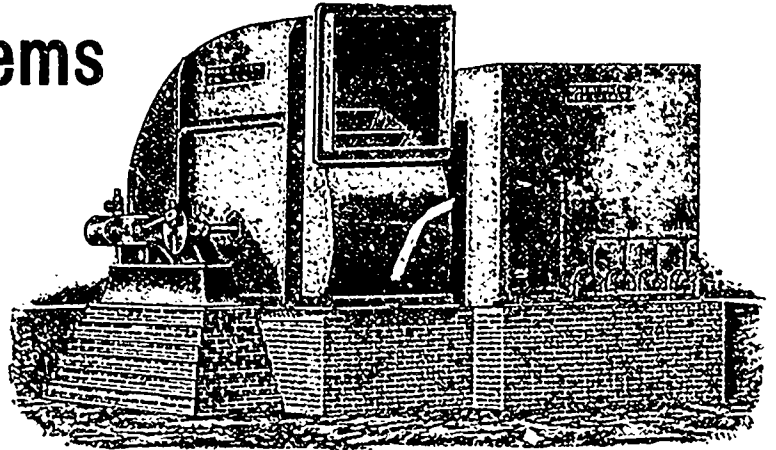
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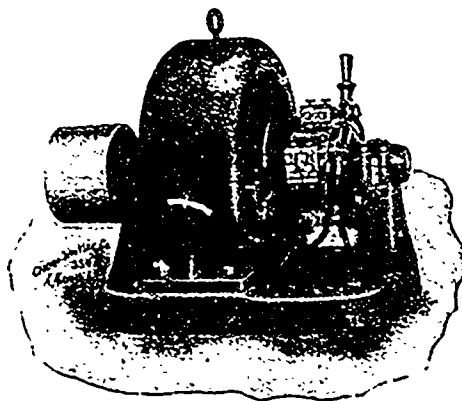
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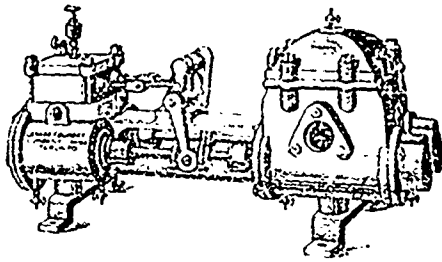
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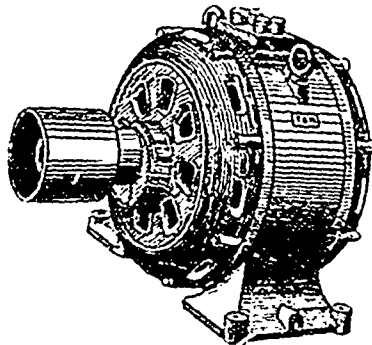
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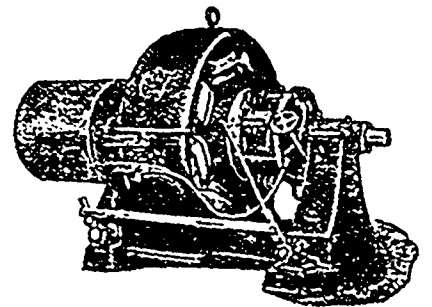
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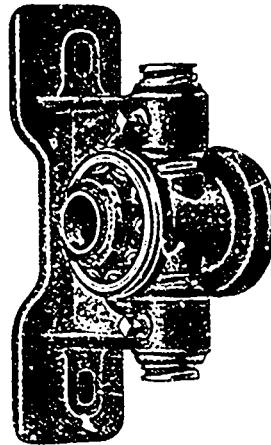
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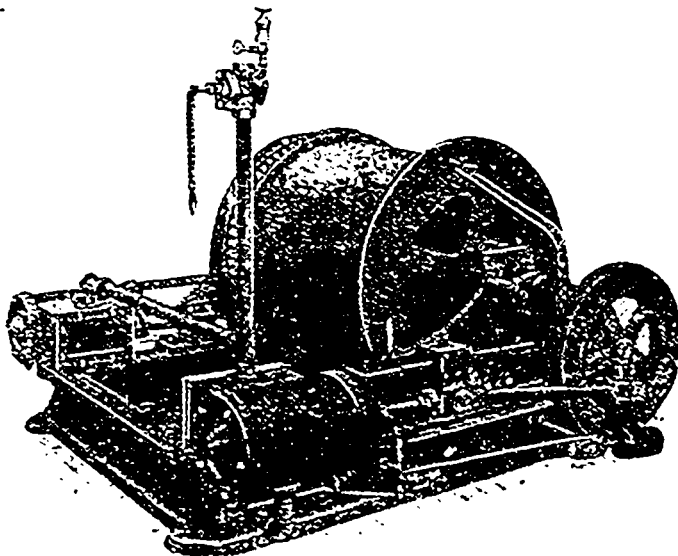
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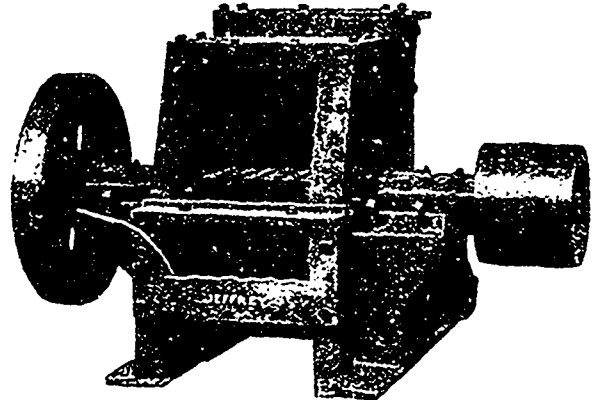
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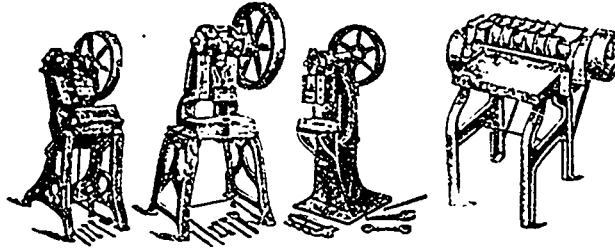
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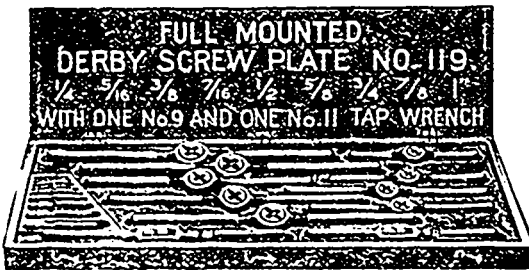
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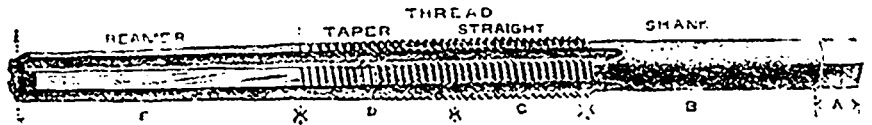


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FAR REACHING EFFECTS.

By the provisions of a circular issued on February 5 by Secretary Shaw, of the United States Treasury, pursuant to the opinion of United States Attorney-General Moody, American manufacturers may now import from abroad every kind and class of materials contained in any finished product subsequently exported by them, upon which they will be allowed a drawback of 99 per cent. of the amount of duty paid. The question originated in the application of certain Minneapolis flour millers who requested the government to allow the drawback on Canadian wheat when imported to be mixed with American wheat and ground into flour and exported to foreign countries. Secretary Shaw referred the matter to Attorney-General Moody who, in his report, taking a wide view of the question, says:

In my opinion, where it is proposed to export a product manufactured in the United States from a combination of domestic material and foreign material which has paid duty, and Customs officials can identify the foreign material and can ascertain to their satisfaction by the evidence of books of accounts or otherwise, the quantity or measure of foreign material actually present in the completed article, the exporter is entitled to receive a drawback of 99 per cent. of the duties paid upon the imported material thus ascertained to be present in the completed article.

By this ruling, American manufacturers may import every class of materials, pay the duty thereon at the time of importation, and recover 99 per cent. of said duty when it is shown that the imported article is contained in a finished product subsequently exported.

Among the industries which Secretary Shaw points out as certain to be materially benefitted is the boot and shoe industry of New England. Heretofore the tanner has been able to import hides, tan them, and then secure the drawback when they were exported, but serious difficulties confronted the manufacturer who converted the imported hides into shoes and then applied for the drawback. Now he can import hides, tan them, manufacture them into boots and shoes and obtain the drawback by showing the amount of imported material in the exported product. To secure the drawback he need only keep his books according to the system prescribed by the Treasury Department. Heretofore, wire manufactured in whole or in part from Swedish iron was entitled to the drawback, but if the imported ore was manu-

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factured into stoves and other commodities of a similar character the drawback was denied. Now the drawback can be obtained on every steam engine, wood and iron working machine, boiler, locomotive or other finished product which can be shown to contain any imported material.

The legal proposition set forth by the Attorney-General is that the section of the Dingley Act which provides for drawbacks and declares that the imported material "shall so appear in the completed articles that the quantity or measure thereof may be ascertained" may be so construed that the term "appear" shall mean "that knowledge which comes to the mind as a result of evidence, as well as knowledge derived from the exercise of the senses." The Attorney-General further says:

"In my opinion, where it is proposed to export a product manufactured in the United States from a combination of domestic material and foreign material which has paid duty, and customs officials can identify the foreign material and can ascertain to their satisfaction by the evidence of books of accounts or otherwise the quantity or measure of foreign material actually present in the completed article, the exporter is entitled to receive a drawback of 99 per cent. of the duties paid upon the imported material thus ascertained to be present in the completed article."

Secretary Shaw, speaking of effects that may result from this ruling, is reported to have said that "it will probably result in the consumption of several thousand or perhaps several hundred thousand bushels of our domestic wheat in foreign markets that would otherwise have been thrown upon our own markets at a reduced price, or not sold at all. I think it is safe to say that more than \$100,000,000 worth of our foreign trade to-day depends upon drawbacks for its being. Take, for instance, the sale of a locomotive abroad. The American manufacturers of this costly piece of mechanism do not receive much in the way of drawbacks on all the articles that go to make up the machine, for most of the parts are made of iron and steel and brass that are from our own mines.

"Only a few trinkets are made of imported materials, and the drawback on that locomotive may amount to \$200 or less. But that \$200 that they are able to shave from their selling price abroad probably allows them to make the sale of not only that one locomotive, but hundreds of others as well. A

drawback of a few dollars, therefore, on a single piece of mechanism may mean the sale abroad of many thousands of dollars' worth of manufactures. Of the \$100,000,000 worth of manufactured goods sold in foreign markets as a result of drawbacks given by the Treasury Department, at least \$50,000,000 goes into the pockets of American workmen as wages. Therefore I am firmly convinced that drawbacks are a great benefit to the country, and should be encouraged."

The matter is, of course, exciting considerable interest in Canada, but it does not seem that, with even those who are inclined to discuss it, the extent to which it will affect near about every manufacturing interest, is fully appreciated. In the House of Commons Mr. Maclean brought it to the notice of the Government, making particular reference to the effect it would have upon the Canadian flour milling industry, and the necessity of imposing an export duty on wheat. Advocating the drastic measure of an export duty on wheat when exported for grinding in the United States, Mr. Maclean quoted Mr. Robert Meighen of Montreal, who declared himself in favor of such a duty in order to preserve the market for Canadian flour millers. This proposition he declared himself in favor of. The existing situation was one of extreme national importance. He contended that an export duty might with advantage also be placed upon wheat intended for grinding in Great Britain. Export duties on nickel and pulpwood were also advocated by Mr. Maclean as in the interests of industrial progress and development in Canada.

If the new ruling of Secretary Shaw is carried to its legitimate conclusion, as it undoubtedly will be, the far reaching effects will bear in a most remarkable manner not only upon our exports of wheat and flour, and many other kindred articles, but upon our imports also; and it will probably be found that, notwithstanding our tariff preference in favor of British goods, the trade in every article imported from the Mother Country will be disfigured with a black eye that will forever spoil its attractiveness, even including our imports of woolen goods.

There is no duty imposed on wool imported into Canada when no further prepared than washed; such wool imported into the United States pays a duty of 12 cents per pound. Canada's imports of such wool in 1904 amounted to 7,339,369 pounds, valued at \$1,319,755. The total value of Canada's imports of wool and manufactures of last year was \$16,794,593, nearly all of which came from Great Britain under the preferential tariff; and such goods are the only ones in which that country holds her own as compared with the United States. This is not because British woolen goods are superior to similar American goods, but because American manufacturers were handicapped by the 12 cents a pound duty imposed upon wool in that country. Given what would be substantially free wool, it cannot be doubted that in a short time American woolen goods would soon supplant British woolens in the Canadian market. The cloud under which Canadian woolen manufacturers have been struggling ever since the coming into force of the preferential tariff will now become blacker than ever.

In a recent issue of THE CANADIAN MANUFACTURER a tabulated statement was given having reference to some 250 different dutiable articles, chiefly manufactures of iron, steel, metals, machinery, etc., imported into Canada last year, in which it was shown that of a total value of such imports from all countries, aggregating \$59,905,810, our imports from the United States under the general tariff amounted to \$49,603,523, and from Great Britain, under the

preferential tariff, to only \$6,185,458. It may be asked how much further apart these figures will, in the future, be forced through the removal of duties heretofore imposed upon imported products entering into American manufactures exported to Canada. Where would the list begin and end of Canadian or other raw products going into the United States substantially duty free to be manufactured into goods to be exported to Canada. It would benefit our pig iron industry, and also all other lines of only semi-finished forms of iron and steel, and Nova Scotia and British Columbia miners of soft coal would also be benefited. Our trade with the United States, already large, will be increased to such an extent as to cause the manufacture of American goods to be confined largely to factories, foundries and workshops operated for that purpose exclusively, where the quantities and values of imported raw materials could be accurately and easily ascertained.

TRADE RELATIONS.

One of the most remarkable features in the consideration of the question of closer trade relations between Canada and the United States is that Canadian politicians—some of them—vie with certain American politicians in raising every imaginable objection to defeat such an event. They advance the argument that closer trade relations, meaning greater freedom in buying and selling, implies some sort of a reciprocity treaty between the two countries to which Great Britain would have to give her assent, and which involves the tying up of the fiscal liberty of both countries for the term of years over which the treaty would extend. In their eyes a reciprocity treaty is the only known method by which any closer trade relations than what now exists could possibly be brought about. That this is so is evidenced by the recent visits of Hon. George E. Foster, and Hon. W. H. Montague to New England, where they addressed large and intelligent audiences on this subject. They both, in platitude language, while proclaiming the desire of the Canadian people to enjoy such closer relations, declared the impossibility of bringing it about save by a reciprocity treaty, which Canada at this time would not consider. And not in New England only, but in Canada also, in season and out of season, these politicians are proclaiming the same idea. That this idea uppermost in their minds is shown by the constant denouncement of reciprocity, or of anything else that looks to the removal to greater or less extent of existing barriers. The fact is, these gentlemen do not seem able to entertain any idea of reciprocal trade relations apart from a reciprocity "treaty."

A reciprocity treaty is much talked of in the United States, the subject being uppermost in the minds of many who desire to be on more neighbourly terms, commercially, than heretofore, and of course the talk is in favor of or against a "treaty" according to individual sentiment, but it occurs to but few that a treaty is not at all essential, and that if the United States desires the lowering of the barriers, it does not require a treaty to effect it. The American people have a higher commercial appreciation of the value of the Canadian market, both for buying and selling than ever before, and if there is any benefit in such transactions, it should accrue equally to both sides. It is true that for years the United States has been commercially unfriendly to this country, but their business men, many of them, have come to see the error of their ways, and if they are willing and desirous to live up to the golden rule, Canada would certainly stand in her own light were she to reject the friendly overtures.

We repeat, at this time Canada desires no reciprocity treaty.

with the United States. It is not desirable, but the fact that the aggregate trade between the two countries is so much larger than with Great Britain—that notwithstanding a tariff preference shown to the Mother Country. British manufacturers fail to supply Canadian wants to anything like the extent that American manufacturers do, the politicians must understand that the right hand of friendship that is now being extended to us should not be rejected.

The shortest, easiest and most effective and satisfactory way for the United States to bring about more pleasant trade relations with Canada, is to remove some of the barriers to such relations that itself has erected. If it is done the desired end is accomplished. There are many influential Americans who are striving in that direction, and they should not be discouraged. They do not propose another reciprocity treaty, nor are they asking that Canada should lower her tariff on American products. They are working for a reform in their own tariff—not ours. Obstructionists like the American Economist and the Protectionist, say that because Canada is such a large purchaser of American merchandise the situation is satisfactory to them, but they lose sight of the fact that although Canada is not inclined to increase her duties, she will probably adopt a system of multiple tariffs—high duties to meet the high duties of the American tariff; moderate duties to apply to the products of countries whose tariffs are not unfavorable to us; preferential duties on British merchandise, and, if that system did not go far enough, an export duty on wheat, pulp wood and other articles. This, of course would savor of retaliation, which, undoubtedly our American friends would not like to see established, neither would Canadians if it could be avoided.

CANADIAN FORESTRY.

The Canadian Forestry Association is one of those organizations which are doing much to benefit Canada by a constant and intelligent discussion regarding the forest wealth and capabilities of this country. The project for the formation of the Association was initiated by Mr. E. Stewart, Dominion Superintendent of Forestry, who called a meeting of a number of persons interested in the subject at his office in Ottawa in February, 1900, at which it was decided to form such an Association, and on March 8 following, the first meeting was held in that city at which the Canadian Forestry Association was duly organized. Mr. Stewart was the first secretary, the assistant secretary and treasurer being Mr. R. H. Campbell. The Association was formed and has ever since continued under the auspices of the Dominion Department of the Interior. At this time Aubrey White, Esq., Toronto, Assistant Commissioner of Ontario Crown Lands, is president. There are vice-presidents for each province in the Dominion, Hon. E. J. Davis representing Ontario. The board of directors includes William Saunders, LL.D., Ottawa, Prof. John Macorin, Ottawa, Thomas Southworth, Toronto, Hiram Robinson, J. R. Booth and E. Stewart, of Ottawa, and H. M. Price, Quebec, Que. Mr. R. H. Campbell, secretary of the Association and managing editor of the Canadian Forestry Journal, the first issue of which has just been issued.

The objects of the Association include the preservation of Canadian forests for their influence on climate, fertility and water supply; the exploration of the public domain, and the reservation for timber production of lands unsuited for agriculture; the promotion of judicious methods in dealing with forests and woodlands; re-forestation where advisable; tree planting on the plains and on streets and highways, and the

collection and dissemination of information bearing on the forestry problem in general.

Canada has from the beginning of her history, as Mr. Campbell points out, been noted for the extent and riches of her forests, and the lumber industry has been one of the leading branches of her manifold activities, and has developed with her growth, forming a principal contributor to the domestic and export trade of the country, giving employment to a large section of the population, developing a healthy and sturdy class of men, and adding to the wealth and prosperity of the Dominion. At the same time the revenue received by some of the provincial governments directly from the forests has been one of the largest sources of income, and has rendered a resort to direct taxation in any other form almost altogether unnecessary. The exports from Canada of forest products for the last fiscal year was \$36,724,445.

WAKE UP!

A Winnipeg correspondent of the London Times Commercial Supplement, advising British manufacturers to bestir themselves to sell their goods in Canada, says:

Wake up! Wake up! and send out men to study the needs of this rapidly-growing population; have British goods and your representatives always on the spot to meet your customers, and your American rivals are beaten; otherwise the American will capture for ever the whole of the trade, which in another quarter of a century will be beyond your wildest dreams; and then you may sleep for ever, for it will be too late.

Mr. W. A. MacKinnon, Canadian Commercial Agent at Bristol, England, writing to the Trade and Commerce Department at Ottawa regarding this subject, says:

It may seem odd to send Canadian thoughts back from England to Canada, but I have a two-fold object: first, that all who have business relations of any kind with British firms, may join in impressing this truth upon them, that the only way to secure trade is to go out for it in person or by trusty representatives.

An analysis of British-Canadian trade, recently published in this journal shows that in a selected list of 250 dutiable articles imported into Canada in 1904, but a very small proportion of them came from Great Britain, notwithstanding the fact that, under the preferential tariff, a remission of one-third of the duties are allowed.

The Winnipeg man tells the British manufacturer to "Wake up," and indeed he should, but will he? The American rival is a wide awake sort of a fellow who not only sends his representatives to canvas the consumer, but he also places specimens of his goods on view so that the consumer may inspect the goods personally; and he also does more than that—he advertises them liberally in the Canadian trade journals, and in this way keeps the merits of his products constantly before the attention of consumers, which the average British manufacturer does not do. The British manufacturer will not have to wait a quarter of a century to discover the fact that by his dilatoriness and unbusinesslike methods, the trade of Canada, which is even now increased to far beyond the wildest of the dreams that ever possessed their brains, is slipping—has slipped away, and is now in the firm grip of their American rivals. Perhaps the Winnipeg man is rather pessimistic in his prophecy. The British manufacturer does not have to sleep for ever—he may "wake up" as it is suggested, and the sooner he rids himself of his somnolence the better for him. His Yankee competitor permeates every commercial nook and corner in Canada, finds out what the people want, learns what their tastes are and

caters accordingly. Not so the Britisher who makes good goods, and if the Canadian wants them he must go for them. If the Canadian wants a certain article, made in a certain way, if the Britisher has it, it is for sale—if he does not have the exact thing, the Canadian can take what he offers or go without. Not so with the Yankee, for he will put himself to a deal of trouble and pains and expense to produce the article precisely as it is wanted. This pleases the customer, and thereafter the buyer and the seller are fast commercial friends. The Yankee desires to please and does please, while Mr. John Bull will not adopt such methods, and then wonders why Canadians do not tumble over themselves to cultivate trade with him.

British manufacturers should "wake up."

CANADIAN COMMERCIAL BRANCH OFFICE IN LONDON.

The offices recently acquired by the Canadian government in London, England, are established in the commercial quarter of the city. They have been opened under the direction of the High Commissioner for Canada, and are now available for persons wishing to make use of the facilities provided.

The City Trade Branch, as it is to be known, is housed at 73 Basinghall street, E.C., and is primarily intended for the greater convenience of business men who may wish to make inquiries concerning Canadian trade, and to obtain information about the products and resources of the Dominion. It should also be useful to Canadian business men who may desire to obtain special information about business openings, particularly those who are visiting London, for it is located in the heart of the city. This city branch will work in conjunction with the office of the High Commissioner for Canada and with the Canadian section of the Imperial Institute, and will also co-operate with the Commercial Intelligence Branch of the Board of Trade, which has offices in the same building.

When some little time ago, the control of the Imperial Institute was assumed by the Imperial government, the general commercial work previously carried on by the institute was transferred to the Commercial Intelligence Branch of the Board of Trade, the Imperial Government Department which most nearly corresponds to the Canadian Department of Trade and Commerce. An important feature of the re-organization was the removal of this Commercial Intelligence Branch of the Board of Trade to the central situation in the city "with a view to meet the constantly increasing demand for prompt and correct information on commercial matters in the interest of British trade so far as can be met by government action." In due course commodious premises were obtained at Portland House, 73 Basinghall Street, E.C., where facilities furnished are more readily available to business men.

