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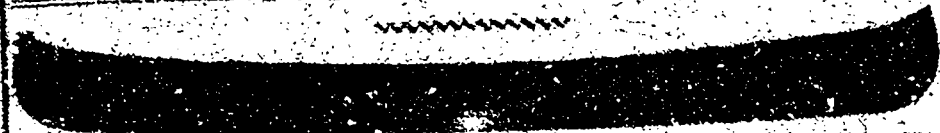
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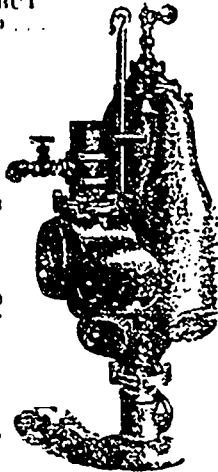
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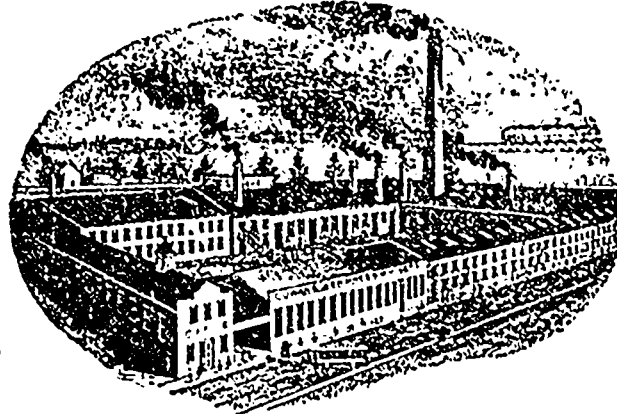
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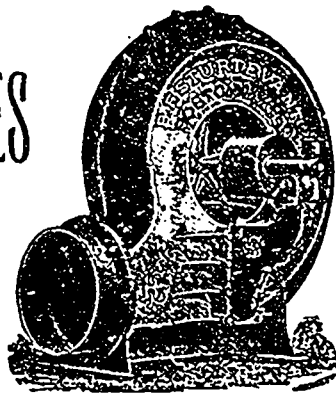
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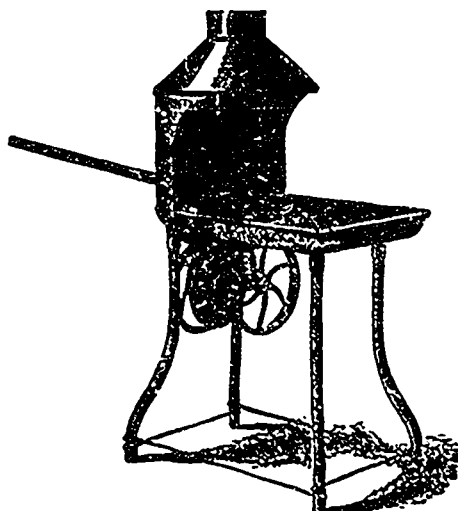
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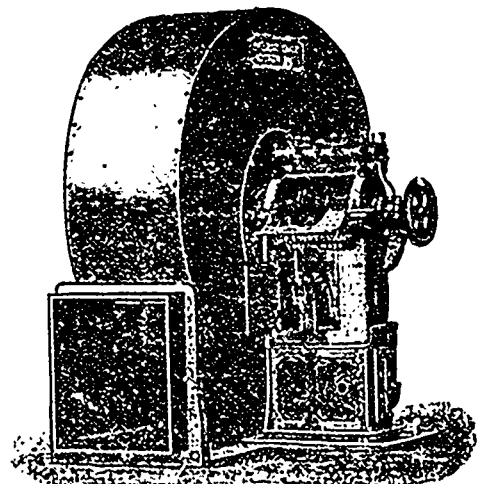
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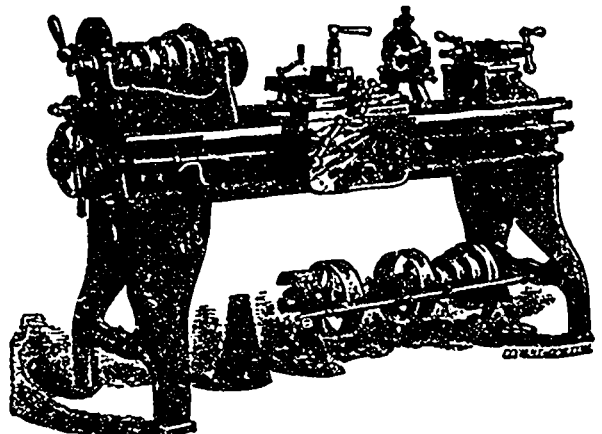
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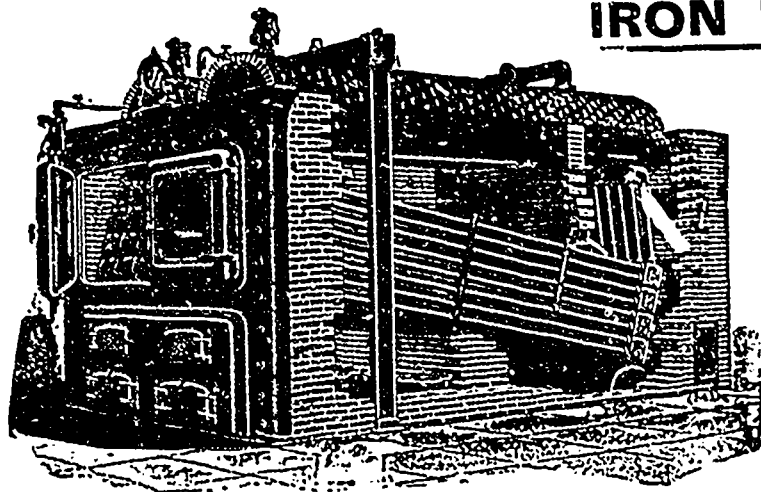
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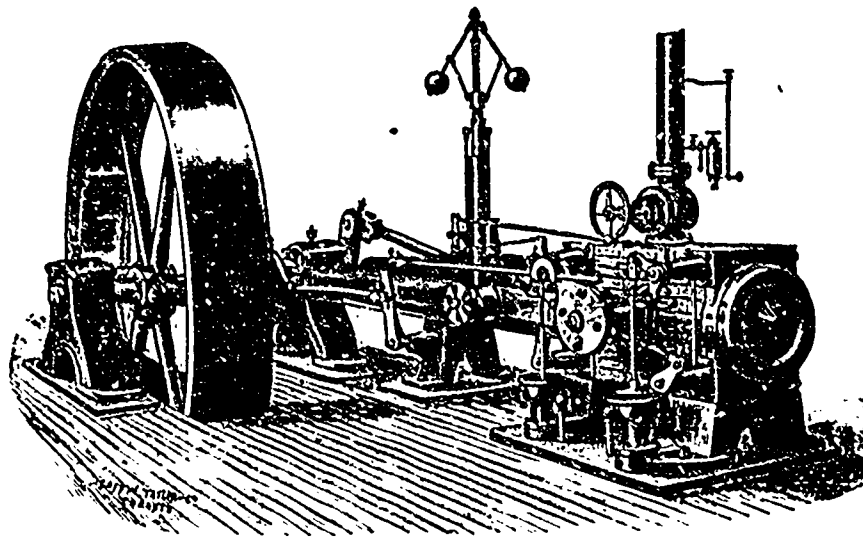
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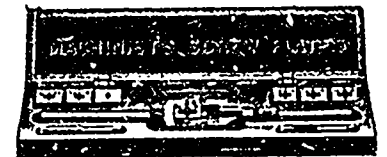
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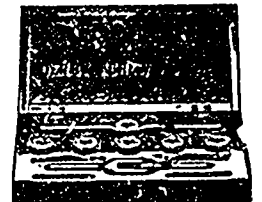
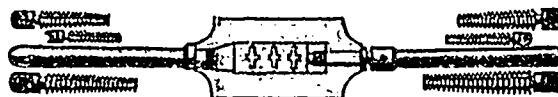