In connection with this step it was suggested to the Canadian and colonial governments represented at the Imperial Institute that they should co-operate with the Board of Trade in any individual action which might be contemplated in connection with the establishment of city commercial branches, and the suggestion was also made that it would be mutually advantageous to have these offices in the same building as those of the Board of Trade. The High Commissioner for Canada has been for some time past occupied with the negotiations which have resulted in the acquisition and establishment of the new city trade branch.

EDITORIAL NOTES.

A meeting of the paper and wood pulp manufacturers of Canada was held in Montreal a few days ago at which it was unanimously resolved that in the interests of the Dominion, and especially of the Province of Quebec, every effort should be made to obtain legislation to prohibit the export of logs and pulpwood. A special committee was appointed for the purpose of preparing a petition to lay before Parliament now in session at Ottawa. Following are the companies represented at the meeting: The James MacLaren Co., the Chicoutimi Pulp Co., Laurentide Paper Co., The E. F. Eddy Co., Jonquieres Pulp Co., Lake Megantic Pulp Co., Canada Paper Co., Chatham Pulp & Paper Co., Montmagny Pulp Co., J. R. Booth, Quatehouan Falls Pulp Co., Jacques Cartier Pulp & Paper Co., Jos. Ford & Co., Price-Porratt Pulp & Paper Co., Belge Pulp & Paper Co., Northern Mills Co., Rolland Paper Co., and St. Raymond Pulp & Paper Co.

The Labor Gazette for January, in addition to its usual monthly survey of the conditions of employment, trade disputes, immigration returns, industrial accidents, etc., contains a series of reviews of the year 1904 from an industrial and labor standpoint. In the number of strikes and lock-outs the year showed a great improvement as compared with 1903, the total number of disputes in existence being only 103, as compared with 160 in the previous year and 123 in 1902. The number of workmen involved in strikes during 1904 was 15,665, and the loss of time in working days, approximately, 278,956. Dealing with industrial accidents, the railway service, with a total of 243 fatalities, was shown to involve the greatest amount of personal danger to employees, though heavy returns were also shown under the heading of mining, with 106 fatal accidents; general transport, with 100 fatal accidents; agriculture, with 100 fatal accidents; the metal trades with 103 fatal accidents, and the lumbering and sawmilling industry, with 69 fatal accidents. Comparatively few fatalities were reported in the other branches of employment. Among the branches reporting accidents which did not result fatally the metal trades stood first, with 492, the railway service following, with 331. Under general transport 169 accidents of this class were reported. In the wood-working trades 153, in the building trades 133, in the agricultural industry 117, and amongst unskilled laborers 121. An especially valuable portion of the article is that which analyzes the cause of the different accidents. A large number of the fatal accidents reported to agriculturists, for example, are shown to have been the result of farmers being struck by trains while marketing their produce. In the lumbering industry the largest number of fatal accidents were caused by falling trees. In mining explosions caused the greatest loss of life.

The Canadian Manufacturers' Association are issuing a circular to members in opposition to the Union Label Bill now before the Dominion Parliament. The bill is declared to be vicious, and to threaten the very existence of many industries, giving trades unions a coercive power over both employer and employee amounting to compulsion. Some of the objections pointed out are as follows:

The bill seeks to secure for the union label a legal status—the sole proprietary rights of which would belong to bodies which are not incorporated, and have no legal responsibility.

It legalizes the placing of an identifying mark on the

products of union labor, and assumes a proprietary interest where there is none.

It discriminates in favor of about one-eighth of the working people of the country, who compose the unions, endeavoring to place them on a higher plane than the other seven-eighths who are quite as skilled and receive just as high wages.

When once a manufacturer adopts the union label he is at the mercy of the union. If he does not comply with the demands of the union he is threatened with a withdrawal of the union label. If he discontinues the use of the label he is met by a strike or boycott, probably both.

The bill provides for marking both the goods and the packages. As a rule the goods and the packages are manufactured in different factories. If non-union packages were used the unions of the transportation companies in the event of trouble would call such packages "scab" goods and treat them accordingly.

The circular concludes:

It is, in short, only in the interest of a militant organization representing only a small proportion of the working-men of Canada, who desire to legalize a dangerous weapon to enforce boycotts. It is described in the United States as the "Little Prince of Boycoters."

The managers of the iron and steel industries at the Canadian Sault have filed a claim for the bounty of \$3 a ton voted by Parliament for the manufacture in Canada of certain classes of steel used in structural work. The claim is made in respect of several thousand tons of steel rails, and amounts to about \$60,000. The resolution providing for the \$3 bounty was not supposed to apply to steel rails, but the Soo people hold that it does. It is possible that by reason of faulty wording their claim may be upheld. The claim has been referred to Mr. A. B. Aylesworth, K.C., for an opinion, and he now has the matter in hand. Before the claim can be paid an order in Council must be passed, and the account certified to by the Auditor-General. Neither of these necessary acts has been performed. Mr. McDougall states that the claim would not be passed by him unless it was established to his satisfaction. The manufacture of steel rails in Canada is protected by a duty of \$7 a ton.

Drawbacks may be legally allowed on exported flour from the United States made in part from imported wheat, according to an opinion just rendered by United States Attorney-General Moody upon a question raised in the Treasury Department some months ago, and which has aroused considerable interest in sections of the country where milling is a prominent industry. The Attorney-General holds that where it is proposed to export a product manufactured in the United States from a combination of domestic material and of foreign material which has paid duty, and the customs officials can identify the foreign material, and can ascertain to their satisfaction, by the evidence of books of account or otherwise, the quantity or measure of the foreign material actually present in the completed article, the exporter is entitled to receive a drawback of 99 per cent. of the duties paid upon the imported material thus ascertained to be actually present in the completed article. This opinion of the Attorney-General sustains, it will be seen, the contentions of the United States millers.

The latest use of wireless telegraphy is in what is known as the De Forest wireless ship localizer. Its purpose is to advise vessels of their distance from dangerous points, such

as rocks or shoals. The ships which are equipped to make use of the signal system will have wireless telegraph plants, which will be in communication with numerous stations along the coast. Part of the same apparatus will be used both in the localizer and in the message telegraphing apparatus. It is proposed to make experimental trials on the great lakes, it being the intention to erect 52 automatic stations at the principal danger points in addition to the 10 stations used for sending and receiving commercial messages. The effect of these automatic stations will reach about six miles, and they will operate continuously upon the approach of storms or fogs. Each will have its own call, consisting, for instance, of three initials, and as soon as these are heard by a listener at the wireless instrument on board a ship he will know he is within six miles of the station whose signal he recognizes. The strength of the signal increases as the vessel draws nearer to the sending station, so that the approximate distance can be easily ascertained. The instrument for determining the direction of the station makes use of a long flat screen instead of the antennae wires used for ordinary wireless signaling. This is mounted pivotally so that it may be pointed in any direction. By constantly turning the screen while the warning signals are being received the direction will be indicated by an apparatus which works on much the same principle as a mariner's compass.

Commenting upon Mr. Chamberlain's recent speech at Gainsborough, *The Manchester Guardian* says: "When the Canadian preference is closely examined its effect on the general volume of trade and distribution of colonial trade is seen to be comparatively insignificant. When one-half of American imports into Canada are duty free, and only two-sevenths of English imports enjoy a like privilege the preference, and a diminishing one, is, as Mr. Chamberlain once admitted, 'discouraging and disappointing.' If British manufacturers are excluded by a wall which they cannot surmount it is poor consolation to them to reflect that a still higher wall excludes somebody else. We say all this not giving any ground of complaint against Canada, which is perfectly entitled to make any use she chooses of her fiscal autonomy, but simply to show that no scheme of preference can arrest the natural development of American trade with Canada or overcome the local advantages of freight and climate. Mr. Chamberlain's contention that our trade with Canada has increased under the preference omits to take account the fact that American trade without a preference of this kind has increased no less."

At a recent meeting of the Marconi Wireless Telegraph Company in London, it was stated that in view of the commercial working between England and America a new station with the latest improvements had nearly been completed in Canada. With a reduced rate to sixpence the directors thought a pair of wireless stations would be fully employed during the year. Four stations had been equipped on the St. Lawrence and a new contract had been entered into with the Canadian Government by the Associated Canadian Company, representing the extension of the organization of the wireless telegraph stations already established to the order of the Canadian Government. Five stations also had been equipped at fishing centres along the Labrador coast. When other stations contemplated in Canada had been erected there would be a chain of stations, and they will offer the Newfoundland Government direct wireless communication between the Labrador coast and Canada.

CAPTAINS OF INDUSTRY.

The following items of information, which are classified under the title "Captains of Industry," relate to matters that are of special interest to every advertiser 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, alkalis, etc. It is well worth the while of every reader of the Canadian Manufacturer to closely inspect all items under the head of Captains of Industry.

The Avonmore Hotel at Avonmore, Ont., was destroyed by fire February 8.

The Parkin Elevator Co., Toronto, have just had patented an automatic fire-proof door for elevator enclosures. The fire underwriters have given it unstinted praise, and it has been commended by a large number of prominent architects and builders. The Gordon, Mackay Co., Toronto, are having the doors installed in their building. Although the article is practically new to the market, a large number of orders have been received, and the company have found it necessary to considerably enlarge their plant, having purchased the factory lately occupied by the Hamilton Motor Works Co.

As a result of negotiations between the Dominion Iron & Steel Co., Sydney, N.S., and representatives from various American and Canadian electrical and engineering concerns the contract for additional steam power has been awarded to the Goldie & McCulloch Co., Galt, Ont., and that for electrical power to the Canadian General Electric Co., Toronto. Goldie & McCulloch's portion of the contract consists of two vertical engines of 850 h.p. each, having 150 revolutions per minute, which are to be directly connected with alternating generators for light and power purposes. The generators to be supplied by the Canadian General Electric Co., represent 600 kilowatts. It is the intention to begin delivery and installation of this power as soon as possible.

The following record of patents recently granted to Canadian inventors in Canada and the United States is furnished by Messrs. Fetherstonhaugh & Co., Toronto:—Canadian patents—H. Smith, G. H. West, H. P. Simpson, Winnipeg, Man., switch operating and controlling devices; J. Murphy, Toronto, support for wall radiators; L. H. Jones, R. H. Verity and C. McLeod, Toronto, mowers; J. G. Webster, St. John, Que., railway crossings; J. Parken, Hamilton, Ont., freight elevators; C. C. Werthner, Toronto, car coupler; T. E. McCollum, Toronto, hand brakes; R. E. Brundle, Toronto, railroad rails; A. A. Friberg, Welland, Ont., devices for lasting boots and shoes; E. L. M. J. Herreboudt, Terrebonne, Que., knitted or woven fabrics. United States patents—A. J. Cooper, Madoc, Que., car coupling; H. Campbell, Toronto, moulding machine; T. J. Carroll, Hamilton,

Ont., flexible metallic tube; Wm. J. Finlay, Killarney, Ont., traction engine coupling; A. LeSueur, Ottawa, treating acetylene for facilitating its transportation and storage; J. F. Orr, Belleville, Ont., track brake; A. J. Pattison, Toronto, variable speed gear.

H. G. Waddie, Hamilton, Ont., who is interested in the organization of the Canadian Drawn Steel Co., will erect a factory in that city, to be in operation by June, and will give employment to about sixty men.

The Knox Presbyterian church at St. Mary's, Ont., was destroyed by fire February 12. Loss about \$20,000.

The Canada Printing Ink Co., Toronto, have increased their capital from \$40,000, to \$60,000.

The Canadian Graphic Publishing Co., Toronto, have been incorporated with a capital of \$25,000, to acquire the publishing business of Canadian Graphic, and to carry on a printing and lithographing business. The provisional directors include Thos. Jarrett, Trenton, Ont., H. S. Macmillan, Ottawa, and G. M. Elliott, Toronto.

Whites, Limited, Collingwood, Ont., have been incorporated with a capital of \$50,000, to manufacture hardware, etc. The provisional directors include T. J. White, W. D. White, Collingwood, and J. W. White, Huntsville, Ont.

The Crystal Lake Ice Co., London, Ont. have been incorporated with a capital of \$40,000, to manufacture ice, and to carry on a cold storage business, etc. The provisional directors include D. Collins, G. Arthurs and J. Steele, London.

The House Cold Tire Setter Co., Toronto, have been incorporated with a capital of \$50,000, to manufacture blacksmiths' tools, machinery, etc. The provisional directors include J. F. House, R. A. Sabiston and W. W. Ritchie, Toronto.

The Mitchell Rifle Sight Co., Toronto, have been incorporated with a capital of \$50,000, to acquire the invention of the Mitchell Rifle Sight and to manufacture guns, rifles, etc. The provisional directors include Thos. Mitchell, A. D. Watson and W. J. Fletcher, Toronto.

The Canadian Pneumatic Tube Co., Toronto, have been incorporated with a

capital of \$100,000, to manufacture pneumatic tubes, supplies, etc. The provisional directors include E. P. Leon, A. F. Lowry and J. A. Soule.

Messrs. Baker & Bryans, Limited, Lindsay, Ont., have been incorporated with a capital of \$100,000, to manufacture lumber, shingles, staves, barrels, etc., and to acquire the business of the Rathbun Co. The provisional directors include G. H. M. Baker, R. Bryans and G. H. Hopkins, Lindsay.

The Archer Light, Heat & Power Co., Toronto, have been incorporated with a capital of \$100,000, to manufacture stoves, engines, machinery, boilers, etc. The provisional directors include J. H. Moore, J. M. Sinclair and R. B. Youngusband, Toronto.

The Canadian Time Recording Co., Toronto, have been incorporated with a capital of \$40,000, to manufacture clocks, time recording instruments, etc. The provisional directors include L. E. Flewelling, J. P. MacGregor and P. Hallett, Toronto.

The Huntsville Foundry & Machine Co., Huntsville, Ont., have been incorporated with a capital of \$20,000, to carry on a foundry and machine business. The provisional directors include J. H. Johnson, D. McKenzie Grant and F. H. Tool, Huntsville.

Messrs. Ryrie Bros., Limited, Toronto, have been incorporated with a capital of \$1,000,000, to manufacture jewelry, silverware, watches, clocks, etc., and to acquire the business of Ryrie Bros. The provisional directors include Jas. Ryrie, H. Ryrie, Toronto, and W. M. Birks, Montreal.

The Frances Gold Mines, Limited, Sault Ste. Marie, Ont., have been incorporated with a capital of \$1,000,000, to carry on a mining, milling and reduction business. The provisional directors include D. M. Stenabaugh, J. Gostaman and H. F. Reid, Sault Ste. Marie, Mich.

The Magpie Gold Mining & Development Co., Sault Ste. Marie, Ont., have been incorporated with a capital of \$40,000, to carry on a mining, milling and reduction business. The provisional directors include Wm. Webster, T. R. Harvey and R. F. Endress, Sault Ste. Marie, Mich.

The Boston Shoe Co., Toronto, have been incorporated with a capital of \$70,000, to manufacture boots, shoes, rubbers, etc. The provisional directors include H. Frank, P. Tebrish and S. Jacoby, Toronto.

The Northern Land & Lumber Co., Port Arthur, Ont., have been incorporated with a capital of \$75,000, to manufacture lumber, shingles, staves, etc. The provisional directors include H. Shear, G. F. Clarkson and W. E. Pollard, Port Arthur.

The Dominion of Canada Malt Co., Toronto, have been incorporated with a capital of \$100,000, to manufacture malt extract, vinegar, etc. The provisional directors include A. B. Armstrong, J. Kyles and C. M. Kirby, Toronto.

Messrs. Carson, May & Borbridge, Ltd., Ottawa, have been incorporated with a capital of \$50,000, to manufacture

trunks, bags, leather goods, etc. The provisional directors include H. Carson, F. W. May and E. W. Borbridge, Ottawa.

The General Mercantile, Ltd., Toronto, have been incorporated with a capital of \$50,000, to manufacture guano, phosphates, ammoniates, etc. The provisional directors include J. S. Lovell, Wm. Bain and R. Gowans, Toronto.

The Canada Neckwear, Ltd., Toronto, have been incorporated with a capital of \$50,000, to manufacture neckwear, etc. The provisional directors include C. A. Brodigan, S. Henderson and W. G. Milne, Toronto.

The Connor-Woods Machinery Co., Sarnia, Ont., have been incorporated with a capital of \$40,000 to manufacture agricultural and wood-sawing machinery. The provisional directors include G. F. Connor, F. W. Woods and D. E. Purdy, Port Huron, Mich.

The Spencer Industrials Co., Toronto, have been incorporated with a capital of \$15,000, to manufacture novelties, supplies, etc. The provisional directors include A. E. Spencer, W. Boadway, Chicago, Ill., and I. Boadway, Flos, Ont.

The Bracebridge Furniture Co., Bracebridge, Ont., have been incorporated with a capital of \$150,000 to acquire the business of the Hess Furniture Co., and to manufacture furniture, caskets, etc. The provisional directors include J. D. Shier, J. W. McMillan and G. W. Ecclestone, Bracebridge.

The Modern Brick & Stone Co., Toronto, have been incorporated with a capital of \$200,000 to manufacture bricks, stone, lime, etc. The provisional directors include J. A. Mitchell, Atwood, Ont., C. H. McFarlane and Wm. Bullock, Toronto.

The Peterborough Cereal Co., Peterborough, Ont., have been incorporated with a capital of \$250,000 to manufacture grain, cereals, flour, etc. The provisional directors include W. H. Meldrum, W. G. Ferguson and A. Hall, Peterborough.

Messrs. Hyslop Brothers, Ltd., Toronto, have been incorporated with a capital of \$40,000 to acquire the business of Hyslop Bros. and to manufacture bicycles, automobiles, etc. The provisional directors include Wm. Hyslop, Jr., H. H. Love and W. P. Rylie, Toronto.

The Duncan Ferguson Co., Stratford, Ont., have been incorporated with a capital \$100,000 to manufacture wearing apparel, etc. The provisional directors include D. McC. Ferguson, Jas. Swinton and W. P. Zick, Stratford.

The Monarch Typewriter Co., Toronto, have been incorporated with a capital of \$10,000 to manufacture typewriting machines, supplies, etc. The provisional directors include S. W. Crandall, J. S. Mitchell, Syracuse, N.Y., and E. R. R. Heyland, Toronto.

The Curtis & Neff Screw Co., Ingersoll, Ont., have been incorporated with a capital of \$30,000 to manufacture screw machines, machine screws, nuts, etc. The provisional directors include F. O.

Curtis, J. A. Neff and E. A. Neff, Ingersoll.

The Aberdeen Brick Works, Hamilton, Ont., have been incorporated with a capital of \$50,000, to manufacture bricks, tiles, sewer pipe, etc. The provisional directors include A. Fowler, New York City, B. A. Kennedy, Chicago, Ill., and J. J. Scott, Hamilton.

The Hubbs & Howe Co., a United States incorporation, have been licensed to manufacture paper in Ontario with a capital of \$10,000. A. M. Thorne, Toronto, is their attorney.

The General Illuminating Co., Ltd., have been licensed to do business in Ontario. L. Crannell, Ottawa, is their attorney.

The Singer Sewing Machine Co., a United States incorporation, have been licensed to manufacture sewing machines in Ontario with a capital of \$30,000. J. A. McLeod, Toronto, is their attorney.

The Durant-Dort Carriage Co., a United States incorporation, have been licensed to manufacture vehicles in Ontario with a capital of \$25,000. G. C. Greene, Sarnia, Ont., is their attorney.

The Roman Catholic school building at Tweed, Ont., was destroyed by fire February 10.

The Williams Iron Mine are shipping bessemer quality ore to the Algoma Steel Works at Sault Ste. Marie, Ont., at the rate of 35 tons per day.

The Perrin Plough Co., Smith's Falls, Ont., will increase their capital from \$100,000 to \$250,000.

The Ontario & Minnesota Power Co., Toronto, have been incorporated with a capital of \$3,000,000, to develop water powers, produce electricity, etc. The provisional directors include E. W. Backus, Minneapolis, Minn., A. McKenzie and R. A. Grant, Toronto.

The P. M. Sharpless Cream Separator Co., West Chester, Pa., will open a large branch factory in Toronto. Mr. Ellwood will be Canadian manager.

Sir Wilfrid Laurier, House of Commons, Ottawa, stated a few days ago that the Marine & Fisheries Department had purchased, since July 1, 1903, 187 tons of calcium carbide at \$65 per ton from the Ottawa Carbide Co.

Messrs. A. White & Son's grist mill at Orwell, Ont., was destroyed by fire February 13. Loss about \$6,000.

The Seaman-Kent Co., Menford, Ont., are installing a new dry kiln with a capacity of 75,000 feet.

The Canadian Folding Box Co., Ltd., Brantford, Ont., have been incorporated with a capital of \$40,000, to manufacture packages, etc., and to acquire the business of the Canadian Folding Box Co. The provisional directors include M. H. Robertson, J. H. Crompton, and C. F. Ramsay, Brantford.

The Bessemer Iron Mines of Ontario, Ltd., Sault Ste. Marie, Ont., have been incorporated with a capital of \$200,000, to carry on a mining, milling, and reduction business. The provisional directors include R. Henry, Sault Ste. Marie, Ont.,

C. W. Baldwin, and A. B. Standish, Sault Ste. Marie, Mich.

The Liquozone Co., an American incorporation have been licensed to manufacture chemicals, compounds, etc. in Ontario with a capital of \$40,000. J. J. Warren, Toronto, is their attorney.

The Gilmour Door Co., will increase their capital from \$250,000, to \$300,000.

The Dremite Explosive Co., of Canada, Ltd., Sudbury, Ont., have changed their name to the Sudbury Powder Co.

The Elizabeth Copper Mining Co., Sault Ste. Marie, Ont., have been incorporated with a capital of \$250,000, to carry on a mining, milling, and reduction business. The provisional directors include C. W. Baldwin, A. E. Sharp, and F. P. Sullivan, Sault Ste. Marie, Mich.

The Great Northern Lumber Co., Toronto, have been incorporated with a capital of \$50,000, to carry on a lumbering and mining business. The provisional directors include Jas. Milne, E. D. Watts, and A. W. Holmsted, Toronto.

The B. A. Pyrites Co., Toronto, have been incorporated with a capital of \$750,000, to carry on a mining, milling, and development business. The provisional directors include A. B. Moore, J. W. Cheeseworth, and J. G. Mowat, Toronto.

The Toronto Street Railway Co., will install the Sterling brake on all the new cars which they purpose building and if it is found to be successful it will be put on all present cars. An automatic fender will also be introduced on the company's cars.

Messrs. Skedden and Co.'s brush factory at Hamilton, Ont., was damaged by fire February 8. Loss about \$1,100.

Messrs. George Shepherd & Sons, proprietors of the Ponton Mills at Primrose, Ont., have completed the remodeling of their plant to the Universal Bolter System, which was installed by the Stratford Mill Building Co., Stratford, Ont.

Mr. P. W. Gardiner, Galt, Ont., will erect a large planing mill in that town, and will equip it with the most modern machinery for the manufacture of sashes and doors, flooring, etc.,

The Methodists at Leamington, Ont., will erect a new church building there to replace the one destroyed by fire recently.

The Brampton, Ont., Conservator printing establishment was damaged by fire February 9. Loss about \$3,000.

The Redding Mining Co., are installing machinery for a stamp mill at their mine in the Atikokan district near Fort William, Ont. Mr. Dalphin of Montreal, has charge of the work.

Messrs. D. H. Gillies & Co.'s saw mill at London, Ont., was damaged by fire February 7.

The barley mills of John MacKay, Limited, at Bowmanville, Ont., recently destroyed by fire will be rebuilt. Mr. J. R. Code, president of the company has awarded contracts to Wm. Brock, Bowmanville, for the erection of a four story brick mill and to the Goldie & McCulloch Co., Galt, Ont., for the installation of a complete set of machinery and steam plant.

Among the building permits issued in Toronto recently are:—W. J. Gage & Co., factory, at a cost of about \$50,000; Cosgrave Brewing Co., rebuilding damages from fire, to cost \$4,000; Christie, Brown & Co, stables and barn, to cost \$15,000; Canada Launch Works, office and workshop, \$2,000; Mr. Cawthra, interior alterations to store, \$18,000; Gutta Percha Rubber Co., office and warehouse, \$75,000.

The Peterborough Cold Storage and Provision Co., Peterborough, Ont., will shortly commence the manufacture of beet sugar.

The Backus-Brooks Co., Minneapolis, Minn., have awarded the contract for the construction of a coffer dam at Rainy River, Ont., to Messrs. Penniman & McGuire, Providence, R.I., at a cost of \$500,000.

The Canadian Northern Railway Co., have ordered 200 box cars, 60,000 pounds capacity, from the Crossen Car Mfg. Co., Cobourg, Ont.

The Dominion Government will erect a large new storage warehouse at London, Ont., at a cost of about \$20,000.

The Merchants' Oil & Gas Co., with a capital of \$1,000,000, and the Leamington International Oil Co., with a capital of \$50,000, have been organized at Detroit, Mich., to operate the oil fields at Leamington, Ont.

Mr. Carson, Belleville, Ont., will erect a canning factory at Napanee, Ont., at a cost of about \$15,000. For further information apply to the mayor of Napanee.

The Montreal plant of the Canadian General Electric Co., will be removed to Peterborough, Ont., where the company already have extensive works.

Father Moyna, Orillia, Ont., is considering the erection of a new Roman Catholic church building in that town at a cost of about \$30,000.

Messrs. Henry Birks & Sons, manufacturing jewellers, Montreal, have acquired the controlling interest in the firm of Messrs. Ryrie Bros., Toronto. The Toronto business will be conducted under the name of Ryrie Bros., Limited, with the personnel of their present staff unchanged. The new firm will be located on or about June in the building lately acquired by the Montreal concern, which will be one of the handsomest jewelry establishments on the continent.

The Dominion Cement Block Machine Co., Ottawa, have been incorporated with a capital of \$100,000, to manufacture machinery for making blocks of cement, concrete, etc. The provisional directors include C. A. Irvin, H. P. Fleming, Ottawa, and C. E. B. Adams, Toronto.

The Canadian Canals Corporation, the name of an ambitious enterprise, will have Toronto for their headquarters. The proposed incorporators are H. C. Spalding, New York; Col. J. I. Davidson, P. Howland, R. C. Steele, and A. T. Drummond, Toronto; T. Burnham, Chicago, Ill., and T. W. Hugo, Duluth, Minn. They seek power to build canals or waterways from a point on the Georgian

Bay between Waubesa and Port Severn, or on Nottawasaga Bay, on Lake Simcoe, thence to some point on Lake Ontario, and from some point on Nottawasaga Bay along the valley of the Nottawasaga River, thence to some point on Lake Ontario. One terminus on Lake Ontario is to be in the County of York, and the other either in the County of York or in the County of Ontario. The company seeks authority to construct the necessary basins and reservoirs. It asks expropriation powers, and desires authority to levy and collect tolls. The capital stock of the company is placed at \$15,000,000.

The Toronto City Engineer has recommended to the city authorities the construction of a subway over the Queen Street crossing, and an extension of the Don River bridge so as to cover the railway tracks at that crossing. These works will cost about \$250,000. Estimates will also be presented for improvements in fire protection, water works, new bridges at the Exhibition grounds, etc.

Messrs. East & Co's umbrella and trunk factory at Toronto, was partially destroyed by fire February 2. Loss about \$3,000.

The Hendrie Co., Toronto, will erect a stable for 300 horses, a smithy and shoeing forge at a cost of about \$100,000.

A new machine has been invented by J. G. Mills, Toronto, for excavating trenches, sewers, drains, etc. It will excavate at the rate of 320 cubic yards of earth daily. Mr. Robert Taggart, 265 Church Street, Toronto, is handling the business.

Messrs. Mettam, Tendon & Co., Leamington, Ont., will erect a two story hardware store 90x48 feet.

The Hamilton, Grimsby & Beamsville Electric Railway Co., will erect a new station at Hamilton, Ont.

The International Terminal & Bridge Co., are applying for incorporation to construct a bridge across Rainy River at or near Fort Francis, Ont. For further information apply to Messrs. Kerr, Davidson, Paterson and Grant, Toronto.

The Hamilton, Grimsby & Beamsville Electric Railway Co. will connect their line with the Niagara, St. Catharines and Toronto electric line at or near Vineland, Ont. The companies will erect a high level bridge over the old Welland Canal at St. Catharines, Ont.

The Canadian Shredded Wheat Co., recently incorporated at Niagara Falls, Ont., will erect a large factory there for the manufacture of foods, etc.

Messrs. Geo. Jordan and Mr. J. Ellis, Lindsay, Ont., are organizing a new canning company with a capital of \$75,000. They intend erecting a canning factory in that town at a cost of about \$45,000.

The Methodist church at Mimosa, Ont. was destroyed by fire February 5th.

Messrs. W. J. White & Son's furniture establishment at Bracebridge, Ont. was destroyed by fire February 6th. Loss about \$5,000.

The new arts building in connection with the Ottawa University is being con-

structed of armored concrete. A library and medical hall, as well as a large convocation hall will also be erected of the same material. Two large wings on either side of the arts building will be commenced shortly the corner stones to be laid on May 24. The work is being done by the Ferro Concrete Construction Co., Baltimore, Md. M. J. S. Irvin, manager of the International Portland Cement Co., Ottawa, being one of the principal promoters of the reinforced concrete plan of construction.

The new Victoria Museum Building to be erected at Ottawa, at a cost of \$950,000, will be constructed of Nepean stone and will be 219x53 feet, with two wings of 153x54 feet, and a tower rising 220 feet, 120 feet above the main building. The Geological Survey Department will be housed in this building. Geo. Goodwin, Ottawa, is the contractor.

The Canada Brass Rolling Mills at New Toronto, Ont., have made their first shipment of brass, which marks a new stage in the industrial progress of Canada. Lake Superior district copper was used.

A new telephone exchange will be erected in Kingston, Ont., at a cost of about \$30,000. For further information apply to the mayor of that city.

The Dominion Government will establish a central gas plant at Parry Sound, Ont., at which the Department of Marine will manufacture acetylene gas and store it in the buoys and lights of the eastern portion of Georgian Bay.

W. H. Clay, town clerk, East Toronto, Ont., is inviting tenders for the erection of a reinforced concrete pumping station in that town.

Three large new churches will be erected in Peterborough, Ont., this year. The Park Street Baptist, All Saints, Anglican and the Methodist will each build one.

The directors of the Lake Superior Corporation, Sault Ste. Marie, Ont., now have on hand a sufficient number of applications for the sites for plants at the Soo to guarantee the disposal of almost the entire 55,000 h.p. the company will have at their disposal. A director of the company states that the Toronto director have not taken action in regard to the application because it is the intention of the directors to raise the head of the present dam so that the company will increase their power output from 35,000 to 55,000 h.p. It is intended that this work will be carried out early in the spring. At the present time the company have disposed of 20,000 h.p. to the American Carbide Co., and 2,000 h.p. to the street railway company on the Canadian side. They will leave about 33,000 h.p. to be disposed of to companies desiring to locate at the Soo. The price set by the directors of the power is \$25 per h.p. where large units are contracted for, and as high as \$35 and \$37.50 where small units only will be taken.

It is reported that The Canadian Elevator Co., Hamilton, Ont., have acquired the business and plant of the Fenson Elevator Co., at Toronto.

The C. Stephens Co.'s cold storage

warehouse at Collingwood, Ont., was damaged by fire February 10. Loss about \$37,000.

The Doherty Organ Co.'s, machine shop at Clinton, Ont., was destroyed by fire February 15. Loss about \$50,000. The company will rebuild as soon as possible.

The Chapman Double Ball Bearing Co., Toronto, have just completed the installation of their bearings in the new plant of the Northern Electric Co., Montreal.

The National Acme Machinery Co., Cleveland, Ohio, have installed several automatic brass threading machines in the new plant of the Robert Mitchell Co., Montreal. Mr. A. G. Johnston of that company was in Montreal this week putting the new machinery in operation.

A steel bridge, now under construction over the St. Lawrence river at Quebec, is in many respects a remarkable structure. The weight of this bridge will be about 35,000 tons. Its span of 1,800 feet crosses the entire St. Lawrence river at a height not to interfere with navigation, and is the longest span in the world, the Forth bridge in Scotland being 1,710 feet long, the Brooklyn bridge 1,680 feet, and the new East River bridge in New York 1,600 feet. There have been manufactured by the Phoenix Bridge Co., Phoenixville, Pa., to date and partly shipped to the site of the bridge about 10,000 tons of steel. It will take about two more years to complete the bridge. The masonry piers are entirely finished and the temporary false-works, of steel, are now in place on the south shore, upon which erection will begin at the opening of spring this year, the 1,800 feet of steel bridge-work between the piers to be erected without any false-work in the river. The bridge is to be 80 feet wide over all, carrying a double track railroad, a double track trolley and highway, and two sidewalks. Many novel features have been adopted in the design and manufacture of this bridge which mark a new era in long span bridge-building. The total length of the bridge will be 3,300 feet; length of channel span, as stated above, 1,800 feet; ship clear headway, 150 feet above highest tide; height of cantilever towers, 360 feet above the river. The Phoenix Bridge Co. are the contractors for the superstructure.

The Crown Lands Department of the Province of Quebec estimates that in the Lake St. John district alone (3,100 square miles) there are a hundred million cords of pulpwood. This figure is based on the extremely low estimate of five cords per acre. If the true average per acre were used and a calculation made for the total forested area of the peninsula, the result would be beyond all belief. The available raw material is sufficient to provide for an annual output of millions of tons of pulp for an indefinite period.

Le Credit Foncier Franco-Canadien, Montreal, will erect a ten-story office building in that city at a cost of about \$400,000.

Davies, Limited, Montreal, have been incorporated with a capital of \$600,000 to carry on a packing and canning business,

etc. The provisional directors include R. D. McCibbon, S. J. LeHurray and K. J. Beardwood, Montreal.

The Cantin Varnished Leather Co., Quebec City, have been incorporated with a capital of \$100,000, to manufacture leather, etc. The provisional directors include M. Cantin, W. A. Marsh and J. A. Scott, Quebec City.

The Messrs. Allan of the Allan Steamship Co., Montreal, state that the first turbine steamer will be placed in service between Canada and Great Britain in March next. A second turbine steamer will be operated shortly afterwards.

A second of the ice-breaking steamers ordered by the Dominion government for the St. Lawrence reached Quebec a few days ago. She was built in Scotland, the principal dimensions being: Length, 245 feet; breadth, 40½ feet; depth, 18 feet, with a gross tonnage of about 1,350 tons. The vessel is specially strengthened in order to resist pressure, the shell plating at bows and in other parts being of double thickness, with intermediate frames extending fore and aft. The keel, stem, stern-post, propeller, brackets and rudder are extra strong and heavy, and made of nickel steel. On the stern-post a cast-steel knife is fitted to break ice when working astern, and to protect the rudder. She is propelled by twin screws, and is expected to develop a high rate of speed. The steamers will be used to prevent the formation of the ice bridge at Cap Rouge, and to make a way for steamers through ice, if necessary, to get them to sea. The project for trying to lengthen the period of navigation to Montreal has been abandoned for the season.

The council of the Montreal Board of Trade, in their report for 1904, observe the tendency towards amalgamation of the manufacturing concerns on trade conditions in part as follows:—“The important feature of the year was the steady growth of the West. While there was a decrease in the export of wheat of about \$10,000,000, as compared with the previous year, the Western crop was, nevertheless, satisfactory, exceeding, in fact, what was expected during the early harvesting operations. The tide of immigration shows no sign of abating, and an evidence of the result of this influx of settlers is that about 4,000,000 acres will be put under cultivation this year, showing an increase of over 15 per cent. The establishment of many large industrial concerns, such as the works of the Canada Car Co., is another noteworthy feature among those which point to the belief that Canada may hope to enjoy that prosperity which has been hers for many years to come. The broadening out of commercial and industrial Canada has moved the banks to largely increase their capital in order to meet the demands upon them for funds, the note circulation of many of them having approached the legal limit during the movement of the crops. In response to the tendency of the times has been the movement towards the consolidating of large manufacturing enterprises, such, for instance, as cotton companies.

The Dominion Camp Equipment Co., Montreal, have been incorporated with a capital of \$20,000 to manufacture camp ranges, movable ovens, cooking utensils, camping outfits, etc. The provisional directors include D. W. Lockerby, A. H. Scott and J. H. McComb, Montreal.

The Hill Crest Coal & Coke Co., Montreal, have been incorporated with a capital of \$500,000, to manufacture coke and carry on a coal mining business. The provisional directors include R. H. Pope, Cookskire, Que., M. P. Davis, Ottawa, and W. Farewell, Sherbrooke, Que.

The Wool & Cotton Drysalers Co., Montreal, have been incorporated with a capital of \$49,000, to manufacture chemicals, dye-stuffs, etc. The provisional directors include Watson Jack, W. F. B. Henry and W. R. Allen, Montreal.

The Denis Advertising Signs, Limited, Montreal, have been incorporated with a capital of \$20,000, to manufacture signs, and to carry on the general business of electricians, etc. The provisional directors include A. Denis, E. Denis and J. O. Denis, Montreal.

The Canadian Appraisal Co., Montreal, have been incorporated with a capital of \$50,000, to supervise the construction of buildings, machinery and industrial plants, etc. The provisional directors include F. Paul, W. M. Doull and L. Guest, Montreal.

The Commercial Rubber Co., Montreal, have increased their capital from \$20,000, to \$140,000.

The St. Laurent College, at Outremont, Que., was damaged by fire February 9. Loss about \$5,000.

The Grand Trunk Railway Co.'s blacksmith shop at Point St. Charles, Que., was destroyed by fire February 3. Loss about \$10,000.

Large additions to rolling stock are being made by the Canadian Pacific Railway Co. Orders have been given for fifty combined passenger and freight engines. Ten are to be built by the Canadian Locomotive Works at Kingston, Ont., thirty by the Montreal Locomotive Machine Co., and ten at the Canadian Pacific Railway Angus shops. Another order has been placed for the construction of forty vans at the Canadian Pacific Railway shops at Farnham, Que. In addition to these preparations are being made for the building of 3,000 box-cars at the Angus shops of the company.

The building occupied by Messrs. S. B. Foote & Co., publishers of The Shareholder, was damaged by fire February 2.

Fred Galibert's tannery at Montreal, was destroyed by fire February 1. Loss about \$40,000.

The Robillard building in Montreal, occupied by the Merchants' Telephone Co., the Tuckett Cigar Co., and the Peerless Gaslight Co., was destroyed by fire February 3. Loss about \$125,000.

The Dominion Automatic Scale Co., Amherst, N.S., has been organized with a capital of \$12,000, to acquire the business of the Automatic Scale Co.

The Revere House at Pictou, N.S., was destroyed by fire February 4. Loss about \$30,000.

The Temiskaming & Northern Ontario Railway Co., have placed an order for 25 flat cars, two vans and one snow plow with Messrs. Rhodes, Curry & Co., Amherst, N.S.

The Shipbuilding & Investment Co., have been organized at Halifax, N.S., where they will erect a large shipbuilding plant. The following are the officers of the company:—Geo. S. Campbell, president; Ald. J. A. Johnson, vice-president, and G. Fred Pearson, secretary-treasurer.

A large corporation has been organized for fruit growing and general farming in the Annapolis Valley, N.S. The company have secured options on thirty farms, with an aggregate acreage of 3,000, in the heart of the fruit belt, and propose to set out 40,000 new trees, put in a box and barrel factory, install a canning and vinegar plant. For further information apply to the mayor of Annapolis, N.S.

Messrs. Jas. Pender & Co., St. John, N.B., manufacturers of nails, etc., are erecting a new mill.

A. J. Slater will install a shingle machine in his mill at Kirkland, N.B.

Messrs. Timothy Lynch & Co., Nelson, N.B., have been incorporated with a capital of \$200,000 to manufacture lumber, pulp, etc. The provisional directors include T. Lynch, T. B. Lynch, Fredericton, N.B., and P. B. Millie, Glassville, N.L.

The Department of Public Works at Fredericton, N.B. are inviting tenders for rebuilding the Forks bridge over Eel River, Shannonsvale, N.B.

The McFarlane, Thompson & Anderson Mfg. Co., Fredericton, N.B., have been incorporated with a capital of \$75,000, to manufacture railway castings, milling machinery, etc., and to acquire the business of McFarlane, Thompson & Anderson. The provisional directors include W. McFarlane, Nashwaankis, N.B., F. P. Thompson and W. T. Whitehead, Fredericton.

The Sydney Cement Co., Sydney, N.S., incorporated with a capital of \$500,000, to manufacture cement from the slag, a by-product of the Dominion Iron & Steel Co., have awarded the contract for the erection of their factory to C. J. Curtis, New York City, and the contract for the machinery to Ruggles Coles Engineering Co., New York City. The plant will cost about \$225,000, and will have a capacity of 500 barrels of cement daily. A large cooperage will also be built, with a capacity of 50,000 barrels annually.

The New Brunswick Iron Co., Leppreux, N.B., recently organized with a capital of \$1,000,000, will erect docks at that place and will commence mining operations shortly. The following are the officers of the company:—President, C. V. Wetmore, Truro, N.S.; vice-president J. McLennan, Sydney, N.S., and P. Clinch, secretary.

The Eclipse Stock-Taking Machine Co., Winnipeg, Man., have been incor-

porated with a capital of \$10,000, to manufacture machines for winding ribbons, braids, laces, etc. The provisional directors include H. C. Hamelin, Lauder, Man., B. D. Wight and W. F. Hamelin, Winnipeg.

The R. P. Campbell block at Portage la Prairie, Man., was destroyed by fire February 6. Loss about \$35,000.

A company has been formed at Claresholm, N.W.T., to erect a 100-barrel flour mill and a 30,000-bushel elevator. F. H. Le Quesne, formerly of St. John, N.B., has been retained as manager.

The White Block at Moosomin, N.W.T., was destroyed by fire February 9. Loss about \$40,000.

The King Edward Hotel at Stoughton, N.W.T., was destroyed by fire January 31. Loss about \$10,000.

The First Baptist Church at Calgary, N.W.T., was destroyed by fire February 8. Loss about \$10,000.

The town of Swan Lake, Man., have granted a bonus of \$6,000 to S. P. Hodgson of Headingly, Man., for the erection of a 90-barrel mill and grain elevator there.

The Sons of England will erect a hall at Winnipeg, Man., at a cost of about \$40,000.

R. J. Lund's flour mill at West Selkirk, Man., was destroyed by fire February 4.

Messrs. J. Gunn & Sons, Winnipeg, Man., have been awarded the contract for the new Canadian Northern Railway bridge over the south branch of the Saskatchewan River near Prince Albert, N.W.T. The structure consists of nine spans of 150 feet each, the track being 100 feet above low water. The piers will be built of concrete and the trusses of steel.

Messrs. D. R. Fraser & Co., Edmonton, N.W.T., are applying for incorporation for power to construct dams, wharves, piers, etc., on the river above Edmonton for use in handling saw-logs.

The Canadian Iron Wool Co., Winnipeg, Man., are applying for incorporation.

Messrs. B. W. Yeo, J. Fifi and J. J. Butt, Swan Lake, Man., are interested in the erection of a large flour mill at Cypress River, Man.

Parties in Dawson City, Yukon, are building a steam auto-sled which will be run by means of an endless chain with cogs attached. An engine will be used for the supply of the power necessary, and it is estimated that the sled can be driven from five to ten miles per hour.

The Manitoba Legislature have guaranteed a bonus of \$10,000 per mile for 189 miles of road to the Canadian Northern Railway Co., and also \$1,000,000 for the new terminals in Winnipeg, Man.

The Royal Lumber & Fuel Co., Winnipeg, Man., recently incorporated, will erect a lumber mill there.

Messrs. McDermid & Clark, Brandon, Man., will erect a new planing mill. The machinery will be driven by electric power.

The Empire Sash & Door Co., Winnipeg, Man., have been incorporated with a capital of \$100,000 to manufacture lumber, pulp, window sashes, doors, etc. The provisional directors include W. H. McWilliams, G. R. Crowe and J. Love, Winnipeg.

The Canadian Pacific Railway Co. have purchased the Esquimalt & Nanaimo Railway at a cost of \$1,250,000.

Messrs. A. Ikeda & Co.'s oil and fish guano works at Departure Bay, Nanaimo, B.C., were destroyed by fire February 1. Loss about \$6,000.

Survey parties have been sent out by the Canadian Pacific Railway Co., to select the route of two one hundred mile branches from the Calgary and Edmonton branch. The new lines will be extensions of the 25 mile branches already begun from Lacombe and Wetaskiwin last season. Parties have also recently returned to Winnipeg, Man., after having completed the survey of a new proposed line of 180 miles that will extend from Golden, B.C., to Jaffray, on the Crow's Nest Pass road. The proposed line runs north and south, paralleling the Columbia river. It passes through a country of mining resources chiefly.

S. Jones, Victoria, B.C., will erect a large office building in Vancouver, B.C.

Messrs. Heap & Co.'s dry kiln at Ruskin, B.C., was destroyed by fire Feb. 11. Loss about \$9,000.

At a special meeting of the directors of the Royal Agricultural and Industrial Society, held recently at New Westminster, B.C., it was decided to hold the Dominion Exhibition from September 27 to October 7. Over \$100,000, including the federal grant, will be raised.

The Kaiser House at Poplar, B.C., owned by F. Kaiser, Eholt, B.C., was destroyed by fire February 6.

The second smelter of the Montreal & Boston Consolidated, Co., at Boundary Falls, B.C., was blown in February 7, and it is the expectation of the company to keep both furnaces in blast from now on. The ore all comes from the company's Brooklyn, Rawhide, Mountain Rose and Sunset mines, which are now sending out about 20 cars daily.

Messrs. Robert and D. C. Hutchinson, Victoria, B.C., are interested in the establishment of a large automobile factory in that city. They have awarded the contract for the installation of the machinery to the MacGregor-Gourlay Co. of Galt, Ont.

The South Yale Copper Co. have been incorporated at Victoria, B.C., with a capital of \$450,000 to carry on a mining, smelting and refining business.

The Bourne Macdonald Moscrop Co., Revelstoke, B.C., have been incorporated with a capital of \$75,000, to manufacture trunks, furniture, etc.

The British Pacific Fishing & Canning Co. have been incorporated at Victoria, B.C., with a capital of \$200,000 to carry on a canning and packing business.