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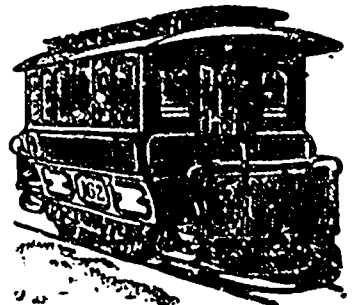
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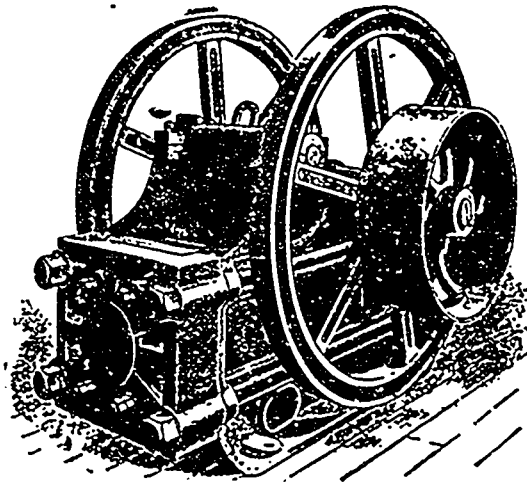
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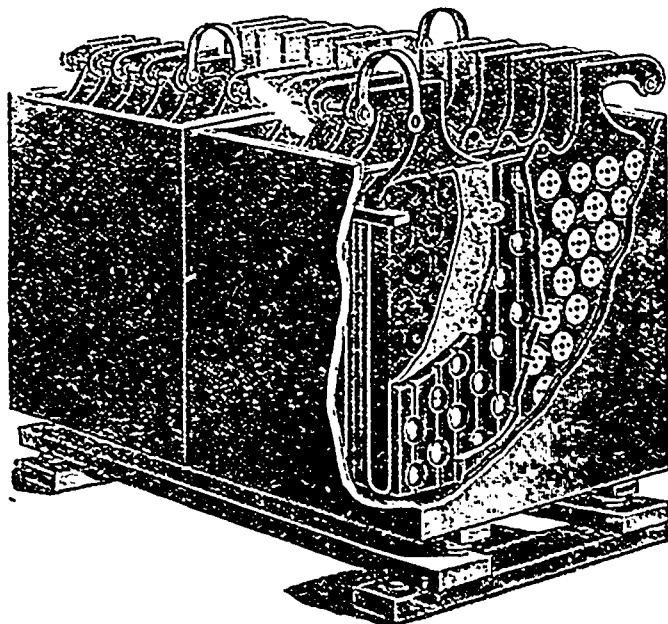
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IRON MAKING IN ONTARIO.

The second annual report of the Ontario Bureau of Mines contains a description of the earlier efforts of making pig iron in this province, from which the following interesting summary is obtained:—

“The first blast furnace in Ontario was constructed about the year 1800 at the falls of the Gananoque river, there was also a forge for the construction of bar iron. Owing to poor ores used and cost of assembling materials, works were abandoned after running two years.

“Twenty years later in Charlotteville Township, County Norfolk, a furnace was constructed and ran successfully for

some twenty five years, until the immediate supply of bog ore became exhausted. Mr. Van Norman, one of the promoters of the Charlotteville works, started another furnace in Houghton township in 1854, the main object being to supply the Great Western Railway with iron for car wheels, but the product proving unsuitable the furnace was blown out.

“In 1820 a furnace plant was erected at Marmora to smelt the magnetites of that district. During the course of some forty years, although lying idle for the most part, it managed to ruin or cripple three or four successive owners. In 1837, the plant, consisting of two stacks with a common cast house, forge for manufacturing wrought iron, stock house, saw and grist mills, blacksmith shop, store, dwellings, etc., was offered for sale to the Government for the sum of £25,000 including lands. The idea being to remove the penitentiary from Kingston to Marmora to employ convict labor at the works. This having fallen through nothing further was done until 1847 when Mr. Van Norman, of the Charlotte furnace, purchased the property, but want of experience in smelting magnetites again resulted in failure.

“At Olinda, in Essex County, a furnace was started in 1831 to smelt the bog ores of Colchester and Gosfield townships and after running about six years stopped for want of funds. In 1836-37 a furnace was built at Madoc which ran for some nine years.”

During the past forty years sundry attempts have been made to start blast furnaces and smelting works in Ontario, but no satisfactory result was ever arrived at until the erection of the Hamilton Iron and Steel Company at Hamilton.

HOW FACTORIES HELP FARMERS.

The Manufacturers' Record contains a letter from a South Carolina correspondent, giving some account of how factories in the upper part of that state have helped the farmers in their neighborhood, the lesson of which teaches that it is profitable to exempt from local taxation for a term of years all kinds of industrial enterprises, the establishment of which could be secured by the grant of that exemption, the argument being that the community would be far more than repaid for the taxes so waived, by the effects of the new enterprise in enhancing land values alone in its neighborhood.

The writer after alluding to the fact of the establishment of two factories in a certain neighborhood some years ago, tells of the effect of their presence on the farm lands in their vicinity. When the factories were projected the value of farm lands thereabout did not average ten dollars per acre. “The system of cultivation was crude, and generally the farms were little cared for and dilapidated.” The presence of the factories awakened a new spirit among the farmers, who soon learned that “every food crop for man and beast found a ready market at their doors, due to the assemblage of factory operatives as consumers” at the mills. The result was that renewed attention was given to farm improvements and the production of such crops, which had before been neglected in favor of cotton, and at the same time it was found that the local demand and market for cotton for the mills “put on it and kept on it a premium of from one-eighth to one-quarter of a cent per pound and often even more.” On this basis, it is estimated, the local cotton crop has been increased in value by from \$270,000 to \$510,000, “all of

which has gone into the pockets of the adjacent farmers," and while the factories did not consume every bale produced in their territory, yet they fixed the price and put the premium "on all of it that was shipped away."

It is not possible to compute the profits on the sale of fruits and vegetables, but they are estimated among the millions, and it is noted that they were obtained by people who had "never contributed a cent" towards the building of either of the mills. It is also noted that while the mills have proved highly remunerative to those who invested money in them, and while their stock is in great demand as an investment, "the people of the surrounding country who own the farm lands have been benefited to an amount in excess of the entire cost of both factories." In plain figures it is estimated that the land within a radius of ten miles about a point midway between the two factories has so increased in value as to give the owners a profit of \$2,000,000, which is \$200,000 more than the capitalization of the mills, all of which has accrued to the farmer owners without their making a cent of investment. The fortunate farmers understand what the mills have done for them. The correspondent reports that he has talked with intelligent men who live within the ten-mile limit, "and most of them place the increased value of their lands, resultant on building the factories, at from \$15 to \$25 an acre." No farm lands, he adds, can now be bought within ten miles of either factory for less than \$25 to \$30 per acre, and many command a higher price than this.