The Western Power Co. have been incorporated at Victoria, B.C., with a capital of \$25,000, to produce electricity

for hydraulic mining and power purposes, etc.

The Whatshan Lake Power Co. have been incorporated at Victoria, B.C., with a capital of \$250,000, to produce electricity for light, heat and power purposes.

Speaking of steel construction in buildings, it would be hard to beat something in this line in Baltimore. Plans for a new six-story building to be erected in the burned district there provide for a steel structure without a splinter of wood in it from top to bottom. Even the doors, trims, window sashes and door jams are to be of metal. The windows will be glazed with wire glass. The frame for the show windows will be of steel, into which the plate glass will be fitted. The side walls, columns and rear walls, as well as the supporting columns of the front walls, will be of concrete. The floors will be of cement. The stairs will be of concrete, with slate treads and wrought iron balustrades. The elevator shaft will be of concrete, as will also the inclosure around the stairway and the elevator hall. The cellar and roof are to be of cement. And to cap the climax the flagstaff will be of steel.

The Canadian Westinghouse Co., Hamilton, Ont., have just entered an order for the equipment of a power house for the electrical operation of gold dredging boats on the Alaskan rivers. The plan is an entirely new one involving many interesting features. A number of Detroit capitalists recently formed the Canadian Klondike Mining Co. A visit was made to the works of the Westinghouse interests at East Pittsburg, Pa., to ascertain if electrical machinery could be used in the gold mining plant. After considering various plans, it was decided to install a 400 kilowatt turbo-generator in the power house, to be driven by a 600 h.p. Westinghouse-Parsons steam turbine. The dredge boats are being built by the Marion Steam Shovel Co., Marion, Ohio. On these boats will be installed induction motors, aggregating a total of about 500 h.p., and varying in size from 7½ to 100 h.p. The fact that these people are willing to install a plant of this nature in such a distant country, far from the manufactory and possible repairs, shows the confidence engineers place in this type of unit. The power house will be located at Dawson City, and the dredges will operate on the Yukon river and its tributaries. Lines for transmitting power will be strung from the station to the boats, wherever they may be working. Electrical machinery is used very extensively in mining operations, but this plant will be watched with considerable interest, owing to the remoteness of the country and the new field which will be opened.

The American Locomotive Co., with general offices in New York and plants in Dunkirk, N.Y., Paterson, N.J., Scranton, Pa., Manchester, N.H., Allegheny, Pa., Providence, R.I., Richmond, Va., Schenectady, N.Y., and Montreal, Que., having an annual capacity of fully 3,000 locomotives, have acquired the Rogers Locomotive Works, Paterson, N.J., which have a capacity of about 300 locomotives per year.

ELECTRICITY.

Electrical machinery and appliances of all kinds, electrical power plants and other progress in the electrical industries will be noted here.

The Metal and Jewelry Section of the Canadian Manufacturers' Association held a luncheon at McConkey's, February 8, at which Mr. K. L. Aitken, consulting engineer, of Toronto, was the speaker. Mr. Aitken took for his subject "The Comparative Advantages and Cost of Steam and Electric Power," and the address proved to be of extreme interest. Relative cost of buying and making power was first dealt with, after which the question of mechanical versus electrical drive was taken up. About fifty members were present, and at the adjournment, a very hearty vote of thanks was tendered to Mr. Aitken for his remarks.

W. F. Forrest, Atwood, Ont., will equip his new grist mill with sufficient boilers and machinery to do a general milling business and supply electric light for that town at a cost of about \$11,000.

The Grand Trunk Railway Co., Montreal, have placed an order with the Canadian Westinghouse Co., Hamilton, Ont., for six electrical locomotives for handling trains through the tunnel at Port Huron, Mich. The plans also call for a brilliant illumination of the tunnel.

The new electric lighting system which is owned and controlled by the city of Moose Jaw, Assiniboia, is now in effective operation. The electrical apparatus, including the generator, switchboard, pole line and wiring system, was supplied by Allis-Chalmers Bullock, Limited, Montreal. The generator is a 2 phase, 2,200 volt, 100 k.w., Bullock revolving field type. The power house is equipped with a tandem compounding condensing engine of 160 h.p., built by the Robb Engineering Co., Amherst, N.S. When the pumps are installed the cost of the building and machinery will be in the neighborhood of \$38,000. The whole equipment is thoroughly efficient and modern.

The new power house erected at Fencelon Falls, Ont., is completed and the electric plant fully installed. The commissioners have 400 h.p. for sale at \$15 per h.p. For further information apply to E. Pearce of that town.

The Fording Valley Railway Co. are applying for incorporation in British Columbia to construct a railway to be operated by electricity, from a point on the B. C. Southern Railway, near the confluence of the Elk River and Michel Creek, along the Elk River valley, then along the Fording River valley, and other rivers, to the Alberta boundary at Henrietta Creek, at the northern limit of the properties of the Imperial Coal & Coke Co. Power is asked to construct branch lines along Grace, Erwin, Smith, Lewis and Henrietta Creeks, also other branches, not exceeding 20 miles long in any one case, to connect with the Canadian Pacific Railway or any other railway near the projected route. Harvey and McCarier, Victoria, B.C. are solicitors for the promoters, who are the Im-

perial Coal & Coke Co., the head offices of which are in Montreal.

The Canadian Westinghouse Co., Hamilton, Ont., have closed a contract with the Grand Trunk Pacific Railway Co. to provide air brakes for the rolling stock and equipment of the Transcontinental Railway, to cost \$700,000. The new buildings of the Westinghouse company will soon be ready for occupation. They will be devoted to the manufacture of electrical machinery and appliances, and it is anticipated that by April next this department of the enterprise will be in full operation, employing from 800 to 1,000 hands.

The Grand River & Western Power Co. are applying for incorporation to construct a water course and feeder at Dunnville and a raceway northerly from the Grand River to Jordan, on Lake Ontario, for the purpose of developing electrical and hydraulic energy. It is also proposed to construct lines of wire, poles, tunnels and conduits for the transmission of light, heat and power.

The Windsor, Essex & Lake Shore Rapid Railway Co., Windsor, Ont., will build an electric railway from Windsor, through Leamington and Kingsville to Chatham, Ont.

The Chilliwack Light & Power Co., Chilliwack, B.C., of which J. B. Morgan is manager, are planning to commence work early in the spring on their power plant and electric railway, the latter to extend from Chilliwack to New Westminster, B.C. The power plant and transmission line is estimated to cost \$125,000.

A syndicate headed by J. W. Molson, Montreal, are applying to the Provincial Legislature for charter rights for the organization of the Electric Railway Co. of Lac Achigan, Que. The company propose to build two electric lines, one from St. Jerome, Que., to Lac Achigan, running through Shawbridge, and one from St. Jerome to New Glasgow, Que., and running through the town of St. Sophie.

The Lonqueuil Tramway Co. Montreal, are seeking incorporation to build an electric railway from Montreal to Lonqueuil, Que., and through other parishes of Chambly County, Que.

The York & Toronto Radial Railway Co. have plans under way for considerably extending the radial railway system around Toronto. The extension from Long Branch to Oakville, Ont., will be undertaken at an early date, and the Metropolitan extension to Lake Simcoe will be commenced as soon as spring opens.

The Bell Telephone Co. are negotiating for a franchise in Berlin, Ont., and also with the farmers throughout Waterloo county, who have been discussing the desirability of establishing an independent telephone company in the county.

The municipalities of Gleisdorf, Steyermark, Austria, and of Kastelruth, Tyrol, Austria-Hungary, will introduce electric lighting and power stations.

An electric railway line will be constructed to run from Aigle to Seppey, Leysin, and Feydey in Switzerland. For

particulars address the Aigle-Ollon Monthey Railway Co., Aigle, Switzerland.

The tramway lines in the city of Guatemala are to be operated by electric traction. For detailed information apply to Director Ricardo Echeverria, Guatemala City, Guatemala.

Three electric cable tramways will be built in the city of Berne, Switzerland.

The British Columbia Electric Railway Co. will commence the construction of a branch line from the city of Vancouver, B.C., to the Gorge in the spring.

The Marmora Electric Co., Ltd., Marmora, Ont., have been incorporated with a capital of \$40,000 to acquire the Marmora Electric Co., and to produce electricity, natural gas, etc. The provisional directors include A. W. Carscallen, M. O'Connor and Jas. Parker, Marmora.

The Scarborough Telephone Co., Toronto, have been incorporated with a capital of \$40,000, to carry on the business of a telephone company. The provisional directors include A. Neilson, J. Neilson and D. Brown, Scarborough, Ont.

The Markham & Pickering Telephone Co., Whitevale, Ont., have been incorporated with a capital of \$40,000, to carry on the business of a telephone company. The provisional directors include A. Hoover, D. R. Beaton, Pickering, Ont., and A. C. Reesor, Markham, Ont.

The Maine & New Brunswick Electric Power Co., Andover, N.B., will shortly commence developing their property at Aroostook Falls, N.B. There is a head of 75 feet and it is estimated that 4,000 h.p. is available. The company will install five pair of wheels of 300 h.p. each.

The British Columbia Electric Railway Co. will build this year twenty-one new cars for their different systems. Of these, fifteen will be for the service in Vancouver, B.C., two for New Westminster, B.C., and the remaining four will constitute the rolling stock of the new branch line to Lulu Island and Steveston, B.C. A powerful baggage van will be constructed, also six smaller dump cars. For New Westminster there will be built a large interurban car 50 feet in length and carrying four motors.

The town council of Goderich, Ont., are considering making improvements to the electric light plant there at a cost of about \$10,000.

An electric lighting and power plant will probably be installed at Granby, Que.

Messrs. Ratz Bros. have installed a new dynamo of 1,500 lights capacity in their electric plant at Elmira, Ont.

The MacLaren Electric Light Co., Buckingham, Que., will install a new dynamo in their plant for additional power purposes.

The new electric lighting system which is owned and controlled by the city of Moose Jaw, N.W.T., is now in effective operation. The electrical apparatus was supplied by Allis-Chalmers-Bullock, Ltd., Montreal. The generator is a 2 phase,

2,200 volt-100 K. W. Bullock revolving field type. The power house is equipped with a tandem compounding condensing engine of 160 h.p. The cost of the building and machinery is about \$38,000.

The city of Temascaltepec will contract with Messrs. Francisco Segura and Hermano of the City of Mexico for the installation of an electric light plant.

Charles A. Hamilton, of Oaxaca, Oax., has obtained concession to develop water-power and build electric plant for power transmission at the City of Ejutla, Jalisco.

FUEL.

For names of fuel dealers see "Coal and Coke" in Classified Index.

The fuel supply question is a most important one to Canadian manufacturers. The information published in this department will keep the readers posted on sources of production.

The coming season will witness more competition in the coal trade on the great lakes than has marked it since the Pittsburgh Coal Co. was formed five years ago. When the Pittsburgh Coal Co. was organized the coal interests of M. A. Hanna & Co. and Pickands, Mather & Co. were sold to them. At the same time an agreement was made whereby the two Cleveland firms were to handle the product of the mines of the Pittsburgh Coal Co. for five years. This contract expired on January 1 last. Both firms are therefore independent of the Pittsburgh Coal Co. and will engage in the lake coal trade in competition with them. When Mr. Martin Mullen entered the firm of M. A. Hanna & Co. it was predicted that it meant competition in this trade. Mr. F. L. Robbins, president of the Pittsburgh Coal Co., admits that the contracts with the two firms mentioned are not to be renewed and expects competition as a result, but he does not look forward to any slashing of rates.—Marine Review.

The Imperial Coal & Coke Co., who own an extensive area of coal lands at Fording River, B.C., have found that certain of their seams carry a good grade of gas coal. Tests show a production of about ten thousand cubic feet per ton, which should qualify this coal for gas production when the western country needs gas.

The Pittsburgh Coal Co. have leased a lot upon Fifth Avenue, Pittsburg, Pa., upon which they will erect a ten-story, steel frame, office building to accommodate their main offices.

Berlin, Germany, consumes for municipal purposes (gas works, heating public buildings, etc.) from 250,000 to 300,000 metric tons (of 2,204.6 pounds each) of coal per year, which heretofore has been supplied by the mines in Lower Silesia. The syndicate, however, controlling these mines have raised the price of coal so high that the authorities of the city will draw their coal supplies for 1905 from abroad. Berlin papers report that the municipality have already concluded large contracts for English coal. It is estimated that these coal purchases of

the city will send \$1,250,000 to \$1,500,000 per year to England.

S. Gillies, Bay City, Mich., has purchased the Hamilton, Ont., business of the Rogers Coal Co.

The stockholders of the Bessemer Coal & Coke Co., at their annual meeting in Pittsburgh, Pa., elected the following directors: C. J. Brokenshine, Cleveland; George H. Love, Johnstown; J. C. Trask, Cleveland; E. M. Love, Somerset; J. W. Wood, Cleveland; Dr. J. C. Lange, L. F. Demmler, and William Steinmeyer, Pittsburgh; Col. J. R. Branch, New York; E. H. Baker, Cleveland, and Wilfred Johnson, New York. After the stockholders' meeting the directors organized by re-electing C. J. Brokenshine, president; G. H. Love, vice-president; J. C. Trask, treasurer; E. M. Love, secretary, and J. W. Wood, general manager. It was decided to remove the headquarters of the company from Cleveland to Pittsburgh. Mr. Geo. H. Mills represents the company in Buffalo, and is Canadian sales agent.

The St. Lawrence Coal Co., Montreal, recently incorporated with a capital of \$500,000 to mine coal in Cape Breton, have purchased the colliery areas at Little Bras D'Or and mining operations will be commenced shortly. These areas, covering 700 acres in extent, are situated on the eastern side of Little Bras D'Or Gut; they are four miles from North Sydney, N.S., and adjoin the Sydney mines areas of the Nova Scotia Steel & Coal Co. They extend along the bank of the channel about a mile and a quarter, and are thus favorably located for shipping purposes. There are three workable seams, ranging from three to six feet in thickness, and it is estimated that these areas are capable of producing over 5,000,000 tons. Other seams as yet undeveloped, it is claimed, will bring the total available coal up to 20,000,000 tons. As to quality, it is identical with Old Sydney Mines.

The Enderby Coal Mines, Ltd., have been incorporated at Victoria, B.C. with a capital of \$250,000 to carry on a coal mining business.

THE CROW'S NEST PASS COAL CO.

The shareholders of the Crow's Nest Pass Coal Co. held their 5th annual meeting in Toronto last week, when it was shown that there had been an increase in the amount of coal mined during the year of \$1,000 tons, and an increase in the coke exported of 1,500 tons. A lease for twenty years of the Coal Creek branch of the Canadian Pacific Railway, to the Morrissey, Fernie and Michel Railway has been executed which now gives the mines at Coal Creek and the coke ovens at Fernie R.C. connection both with the Canadian Pacific and the Great Northern Railway. Reference is made in the report to the appointment as general manager of Mr. G. G. S. Jindsey, K.C., in place of Mr. T. R. Stockett, jr., who resigned to accept the position as general manager of the Western Fuel Association at Nanaimo, B.C. The domestic trade of the co-

pany is on the increase, and it is expected that this branch of the business will yield a much larger result this year. President Jaffray in the course of his address stated that the amount of coal produced during the year 1904 was 742,210 tons. The company's pay rolls during the year amounted to \$1,419,795, and \$254,000 had been spent in additions to plants and development to different collieries. The company paid for royalty and tax on coal and coke to the British Columbia government during the year \$50,569.97. During the year great attention has been paid to producing only standard coal and standard coke. The quality of the coal has been greatly improved, and the percentage of ash going to the coke ovens reduced, and the coke is now equal to any produced in America.

OPPORTUNITIES.

Manufacturers and others in need of machinery, supplies, etc., of any kind are requested to consult our advertising columns, and if they cannot find just what they want, if they will send us particulars we will make their wants known free of cost, and in this way secure the attention of those who may be able to supply them. No charge for publishing what is wanted nor for giving information. When writing to enquirers kindly mention The Canadian Manufacturer.

Mr. A. W. Donly, Canada's commercial agent, in Mexico, sends his first report to the Trade & Commerce Department at Ottawa. He says that there is little likelihood of an immediate trade between British Columbia and Mexico, on the Pacific. Referring to the prospects by the Atlantic route, Mr. Donly says that the trade that may ultimately be had between Eastern Canada and Central and Eastern Mexico is practically unlimited.

The Bridge Works at Mitchell, Ont., desire to purchase a strong column drill to swing about 36 inches; also a portable engine and boiler of about 10 h. p.

A. G. Greaser, Owen Sound, Ont., desires to purchase one second-hand clam shell digger, with travelling derrick, complete; and one second-hand locomotive, from 15 to 20 tons.

A narrow-gauge steam railroad line will be built between Samaden and Pontresina, Switzerland.

Proposals for the building of an iron viaduct on the Anvers-Gare central boom will be received at the Bourse, Brussels, Belgium. Estimated cost, about \$35,000.

Government concessions have been granted for the construction of the following line of railway. From Paloma to San Marcos, Chili, from Caleta de Pan de Azucar to Mina Esplodadora, Chili, and from Paillos to the borax fields in the Cordillera de Silillica, Chili.

The League of Agricultural Associations of Poland have organized a central bureau in Warsaw, which will purchase all goods, machines, and supplies needed by these associations. Some of the agricultural societies of the provinces of Volhynia and Podolin have joined this

league. Manufacturers interested in foreign trade may do well by opening business connection with the new bureau in Warsaw, Russia.

A concession has been secured from the government for a steam railway from Springs to Wiltank, Transvaal.

A concession has been granted to build a line of railway from Guaymas to Toniche, Mexico.

La Corona Fabrica de Vilas, Ltd., Tampico, Mexico, will erect additional brick building and install machinery for largely increasing the output of candles. F. A. Parcels is manager.

B. F. Huntington, San Francisco, Cal., contemplates the developing of coal mines in the State of Puebla, Mexico.

In addition to railroad equipment and mining machinery, Mexico is now buying great quantities of typewriting machines and automobiles. Canadian manufacturers of such machinery would do well to reach out for a portion of this trade.

The Compania Fundidora de Fierro y Acero de Monterey, Vicente Ferrara, Monterey, N. L., Mexico, have begun the construction of 60 coke ovens, and will build 60 more this year.

The Descubridora & Development Co. will build a 100-ton stamp mill. Address care of John F. Johnston, Parral, Chi., Mexico.

Orphanage buildings for an orphanage will be erected in Monterey, N. L., Mexico, at a cost of \$100,000. Messrs. Lic. Lazaro Ayala, Francisco Belden and Valentin Rivero, committee in charge.

PUBLICATIONS.

The publishers of The Canadian Manufacturer solicit in advance, if possible, catalogues, circulars, and other industrial publications issued by manufacturers. We wish to review such literature, and bring the principal points to the attention of our readers.

The Westinghouse Machine Co., Pittsburgh, Pa., have issued a very handsome catalogue, illustrating and describing the "Westinghouse Parsons Steam Turbine." It contains a bird's eye view of their extensive works at East Pittsburgh, also some fine half-tone illustrations of several recent installations of turbine machinery. The Westinghouse Co., acquired the right to manufacture the Parsons turbine in the United States and Canada in 1895, and in 1898 the Westinghouse-Parsons turbine was first placed upon the market. At the works of the builders at East Pittsburgh every facility for the successful manufacture of turbines upon an enormous scale has been provided. Every turbine is thoroughly tested under contract conditions before shipment, and purchasers are at liberty to witness tests at any convenient time.

The first number of the Canadian Forestry Journal, published by the Canadian Forestry Association, contains a sketch of the history of the Association by the Editor, "Canada as a Field for Intelligent Forestry," by E. Stewart,

Dominion Superintendent of Forestry; "Forest Influences," Professor J. B. Reynolds, Ontario Agricultural College; "A Glance at Forest Conditions in New Brunswick," G. U. Hay, D.Sc., St. John; "The Forest Resources of the Labrador Peninsula," A. H. D. Ross, M.A., Yale Forest School.

The Garvin Machine Co., New York City, have sent us a booklet illustrating and relating to all kinds of milling machinery manufactured by them.

The Standard Tool Co., Cleveland, Ohio and New York City, have sent us a handsome little desk calendar entitled "Constance," the centre feature of which is a colored picture of a beautiful maiden.

The Packard Electric Co., St. Catharines, Ont., have sent us a neat folder relating to the Jaudus Interchangeable Arc lamp, which was awarded the Gold Medal at the World's Fair, St. Louis, Mo.

The Cassella Color Co., 182 Front Street, New York, have sent us a bound volume of a supplement to the "Dyeing of Cotton." The special requirements in the dyeing of loose cotton, cotton yarns, cotton fabrics, hosiery, linen yarns, linen and half-linen fabrics, China-grass, jute and artificial silk as well as machine-dyeing have been dealt with as exhaustively as possible in this supplement.

M. S. M. Long, lumber merchant, Hamilton, Ont., has sent us his handsome calendar for 1905, characteristic of the lumber trade.

Messrs. Lawson & Jones, London, Ont., lithographers and printers, have sent us a copy of their handsome calendar for 1905.

The Lord Advertising Agency, Scranton, Pa., have sent us a copy of their first edition of "Lord's List of Trade Papers," in which is enumerated the names of about all the trade papers published in the United States and Canada. This directory has been prepared for distribution among present and prospective advertisers, and also to advertise the facilities of the agency for handling trade paper advertising.

"Canada First" is the name of a very nicely gotten up publication, published in Toronto in the interest of the Canadian Preference League. Besides publishing articles calculated to carry out the aims of the League, it contains literary essays, stories, poems, etc., of a character to make it welcome to those who it is intended to reach.

Volume I. No. 1, for January 1905, of "The Canadian Machine Shop," published in Toronto by Biggar-Samuels, Ltd., has reached us. It is an offshoot of The Canadian Engineer, and is devoted to machine shop practise, mechanical engineering, foundry work, pattern making, etc., and is intended by the publishers to fill a long felt want in those directions. There is always room at the top for such publications when they get there.

Messrs. Ritchie & Ramsay, manufacturers of coated papers, etc., Toronto, have sent us their very handsome calendar for 1905, made by the Toronto Lithographing Co.

The Northwestern Miller, a trade journal published in Minneapolis, Minn., which is regarded as the leading authority on grain and milling subjects, has opened a branch office for Canada, in the Board of Trade Building, Toronto. Mr. P. A. Robinson, formerly of Minneapolis, is in charge.

"The Engineers of America" will be the title of a directory of the engineering profession which is now being compiled by E. C. Brown, the editor of the Progressive Age, 280 Broadway, New York. The names will be obtained mainly from the membership list of the various engineering societies, and those whose work entitles them to such prominence will be given short biographies.

"Niagara's Power," a reprint in pamphlet form by the Electrical Development Co., Toronto, of an address by Frederic Nicholls, delivered before the members of the Empire Club on January 19, 1905, is one of the most readable booklets ever gotten up about this subject. It treats fully of the subject, past, present and prospective, and as a work of general reference is of inestimable value.

The National Electric Co., Milwaukee, Wis., have inaugurated the publication of a series of pamphlets which will form a thoroughly up-to-date practical electrical catechism. This will be issued as a serial, and by presenting it in the form of questions and answers, it will thus give, in a very condensed way, a maximum amount of such information concerning the technical applications of direct and alternating current electricity, collected from the most recent sources of literature and practical experience, as will be useful, not only to the layman and practical engineer, but also to the technical engineer as the subject develops. The company will be glad to forward this catechism free of charge to all who request it.