The correspondent says that seventeen years ago, at the time the land was being purchased for the establishment of these factories, for which five dollars per acre was paid, there was living nearby an old and respectable farmer on a worn-out and dilapidated farm, with a house to correspond, the roof even being worn-out and leaky. He had offered his farm time and time again at \$5 per acre, and finally tried to get \$4.50 per acre to enable him to move away in order to get better land. Failing to sell he remained, and when the noise of the loom and the hum of the spindle were heard near him, took heart, began to farm better and to sell wood, turnips and farm truck, put a new roof on his house, cut away the briars and thorns, fixed up the place generally, and has since sold 100 of his surplus acres at \$50 to \$75 per acre, and could now get \$70 per acre for the 200 left; and this honest old farmer is but one of the many who have found themselves bettered by the successful enterprises of others."

The correspondent applies the lesson of the experience of the builders of Pelzer and Piedmont by recommending that people who build factories in country districts in the South hereafter would do well to purchase liberally of the surrounding lands as a profitable investment, and the suggestion should appeal with as much force to resident owners of "cheap" lands as to outside capitalists. If a successful factory will double or treble the value of all waste lands for ten miles around it within fifteen years, besides paying a profit on its own operations, it should not be difficult to build a factory in any town or village which has been so blind to its opportunities as not to have built one already. It plainly appears from "J. L.'s" statements of facts and estimates that it would pay any country community to build and operate a factory, if it did no more than support itself and keep out of debt after it was built—to put the matter in the least favorable light.

It is enough to say that as it would certainly have paid the

municipalities where these factories are located to have exempted them from taxation for ten or twenty years, in order to establish them in business, it would pay any other community to pursue the same liberal policy. It is far more "liberal," in fact, to the interests that grant the exemption than to the interests to which it is granted. If the growth of manufacturing can accomplish so much for one locality, and if a protective tariff aids in the development of manufactures, is it not a wise policy, as a business matter and without any reference to politics, to encourage protection. Eliminate this question from politics, as should be done, and then it can stand on its own merits.

A BAD THING TO EXPERIMENT WITH.

Some of the first effects of the condition of uncertainty as to the tariff, caused by the possibility of a triumph for the anti-protectionist allies, are to be seen in London, where the McClary Manufacturing Company is cutting its pay-roll temporarily in two for this reason. Last pay-day the employees of this company received the following printed notice:—

Our pay-sheet is \$4,000 per week; our collections are much below current expenses. From depression and threatened tariff disturbance, prudence prompts us to reduce our pay-sheet one-half as nearly as possible. It is with regret that we are forced to reduce our staff or ask employees to work shorter time. It has always been our study to give them constant employment the year round. It is our wish that they feel they have an interest in the business. We hope for the best for the city and country. Until the trade policy of the country is assured we may look for a waiting condition. We recommend the strictest economy to guard as far as possible against more unfavorable conditions.

This was undoubtedly a pleasing election souvenir to the workmen who received it, says the Montreal Star. Yet there is no reason to be astonished at the action of the McClary Company. A similar cause produced far worse effects of the same kind all through the United States a year or two ago. Pay lists were not only cut in two, but suspended altogether; and workmen without a dollar in their pockets or a ghost of an idea where to turn to get employment, rejoiced in the prospect that a lowered tariff would some day give them cheap goods which they could not buy.

The effect of this upon the farmers whose home market was suddenly deprived of much of its purchasing power may well be imagined. When the dinner pail is empty, the men who have been accustomed to make a living by filling it, suffer as surely as does the man who once enjoyed emptying it. When the workman had no money to spend, there was, of course, none to go west to pay the farmer for his goods; and it is no wonder that the western farmer is now in favor of "free silver" or any other policy which promises to put money in circulation, some of which may come within his reach.

If the uncertainty as to the Canadian tariff becomes acute, as it would, for instance, were the Liberals to win the elections, there is no likelihood that the McClary case would long remain unique. Other manufacturing firms would be compelled to take in sail until they knew for a certainty the direction of the wind. "Hands" might be laid off here, and departments shut down there, and half-time adopted somewhere else until it was known what the new Government intended to do with the tariff. The effect of such cautionary proceedings is always cumulative; and men out of work or on half-pay soon throw

trade generally out of joint. Distrust might easily lead to dismay and dismay to panic before the Liberal Finance Minister had made known his will; and the hard times that the National Policy met at the border and saved us from two years ago might rise in our midst from internal causes and bring disaster to our people just as the Americans are beginning again to prosper through the stimulus given by the prospect of the protective Republican party being returned to power there.

The tariff is a bad thing to experiment with.

FIRE INSURANCE AND EXHORBITANT PROFITS.

In his recent annual address before the Toronto Board of Trade, president Caldecott, speaking of the large profits made by the fire insurance companies doing business in Toronto, said:—

The rapid advance in the fire rates for the city of Toronto, has received the attention of the council, and it is strongly felt both by the merchants, the manufacturers, and your council that the action of the Fire Underwriters in raising rates so high was both arbitrary and severe, and not justified by the facts, when it is considered that the city of Toronto has been for many years a very profitable field for investment by fire insurance companies, and that the merchants of the city had done all in their power to induce the City Council to get those fire appliances which the underwriters had stated were needful to place the city in a state of safety from the danger of a serious conflagration.

The city authorities have now complied with all the requirements that the Board of Underwriters called originally for, in order to place the city in a position of safety. The increase of the size of the mains since added to the demands of the underwriters is a matter for further consideration, but enough has been done by the city authorities to show their desire to meet all reasonable requirements, and it is hoped the Board of Underwriters will see the expediency and justice of removing at once not a portion but the whole of the conflagration risk, and returning to the rates in force before February, 1895.

There has not yet been issued the returns for 1895, but those to the Dominion Government, made in 1894, show the following results:—

Total receipts for fire premiums.....	\$6,711,369
Total losses.....	\$1,501,149
Gains.....	2,130,220
or 33 per cent. to pay for interest and cost of management.	6,711,369
Since Confederation the account stands:	
Premiums.....	\$112,021,678
Losses.....	77,801,225
Gains from which to pay interest on capital and cost of management.....	\$34,219,853

Unless the Fire Underwriters return to former rates they may feel assured much discontent will prevail, and profitable business will be driven to New York or elsewhere, where lower rates can be obtained, or there will spring up a large Municipal Fire Insurance Company, something like that outlined by Ald. Lamb, or like that now in operation in London, England, where the London School Board have, since 1885, themselves insured the whole of the school buildings under their charge, paying premiums into an insurance fund, which fund, now in its eleventh year, amounts to £30,000 sterling, earning £1,000 per annum in interest, this being the amount saved after paying the total losses from fire which during the same period amounted to less than £2,000. Fire insurance in Toronto is largely a combination. The public do not love monopolies. Let the Fire Underwriters look these facts in the face, and give that relief from excessive rates that both prudence and justice demand.

PROTECTION AS THEY WANT IT IN BRITAIN.

In a recent letter to the Manchester Courier Lord Masham, speaking of the necessity of Imperial Federation to Great Britain says:—

It appears to me that the time has come for us to reconsider our fiscal policy in the interests of labor, and more especially in the interest of what I consider one of our greatest difficulties—how to find work and honest and well-earned wages for the great army of the unemployed. But it may be well here to note that Free-Traders, in order to prejudice Protection, have been constantly in the habit of saying that it was simply a means of filling the pockets of the capitalist employer at the expense of the general community, and then with a strange want of consistency to urge that no capitalist employer or workman could earn more by a protected article than one that was not. It is quite clear that both these statements cannot be correct. Let me now, in a very brief and simple manner, illustrate the true position. Take an iron girder, or steel rail, the present price being, say, £4, or eighty shillings, per ton. If the ironmaster buys his ore (Spanish ore is now generally used for steel rails) and his coal or coke, he will probably turn his capital over four times a year, and in that case he would be well satisfied with two shillings per ton profit, or two-and-a-half per cent., leaving the remaining seventy-eight shillings to go into the pockets of the great body of producers, and in that way enriching the country. However protected he might be, he could not look for more, as local competition would prevent it. From this you will see the fallacy of supposing that all the money goes into one pocket. The capitalist may hope to get his fair profit, but nothing more. So far as manufacturers are concerned, I believe that the country is ripe for a change, and that Protection would be carried by acclamation by the working-classes were it not for the "big and little loaf"—the agricultural difficulty. As things now stand it may be said with perfect truth that land and labor are alike both being ruined by free imports; but how to arrange a compromise that shall satisfy both is not so easy to see. As a large land owner, and also one of the largest employers of labor in manufactures, minerals and agriculture, I know well, and feel daily, the disastrous effects of free imports, but how to find a remedy that shall satisfy the various, and often conflicting, interests is no easy problem. It is the "cheap loaf"—so-called—that tempts the working-man to his ruin, whereas it is really to him the very dearest loaf in Europe, as he loses more in wages by the free importation of foreign manufactures than would pay twice over for all the corn that he consumes. But want of work, destitution and hunger must eventually compel a change. Fair traders have for years advocated "Imperial Federation" as the best possible remedy for our very serious fiscal difficulties.

CANADA'S NEW HIGH COMMISSIONER.

The appointment of Sir Donald Smith, K.C.M.G., as Canada's High Commissioner at London, though unexpected, was at the same time one of the most acceptable to the people of this country. Speaking of the qualifications of Sir Donald The Shareholder says that he has shown himself to be a true benefactor. The possessor of large wealth, he has made its possession a means of conferring large benefits upon his country, which, without his generosity, it would never have

possessed, and to-day the city of Montreal can point to the numerous educational and charitable institutions which owe their influence and advantages to the unstinted liberality which that gentleman has so frequently exercised. He has proved himself worthy of every honor which can be conferred upon him, being emphatically a friend of the people and a benefactor as well. But, apart from this, Sir Donald is otherwise well qualified for the High Commissionership. Thoroughly intimate with the country's requirements, its resources, its advantages and its opportunities, and zealous for its development and progress, he is calculated to represent the country's needs, and to urge them in a manner that cannot fail to reflect advantageously upon the Dominion. As president of the Bank of Montreal—one of the leading financial institutions of the world—he has had the means of acquiring a vast amount of information which will greatly aid him in the discharge of his new responsibilities. Deeply impressed, as he has shown himself to be, in the necessity of largely attracting large additions to the population of the Dominion, and especially to the North-West Territories, with which and its history he has been so long and intimately connected, he will be in a position to use and exercise all his influence in the direction of making the attractions of that portion of the country better known, understood and appreciated than they have ever hitherto been. We have not forgotten his strong appeal, when presiding at a meeting of the shareholders of the Bank of Montreal, two or three years ago, for the exercise of a liberal immigration policy on the part of the Government, and we now look for the success of that appeal, thoroughly confident that if he does not attain the success which we look for, it will be due to the lack of that proper support from the Government which he is entitled to expect under the circumstances. In Sir Donald's hands the interests of the Dominion will be carefully and ably looked after and his administration of the office of High Commissioner will not be restricted to the consideration of keeping expenditure within the allowance for his office, or the desirability of setting aside a surplus for his own remuneration.

INCREASED RAILWAY CONSTRUCTION IN THE UNITED STATES.

There seems to be every prospect that the year 1896 will be marked by a very tangible increase in the amount of railroad construction to be added to the existing mileage of the United States. For the last two years the effect of hard times upon this branch of industry was very marked. In 1895 less than 1,800 miles of new track was built, and in 1894 the amount was only 1,950 miles. Even in 1893 the aggregate footed up only 2,600 miles, against over 4,000 miles in 1891 and 1892, respectively. The Railway Age, which has made an extended examination of the subject, points out that there has been a steady decrease in the number of miles of track laid each year since 1887, when 12,724 miles of new road was built. As the same authority says, this decrease does not mean that the demand for railways is nearly supplied and that construction will continue to decrease. On the contrary, it points out that there is room, and will be need for additions far greater than the entire present mileage of that country. There are now something over 181,000 miles of road there. To equal Great Britain in its ratio of railway mileage to square miles of terri-

tory, it should have a total of nearly 500,000 miles. To equal the abundant supply of Illinois, there must be 522,000 miles, while if Massachusetts, with its mile of railway to every four square miles of territory, be taken as the standard, the United States as a whole would eventually boast of 772,000 miles of lines.

It would seem from the examination which the Railway Age has just concluded that between 30,000 and 40,000 miles of new lines are either uncompleted or projected at the present time in the United States, and that every day adds to the list of new enterprises of this character. From this mass of prospective or possible mileage it has selected a list of roads upon which construction has been commenced, or which seem to give promise of early commencement. Summarized, this list shows 205 lines, lying in forty-seven states and territories, and contemplating over 10,000 miles of new road.

Bradstreet's points out that from this statement it will be seen that relief from the pressure of hard times and unfavorable financial conditions is having an immediate effect upon the railroad building industry. The effects of such a movement upon industry in general would be highly beneficial, and it therefore becomes a question of much interest to determine how much of this mileage for which preparations are being made will be actually undertaken, or how many new lines not included in the above total will come into existence. The question will probably be decided by financial conditions.

The improvement in that respect, although marked, is not such as to justify an assumption that the greater part of the entire 10,000 miles included in the tabulation can be undertaken or finished during 1896. Many legitimate enterprises of the kind will, no doubt, have to be deferred till some later time, although if the growth of financial confidence and the expansion of the investment demand is maintained at the present rate of progress, there would be no ground for surprise should the track-laying record of the current year reach an aggregate of from 2,000 to 3,000 miles, while under such conditions work would naturally be commenced upon probably as much more. During the first three months of the year about 253 miles of road was completed by twenty separate companies, and it is reasonably certain that at least 1,750 miles of additional road now actually in progress will have been finished early in the year.

REGULATING LABOR IN MERCANTILE ESTABLISHMENTS.

New York state has supplemented its legislation regulating labor by an act which limits the hours of employment, and otherwise effects the condition of women and children employed in mercantile establishments. Governor Morton has signed a bill providing that no male under sixteen years of age, and no female under twenty-one years of age, employed in any mercantile establishment in the state, shall be required to work therein more than sixty hours in any one week; nor more than ten hours in any one day, unless for the purpose of making a shorter workday on any one day of the week; and that in no case shall any person belonging to either the classes mentioned work in any mercantile establishment after ten o'clock in the evening or before seven o'clock in the morning of any day. This provision is not to be construed so as to apply to the employment of any person in any mercantile

establishment on any Saturday of the year, except that the total number of hours of labor per week of members of the classes mentioned shall not exceed sixty hours, and none of the provisions of this section are to apply to the employment of any persons between December 15th of any year and January 1st of the year next following. This provision aims to except from the operation of the law the Christmas holiday season.