"Rand Air and Gas Compressors" is the title of a brochure just published by the Canadian Rand Drill Co., whose head offices are in Montreal, and works at Sherbrook, Que. All types and designs of this class of machinery, designed for all duties, made by this company, are fully illustrated and described in the book. In the introductory it is remarked that with the increasing use of compressed air has come the recognition of the air compressor as one of the most important of prime movers. Generally considered in the earlier applications of compressed air as a means to an end, the air compressor did not receive the attention it merited. To-day, however, air compressor efficiency in design and construction is a problem, the increasing importance of which is becoming more apparent with industrial progress. The diversity of compressed air application now requires compressors of increasing range of design and terminal pressure; and this company are now building many compressors for special purposes, from the four-stage high pressure compressor, for compressed air locomotive systems, to the low pressure compressor for agitating or pumping liquids, pneumatic transmission systems and other work.

Full particulars of the company's designs and construction are embodied under the various headings in the book, where it is pointed out that the high efficiency with which these compressors will operate automatically under a variable load, and also the ease with which the pistons, valves, and other working parts can be reached for inspection and repairs. Copies of this valuable book can be obtained by addressing the Montreal office of the company.

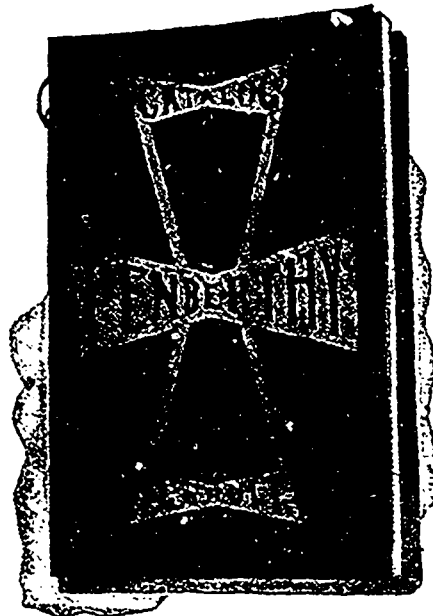
The American Steam Pump Co., Battle Creek, Mich., have issued an illustrated booklet relating to Marsh boiler feed pumps.

THE NEW PENBERTHY CATALOGUE.

The Penberthy Injector Co., Detroit, Mich., have recently sent us their new catalogue, which describes and illustrates their line for the year 1905.

The accompanying illustration shows the design of the front cover of the catalogue.

Besides the well-known Penberthy Automatic Injector, familiar to so many steam users, it lists and describes a very



full line of steam specialties, including the Penberthy auto-positive injectors, ejectors, force-feed oil pumps, oil and grease pumps, high and low water alarms, water gages, gage cocks, and other engine-room necessities. The catalogue is conveniently indexed and every dealer who handles steam specialties should have a copy of it as it will be of great value to him for daily reference. It is well printed and handsomely illustrated in a way which does credit to the Penberthy Injector Co.

In the illustrated portion of the February 3 issue of this journal in an article relating to "Independent Condensers," manufactured by the Goldie & McCulloch Co., Galt, Ont., the wrong title was placed under the cut which should have read "The Goldie & McCulloch Independent Condenser."

PERSONALS.

Mr. A. S. McQueen, in charge of the New England sales of the Consolidated Coal Co., the Fairmont Coal Co., and the Somerset Coal Co., allied concerns, was recently in Montreal in the interests of these companies. Mr. McQueen is a native of Galt, Ont.

Mr. J. A. Carrick, who has been the London manager of the Queen City Oil Co. for the past seven years, is coming to Toronto, having been appointed Assistant General Manager of the company.

Ex-Mayor Ernest Garadot, of Sandwich, Ont., has received notice from Ottawa of his appointment as Canadian Commissioner to the World's Fair at Liege, Belgium.

The annual report of the Public Works Department at Ottawa, just issued, contains a fine tribute to the professional capacity of the Canadian engineer. The report says: "The despatching of so many engineering parties at the same time as the surveying work of the Transcontinental Railway was being commenced has given employment to a large number of Canadian engineers. It has been found on the formation of parties that the engineering profession in Canada was fully equal to the demand made upon it for the professional equipment which is required for the explorations and studies necessitated by the extensive surveys for those two great works. All the engineering staff has been supplied by Canadian intelligence and professional training, and there is no doubt that the profession in Canada is fully able to render a good account of itself in the performance of the arduous duties connected with the examinations now under way."

The annual meeting of the Lumbermen's Association of Canada was held in Toronto February 6. Among those present were President W. D. Lummis; Messrs. W. Laking, Hamilton, Ont.; R. Laidlaw, Toronto; Geo. Thompson, Goderich, Ont.; W. B. McLean, Toronto; R. H. Roys, Sandwich, Ont.; Robt. Watt, Warton, Ont.; W. J. Maitland and E. J. Harrison, Owen Sound, Ont.; J. S. Shook, Peterboro', Ont.; Dwight J. Turner and J. Turner, Midland, Ont.; R. Cooke, South River, Ont.; J. B. Miller, Toronto, and the secretary-treasurer, W. P. Tindall, Toronto. The meeting discussed at some length the free importation of Georgia pine into Canada, and a resolution was unanimously passed endorsing the decision to meet Sir Wilfrid Laurier with a view to securing, if possible, reciprocal legislation governing the tariff on lumber coming into Canada. The American lumber enters Canada free while the duty on Canadian lumber entering the United States is \$2 per thousand. The election of officers for the ensuing year resulted as follows: president, J. B. Miller; 1st vice-president, Robt. Watt; 2nd vice-president, D. J. Turner; secretary-treasurer, W. B. Tindall; board management, Messrs. W. D. Lummis, R. Laidlaw, Geo. Thompson, W. B. McLean, W. P. Bull, R. H. Roys, D. L. White, J. B. Miller, W. J. Ard, W. J. Sheppard, Dwight J. Turner and Robt. Watt.

At the annual convention of the National Association of Marine Engineers, held in Collingwood, Ont., February 6, the following officers were elected for the ensuing year: F. S. Henning, Toronto, grand president; Neil J. Morrison, St. John, New Brunswick, grand secretary; Charles Robertson, Owen Sound, conductor; — Therian, Levis, Que., door-keeper; Gillies, Kingston, Ont., and Cronk, Windsor, Ont., auditors.

The sixth annual meeting of the Canadian Forestry Association will be held in the city of Quebec on March 9-10, 1905. Among the papers promised are "Forest Fires in British Columbia," Professor R. W. Brock of Queen's; "Northern Quebec and Labrador," by A. P. Low, Geological Survey; "Forest Insects," Rev. F. T. Fyles, Levis; "Forest Resources of Quebec," J. C. Langelier; "The Lumber Industry," P. G. Owens, Secretary Quebec Lumbermen's Association; "The Forests of New Brunswick," T. G. Luggie, Fredericton; "The Fire Warden System in Nova Scotia," Hon. J. W. Longley. On Friday evening a dinner will be tendered the visiting members by the friends of the Forestry Association in Quebec.

The annual general meetings of the Canadian Mining Institute will be held in the Windsor Hotel, Montreal, on March 1, 2 and 3, 1905.

Justice Killam has been appointed Chairman of the Railway Commission at Ottawa.

E. C. Atkins & Co., saw and tool manufacturers, have moved their Toronto office from 30 Front Street East to 56 King Street East.

The Canadian Casualty & Boiler Insurance Co., Toronto, have appointed Mr. Chas. O. Granberg to their already large and experienced staff of engineers. Mr. Granberg is regarded in engineering and insurance circles as one of the best in his class.

Mr. Willis Chipman, Toronto, has been engaged by the Halifax, N.S., City Council as hydraulic engineer to report on the water service of Halifax and prepare plans for its improvement. His remuneration will be fifty dollars per day and travelling expenses.

Messrs. E. J. Fetherstonhaugh & Co., Montreal, have admitted to the partnership Mr. Lloyd Blackmore and in future the designation of the firm will be Fetherstonhaugh & Blackmore, Patent Solicitors and Experts.

At the request of the authorities of the National Museum, Paris, the Ontario Bureau of Mines is forwarding a collection of corundum and corundum-bearing rocks to that institution for permanent exhibition. The collection is from the mines in Raglan, Carlow and Methuen townships, Renfrew, Hastings and Peterboro' counties, respectively, and comprises splendid specimens. The fact that Ontario has the finest corundum deposits in the world seems to have become known to the French authorities, hence the request mentioned.

IT STOOD THE SHOCK.

It is hardly customary to design hot blast apparatus to withstand the shock of explosion, but the substantial character of such an apparatus built by the B. F. Sturtevant Co., Hyde Park, Mass., for the Fabrikoid Co., Newburgh, N. Y., is clearly evidenced by the accompanying reproduction of a photograph taken shortly after an explosion of 1,500 pounds of gun cotton within the building containing the apparatus.

The building was of wood and practi-



cally air tight, which made the force of the explosion greater. What is shown in the picture is all that was left. The fan and heater were intact, except that one name plate was blown off the fan; otherwise it was in perfect condition. The wheel turned with ease and ran as true as if it had just been set up. The steam connection to the heater was not harmed, although the asbestos covering on the pipe was blown off. The fan is running to-day just as if nothing had happened.

THE NEW C. P. R. STEAMERS.

The two new passenger steamers that the Canadian Pacific Railway Co. will add to their Atlantic fleet in the early spring of 1906 will be the finest vessels of the kind ever built.

They will not be quite so palatial possibly as some of the German steamers, but Mr. Arthur Piers, the company's superintendent of steamship lines, states that in design, equipment, convenience and decoration they will surpass any yet plying from American or Canadian ports.

Mr. Piers added that the two vessels in question will revolutionize the Canadian passenger business on the Atlantic, tending, as they will, to popularize the St. Lawrence route, even more largely than heretofore.

"The fact of the matter is," said Mr. Piers, "that we in Canada have never had any passenger vessels on the Atlantic that could compete with those running into New York. The Canadian Pacific Railway will now set the pace in this respect. These vessels, which will form the nucleus of a standardized fleet for the company, will be equally serviceable on the Pacific Ocean, and additional vessels for that line are sure to follow in the near future."

Some idea of the size of the vessels may be gained from the fact that they will be 550 feet between perpendiculars, with a 65-foot beam. They will be 14,500 tons, which forms a much greater tonnage than either the Tunisian or the Bavarian. Not only will the vessels, then, be much finer than any vessels yet put on the route, but

they will be the largest that have ever visited St. Lawrence waters.

The directors of the Canadian Pacific Railway have passed upon the plans, and the contracts for the two vessels, which will be carried out in their entirety by the Fairfield Shipbuilding Co., Glasgow. The vessels will be ready in April and May, 1906.

Although the Canadian Pacific Railway have no contract for carrying mails upon the Atlantic, and while the company are carrying out their design altogether, irrespective of the granting or withholding of such a contract, it has been stipulated that the vessels in question shall have a speed—twenty knots an hour—that will bring them within the conditions that the Government exacted in this respect when calling for tenders in the past. The vessels will consequently be able to carry mails between Queenstown and Kinoussi in five and one-half days, while the distance between Liverpool and Quebec will be readily covered in six and one-half days.

While ample accommodation is being provided for cargo, the vessels will be admirably adapted for the purpose for which they are primarily intended, viz., to carry passengers. With this object in view, accommodation will be provided for 300 first-class passengers, 350 second-class passengers, and for between 750 and 1,000 steerage passengers, according to the claims that are made at various seasons upon the quarters usually reserved for the immigrants.

The vessels will be constructed of steel, and will be fitted with quadruple expansion engines of the most modern type. As has been the case with the company's vessels on the Pacific, the effort of the management will be directed to having these new vessels run absolutely on advertised time, which Mr. Piers considers to be a requirement demanded much more by modern travellers than boasted average speed at sea.

THE GRAND TRUNK PACIFIC TERMINUS.

The main line of the National Transcontinental Railway east of Winnipeg, Man., will lie far north of Lake Superior, and the Grand Trunk Pacific Co., is, says The Globe, under the necessity of constructing a branch line 200 miles long to Thunder Bay. This necessity was foreseen from the outset, and much curiosity has been manifested regarding the precise spot to be selected for the lake terminus. All speculation on the subject seems to be set at rest by the announcement that plans have been filed as a basis for the expropriation of the shore of the Kaministiquia River opposite the Canadian Pacific Railway site at Fort William, Ont. The land on that side of the river belongs to the Indians, and the indications go to show that the transfer of the property will be effected by friendly negotiations.

The construction of the extensive harbor works described in the filed plans will give an indefinite but powerful impetus to the growth and prosperity of the town of Fort William. The lower part of the river will have to be widened

and deepened. Docks, terminal works, and elevators will have to be built. As the establishment of flouring mills is beginning on the Canadian Pacific side of the river it will soon be commenced on the Grand Trunk side also. The great desideratum is power to be converted into electric energy, and that may be had in abundance at and about the Kakabeka Falls, a few miles up the river. The amount has been estimated at 80,000 h.p. The immense milling industry likely to spring up shows the urgent necessity of retaining for the Province the complete and untrammelled control of this waterpower, which seems likely otherwise to pass into the possession of a single milling firm. If the development of the power were treated as a Government work the developed energy might be distributed on perfectly fair terms to all who desire to utilize it.

CANADIAN CHEMICAL INDUSTRIES.

Prof. W. R. Lang of the Toronto University spoke at the Canadian Institute recently on "The Chemical Industries of Canada." His paper was of an exhaustive character and dealt with common salt, alkali and chlorine compounds, the extracting and refining of metals; leather and tanning; sulphuric and acetic acids, wood alcohol, charcoal and ammonia; soap and glycerine; refined chemicals and drugs, fertilizers; coal tar and asphalt; calcium carbide, carborundum and graphite; cement and plaster; the refining of sugar and beet sugar; natural gas and petroleum; pulp and paper; asbestos.

The distribution in Canada of the several ores and minerals and other products used in the various industries depending on chemical knowledge was very fully dealt with by the lecturer. He stated that the bounty on lead smelted in Canada has led to the revival of silver lead mining in British Columbia. Auriferous mispickel mines are being opened up at Lake Temagami, and concentrating works are in course of erection; the process of refining the arsenic being an electric one. The ores of the Haileybury region contain 60 or 65 per cent. of arsenic, but are more valuable for their other constituents, including silver, cobalt and nickel.

The leather and soap industries are making great progress in Canada, and refined chemicals and drugs are becoming an important industry. The natural corundum industry of Ontario, and which is of recent origin is steadily growing in amount and value of output. The product of 1901 had a value of \$53,115, and in 1903 of \$106,332. Another less widely known product of Ontario and Quebec is mica. The greater part of the mica used in the manufacture of electrical apparatus in the United States is produced in these provinces, and they also export quantities to Great Britain. The so-called amber mica, or phlogopite, is preferred for this use to other varieties on account of its superior flexibility and the thinness of the sheets into which it can be split.

The manufacture of matches, brewing and distilling, fruit canning, bacon packing and salmon canning, explosives, blackings, varnishes, paints, foodstuffs, sauces, mineral waters, rubber goods, dyeing and other industries were mentioned as among those requiring the careful supervision of the trained chemist. The attitude of manufacturers towards chemists has of late years been extremely favorable, and many have seen it to be to their advantage to employ men trained in the universities to investigate the processes and materials employed in their particular industries. So far their employment, said Prof. Lang, has been amply justified by the results, and it is to be hoped that more may be brought to see the profit to be gained by adopting scientific methods of work. Where chemical processes are used it is essential for the prosperity of the country that all the available scientific knowledge should be brought to bear on them, in order that they may continue to improve and to develop even more than they have done in the past decade.

NEW HYDRAULIC SUCTION DREDGE.

The Polson Iron Works, Toronto, Ont., are building a hydraulic suction dredge for the Dominion government which is intended for service on the St. Lawrence channel between Montreal and Quebec. The dredge is somewhat similar to the J. Israel Tarte, built by the Polson Iron Works in 1902. The principal dimensions are: Length over all, 127 feet; breadth, 32 feet; depth at side, 9 feet; draught, 5 feet. The hull will be of scow model, with square bow and rake stern, for the purpose of towing easily. It is to be constructed of mild steel, divided into bulkheads, and fitted with bunkers to have a capacity of 100 tons of coal. The main deck will be of 3 by 4 inch British Columbia pine; the upper deck of 2 inch British Columbia pine; and there will also be a light shade deck over the hoisting engine. A cabin for officers and crew will be provided; it will be steam heated. Two boats are also to be supplied with the dredge.

The machinery will consist of a direct acting, inverted, triple-compound, three crank, surface condensing engine having cylinders 14, 22 and 36 inches diameter by 21 inch stroke, and built for a working pressure of 160 pounds a square inch, and is calculated to develop 600 I. H. P., when running at 190 revolutions a minute. The main dredging pump will be a centrifugal one, with the suction and discharge pipes 24 inches in diameter; and the feed and bilge pumps will consist of two independent horizontal, duplex outside packed plunger pumps 7½ by 4½ by 10 inches. The hoisting engine for raising and lowering the suction pipe and swinging the boom will be located on the main deck forward, and will be a 10 by 12 inch, two-cylinder, double acting, independent type engine, with link motion to allow operation in either direction. The steel boom for raising and lowering the suction pipe will be located at the suction end of the dredge, and will be

about 65 feet in length. The suction pipe will have an internal diameter of 24 inches, and will be fitted with a cutter head at the outer end. To excavate the material there will be a rotary steel cutter. The steel head of this will be of suitable shape, and will have attached to it a renewable steel block of such a shape that it will convey the material taken from the bed of the river into the pipe. The outside diameter of the head is to be large enough to enclose the whole of the mouth of the pipe. This head will be driven by a steel shaft carried along the whole length of the pipe, and receiving its power from a separate engine, by suitable steel gearing. The engine, to supply this power will be a two-cylinder, double acting, horizontal engine, 12 by 12 inch stroke, arranged to run in one direction only. The discharge pipe will also be 24 inches in diameter, and will be arranged for discharging the material into scows. The capstans will be operated by two 6 by 8 inch double acting engines, which are to be located on the main deck forward of the hoisting engine. Steam will be supplied to the various engines by two marine return tubular boilers, allowed a working pressure of 160 pounds to the square inch. They will be 12 by 12 feet 6 inches, and will have three furnaces, each 35 inches diameter, and a grate surface in each boiler of 48 square feet. There will be two smoke stacks, each 42 feet in height from centre of boiler.

QUEEN'S RUN FIRE BRICK.

Within the last year the Queen's Run Fire Brick Co., Lock Haven, Pa., have entirely rebuilt their plant, and have about trebled their capacity for the manufacture of fire brick. They are among the oldest fire brick makers in the country. Their new plant is unique, in that the clay is handled automatically from the time it leaves the cars in which it is transported from the mines until it is moulded into brick. From the cars the crude clay is dumped into a chute leading to a No. 5 Champion crusher, thence a 70-foot elevator delivers it to a 90-foot belt conveyor, from which it is distributed, as desired, into eight storage bins, each of 175 tons capacity. These bins are hopper bottomed, and spouts equipped with automatic gates lead the clay to the pans. The charging and mixing are under the control of one operator for each pan, and are regulated by four levers. By a device of the company's own patent the pans are emptied automatically into steel cars running on a narrow gauge track, which extends the entire length of the dry floor, and thus the tempered clay is delivered to the moulders.

A steel building 90 x 30 feet, with concrete foundation 4 feet thick over the entire surface, accommodates all the machinery, storage bins, etc. The dry floor is 400 x 75 feet and has no posts or obstructions of any kind in this area. The machinery includes one No. 5 Champion crusher, three 7½ foot Clearfield wet pans, one 9 foot Clearfield dry pan and one 4 mould special Boy

brick press with screens, elevators, conveyors, etc. The boiler and engine house is a separate fire proof brick building, 56 x 48 feet, and is equipped with one 200 h.p. Frick-Corliss engine, three 125 h.p. boilers and one 25 h.p. engine and dynamo. Twenty kilns of 40,000 capacity each, a large detached pattern storage building, a carpenter shop, a blacksmith shop and storage sheds for burned brick complete the equipment of this thoroughly modern plant.

For more than fifty years Queen's Run fire brick have been recognized as of the highest standard. This reputation was earned and has been maintained primarily by the uniform excellence of their fire clay deposits of which they have practically an unlimited supply. The Queen's Run Fire Brick Co. own a very large acreage of actually developed fire clay, as great, perhaps, as any other independent concern in the United States.

Their brands are Queen's Run; Queen's Run Roof; Queen's Run Bung, and

Queen's Run Glass, for high grade work, where the most refractory material is required.

CANADIAN RAILWAYS.

During the year ended June 30, 1904, there were 534 miles of steam railway built in Canada, bringing the total mileage on the date mentioned up to 19,611 miles. The capital paid amounted to \$1,186,546,918, an increase of \$39,996,149. This amount includes Dominion and Provincial subsidies, and loans and municipal aid. The miles of railway in operation numbered 19,431, an increase of 443 miles, compared with the previous year. The gross earnings of all the steam railways aggregated \$100,219,436, a gain of \$1,154,909. The working expenses amounted to \$74,563,162, an increase of \$7,081.63, but the net earnings show a falling off of \$2,927,729, the total for the year being \$25,656,274. The steam railroads carried 23,640,765 passengers,

an increase of 1,492,023, and 48,097,519 tons of freight, a gain of 724,102 tons. Only 25 passengers were killed, being 28 less than in the year previous.

The capital, including Dominion and Provincial subsidies and municipal aid, was \$80,453,609, an increase of \$1,219,932. Working expenses were represented by the sum of \$5,326,517, an increase of \$853,659, when contrasted with the year previous. Net earnings totalled \$3,125,092, or an increase of \$366,273. There were 181,689,998 passengers carried, as against 155,662,812 for the preceeding year. Of freight 400,161 tons were carried, 28,876 more than in 1902-3.

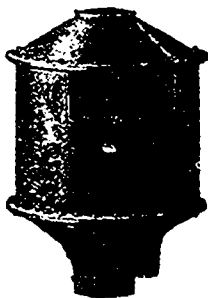
At a recent meeting of the creditors of the Reese-Hammond Fire Brick Co. and allied concerns, held at Pittsburg, Pa., action was taken looking toward a dissolution of the receivership in the near future. Statements made to the creditors showed that since November, 1903, when

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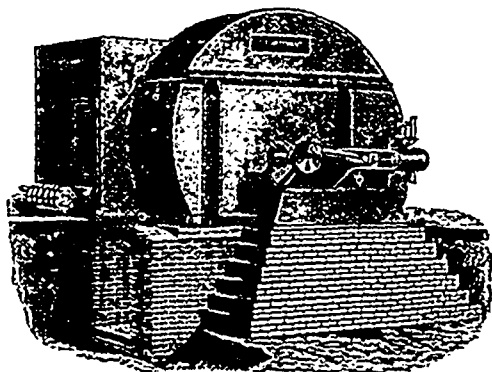
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the Reese-Hammond plants went into the receiver's hands they have been only partially operated, but nevertheless the net profit was close to \$80,000. With a bright business outlook and with careful management it is believed that the affairs of the company can be straightened out within a few years so that the original management can again assume charge. The creditors' committee recommended that steps be taken to have the receivership dissolved, and that the affairs of the company be administered under the supervision of the creditors' committee for the ensuing five years. The creditors in attendance at this meeting hold about 90 per cent. of the claims and if the remaining creditors sign the agreement the plan will be immediately put in force. The company owns valuable fire brick plants at Bolivar and in Clearfield County, Pa., which will be placed in operation.