The law further provides that no child under fourteen years of age shall be employed in any mercantile establishment in the state; that it shall be the duty of every person employing children to keep a register in which shall be recorded the name, birth, age and place of residence of every person employed by him under the age of sixteen years; and that it shall be unlawful for any proprietor, agent, foreman or other person in or connected with a mercantile establishment to hire or employ any child under the age of sixteen years to work therein unless there is first provided and placed on file in the office thereof a certificate, which register and certificate are to be produced for inspection on demand made by the board or department of health or health commissioner or commissioners of any city or town or incorporated village where such child is employed. The certificate required is to be a certificate from the board or department of health or health commissioner or commissioners of the city or town where such child resides, or is employed, or is about to be employed, which shall state the date and place of birth of such child, whenever possible. The law requires that seats be provided for female employees, and fixes forty-five minutes as the allowance of time for the noonday meal. Under the act mercantile establishments are construed to mean places where goods, wares or merchandise are offered for sale.

CANADIAN ELECTRICAL ASSOCIATION.

The Sixth Convention of the Canadian Electrical Association was held in the Council Chamber of the Board of Trade, Toronto, on the 17th, 18th and 19th, instant, President A. B. Smith presiding. Among the papers discussed were the following;—"Acetylene Gas," by Geo. Black, Hamilton, "Power Transmission by Polyphase E.M.F.'s" by Geo. White Fraser, Toronto; "Meters" by James Milne, Toronto, "Operating Engines without a Natural Supply of Condensing Water" by E. J. Phillips, Toronto, "Some Central Station Economics" by P. G. Gossler, Montreal; "The Outlook for the Electric Railway" by F. C. Armstrong, Toronto. Several of the papers were illustrated by electric projection of diagrams, adding very much to the interest in the discussion.

On the evening of the 17th Mr. James Milne delivered a lecture on "Radiant Matter" with illustrations, showing Prof. Crook's experiments and demonstrations of Roentgen rays. Interesting shadowgraphs were taken and exhibited.

On the afternoon of the 18th members of the Convention took steamer for Lorne Park where the annual banquet took place at Hotel Louise.

Among the members of the Association in attendance at the Convention were.—G. J. Henderson, Montreal, E. E. Carey, Packard Electric Co., St. Catharines, K. J. Dunstan, Toronto; Joseph Wright, W. G. Bradley, J. S. Robertson, T. R. Roseburgh, Alex. Stark, W. J. Clarke, F. C. Man, W. R. Evans, A. B. Smith, F. J. Ricarde Seaver, D. Elliott, S. Rose, C. S.

Mallett, M. W. Hopkins, A. Knowles, I. Smith, E. K. M. Wedd, J. W. Taylor, C. H. Mortimer, A. E. Payne, Fred. Thomson, W. H. Johnson, J. K. Johnston, O. Higman, J. H. Kammerer, John C. Gardner, J. J. Wright, P. G. Gossler, J. Norman Smit. Joseph Rogers, C. S. Mallett, F. C. Armstrong, A. E. Payner, Wm. Bourne, James Orr, J. F. H. Wyse, B. J. Throop, Geo. White Fraser, J. W. Campbell, Ed. D. McCormack, J. J. Ashworth, O. N. Yule, Wm. Williams, A. M. Wickens, A. Christie, Geo. F. Madden, W. B. W. Armstrong, Thos. W. N. Hilliard, F. C. Robertson, Geo. Black, C. P. Dwight, E. B. Biggar, F. B. Moone, E. C. Breithaupt, G. A. Powell.

The following are the names of officers of the Association elected for the ensuing year.—

President, John Yule, Guelph, First Vice President, L. B. McFarlane, Montreal, Second Vice-President, E. Carl Breithaupt, Berlin, Sec. Treasurer, C. H. Mortimer, (re-elected), Toronto, Executive Committee, A. B. Smith, Hamilton, Ross McKenzie, Niagara Falls, John Carroll, Montreal, K. J. Dunstan, Toronto, J. J. Wright, Toronto, A. M. Wickens, Toronto, J. A. Kammerer, Montreal; F. C. Armstrong, Peterboro', Geo. Black, Hamilton, C. B. Hunt, London.

It was decided to hold the next convention at Niagara Falls, Ont., in June of next year, the precise date to be announced hereafter.

EDITORIAL NOTES.

The development of the beet sugar industry has been very rapid and successful in Sweden. In 1890 only four factories were in existence, while now eighteen are in operation, producing annually 50,000 tons raw sugar.

This is what the country needs: Less money sent abroad to pay for foreign grown corn and foreign made goods, and consequently more work for the British agricultural laborer and mechanic.—Mark Lane Express, May 11, 1896.

A horseless carriage parade in which there were six entries took place in New York on Decoration Day. The New York papers in describing the parade say that the carriages glided over the stones with great ease, and that the engineers of the novel vehicles found no difficulty in making their way through the crowded thoroughfares. There were no electric competitors.

"You have no right to doubt that in ten years from the time when England inaugurates the golden era of commercial freedom every civilized country will be free-traders to the backbone."—Richard Cobden's promise,'44.

M. Méline, the great protectionist leader of France, has become Prime Minister of the Republic, and Mr. McKinley, the great protectionist leader of the United States, first favorite for the Presidency.—The Facts, 1896.

English paper manufacturers are more than ever inclined to look to Canada for their supplies of wood pulp. They are somewhat disturbed over the attempts of Scandinavian pulp makers, from whom they have purchased liberally for many years, to force up the prices of pulp, and they argue that they

can more readily establish with the Canadians, trade relations that will have some degree of permanence than they can with the Scandinavians. Even now something like 100 tons of pulp are shipped from the "Soo," via the St. Lawrence river, to England every week.—The Paper Mill.

The annual meeting of the Ontario Good Roads' Association will be held at the grounds of the Industrial Exhibition, Toronto, on Tuesday, September 8th. Arrangements will be made for a special exhibit of modern road making machinery, crushers, bridges, culvert pipe, etc., during the Fair. For this purpose the exhibition authorities will set apart sufficient ground to enable exhibitors to show the working of their machines. A. W. Campbell, C.E., provincial instructor in road-making will assist in completing arrangements.

As showing the desire of the Japanese government to encourage ship building in that country, a ship building bill was recently passed through both houses there providing that a subsidy of \$6.50 per ton shall be granted to every Japanese subject building in Japan an iron or steel steamship of and over 700 but under 1,000 tons, and of \$11 per ton for one of and over 1,000 tons, with an additional \$2.75 for each unit of horse power. Both hull and engines must be built under the supervision of the department of communications, and no foreign material is to be employed unless specified by that department. The measure is to come into force in October next, and to continue in force for fifteen years.

The daily newspapers, and also many of the so-called trade journals are constantly doing the manufacturing and commercial concerns of Canada an immense amount of damage by announcing in a most prominent manner every business suspension or failure that occurs. A moment's reflection will tell any business man that this is one of the worst things that can happen. As a matter of news, if it is necessary to tell it, the plain statement of facts is sufficient, for common sense tells any man that those most interested knew all about it before the papers, in many instances, even suspected it. It only serves to keep commercial circles in an unsettled and agitated condition, causing men who have capital to become timid and slow in investing. If the papers generally would follow the example set by this journal and give the prominence to the sunshine side instead of the clouds, it would be better for the whole country.