The Detroit, Mich., News states that, as a result of the unification of the New York Central, Lake Shore, Michigan Central and Big Four systems, a tunnel will be immediately constructed under the Detroit River to facilitate the transportation of cars and avoid the delays that are caused by the ice every winter. The tunnel will be built by the Vanderbilt interests, independent of other roads.

The French Automobile Club have been conducting a series of experiments on the length of time required to stop an automobile at various speeds, and more particularly as to the distance in which a

full stop could be effected. While it is found that the stopping is somewhat quicker than that of a horse, yet the distances traversed are considerable when the speed is at all high. Some of the results are: At 7½ miles per hour, 10 ft.; 10 miles, 13½ ft.; 12½ miles, 16½ ft.; 16 miles, 33½ ft.; 25 miles, 60 ft. The stopping distance seems to vary rather faster than the speed.

The Westinghouse Electric & Mfg. Co., Pittsburg, Pa., have sold to the Syracuse Railroad Construction Co. apparatus for the complete equipment of the Rochester, Syracuse and Eastern Railroad. The contracts include two 1,500 k.w. turbo-generator outfits which will generate current at 3,300 volts, 3-phase and 25 cycles. Each turbo-generator will be furnished with a 50 k.w. exciter mounted on the turbine shaft. The equipment also includes two 500 k.w. rotary converters and six 400 k.w. rotary converters; twenty-four transformers, with a total capacity of 6,500 k.w., a 13-panel switchboard for the main generating station, and three sub-station switchboards of 6 panels each, as well as protective and detail apparatus. Motor equipments included in the contract call for twelve quadruple equipments of Westinghouse 110 h.p. motors, as well as eight quadruple and two double equipments of motors of other sizes.

A gas well in the Nineveh region of Greene County, Pa., has shown what may be said to be the highest pressure

ever observed in any natural gas well. The well struck the Campbell's Run oil sand, and, though the volume of gas was relatively small, the rock pressure finally passed the limit of the gauge, which was 1,500 pounds per square inch, and blew off the 2-inch pipe by which the well was shut in. As this pipe was supposed to be tested to 2,000 pounds, the ultimate pressure shown by the gas was probably not less than 1,600 pounds per square inch. A well in Lewis County, W. Va., has a record of 1,125 pounds per square inch, which is the highest known in that State.

In an address on "Electricity from Water Power," before the British Association for the Advancement of Science, figures were given for the installation in the various countries. The United States heads the list with 527,500 h.p.; Canada, 228,000; Italy, 210,000; France, 161,000; and Switzerland, 133,000, follow in the order named. No other country reaches 75,000, and Great Britain has only 12,000. The grand total given is 1,483,390 h.p. It is estimated that if these plants are operated 12 hours per day the coal saved amounts to 11,720,000 tons annually, at a value of \$30,000,000.

Messrs. J. O. Gardiner & Co's. biscuit factory at Kingston, Ont., was destroyed by fire February 15. Loss about \$10,000.

Berryfield's Hall at Milestone, N.W. T., was destroyed by fire February 15. Loss about \$10,000.

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LAKE SUPERIOR CORPORATION.

President Warren of the Lake Superior Corporation in an official statement of the operations of the company since the reorganization says:

With two exceptions all the plants of the different subsidiary companies are now in operation. Development work is being carried on at the Gertrude and Elsie nickle mines near Sudbury with satisfactory results. The daily output of the Helen mine since the reorganization has on a number of occasions exceeded 1,000 tons a day, while in the full operating season there was a general average of about 900 tons a day. From now on it is fully expected the average will be 1,000 tons a day. Every pound of ore which will be mined this year has already been sold at a good price, as well as part of the output for 1906. During the present winter the company will take out from the woods from fifteen to twenty million feet of pine, will cut between thirty and forty thousand cords of pulp wood and have already cut 100,000 cords of charcoal wood. The charcoal plant is producing from ten to twelve thousand bushels of charcoal per

day, 1,000 gallons of wood alcohol and 12,000 pounds of acetate of lime. The pulp mill is turning out 100 tons a day and both the saw mill and the veneer mill have resumed operations.

In connection with the steel rail plant one blast furnace has been in constant operation for several weeks and is turning out between 240 and 250 tons of pig iron a day. The charcoal furnace which will be started this week will bring the annual output of the blast furnaces to 150,000 tons. The steel rail mill consumes more pig iron than the blast furnaces can at present produce, but the supply will be supplemented by the blast furnace at Midland, Ont., in which the company hold an interest. The steel rail mill during the winter months is turning out between 400 and 500 tons, and under more favorable conditions between 500 and 600 tons will be reached.

CALIFORNIA EXCURSIONS.

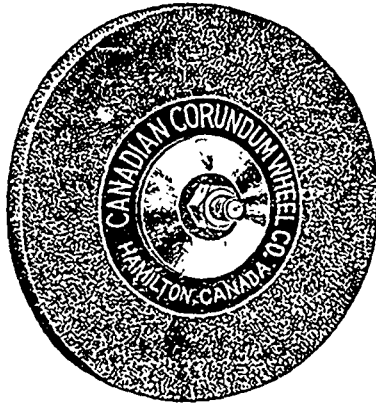
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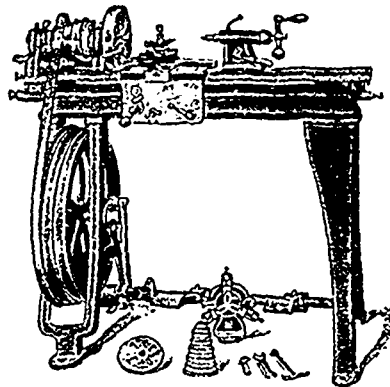
- Barrie, Ont.
- Brantford, Ont.
- Fort William, Ont.
- Halifax, N.S.
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- Lindsay, Ont.
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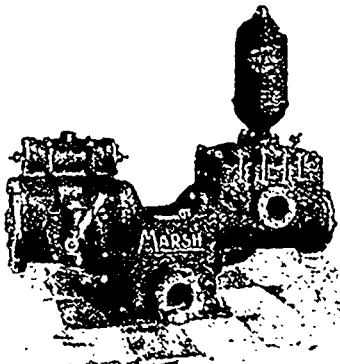
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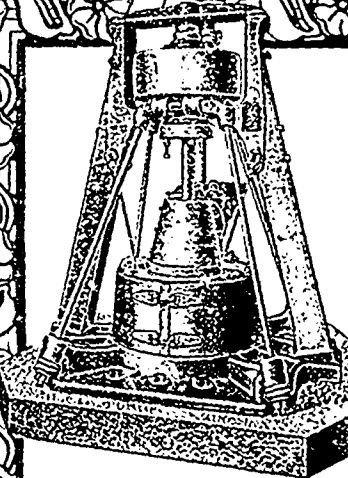
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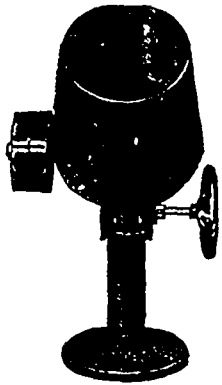
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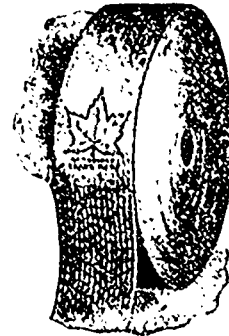


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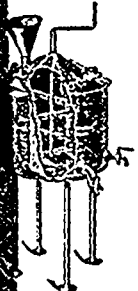
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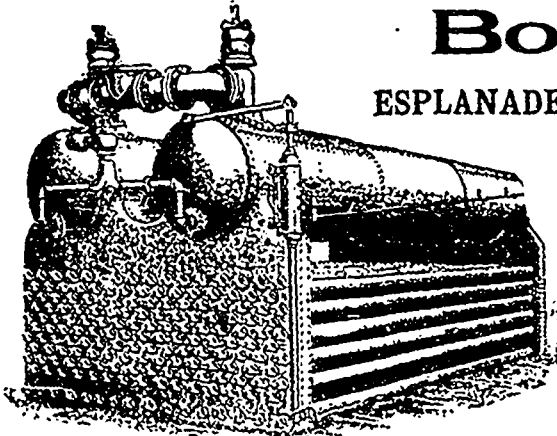
MODEL "A"

30 days' trial under a guarantee of
 paying its cost in one year.
 Over 3,000 of them now in use.
 Let us tell you about it.

Advance Machinery Company,
 TOLEDO, OHIO, U.S.A.

The Canadian Heine Safety Boiler Co.

JOHN J. MAIN
 President and
 Manager.



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HIGH-CLASS
**Water Tube
 Steam Boilers..**

FOR ALL PRESSURES
 DUTIES AND FUEL

From 75 to 600 H.P. Each

REFERENCES :

N.B.—We do not make small Boilers

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

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"IMPERIAL" PNEUMATIC TOOLS



"Procrastination" Etc.

You know the old proverb, don't put off ordering that Compressor any longer. Write at once. We will tell you what **Rand Compressors** and **Imperial Tools** have done for the other fellow.

Catalog on request.

The Canadian Rand Drill Co.,
Room 7, Imperial Bank Bldg.
MONTREAL, QUE.

MECHANICAL ENGINEER having executive ability and 11 years' experience with large manufacturing concerns in Canada and United States, desires to become financially interested with some suitable manufacturing concern in the capacity of Manager or General Superintendent
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WOOLLEN MILL For Sale

Water and steam power; one set Woollen Mill. Three story brick and stone 30 x 32 feet. Two story brick and stone addition 30 x 36 feet.

Good locality; wool plentiful.

Address,

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PAISLEY, ONT.

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Manufacturers contemplating changing or establishing branch factories or industrial stock companies forming, to correspond with me relative to cheap power; natural and artificial advantages that I have listed and am offering for the various municipalities, Boards of Trade, railway corporations, and individuals all over Canada. Factory sites and buildings listed and sold.

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CONVEYING MACHINERY
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THE MEYERCORD CO. (INCORPORATED)

American Manufacturers

DECALCOMANIA TRANSFERS, NAME PLATES, TRADE MARKS AND ORNAMENTS, OPALESCENT TRANSFER WINDOW SIGNS. Chamber of Commerce Building, CHICAGO.

DEEP WELL PUMPS

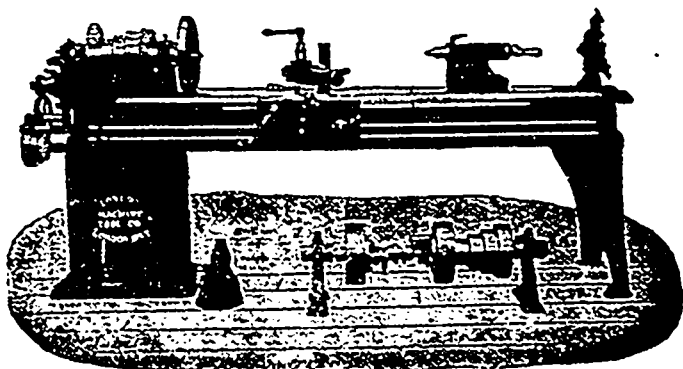
Steam Geared or Electrically Driven.

Deep Well Pumping Systems for Cities, Railroad, Mines, Factories, etc.

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MANUFACTURERS OF
GENERAL MACHINERY

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- PLANERS
- DRILLS
- SHAPERS
- HAMMERS
- BULL DOZERS
- PUNCHES
- PRESSES

SEALED TENDERS addressed to the undersigned, and endorsed "Tender for Collingwood Wharf," will be received at this office on Friday, February 17, 1905, inclusively, for the construction of a wharf at Collingwood, County of Simcoe, Province of Ontario, according to plan and specification to be seen at the offices of H. A. Gray, Esq., Engineer in charge, Confederation Life Building, Toronto; J. G. Sing, Esq., Engineer in charge, London, Ont., on application to the Postmaster at Collingwood, Ont., and the Department of Public Works, Ottawa.

Tenders will not be considered unless made on the printed form supplied, and signed with actual signatures of tenderers. An accepted cheque on a chartered bank payable to the order of the Honourable the Minister of Public Works, for four thousand dollars (\$4,000.00), must accompany each tender. The cheque will be forfeited if the party tender declines the contract or fails to complete the same contracted for, and will be returned in case of non-acceptance of tender. The Department does not bind itself to accept the lowest or any tender.

By order,

FRED. GELINAS, Secretary

Department of Public Works,
Ottawa, January 20, 1905.

Newspapers inserting this advertisement without authority from the Department, will be paid for it.

CHARLES G. SWEPARD
PIG IRON & COKE.
401 ELLICOTT SQUARE, BUFFALO

ROBT. WORTH. LOUIS L. MARTIN.
Telephone Main 3494.

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Manufacturers of Slot Machines,
Novelties, Fine Tools
and Dies.

Model and Experimental Work a specialty.
Inventions perfected.

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498 Railway Ex. Bldg.

4th & Chestnut St., St. Louis, Mo., U.S.A.

We are in the strike breaking business
and can furnish non-union skilled labor of
all kinds to break strikes in any quantity
needed. Special Watchmen, with or with-
out uniform, furnished to guard property.

W. H. STOREY & SON, limited, Acton, Ont.
Manufacturers of ... FINE GLOVES and MITTS
In every variety and style. Moccasins

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PRICES
RIGHT
GALVANIZING
ONT. WIND
ENGINE & PUMP CO.
TORONTO, ONT. LIMITED.


KERR'S "WEBER" Valves

ARE THE GENUINE
VALVES OF THAT
NAME.

ALL OTHERS
ARE IMITATIONS.

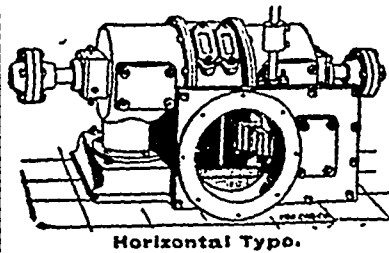
BE SURE AND GET
THOSE MADE BY

The **Kerr Engine Co.**
Limited
WALKERVILLE, - ONT.



**Dixon's
Pure Flake Graphite**
has helped to solve the most difficult problems
in lubrication. Write for a free copy of
"Graphite as a Lubricant"
a new booklet full of interesting information.
Samples free.

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Jersey City, N.J.
London Office, 26 Victoria St., London, S.W., England.



Horizontal Type.

"LITTLE GIANT" TURBINE

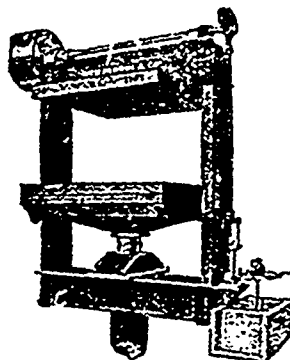
...FOR ALL PURPOSES...

HORIZONTAL AND VERTICAL.
BUILT IN 44 SIZES.

We guarantee a higher percentage of power from
water used than any other wheel on the market.

Water Wheel Governors, Machine Dressed Gearing, Pulleys, Shafting and Bearings.
Catalogue and Gear List mailed on application. Correspondence Solicited.

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Hydraulic Screw and Filter Presses.

WILLIAM R. PERRIN & COMPANY, Limited
Toronto, - Canada.

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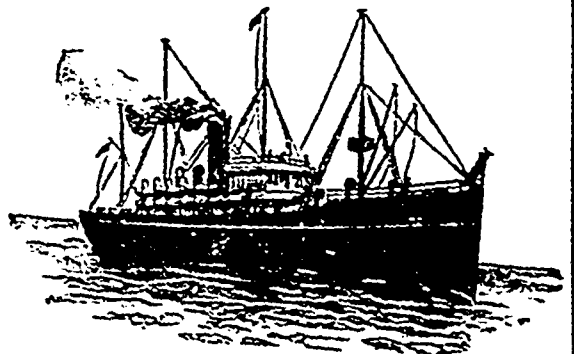
of Great Britain and Ireland

DIRECTORY

PRICE 15s. 6d. net.

40th Year of Publication.

- 1.—Alphabetical List of Exporters, giving Places of Shipment, and Class of Goods shipped.
- 2.—Index to Export Section, giving Alphabetical List of Goods, with names of Shippers.
- 3.—List of Trade Marks.
- 4.—Alphabetical List of Manufacturers, according to their Trades and Towns.



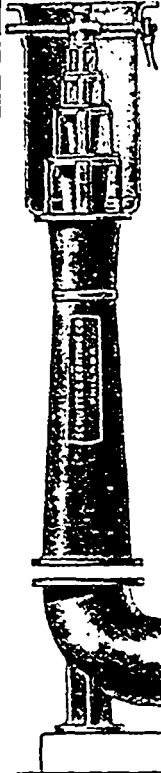
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12th and Thompson Sts., PHILADELPHIA, U.S.A.

CABLE ADDRESS: SCHUTTE, PHILADELPHIA.

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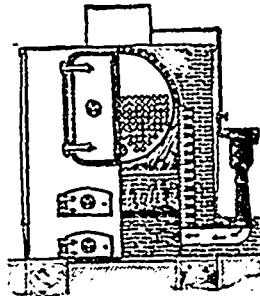
The Schutte & Koerting blowers offer a means of burning low priced fuel, such as screenings, gas works breezes and other refuse with perfect combustion, thereby making a direct reduction in cost of steam. They are used to great advantage on:

Can be actuated by steam or water jets

1. Heating or Forging Furnaces.
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3. Steam Boiler Furnaces.

Ask for catalogues: Injectors, Blast Nozzles, High Grade Valves, Water Jet Condensers, Air Compressors, Exhausters, etc.

THE FURNACE BLOWER
Attached to a Tubular Boiler.



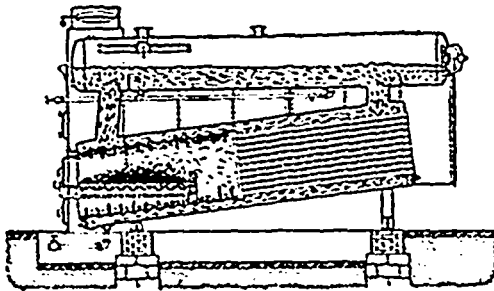
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Regulate blast with side handle.

Start and stop by opening and closing a valve in steam pipe--full.

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Reduce Your Coal Bill



Your coal bill is a large item in your expense account and if it could be reduced ten per cent. it would mean a large addition to your net profit.

The Robb-Mumford internally fired boiler will make a saving of at least ten per cent. over an externally fired boiler, and in some cases considerably more.

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WATSON JACK & COMPANY, Bell Telephone Bldg., Montreal
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CLASSIFIED INDEX.

Abrasives

Canadian Corundum Wheel Co., Hamilton, Ont.
Rice Lewis & Son, Toronto.
Williams, A. R. Machinery Co., Toronto.

Air Compressors

Allis-Chalmers-Bullock, Limited, Montreal.
American Steam Pump Co., Battle Creek Mich.
Canada Foundry Co., Toronto.
Canadian Rand Drill Co., Sherbrooke, Que.
Corbett R. B., Brooklyn, N.Y.
Darling Bros., Montreal.
Schutte & Koerting Co., Philadelphia, Pa.

Aluminum

Northern Aluminum Co., Pittsburg, Pa.
Syracuse Smelting Works, Montreal.

Angles, Beams and Girders

Bourne-Fuller Co., Cleveland, Ohio.
Canada Foundry Co., Toronto.
Hopkins, F. H. & Co., Montreal.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.

Aniline Colors and Dyewood Extracts

Bellhouse, Dillon & Co., Montreal.
Benson, W. T. & Co., Montreal.
Brunner, Mond & Co., Northwich, England.
Canada Chemical Mfg. Co., London, Ont.
Cassella Color Co., New York City.
Geigy Aniline & Extract Co., New York City.
McArthur, Cornelie & Co., Montreal.
Nicholls Chemical Co., Montreal.
Winn & Holland, Montreal.

Annealing Muffles and Furnaces (Wire)

Leslie, A. C. & Co., Montreal.
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Antimony

Syracuse Smelting Works, Montreal.

Anvils and Vises

Hopkins, F. H. & Co., Montreal.
Leslie, A. C. & Co., Montreal.
Rice Lewis & Son, Toronto.

Architects

Edwards, R. J., Toronto.
Parke, R. J., Toronto.
Vogel, C. H., Ottawa.

Automatic Gear Cutting Machines

Becker-Brainard Milling Machine Co., Hyde Park, Mass.

Axles

Hopkins, F. H. & Co., Montreal.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.

Babbitt Metal

Petrie, H. W., Toronto.
Pittsburgh Shafting Co., Detroit, Mich.
Syracuse Smelting Works, Montreal.

Banks

Bank of Hamilton, Hamilton, Ont.

Bar Iron and Steel

Bourne-Fuller Co., Cleveland, Ohio.
Hopkins, F. H. & Co., Montreal.
Leslie, A. C. & Co., Montreal.
Rice Lewis & Son, Toronto.

Belt Dressing

McLaren, J. C. Belting Co., Montreal and Toronto.
Petrie, H. W., Toronto.
Rossendale Belting Co., Toronto.
Williams, A. R. Machinery Co., Toronto.

Belt Fasteners

Bristol Co., Waterbury, Conn.
McLaren, D. K., Montreal and Toronto.
McLaren, J. C. Belting Co., Montreal and Toronto.
Petrie, H. W., Toronto.

Rossendale Belting Co., Toronto.
Williams, A. R. Machinery Co., Toronto.

Belting (Cotton)

Dominion Belting Co., Hamilton, Ont.
Fleming, W. A. & Co., Montreal.

Greay, Wm. & J. G., Toronto.
McLaren, D. K., Montreal and Toronto.
McLaren, J. C. Belting Co., Montreal and Toronto.
Petrie, H. W., Toronto.
Pittsburgh Shafting Co., Detroit, Mich.
Rice Lewis & Son, Toronto.

Sadler & Haworth, Montreal and Toronto.
Williams, A. R. Machinery Co., Toronto.

Belting (Leather)

Fleming, W. A. & Co., Montreal.
Greay, Wm. & J. G., Toronto.
McLaren, D. K., Montreal and Toronto.
McLaren, J. C. Belting Co., Montreal and Toronto.
Petrie, H. W., Toronto.

Pittsburgh Shafting Co., Detroit, Mich.
Rice Lewis & Son, Toronto.

Sadler & Haworth, Montreal and Toronto.
Williams, A. R. Machinery Co., Toronto.

Belting (Rubber)

Greay, Wm. & J. G., Toronto.
Gutta Percha & Rubber Mfg. Co., Toronto.
McLaren, D. K., Montreal and Toronto.
Petrie, H. W., Toronto.
Pittsburgh Shafting Co., Detroit, Mich.

CLASSIFIED INDEX.

(CONTINUED).