To show what an immense pulp wood business is done by Americans in Canada, we note that the pulp wood business on the Champlain canal is one of the most important factors in transportation on that water-way. It is estimated this season that there will be over 75,000 cords of spruce pulp wood brought out of Canada to Ticonderoga, Fort Edward, Glens Falls, Mechanicsville, Cohoes and points on the Hudson river. This will be over a thousand boat loads, and many boats will run in the wood business exclusively, returning to Canada light, if a convenient return load does not offer. This is quite suggestive as to the Adirondack supply of spruce. When these various wood pulp and paper concerns, located as above, were first started, they all depended upon the Hudson river supply, or rather the Adirondack forest supply, for their pulp wood. Gradually, as the capacity of the pulp mills increased, the supply of the Adirondacks diminished, and the proprietors were forced to push out into Canada to buy spruce timber

limits, or to contract for pulp wood in various directions, and bring a large percentage of their supply through by way of the Richelieu canal and Lake Champlain.—Manufacturers' Gazette.

The large exports of bags to the United Kingdom continues, and the Dundee advertiser thinks "the time is approaching when Dundee will find it necessary to retire from competition with Calcutta in the line of jute manufacture. There are other lines, however, in which the manufacture of that article can be carried on by Dundee without fear of effective competition from Calcutta, and perhaps those who anticipate the extinction of the manufacturing industry in Dundee as a result of Calcutta competition in the supply of gunny bags will find reason to believe that they have been rash. Noticeable as is the increase in the export of bags, that of jute cloth is even more remarkable. In five years it has risen from less than 30,000,000 yards to over 103,000,000 yards. About four-fifths of this cloth is shipped to the United States. This distribution of this increasingly important trade last year was:

	Yards.
United States	80,247,694
United Kingdom	15,693,708
China	3,287,550
Australia	736,270
Other countries.....	3,351,505

The law respecting the free admission of mining and smelting machinery not manufactured in Canada has again been renewed. Under this concession machinery of a value of \$169,749 was brought into Canada duty free last year, and the imports during the present season will likely be in excess of this figure. The statement prepared by the Nova Scotia and Quebec Mining Associations has superseded that formerly in use and filed in the Customs department by an enterprising Canadian manufacturing establishment. We are also glad to announce that the present controller, the Hon. John F. Wood is making the most liberal interpretation of the law.—Mining Review.

And thus it is that a most important manufacturing industry is being slaughtered in the interest of a no more important interest. Mining machinery is not of such an intricate and peculiar character that it cannot be manufactured in Canada, and there are quite a number of concerns already well established in this country quite competent to produce any mining machinery that may be required. These manufacturers are interested in the action of the Controller in superseding the descriptive catalogue previous accepted by the Government, and the adoption of one prepared by others. Why does Hon. Mr. Wood desire to antagonize the interests of the manufacturers?

"Cheapness" and the consequent "low standard of life" form the subject of a letter written by Sir Edward Sullivan in the Manchester, Eng., Courier, in which he says:—

Cheapness, cheapness, cheapness, and competition! These have been the parrot-cries of Free Traders; and excellent cries they are for the million and a half lucky individuals with their fixed incomes. But how about the thirty-five millions without fixed incomes? How does it affect them? What does competition and cheapness mean in their case? It means this—it means that, when by home competition a starving needle-woman is found to stitch shirts at 4d. a dozen, straight-way a starving foreign woman is found to stitch shirts at 3d. per dozen, and her work is brought over here to drive English women below starvation point. This is competition!

This is cheapness! And does it benefit the community? The first condition of the vaunted cheapness, this panacea of the Cobden Club, is cheap labor; do not let the operatives forget this when they have dinned into their ears the virtues of mere cheapness. Are shirts stitched by starving women at 4d. a dozen a blessing to the community, or the cheapness of bricks made by overtaxed children at nominal wages, or the cheapness of nails or cables made by overworked women and children, a blessing? Is the waste of human life, the misery, and suffering, and demoralization, and immorality inseparable from cheap labor a benefit to the country? Is the cheapness that is caused by cheap foreign labor a blessing? No, it is not; and in spite of all the writings and preachings of the Cobden Club I maintain that the more we examine the meaning of mere cheapness the more distinctly we find that it means a "low standard of life."

To increase the number of industries in Mississippi is the object of Hon. Mr. Doty, of the State legislature. Mr. Doty, seems to be alive to the importance of manufacturing, and has prepared a bill which, if enacted into law, will doubtless accomplish much in this direction. It exempts from taxation for ten years all factories for working cotton, jute, ramie, wool, silk, fur or metal; all pork-packing and cold storage factories or plants where the amount of capital invested shall not be less than \$10,000; all factories for manufacturing machinery, implements or articles of use, all factories for making wagons, carriages or buggies complete; all factories for making barrels complete, all additions or extensions, costing not less than \$10,000, made before January 1, 1906, to any factory now established or to be established. Mr. Doty follows the theory that raw material produced in the State should be converted into manufactured products at home, a theory which the Manufacturer's Record thoroughly endorses. In support of his views Mr. Doty says;

What we most need in Mississippi to-day is the encouragement and establishment of manufacturing enterprises and the development of our wonderful wealth of raw material. Not to mention many other things, Mississippi is rich in timber and hardwoods. All over the State saw mills are sawing up this valuable timber and shipping it to other States, there to be manufactured into furniture and a thousand other useful articles. We need factories and plants to do this here, and the field is an inviting one for capital to investigate. The masses of the people need education along this line, and the whole State needs to adopt and pursue persistently and enthusiastically a broad and liberal policy on this great question.

Referring to an item that recently appeared in this journal concerning Mr. Edward Farrer, the Bulletin of the American Industrial Association says:—

Taking their cue from the attitude of the Republican party of this country on the reciprocity question the Liberal party in Canada, which is the Free Trade party, is seeking to return to power by putting a reciprocity plank in its own platform. This plank reads as follows:

"That, having regard for the prosperity of Canada and the United States, it is desirable that there should be the most friendly relations and broad, liberal trade intercourse between the two countries, that the interests of not only Canada but of Great Britain would be materially advanced by the establishment of such relations; and that the Liberal party is prepared to enter into negotiations with a view to obtaining a reciprocity treaty from the United States, including a well-considered list of manufactured articles, being satisfied that such a treaty would be approved of by the mother country."

We had a reciprocity treaty with Canada from 1851 to 1866

and it is a matter of record that the United States was cheated badly by that treaty.

The CANADIAN MANUFACTURER for April 17th says that "during the present week Mr. Edward Farrer, late editor of the Toronto Globe, appeared before the Ways and Means Committee of the United States House of Representatives at Washington, and delivered himself of an argument showing why Canada can not possibly live without reciprocity with that country." Mr. Farrer is a Free Trader.

The logic by which a Free Trader, either in Canada or the United States, comes to advocate, reciprocity ought not to be hard to understand. But it is certainly a strange conjunction of events when Protectionists in the United States and Free Traders in Canada are found advocating precisely the same policy for their respective countries.