Belting and Supplies

Bristol Co., Waterbury, Conn.
 Dominion Belting Co., Hamilton, Ont.
 Fleming, W. A. & Co., Montreal.
 Greer, Wm. & J. G., Toronto.
 Gutta Percha & Rubber Mfg. Co., Toronto.
 Jeffrey Mfg. Co., Columbus, Ohio.
 McLaren, D. K., Montreal and Toronto.
 McLaren, J. C. Belting Co., Montreal and Toronto.
 Petrie, H. W., Toronto.
 Pittsburgh Shafting Co., Detroit, Mich.
 Rice Lewis & Son, Toronto.
 Rosendale Belting Co., Toronto.
 Williams, A. R. Machinery Co., Toronto.

Blast Furnace Brick

Dover Fire Brick Co., Cleveland, Ohio.
 Dunbar Fire Brick Co., Pittsburgh, Pa.
 Hamilton Facing Mill Co., Hamilton, Ont.
 Harrison-Walker Refractories Co., Pittsburgh, Pa.
 Pennsylvania Fire Brick Co., Lock Haven, Pa.
 Queen's Run Fire Brick Co., Lock Haven, Pa.
 Reese-Hammond Fire Brick Co., Boliver, Pa.
 Stowe-Fuller Co., Cleveland, Ohio.

Blowers

McEachren Heating & Ventilating Co., Galt, Ont.
 Schutte & Koerting Co., Philadelphia, Pa.
 Sheldon & Sheldon, Galt, Ont.
 Sturtevant, B. F. Co., Boston, Mass.

Boiler Compounds

Canada Chemical Mfg. Co., London, Ont.
 Lord, Geo. W. Co., Philadelphia, Pa.
 Sneath, D., Montreal.

Boiler Inspection

Boiler Inspection & Insurance Co., Toronto.
 Canadian Casualty & Boiler Insurance Co., Toronto.

BOILERS (See Engines and Boilers)

Brass Founders

Hamilton Brass Mfg. Co., Hamilton, Ont.
 Meadows, Geo. B. Wire, Iron & Brass Works Co., Toronto.
 Peabberthy Injector Co., Windsor, Ont.

Brick and Bricklaying Machinery

Allis-Chalmers-Bullock, Limited, Montreal.

Building and Paving Brick

Dover Fire Brick Co., Cleveland, Ohio.
 Dunbar Fire Brick Co., Pittsburgh, Pa.
 Hamilton Facing Mill Co., Hamilton, Ont.
 Harrison-Walker Refractories Co., Pittsburgh, Pa.
 Pennsylvania Fire Brick Co., Lock Haven, Pa.
 Queen's Run Fire Brick Co., Lock Haven, Pa.
 Reese-Hammond Fire Brick Co., Boliver, Pa.
 Stowe-Fuller Co., Cleveland, Ohio.

Building Iron and Steel

Bourne-Fuller Co., Cleveland, Ohio.
 Canada Foundry Co., Toronto.
 Expanded Metal & Fireproofing Co., Toronto.

Bulldozers' Materials

Alben Mfg. Co., Hillsboro, Ont.
 Canada Foundry Co., Toronto.
 Canadian Otis Elevator Co., Toronto.
 Expanded Metal & Fireproofing Co., Toronto.
 Garthshore, John J., Toronto.
 Hopkins, F. H. & Co., Montreal.
 Meadows, Geo. B. Wire, Iron & Brass Works Co., Toronto.
 Metallic Roofing Co., Toronto.
 Owen Sound Portland Cement Co., Owen Sound, Ont.
 Pittsburgh Shafting Co., Detroit, Mich.
 Rice Lewis & Son, Toronto.
 Sheldon & Sheldon, Galt, Ont.

Cables

Dominion Wire Rope Co., Montreal.
 Greening, B. Wire Co., Hamilton, Ont.
 Leipsa, Eugene F. Electrical Works, Montreal.
 Wire & Cable Co., Montreal.

Canada Plates

Lealie, A. C. & Co., Montreal.
 Nova Scotia Steel & Coal Co., New Glasgow, N.S.

Canoes

Peterborough Canoe Co., Peterborough, Ont.

Caps

Callough-Dalsell Crucible Co., Pittsburg, Pa.

Card Clothing

McLaren, D. K., Montreal and Toronto.
 McLaren, J. C. Belting Co., Montreal and Toronto.

Cast Iron Pipe

Canada Foundry Co., Toronto.
 Osborne-Thomson Pipe & Foundry Co., Hamilton, Ont.
 Rice Lewis & Son, Toronto.
 Stowe-Fuller Co., Cleveland, Ohio.
 Stowe-Fuller Pipe Foundry Co., Montreal.
 The John, Caledonian Iron Works Co., Montreal.

Castings (Iron and Brass)

Buhl Malleable Co., Detroit, Mich.
 Greer, Wm. & J. G., Toronto.
 Kerr Engine Co., Walkerville, Ont.
 McDougall, John, Caledonian Iron Works Co., Montreal.

Cement Machinery

Allis-Chalmers-Bullock, Limited, Montreal
 Bradley Pulverizer Co., Boston, Mass.
 Greer, Wm. & J. G., Toronto.
 McDougall, John, Caledonian Iron Works Co., Montreal.

Chain Making Machinery (Welded Golf Chain)

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

Channels

Bourne-Fuller Co., Cleveland, Ohio.
 Canada Foundry Co., Toronto.
 Lealie, A. C. & Co., Montreal.
 Nova Scotia Steel & Coal Co., New Glasgow, N.S.

Charcoal Pig Iron

Canada Iron Furnace Co., Montreal.
 McDougall, John, Caledonian Iron Works Co., Montreal.

Chemists

Archbold, Dr. Geo., Prescott, Ont.
 Heys, Thomas & Son, Toronto.

Clay Working Machinery

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

Coal and Coke

Bourne-Fuller Co., Cleveland, Ohio.
 Boynton, F. M., Inc., Buffalo, N.Y., and Pittsburg, Pa.
 Brownlee, J., Galt, Ont.
 Burton, Beidler & Phillips Co., Cleveland, Ohio.
 Ferguson, J. D., Hamilton, Ont.
 Hoffman, Jules G., Detroit, Mich.
 Milnes, James H. & Co., Toronto.
 Myles' Thos. Sons, Hamilton, Ont.
 Pittsburgh Coal Co., Pittsburgh, Pa.
 Rochester & Pittsburg Coal & Iron Co., Buffalo, N.Y.
 Shawmut Coal & Coke Co., St. Mary's, Pa.
 Shepard, Charles G., Buffalo, N.Y.
 Shipman, O. W. Co., Detroit, Mich.
 Wick, H. K. & Co., Buffalo, N.Y.
 Wilson H. T. Coal Co., Detroit, Mich.

Coal Cutting Machines

Allis-Chalmers-Bullock, Limited, Montreal.
 Canadian Rand Drill Co., Sherbrooke, Que.
 Jeffrey Mfg. Co., Columbus, Ohio.

Coal Tipples

Jeffrey Mfg. Co., Columbus, Ohio.

Coll Chains

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

Coke Oven Brick

Dover Fire Brick Co., Cleveland, Ohio.
 Dunbar Fire Brick Co., Pittsburgh, Pa.
 Stowe-Fuller Co., Cleveland, Ohio.

Collection Agency

Petrie, H. D., Hamilton, Ont.

Concrete Mixers

Hopkins, F. H. & Co., Montreal

Contractors' Machinery

Allis-Chalmers-Bullock, Limited, Montreal.
 Garthshore, John J., Toronto.
 Hopkins, F. H. & Co., Montreal.
 McDougall, John, Caledonian Iron Works Co., Montreal.
 Schutte & Koerting Co., Philadelphia, Pa.

Contractor's Plants

Allis-Chalmers-Bullock, Limited, Montreal.
 Hopkins, F. H. & Co., Montreal.
 Petrie, H. W., Toronto.
 Von der Osten, E. & Co., Toronto.
 Williams, A. R. Machinery Co., Toronto.

Conveying Machinery

Allis-Chalmers-Bullock, Limited, Montreal.
 Babcock & Wilcox, Limited, Montreal.
 Borden & Sellock Co., Chicago, Ill.
 Buhl Malleable Co., Detroit, Mich.
 Canada Foundry Co., Toronto.
 Greer, Wm. & J. G., Toronto.
 Jeffrey Mfg. Co., Columbus, Ohio.
 Link-Belt Engineering Co., Philadelphia, Pa.
 McDougall, John, Caledonian Iron Works Co., Montreal.
 Perrin, William R. & Co., Limited, Toronto.
 Pittsburgh Shafting Co., Detroit, Mich.
 Rosendale Belting Co., Toronto.

Copper Materials

Greening, B. Wire Co., Hamilton, Ont.
 Phillips, Eugene F. Electrical Works, Montreal.
 Syracuse Smelting Works, Montreal.
 Wire & Cable Co., Montreal.

Correspondence Schools

International Correspondence Schools, Scranton, Pa., and Toronto.

Corundum

Canada Corundum Co., Toronto.

Corundum Wheels

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



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Steel Shingles
 either Galvanized or Painted
Are Always They are more economically durable and quicker to apply than any others, fitting accurately—and therefore most easily laid.
 They have been thoroughly tested in all kinds of climates, invariably proving **Fire, Lightning, Rust and Weather Proof.**
 If you're building, make sure of satisfaction by ordering **EASTLAKE** for the roof—fullest information if you write.
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LIMITED
Manufacturers of **Oilcloths** of Every Description.

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REFITTED AND FIRST-CLASS.

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 - 2-Worthington Compound " 14 x 20 x 10 x 15.
 - 2-Worthington duplex Tank, 10 x 14 x 10.
 - 2-Worthington duplex, 12 x 7 x 10.
 - 6-Duplex Boiler Feed, 6 x 4 x 6.
 - 12 " " " 4 1/2 x 2 1/2 x 4.
 - 2-Cameron Sinking Pumps, No. 9.
 - 2 " " " No. 11.
- Fire, Wrecking, Irrigation, Water Works and Mining Pumps, Air Compressors, Tanks, Cars, Pipe, Itall, Boilers and Engines, Beams, Dynamios, Motors and Trucks. Our prices are necessarily of interest to cash buyers.

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CARRIAGE, WAGGON, AND SLEIGH WOOD WORK.

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HOT PRESSED NUTS.
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Manufacturers of Screws, Studs and Pins
for Sewing Machines, Typewriters and
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write them, you will say
that you saw their announce-
ment in

The Canadian Manufacturer.

CLASSIFIED INDEX.

(CONTINUED).

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McCullough-Dalzell Crucible Co., Pittsburg, Pa.
Pittsburg Crucible Works, Pittsburg, Pa.

Crayons

Lowell Crayon Co., Lowell, Mass.

Crucibles

Dixon, Joseph, Crucible Co., Jersey City, N.Y.
McCullough-Dalzell Crucible Co., Pittsburg, Pa.
Pittsburg Crucible Works, Pittsburg, Pa.
Syracuse Smelting Works, Montreal.

Crucible Caps

McCullough-Dalzell Crucible Co., Pittsburg, Pa.
Pittsburg Crucible Works, Pittsburg, Pa.

Crucible Covers

McCullough-Dalzell Crucible Co., Pittsburg, Pa.
Pittsburg Crucible Works, Pittsburg, Pa.

Cutter Grinding Machines

Becker-Brainard Milling Machine Co., Hyde Park, Mass.

Decalcomania

Meyercord Co., Chicago, Ill.

Deep Well Engines

American Steam Pump Co., Battle Creek, Mich.

Detective Agency

Dewar Detective Agency, St. Louis, Mo.

Dies (Socket, Sewer Pipe and Tile)

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

Directories

Kelly's Directories, Limited, Toronto.

Draw Benches (Wire)

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

Drills

Allis-Chalmers-Bullock, Limited, Montreal.
Barnes, B. F. Co., Rockford, Ill.
Canada Machinery Co., Sarnia, Ont.
Canadian Westinghouse Co., Ltd., Hamilton, Ont.
London Machine Tool Co., London, Ont.
Petrie, H. W., Toronto.
Pittsburgh Shafting Co., Detroit, Mich.

Drills (Pneumatic and Rock)

Allis-Chalmers-Bullock, Limited, Montreal.
Canadian Rand Drill Co., Sherbrooke, Que.
Jeffrey Mfg. Co., Columbus, Ohio.

Drills (Twist)

Pittsburg Shafting Co., Detroit, Mich.

Drop Forgings

Globe Machine & Stamping Co., Cleveland, Ohio.

Drop Forging Dies

Globe Machine & Stamping Co., Cleveland, Ohio.

Dry Kiln Apparatus

Sheldon & Sheldon, Galt, Ont.

Sturtevant, B. F. Co., Boston, Mass.

Dust and Shavings Separators

Sheldon & Sheldon, Galt, Ont.

Sturtevant, B. F. Co., Boston, Mass.

Dye Stuffs and Chemicals

Bellhouse, Dillon & Co., Montreal.
Benson, W. T. & Co., Montreal.
Brunner, Mond & Co., Northwich, England.
Canada Chemical Mfg. Co., London, Ont.
Cassella Color Co., New York City.
Geigy Aniline & Extract Co., New York City.
McArthur Cornello & Co., Montreal.
Nicholls Chemical Co., Montreal.
Winn & Holland, Montreal.

DYNAMOS (See Motors and Dynamos)

Electric Motors and Transformers

Allis-Chalmers-Bullock, Limited, Montreal.
Packard Electric Co., St. Catharines, Ont.

Electric Mine Locomotives

Canadian General Electric Co., Toronto.
Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Jeffrey Mfg. Co., Columbus, Ohio.

Electrical Repairs

Volta Electric Repair Works, Toronto.

Electrical Supplies

Allis-Chalmers-Bullock, Limited, Montreal.
Bristol Co., Waterbury, Conn.
Canadian General Electric Co., Toronto.
Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Electrical Construction Co., London, Ont.
Forman, John, Montreal.
Jones & Moore Electric Co., Toronto.
Packard Electric Co., St. Catharines, Ont.
Toronto & Hamilton Electric Co., Hamilton, Ont.
United Electric Co., Toronto.
Worth & Martin, Toronto.

Elevators and Conveyors

Allis-Chalmers-Bullock, Limited, Montreal.
Buhl Malleable Co., Detroit, Mich.
Canadian Otis Elevator Co., Toronto.

Darling Bros., Montreal.
Greay, Wm. & J. G., Toronto.
Jeffrey Mfg. Co., Columbus, Ohio.
Link-Belt Engineering Co., Philadelphia, Pa.

Elevator Insurance

Canadian Casualty & Boiler Insurance Co., Toronto

Emery and Emery Wheels

Canadian Corundum Wheel Co., Hamilton, Ont.
Forman, John, Montreal.
Petrie, H. W., Toronto.

Engineers (Chemical)

Hoys, Thomas & Son, Toronto.
Hunt Robert W. & Co., Chicago, Ill.

Engineers (Civil)

Delano-Osborn Engineering Co., Toronto
Parke, R. J., Toronto.
Vogel, C. H., Ottawa.

Engineers (Consulting)

Aitken, K. L., Toronto.
Delano-Osborn Engineering Co., Toronto.
Electrical Construction Co., London, Ont.
Hunt, Robert W. & Co., Chicago, Ill.
Marion & Marion, Montreal.
Parke, R. J., Toronto.
Perrin, William R. & Co., Limited, Toronto.
Simpson, T. T., Deschambes, Que.
Vogel, C. H., Ottawa.
Volta Electric Repair Works, Toronto.
Von der Osten, E. & Co., Toronto.

Engineers (Contracting)

Babcock & Wilcox, Limited, Montreal.
Danada Foundry Co., Toronto.
Darling Bros., Montreal.
Electrical Construction Co., London, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.
Robb Engineering Co., Amherst, N.S.

Engineers (Electrical)

Aitken, K. L., Toronto.
Allis-Chalmers-Bullock, Limited, Montreal
Canadian General Electric Co., Toronto.
Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Crocker-Wheeler Co., St. Catharines, Ont.
Delano-Osborn Engineering Co., Toronto.
Electric Engineering & Supply Co., Montreal.
Electrical Construction Co., London, Ont.
Jones & Moore Electric Co., Toronto.
Marion & Marion, Montreal.
Toronto & Hamilton Electric Co., Hamilton, Ont.
United Electric Co., Toronto.
Volta Electric Repair Works, Toronto.
Worth & Martin, Toronto.

Engineers (Mechanical)

Allis-Chalmers-Bullock, Limited, Montreal.
Babcock & Wilcox, Limited, Montreal.
Borden & Sellock Co., Chicago, Ill.
Buhl Malleable Co., Detroit, Mich.
Darling Bros., Montreal.
Delano-Osborn Engineering Co., Toronto.
Electrical Construction Co., London, Ont.
Greay, Wm. & J. G., Toronto.
McDougall, John, Caledonian Iron Works Co., Montreal.
Hunt, Robert W. & Co., Chicago, Ill.
Kerr Engine Co., Waukeville, Ont.
Marion & Marion, Montreal.
Robb Engineering Co., Amherst, N.S.
Sheldon & Sheldon, Galt, Ont.

Engineers (Mill and Hydraulic)

Buhl Malleable Co., Detroit, Mich.
Delano-Osborn Engineering Co., Toronto.
Hawthornth, Alfred, Montreal.
Vogel, C. H., Ottawa.

Engineers (Mining)

Buhl Malleable Co., Detroit, Mich.
Hoys, Thomas & Son, Toronto.
Mills, S. D., Toronto.

Engineers (Municipal)

Von der Osten, E. & Co., Toronto.

Engineers and Contractors

Buhl Malleable Co., Detroit, Mich.
Jeffrey Mfg. Co., Columbus, Ohio.

Engines and Boilers

Allis-Chalmers-Bullock, Limited, Montreal.
Babcock & Wilcox, Limited, Montreal.
Bertram Engine Works Co., Toronto
Canada Foundry Co., Toronto.
Canadian Heino Safety Boiler Co., Toronto.
Corbett, R. B., Brooklyn, N.Y.
Goldie & McCulloch Co., Galt, Ont.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Hopkins, F. H. & Co., Montreal.
McDougall, John, Caledonian Iron Works Co., Montreal.
McEachren Heating & Ventilating Co., Galt, Ont.
Petrie, H. W., Toronto.
Pittsburgh Shafting Co., Detroit, Mich.
Robb Engineering Co., Amherst, N.S.
Sheldon & Sheldon, Galt, Ont.
Sturtevant, B. F. Co., Boston, Mass.
Williams, A. R. Machinery Co., Toronto.

Engravers

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

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Exhaust Fans
Sheldon & Sheldon, Galt, Ont.
Sturtevant, B. F. Co., Boston, Mass.

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

Exhausters
Schutte & Koerting Co., Philadelphia, Pa.

Explorer and Geologist
Evans, Horace F., Ashcroft, B.C.

Factory Sites
(See Factory Locations, page 35).
Central Ontario Power Co., Peterboro, Ont.
Hutcherson, S. M., Paisley, Ont.
Poland Chas F., St. Catharines, Ont.

Feed Water Heaters
Babcock & Wilcox, Limited, Montreal.
Darling Bros., Montreal.
McDougall, John, Caledonian Iron Works Co., Montreal.
Schutte & Koerting Co., Philadelphia, Pa.

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

Financial
Bradstreet's, New York City.
Dun, R. G. & Co., Toronto.
Neff & Postlethwaite, Toronto.
Petrie, H. D., Hamilton, Ont.

Filters (Oil)
Babcock & Wilcox, Limited, Montreal.
Burt Mfg. Co., Akron, Ohio.
Darling Bros., Montreal.
McDougall, John, Caledonian Iron Works Co., Montreal.
Perrin, William R. & Co. Limited, Toronto.

Filters and Filtering Systems (Water)
Babcock & Wilcox, Limited, Montreal.
McDougall, John, Caledonian Iron Works Co., Montreal.

Fire Brick and Clay
Dover Fire Brick Co., Cleveland, Ohio.
Dunbar Fire Brick Co., Pittsburgh, Pa.
Hamilton Facing Mill Co., Hamilton, Ont.
Harbison-Walker Refractories Co., Pittsburgh, Pa.
Pennsylvania Fire Brick Co., Lock Haven, Pa.
Queen's Run Fire Brick Co., Lock Haven, Pa.
Reese-Hammond Fire Brick Co., Boliver, Pa.
Stowe-Fuller Co., Cleveland, Ohio.

Fire Escapes
Darling Bros., Montreal.
Meadows, Geo. B., Wire, Iron & Brass Works, Toronto.

Flour Mill Machinery
Goldie & McCulloch Co., Galt, Ont.
Greay, Wm. & J. G., Toronto.

Forges and Blowers
Canada Foundry Co., Toronto.
McEachren Heating & Ventilating Co., Galt, Ont.
Sheldon & Sheldon, Galt, Ont.
Sturtevant, B. F. Co., Boston, Mass.

Founders
Canada Foundry Co., Toronto.
Cowan & Co., Galt, Ont.
Gartshore-Thomson Pipe & Foundry Co., Hamilton, Ont.
Goldie & McCulloch Co., Galt, Ont.
Greay, Wm. & J. G., Toronto.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.

Foundry Facings and Supplies
Hamilton Facing Mill Co., Hamilton, Ont.

Fuel Economizers
Babcock & Wilcox, Limited, Montreal.
Schutte & Koerting Co., Philadelphia, Pa.
Sturtevant, B. F. Co., Hyde Park, Mass.

Furniture (Lodge, Opera and School)
Canadian Office & School Furniture Co., Pres-on, Ont.

Galvanizing
Ontario Wind Engine & Pump Co., Toronto.

Galvanizing and Tinning Machinery and Furnaces (Wire)
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Gas and Gasoline Engines
Goldie & McCulloch Co., Galt, Ont.
Morrison T. A. & Co., Montreal.

Gauges (Recording Pressure)
Bristol Co., Waterbury, Conn.

Gauges (Steam)
Penberthy Injector Co., Windsor, Ont.
Petrie, H. W., Toronto.
Williams A. R. Machinery Co., Toronto.

Gauges (Water)
Babcock & Wilcox, Limited, Montreal.
Penberthy Injector Co., Windsor, Ont.

Generators
Allis-Chalmers-Bullock, Limited, Montreal.
Canadian General Electric Co., Toronto.
Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Electrical Construction Co., London, Ont.
Forman, John, Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
Jones & Moore Electric Co., Toronto.
Phillips, Eugene F., Electrical Works, Montreal.
Toronto & Hamilton Electric Co., Hamilton, Ont.
Volta Electric Repair Works, Toronto.

Gloves, Mittens and Moccasins
Storey, W. H. & Son, Acton, Ont.

Glue Heaters
Advance Machinery Co., Toledo, Ohio.
Greay, Wm. & J. G., Toronto.

Glue Room Equipment
Advance Machinery Co., Toledo, Ohio.

Government Notices
Factory Inspectors.
Minister of Agriculture.

Graphite
Dixon, Jos., Crucible Co., Jersey City, N.J.
McCullough-Dalsell Crucible Co., Pittsburg, Pa.
Pittsburg Crucible Works, Pittsburg, Pa.

Grease Cups
Penberthy Injector Co., Windsor, Ont.

Grinding Machinery
Canadian Corundum Wheel Co., Hamilton, Ont.
Greay, Wm. & J. G., Toronto.

Hardware
Butterfield & Co., Rock Island, Que.
Gartshore, John J., Toronto.
Globe Machine & Stamping Co., Cleveland, Ohio.
Hopkins, F. H. & Co., Montreal.
Morrow, John, Machine Screw Co., Ingersoll, Ont.
Rice Lewis & Son, Toronto.
Ryall Machine Screw Co., Montreal.