The London Parliamentary Committee of the United Empire Trade League "believes that its hands are strengthened by a paper just issued at the instance of Sir Howard Vincent, showing the preferential fiscal advantages enjoyed by the colonial trade of France, Spain and Portugal. It appears that Great Britain alone of important colonial powers treats the colonies on no better footing than foreign countries, or receives no advantage for the mother country in colonial markets. In nearly all the colonies of France, French goods are imported free of duty, and enjoy a privileged footing as regards foreign countries. Colonial produce imported into France is also either exempt from duty or is given considerable privileges. The general principle obtaining in Spain is absolute freedom for all colonial products imported into Spain, and for all Spanish goods exported direct from the mother country to the colonies, and, so far as is known, the colonies will continue to be treated on another and more favorable footing to that accorded to all foreign countries. Portugal likewise reduces its duties by one-half in favor of colonial produce, and receives also similar or greater advantages from the colonies for the produce of the mother country. Germany, not being as yet a colonial power, does little to develop her own colonial trade, although very eager for that of British colonies. There is, however, this important declaration by Mr. Martin Gosselin, of the British Embassy at Berlin: 'The general impression in this country appears to be that differential duties in favor of the trade of the motherland and her colonies, and vice versa, might be introduced in spite of the most favored nation clause, in the absence of an express stipulation to the contrary in the treaties.'"

The completion of a blast furnace at Hamilton, the Ontario Crown Lands report declares, will, it is hoped, result in the establishment of a good local market for iron ores, and already some progress has been made in opening iron mines, notably in the County of Hastings, and on the north shore of Lake Superior, in anticipation of this demand. The immense bodies of hematite ore on the Mattawan River, and of magnetic ore on the Atik-okan River in the western part of the Province, when reached by railway communication, will, it is added, supply ore excellent in quality and practically unlimited in quantity. There is in this official declaration of a Liberal provincial minister as complete a vindication of the wisdom of the protective tariff as the country affords. Without the N. P., and the assistance with which the Ontario Government supplemented it, there would be no Hamilton market for the iron ore of Hastings, no prospective market

in the Lake Superior district, no employment to transportation companies in carrying ore to the furnaces, and no furnaces in Hamilton. Hamilton is benefited through the employment given to its people in smelting the ore, which laborers in Hastings are employed in taking out of the mine, and which railroad workers are employed in carrying. Banking and other capital is employed both in Hamilton and at the mines. There are three interests concerned in the maintenance of this state of affairs, those of the investors, those of the workers as individuals, and those of the communities in which the latter live. The Liberal free trade party, led by Mr. Laurier and Sir Richard Cartwright, is going directly contrary to all three. The case of the Hamilton iron furnaces is repeated, in more or less marked degree, with almost every important industry in the country. The consumers, about whose concerns the Opposition is so wordily anxious, are the investors or workers in these industries, and their business and social connections. They are protected now. The Liberal party by its policy is not working to promote but to damage them.—Montreal Gazette.

No blue ruin in the following extract from the recent address of Mr. Caldecott, president of the Toronto Board of Trade:—

The main industry of Canada is, and must be for many years, that of agriculture, and there is one hopeful feature of the agricultural condition of the country which I should like to draw your attention to; for though undoubtedly our farmers have had much to discourage them, and perhaps have often felt disheartened at the low price of grains, yet evidently a great change has taken place in their methods of cultivating the land. I think the agricultural colleges and experimental farms have done their fair share of the work in producing this result. The farmers are now turning their attention from wheat and barley to what must pay them much better, viz., meat, eggs, butter, cheese, and fruit.

In 1884, there was in cultivation, as follows, in Ontario:—

	1884. acres.	1894 acres.
Wheat	1,586,387	1,009,008
Barley	700,472	486,261
Oats	1,481,378	2,330,766
Maize	174,560	378,749
Peas	570,928	785,007
Roots	133,525	186,513
Hay	2,193,369	2,576,943

Cheese factories:—

1883—635, producing 53,513,000 lbs. cheese.

1894—897, producing over 100,000,000 lbs. cheese.

and since 1891, 16,173 more acres have been devoted to fruit cultivation. There still remains, however, a large opening for improvement in the production of a first-class quality of Canadian butter. Denmark sends annually to England about \$60,000,000 worth of butter which has become noted for its uniform good quality. With proper cold storage arrangements and greater care in the manufacture of Canadian butter, together with strict Government classification and inspection there exists no reason why we should not become as famous for our butter as we now have become for our cheese.

As given in the Government returns the foreign trade of Canada within the periods specified was as follows:—

	Imports.	Exports.
Fiscal year ending June '94..	\$123,474,940	\$117,524,949
Fiscal year ending June '95..	110,781,682	113,638,803

Showing a decline in imports of \$12,693,258, and exports of \$3,886,146 in the years 1894-5, compared with 1893-4. It will, however, be observed that the exports exceed the imports in 1895 by \$2,857,121, being the second time since

Confederation that this has been the case. In 1879-80, the returns were. Imports, \$86,189,710, against \$87,911,158 exports. Imports and exports, 1895.—

	Exports.	Imports.
Great Britain	\$61,856,990	\$31,131,737
United States	41,297,676	54,634,521
Germany	626,976	4,794,159
France	335,782	2,585,174
West Indies ..	3,725,426	4,956,196
Newfoundland	2,325,196	739,850
China and Japan	378,160	2,578,414
Spain	34,101	402,419
Belgium	251,402	441,617
South America	1,303,474	306,996
Italy	34,375	381,574
Holland	140,264	243,900
Portugal	58,781	57,140
Australia	417,124	
Switzerland		259,400
Other Countries	853,626	1,789,334

The proportion of trade stands thus: between Great Britain and Canada 41.42, between Canada and United States 42.74. The trade with Japan and China in 1885 was \$1,266,000, now it is \$2,601,000. The West India trade also is growing, the united export and import trade for five years, ending 1890, being an average of \$5,240,000 a year, as against \$8,681,000 for 1895, thus, during the year our trade increased with the West Indies, China, Japan and the United States, and lessened with the rest of the world.

The efforts of Canadian wood pulp manufacturers to obtain an export duty of \$2 or more per cord upon pulp wood, find some support in the Canadian Gazette, the view taken being to discourage the export of the raw material from Canada and encourage its manufacture into pulp in Canadian mills. At present the United States tax on imported pulp is ten per cent., while pulp wood is free. A Canadian export duty would, it is claimed, induce the United States to remove their duty. This the Canadian association think would give them control of the trade. At present Canada exports about 500,000 cords of pulp wood yearly, so that the proposed export duty would yield a revenue of \$1,000,000 annually. The exporters of pulp wood, of course, object to such an impost. As it is, they have their hands full, they say, to compete with the pulp wood sellers of Virginia and Maine. On the face of it, Canada is wise to encourage her own manufacturers. Her exports of raw material, i.e., pulp wood, practically all of which goes to the United States, have been as follows: 1890, \$108,998; 1891, \$219,458; 1892, \$380,092; 1893, \$392,262; 1894, \$168,359. These figures show a constantly increased export of raw material. The pulp wood exported in 1894 would be capable of producing mechanical pulp to the value of £400,000 sterling, or about five times the value of the pulp wood now exported. If converted into chemical pulp the export value would be no less than £700,000 sterling. As it is, Canada is doing an increasing export trade in pulp as well as in the wood. The exports of pulp stand thus: 1890, \$168,180; 1891, \$280,619; 1892, \$355,303; 1893, \$455,893; 1894, \$547,217; 1895, \$590,974. The British demand for wood pulp is largely on the increase. The imports for 1895, for example, were of the value of £1,574,400 (297,098 tons), an increase of £150,000 over 1894.—Paper Trade Review.