Heating and Ventilating Apparatus
Darling Bros., Montreal.
McEachren Heating & Ventilating Co., Galt, Ont.
Sheldon & Sheldon, Galt, Ont.
Sturtevant, B. F. Co., Boston, Mass.

Hoisting Engines
Bertram Engine Works Co., Toronto.

Hoists (Chain and Pneumatic)
Allis-Chalmers-Bullock, Limited, Montreal.
Canadian Hand Drill Co., Sherbrooke, Que.
Hopkins, F. H. & Co., Montreal.

Hose (Fire and Pneumatic)
Gutta Percha & Rubber Mfg. Co., Toronto.
McLaren, J. C., Belting Co., Montreal and Toronto.

Hydrants
Kerr Engine Co., Walkerville, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.

Hydraulic Accumulators
McDougall, John, Caledonian Iron Works Co., Montreal.

Hydraulic Machinery
Canada Foundry Co., Toronto.
Darling Bros., Montreal.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.

Injectors
Canada Foundry Co., Toronto.
Hamilton Brass Mfg. Co., Hamilton, Ont.
Penberthy Injector Co., Windsor, Ont.
Schutte & Koerting Co., Philadelphia, Pa.
Williams, A. R. Machinery Co., Toronto.

Iron and Steel Inspection
Hunt, R. W. & Co., Chicago, Ill.

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(CONTINUED).

Lamps—Electric

Allis-Chalmers-Bullock, Limited, Montreal.
Canadian General Electric Co., Toronto.
Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Forman, John, Montreal.
Packard Electric Co., St. Catharines, Ont.
Sunbeam Incandescent Lamp Co., Toronto and St.
Catharines, Ont.

Lathes

Barnes, B. F. Co., Rockford, Ill.
Canada Machinery Co., Sarnia, Ont.
Cowdrey, C. H. Machine Works, Fitchburg, Mass.
London Machine Tool Co., London, Ont.
Petrie, H. W., Toronto.
Williams, A. R. & Co., Toronto.

Lathes (Wood-working)

Goldie & McCulloch Co., Galt, Ont.
Petrie, H. W., Toronto.
Williams, A. R. Machinery Co., Toronto.

Lubricators

Penberthy Injector Co., Windsor, Ont.

Machinists

Bertram Engine Works Co., Toronto.
Buhl Malleable Co., Detroit, Mich.
Goldie & McCulloch Co., Galt, Ont.
Greay, Wm. & J. G., Toronto.
London Machine Tool Co., London, Ont.
Worth & Martin Toronto.

Machinists' Supplies

Armstrong Mfg. Co., Bridgeport, Conn.
Buhl Malleable Co., Detroit, Mich.
Butterfield & Co., Rock Island, Que.
Canada Machinery Co., Sarnia, Ont.
Goldie & McCulloch Co., Galt, Ont.
Gutta Percha & Rubber Mfg. Co., Toronto.
Hopkins, F. H. & Co., Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
London Machine Tool Co., London, Ont.
Morrow, John, Machine Screw Co., Ingersoll, Ont.
Petrie, H. W., Toronto.
Pittsburgh Shafing Co., Detroit, Mich.
Ryall Machine Screw Co., Montreal.
Worth & Martin, Toronto.

Machine Tools

Barnes, B. F. Co., Rockford, Ill.
Becker-Brainard Milling Machine Co., Hyde Park
Mass.
Canada Machinery Co., Sarnia, Ont.
Cleveland Twist Drill Co., Cleveland, Ohio.
Cowdrey, C. H. Machine Works, Fitchburg, Mass.
Darling Bros., Montreal.
London Machine Tool Co., London, Ont.
Petrie, H. W., Toronto.

Machinery Repairs

Bertram Engine Works Co., Toronto
Greay, Wm. & J. G., Toronto.

Malleable Iron Castings

Buhl Malleable Co., Detroit, Mich.
Smith's Falls Malleable Castings Co., Smith's Falls,
Ont.

Martine and Stationary Engines and Bollers

Allis-Chalmers-Bullock, Limited, Montreal.
Bertram Engine Works Co., Toronto.

Mechanical Draft

Babcock & Wilcox, Limited, Montreal.
McEnchren Heating & Ventilating Co., Galt, Ont.
Sheldon & Sheldon, Galt, Ont.
Sturtevant, B. F. Co., Boston, Mass.

Metal Gates

Page Wire Fence Co., Walkerville, Ont.

Metal Stamping

Globe Machine & Stamping Co., Cleveland, Ohio.

Metallurgists

Mills, S. D., Toronto.

Mill Machinery and Supplies

Allis-Chalmers-Bullock, Limited, Montreal.
Armstrong Mfg. Co., Bridgeport, Conn.
Becker-Brainard Milling Machine Co., Hyde Park,
Mass.

Buhl Malleable Co., Detroit, Mich.
Darling Bros., Montreal.

Fleming, W. A. & Co., Montreal.
Gartshore, John J., Toronto.

Goldie & McCulloch Co., Galt, Ont.
Greay, Wm. & J. G., Toronto.

Gutta Percha & Rubber Mfg. Co., Toronto.
Hamilton Brass Mfg. Co., Hamilton, Ont.

Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Hawkerorth, Alfred, Montreal.

Hay, Peter Knife Co., Galt, Ont.
Hopkins, F. H. & Co., Montreal.

Jeffrey Mfg. Co., Columbus, Ohio.
London Machine Tool Co., London, Ont.

Morrow, John, Machine Screw Co., Ingersoll, Ont.
McDougall, John, Caledonian Iron Works Co., Mont-
real.

McLaren, D. K., Montreal and Toronto.

Penberthy Injector Co., Windsor, Ont.

Petrie, H. W., Toronto.
Pittsburgh Shafing Co., Detroit, Mich.
Rice Lewis & Son, Toronto.
Robb Engineering Co., Amherst, N.S.
Ryall Machine Screw Co., Montreal.
Spence, R. & Co., Hamilton, Ont.
Wilson, J. C. & Co., Glenora, Ont.

Milling Cutters and Machines

Becker-Brainard Milling Machine Co., Hyde Park,
Mass.

Miners' Lamps

Allis-Chalmers-Bullock, Limited, Montreal.
Anton, John & Son, Monongahela, Pa.

Mining Machinery

Allis-Chalmers-Bullock, Limited, Montreal.
Buhl Malleable Co., Detroit, Mich.
Canadian Road Drill Co., Sherbrooke, Que.
Corbett, R. B., Brooklyn, N.Y.
Gartshore, John J., Toronto.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Hopkins, F. H. & Co., Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
Link-Belt Engineering Co., Philadelphia, Pa.
McDougall, John, Caledonian Iron Works Co.,
Montreal.

Perrin, William R. & Co., Limited, Toronto.

Petrie, H. W., Toronto.

Schutte & Koerting Co., Philadelphia, Pa.

Williams, A. R. Machinery Co., Toronto.

Motors and Dynamos

Allis-Chalmers-Bullock, Limited, Montreal.
Canadian General Electric Co., Toronto.
Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Corbett, R. B., Brooklyn, N.Y.
Electrical Construction Co., London, Ont.
Forman, John, Montreal.
Jeffrey Mfg. Co., Columbus, Ohio.
Jones & Moore Electric Co., Toronto.
Petrie, H. W., Toronto.
Toronto & Hamilton Electric Co., Hamilton, Ont.
United Electric Co., Toronto.
Volta Electric Repair Works, Toronto.

Moulding Sand

Hamilton Facing Mills Co., Hamilton, Ont.

Nickel

Canadian Copper Co., New York, N.Y.
Orford Copper Co., New York, N.Y.

Novelty Manufacturers

Worth & Martin, Toronto.

Nozzles

McCullough-Dalzell Crucible Co., Pittsburg, Pa.
Pittsburg Crucible Works, Pittsburg, Pa.

Office and Bank Fittings

Canadian Office & School Furniture Co., Preston,
Ont.
Meadows, Geo. B., Wire, Iron & Brass Works Co., To-
ronto.

Oils and Lubricants

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

Oil Cloth

Dominion Oil Cloth Co., Montreal.

Oil Cups

Penberthy Injector Co., Windsor, Ont.

Paints and Colors

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

Paper Manufacturers

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

Patents

Budden, Hanbury, A., Montreal.
Fetherstonhaugh & Co., Toronto.
Marion & Marion, Montreal.

Perforated Metals

Globe Machine & Stamping Co., Cleveland, Ohio.
Greening, B. Wire Co., Hamilton, Ont.

Personal Accident

Canadian Casualty & Boiler Insurance Co., Toronto

Phosphorizers

McCullough-Dalzell Crucible Co., Pittsburg, Pa.
Pittsburg Crucible Works, Pittsburg, Pa.

Pig Iron

Bourne-Fuller Co., Cleveland, Ohio.
Canada Iron Furnace Co., Montreal.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Shepard, Charles G., Buffalo, N.Y.
Syracuse Smelting Works, Montreal.

Pipe (Riveted, Iron and Steel)

Babcock & Wilcox, Limited, Montreal.
McDougall, John, Caledonian Iron Works Co., Mont-
real.

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Pipe Threading Machines

Armstrong Mfg. Co., Bridgeport, Conn.
Butterfield & Co., Rock Island, Que.
Petrie, H. W., Toronto.
Rice Lewis & Son, Toronto.

Pipes and Tubes

Bourne-Fuller Co., Cleveland, Ohio.
Canada Foundry Co., Toronto.
Corbett, R. B., Brooklyn, N.Y.
Gartshore-Thomson Pipe & Foundry Co., Hamilton, Ont.
Montreal Pipe Foundry Co., Montreal.
Rice Lewis & Son, 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.

Plumbago

Hamilton Facing Mills Co., Hamilton, Ont.
McCullough-Dalzell Crucible Co., Pittsburg, Pa.
Pittsburg Crucible Works, Pittsburg, Pa.

Pneumatic Tools

Allis-Chalmers-Bullock, Limited, Montreal.
Canadian Rand Drill Co., Shorbrooke, Que.

Pointer Rolls (For Rods and Wire)

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

Portland Cement

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

Power Plants—Equipments

Allis-Chalmers-Bullock, Limited, Montreal.
Babcock & Wilcox, Limited, Montreal.
Canadian General Electric Co., Toronto.
Canadian Westinghouse Co., Ltd., Hamilton, Ont.
Corbett, R. B., Brooklyn, N.Y.
Darling Bros., Montreal.
Delano-Osborn Engineering Co., Toronto.
Electrical Construction Co., London, Ont.
Goldie & McCulloch, Galt, Ont.
Gutta Percha & Rubber Mfg. Co., Toronto.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Jeffrey Mfg. Co., Columbus, Ohio.
Jones & Moore Electric Co., Toronto.
McDougall, John, Caledonian Iron Works Co., Montreal.

Packard Electric Co., St. Catharines, Ont.
Perrin, William R. & Co., Limited, Toronto.
Petrie, H. W., Toronto.
Phillips, Eugene F., Electrical Works, Montreal.
Pittsburgh Shafting Co., Detroit, Mich.
Robb Engineering Co., Amherst, N.S.
Sturtevant, B. F. Co., Boston, Mass.
Toronto & Hamilton Electric Co., Hamilton, Ont.
United Electric Co., Toronto.
Wilson, J. C. & Co., Glenora, Ont.

Presses (Tile, Sower Pipe, Nozzles and Sleeves)

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

Pulleys

Darling Bros., Montreal.
Goldie & McCulloch Co., Galt, Ont.
Greay, Wm. & J. G., Toronto.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Jeffrey Mfg. Co., Columbus, Ohio.
McDougall, John, Caledonian Iron Works Co., Montreal.
McLaren, J. C., Belting Co., Montreal and Toronto.
Petrie, H. W., Toronto.
Pittsburgh Shafting Co., Detroit, Mich.
Wilson, J. C. & Co., Glenora, Ont.

Pumps and Pumping Machinery

Allis-Chalmers-Bullock, Limited, Montreal.
American Steam Pump Co., Battle Creek, Mich.
Canada Foundry Co., Toronto.
Corbett, R. B., Brooklyn, N.Y.
Darling Bros., Montreal.
Downe Pump Co., Downsville, Pa.
Goldie & McCulloch Co., Galt, Ont.
Herr Engine Co., Walkerville, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.
Ontario Wind Engine & Pump Co., Toronto.
Petrie, H. W., Toronto.
Schutte & Koerting Co., Philadelphia, Pa.

Punches and Shears

Canada Machinery Co., Sarnia, Ont.
Globe Machine & Stamping Co., Cleveland, Ohio.
Petrie, H. W., Toronto.

Purifiers

Babcock & Wilcox, Limited, Montreal.
Goldie & McCulloch Co., Galt, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.

Purifying and Softening Systems (Water)

Babcock & Wilcox, Limited, Montreal.
Darling Bros., Montreal.
McDougall, John, Caledonian Iron Works Co., Montreal.

Railroads

Chicago & North-Western Ry., Toronto & St. Paul, Minn.

Railway Supplies

Algoma Steel Co., Sault Ste. Marie, Ont.
Allis-Chalmers-Bullock, Limited, Montreal.
Gartshore, John J., Toronto.
Greening, B. Wire Co., Hamilton, Ont.
Gutta Percha & Rubber Mfg. Co., Toronto.
Hopkins, F. H. & Co., Montreal.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Phillips, Eugene F., Electrical Works, Montreal.

Reamers

Butterfield & Co., Rock Island, Que.

Rivets

Bourne-Fuller Co., Cleveland, Ohio.

Rock and Ore Crushers

Allis-Chalmers-Bullock, Limited, Montreal.
Bradley Pulverizer Co., Boston, Mass.

Roller Bearings

Pittsburg Shafting Co., Detroit, Mich.

Rolling Mill Engineers

Bourne-Fuller Co., Cleveland, Ohio.

Roofing

Bourne-Fuller Co., Cleveland, Ohio.
Metallic Roofing Co., Toronto.

Rubber Goods

Gutta Percha & Rubber Mfg. Co., Toronto.
Pittsburg Shafting Co., Detroit, Mich.

Rubber Packing

Gutta Percha & Rubber Mfg. Co., Toronto.

Rubber Washing Tubs

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

Rural Mail Boxes

Globe Machine & Stamping Co., Cleveland, Ohio.

Safes and Vaults

Goldie & McCulloch Co., Galt, Ont.

Screws

Morrow John, Machine Screw Co., Ingersoll, Ont.
Ryall Machine Screw Co., Montreal.

Screw Plates

Armstrong Mfg. Co., Bridgeport, Conn.
Butterfield & Co., Rock Island, Que.

Shafting

Allis-Chalmers-Bullock, Limited, Montreal.
Bourne-Fuller Co., Cleveland, Ohio.
Goldie & McCulloch Co., Galt, Ont.
Greay, Wm. & J. G., Toronto.
Jeffrey Mfg. Co., Columbus, Ohio.
McDougall, John, Caledonian Iron Works Co., Montreal.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Petrie, H. W., Toronto.
Pittsburgh Shafting Co., Detroit, Mich.

Shapers and Carvers

Advance Machinery Co., Toledo, Ohio.

Shear Knives

Hay, Peter Knife Co., Galt, Ont.

Sheets (Iron and Steel)

Bourne-Fuller Co., Cleveland, Ohio.
Leslie, A. C. & Co., Montreal.
Lysaght, John, Limited, Bristol, England and Montreal.

Sheet Metal Goods

Globe Machine & Stamping Co., Cleveland, Ohio.
Metallic Roofing Co., Toronto.

Sheet Metal Stamping

Globe Machine & Stamping Co., Cleveland, Ohio.
Metallic Roofing Co., Toronto.
Ryall Machine Screw Works, Montreal.

Ship Builders

Bertram Engine Works Co., Toronto.
Ramage Edward, Toronto.

Smoke Stacks

Hamilton, Wm. Mfg. Co., Peterborough, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.

Solder

Globe Machine & Stamping Co., Cleveland, Ohio.
Syracuse Smelting Co., Montreal.

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Globe Machine & Stamping Co., Cleveland, Ohio.

Speed Recorders

Bristol Co., Waterbury, Conn.

Sprinkler Insurance

Canadian Casualty & Boiler Insurance Co., Toronto.

Stamps and Stencils

Globe Machine & Stamping Co., Cleveland, Ohio.

Steam Pumps

Allis-Chalmers-Bullock, Limited, Montreal.
American Steam Pump Co., Battle Creek, Mich.
Canada Foundry Co., Toronto.
Darling Bros., Montreal.
Goldie & McCulloch Co., Galt, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.
Petrie, H. W., Toronto.
Pittsburgh Shafting Co., Detroit, Mich.
Williams, A. R. Machinery Co., Toronto.

Steam Separators

Babcock & Wilcox, Limited, Montreal.
Darling Bros., Montreal.
McEachren Heating & Ventilating Co., Galt, Ont.

Steam Specialties

Darling Bros., Montreal.
McEachren Heating & Ventilating Co., Galt, Ont.
Penberthy Injector Co., Windsor, Ont.
Schutte & Koerting Co., Philadelphia, Pa.
Sheldon & Sheldon, Galt, Ont.

Steam Valves

American Steam Pump Co., Battle Creek, Mich.
Babcock & Wilcox, Limited, Montreal.
Darling Bros., Montreal.
Kerr Engine Co., Walkerville, Ont.
Petrie, H. W., Toronto.
Williams, A. R. Machinery Co., Toronto.

Steel and Composite Ships

Bertram Engine Works Co., Toronto.

Steel Rails

Algoma Steel Co., Sault Ste. Marie, Ont.
Drummond, McCall & Co., Montreal and Toronto.
Gartshore, John J., Toronto.
Hopkins, F. H. & Co., Montreal.

Steel Shafting

Darling Bros., Montreal.
Goldie & McCulloch Co., Galt, Ont.
Greay, Wm. & J. G., Toronto.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Leslie, A. C. & Co., Montreal.
McDougall, John, Caledonian Iron Works Co., Montreal.
Nova Scotia Steel & Coal Co., New Glasgow, N.S.
Pittsburgh Shafting Co., Detroit, Mich.
Wilson, J. C. & Co., Glenora, Ont.

Stocks and Dies

Armstrong Mfg. Co., Bridgeport, Conn.
Butterfield & Co., Rock Island, Que.
Petrie, H. W., Toronto.
Rice Lewis & Son, Toronto.
Worth & Martin, Toronto.

Stoppers

McCullough-Dalsell Crucible Co., Pittsburg, Pa.
Pittsburg Crucible Works, Pittsburg, Pa.

Structural Steel

Bourne-Fuller Co., Cleveland, Ohio.
Canada Foundry Co., Toronto.
Hopkins, F. H. & Co., Montreal.

Sulphur Furnace

Schutte & Koerting Co., Philadelphia, Pa.

Suspension Furnaces

Continental Iron Works Co., New York City.

Tanks (Oil and Water)

Canada Foundry Co., Toronto.
Corbett, R. B., Brooklyn, N.Y.
Goldie & McCulloch Co., Galt, Ont.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
McDougall, John, Caledonian Iron Works Co., Montreal.
Ontario Wind Engine & Pump Co., Toronto.

Taps and Dies

Butterfield & Co., Rock Island, Que.
Globe Machine & Stamping Co., Cleveland, Ohio.

Teas

Bourne-Fuller Co., Cleveland, Ohio.
Canada Foundry Co., Toronto.

Toxille Manufacturers

Dominion Oil Cloth Co., Montreal.
Smith Mfg. Co., Toronto.
Storey, W. H. & Sons, Acton, Ont.

Textile Supplies

Greay, Wm. & J. G., Toronto.
McLaren, J. C. Belting Co., Montreal and Toronto.

Thermometers (Recording)

Bristol Co., Waterbury, Conn.

Tin

Leslie, A. C. & Co., Montreal.
Syracuse Smelting Works, Montreal.

Tool Grinders

Barnes, H. F. Co., Rockford, Ill.

Tool Steel

Bourne-Fuller Co., Cleveland, Ohio.
Hopkins, F. H. & Co., Montreal.
Leslie, A. C. & Co., Montreal.

Transfer Ornaments

Meyercord Co., Chicago, Ill.

Trucks

Corbett, R. B., Brooklyn, N.Y.
Greay, Wm. & J. G., Toronto.
Hopkins, F. H. & Co., Montreal.
McDougall, John, Caledonian Iron Works Co., Montreal.
Sheldon & Sheldon, Galt, Ont.

Trucks (Railway)

Canada Foundry Co., Toronto.

Trucks (Wire Mill Supplies)

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

Tubs (Cleaning and Coating Wire)

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

Tugs

Bertram Engine Works Co., Toronto.

Tumbling Barrels

Globe Machine & Stamping Co., Cleveland, Ohio.

Turbines

Canada Foundry Co., Toronto.
Greay, Wm. & J. G., Toronto.
Hamilton, Wm. Mfg. Co., Peterborough, Ont.
Wilson, J. C. & Co., Glenora, Ont.

Typewriters and Supplies

United Typewriter Co., Toronto.

Valves

American Steam Pump Co., Battle Creek, Mich.
Babcock & Wilcox, Limited, Montreal.
Canada Foundry Co., Toronto.
Hamilton Brass Mfg. Co., Hamilton, Ont.
Kerr Engine Co., Walkerville, Ont.
Petrie, H. W., Toronto.
Schutte & Koerting Co., Philadelphia, Pa.
Williams, A. R. Machinery Co., Toronto.

Valves (Rubber)

Gutta Percha & Rubber Mfg. Co., Toronto.

Varnishes

Berry Bros., Walkerville, Ont.

Ventilators

Darling Bros., Montreal.
Sheldon & Sheldon, Galt, Ont.
Sturtevant, B. F. Co., Boston, Mass.

Wagon and Carriage Wood Work

Hore, F. W. & Son, Hamilton, Ont.

Washers or Hollinders (Cleaning Rubber)

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

Water Power Development

Vogel, C. H., Ottawa.

Water Purifying Chemicals

Canada Chemical Mfg. Co., London, Ont.
Lord, Geo. W. Co., Philadelphia, Pa.
Sleeth, D., Montreal.

Windmills

Ontario Wind Engine & Pump Co., Toronto.

Wire Mill Supplies

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

Wire and Wire Rope

Dominion Wire Rope Co., Montreal.
Greening, B. Wire Co., Hamilton, Ont.
Leslie, A. C. & Co., Montreal.
Phillips, Eugene F. Electrical Works, Montreal.
Pittsburgh Shafting Co., Detroit, Mich.
Wire & Cable Co., Montreal.

Wire Rope Fittings

Dominion Wire Rope Co., Montreal.

Wire Cloth

Greening, B. Wire Co., Hamilton, Ont.

Wire Drawing Machinery

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

Wire Fencing and Netting

Page Wire Fence Co., Walkerville, Ont.

Wire Specialties

Meadows, Geo. B. Wire, Iron & Brass Works Co., Toronto.
Page Wire Fence Co., Walkerville, Ont.

Wood-Working Machinery

Advance Machinery Co., Toledo, Ohio.
Canada Machinery Co., Sarnia, Ont.
Cowdrey, C. H., Machine Works, Fitchburg, Mass.
Goldie & McCulloch Co., Galt, Ont.
London Machine Tool Co., London, Ont.
Petrie, H. W., Toronto.
Sheldon & Sheldon, Galt, Ont.
Smith, H. B., Machine Co., Smithville, N.J.
Williams, A. R. Machinery Co., Toronto.

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