According to announcement the Canadian Society of Civil Engineers met in the School of Practical Science, Toronto, on

Wednesday, Col. Sir Casimir Gzowski presiding. The first business was a discussion of the several acts of Incorporation. In the afternoon, on invitation of the Mayor and city council, the members went for a steamboat excursion around the harbor and Island. The evening session was taken up with a discussion of papers and experiments in the testing laboratory of the School of Practical Science. Thursday's programme consisted of the discussion of papers in the morning, and in the afternoon a visit to the Bell Telephone Company's office, an excursion about the city, a visit to High Park, the Power House of the Toronto Street Railway Company and to the Lozier Bicycle Company's Works at Toronto Junction, and in the evening reading and discussing papers. The programme for Friday included a trip per the Niagara Navigation Company and Niagara Falls Park and River and Gorge Railway Companies to Niagara Falls. Among the papers read at this meeting were:—"Pneumatic Power applied to workshops," by J. Davis Barnett, M. Can. Soc. C.E., and "the Storage of Water in Earthen Reservoirs," by Samuel Fortier, M. Can. Soc. C.E. Among those present were:—Col. Sir Casimir Gzowski (presiding), Toronto; Alan Macdougall, Toronto; C. H. McLeod, Montreal; L. B. Stewart, Toronto; Herbert Bowman, Berlin; E. H. Keating, Toronto; W. T. Jennings, Toronto; J. C. Duff, Toronto; Newton J. Ker, Toronto; J. Davis Barnett, Stratford; W. G. Matheson, New Glasgow, N.S.; C. H. Rust, Toronto; R. Steckel, Ottawa; A. T. Laing, Toronto; Fred. Thomson, Montreal; Alfred Brettan, Montreal; Armitage Rhodes, Quebec; Ernest Marcean, Montreal; Wm. Kennedy, jr., Montreal; Henry F. MacLeod, Ottawa; J. Galbraith, Toronto; Henry A. Gray, Toronto; Henry Smith, Toronto; Robt. W. King, 503 Markham St., Toronto; A. P. Walker, Toronto; G. E. Robertson, Cardinal, Ont.; D. H. Keeley, Ottawa.

Mr. W. B. Hamilton, a Toronto manufacturer who is a member of the Board of Directors of the Toronto Industrial Exhibition Association, speaking of Canada's great fair of last year said:—

The trade done by the various business houses in the city during the Exhibition, as judged from interviews with the principal merchants and trade reports as published in the city press after its close, was the best and most satisfactory at that season for a number of years. The Exhibition is undoubtedly worth many thousands of dollars annually to the trade of the city, but if its yearly increasing success of the past is to be continued in the future some of the buildings must be enlarged, to provide for the constantly increasing number of exhibits. The present Main building is inadequate to its requirements. Manufacturers have never been able to get a sufficient quantity of space in this building to properly display their goods, and as a consequence a number of the best have refrained from exhibiting who would otherwise do so. At the last Exhibition the building was occupied by exhibitors to its fullest capacity, but with cramped spaces, and although a large tent was erected to provide for the overflow, still many would-be exhibitors could not obtain accommodation. The enlargement of the present Machinery hall is also much needed. The association have these matters now under consideration, but how to obtain the necessary funds is the difficulty in the way. A few years since the association assumed a heavy liability, \$235,000, for the erection of new horse stables, cattle sheds, and grand stand, etc., expecting to be able to clear a sufficient profit each year to pay the annual interest on the outlay until such time as certain lands which were pledged as security for the loan could be sold, but in view of the general depression which has existed for the past two or three years, and still exists to a certain extent, it is a question whether

they will be able to do so. When the Exhibition was first started in 1879 it was intended that the city should provide the necessary accommodation and the association should hold the annual Exhibition, applying any surplus they might make each year for additional improvements. That the Exhibition is self-sustaining and shows a profit, though small, each year, is a fact, but its growth has been so remarkable, and the extension of buildings so constantly necessary, that the association cannot out of its profits meet all requirements in this respect.

There has been a good deal of difficulty, in times past, in establishing the value of wood pulp imported into the United States from Canada, for the purpose of fixing import duties. The practice in the customs service, says the Paper Mill, is to accept, as a value to serve as a basis for assessing duties, the market value of the goods in the country from which they were imported. But in the case of Canadian wood pulp, there has been no fixed market value heretofore. The value has depended very largely upon the demand from the United States, and as considerable pulp which is subject to duty at the border is manufactured in Canada by the very parties who import it into the United States, the difficulty of determining values has been increased. As a consequence there have been controversies without number between the importers and the customs officials along the border, and invoices have varied as extensively as from \$6 to \$18 per ton. Appraisers have no standard, and figures which would satisfy the officials at Detroit would appear to officials at Buffalo to be very much too low, or vice versa. Train loads of pulp have been held up on the score of undervaluation in cases where no such business was intended, and generally paper manufacturers who use Canadian pulp have had no end of trouble with the officials. If the treasury officials confirm the result of negotiations which have been undertaken by an agent of the customs service in Toronto, these difficulties and troubles will be obviated in the future. The agent conferred with a number of prominent exporters of pulp and it was agreed that hereafter \$12 per ton should be considered the invoice value of ground wood pulp for purposes of assessing duties. Another troublesome matter, the allowance for moisture in wet pulp, was also the subject of conference, and it was agreed that hereafter wet pulp should be considered as sixty per cent. water and forty per cent. dry pulp; more than that, two-and-a-half tons of wet pulp should be admitted as one ton of dry pulp, at the value of \$12. These agreements, if they are ratified by the customs authorities, will simplify matters at the custom houses very materially for American importers, and if it becomes permanent, will simplify the calculations of the American paper manufacturer who contemplates securing timber limits in Canada and manufacturing pulp on the spot for use in his own paper mills in America. Whether the new order of things will be in favor of the Canadians or of Americans, is another matter, and one which cannot be determined until it has been in force for some time.

Messrs. Ridout & Maybee, solicitors of home and foreign patents, Toronto, have sent us a copy of the second edition of their Inventor's Guide, which has been considerably enlarged and brought entirely up-to-date. They call special attention to the warning given therein in regard to fraudulent "Inventors" and "International" agencies who make a practice of obtaining invalid foreign patents from innocent inventors. Another feature of the work will be of interest to inventors interested in foreign patents, is a table contain-

ing economic statistics of the principal countries in the world, giving their population, area, products, industries and exports. This is likely to prove useful to inventors in determining in what countries any particular invention is likely to prove valuable. This pamphlet is sent free to all desiring to obtain it. Inventors desiring more information than is contained therein, are referred to the larger work—"Ridout on Patents," which may be obtained from them at reasonable rates.

A CURIOUS ELECTRIC FIRE.

The Electric Bureau of the National Board of Fire Underwriters under charge of Electrician Merrill is doing good work in investigating fires due to electricity. The last report, covering the preceding three months, deals with 166 cases. Here is one that is decidedly interesting:

"Current conducted into dwelling by gas pipe, arced to lead water pipes, and caused five fires in two days. No electric wires of any kind in the dwelling. The Edison feed wires ran about eighteen inches underground up the street in front of the house. The insulation on these conductors in their tube had deteriorated at a point nearly opposite the house. Electrical connection was established between one of the conductors and the iron tube, current passed along the tube to where it rested on an iron gas pipe which ran into the dwelling. The current followed this pipe into the dwelling and grounded on the water pipes. About ten o'clock one evening smoke was noticed in the house, an alarm was turned in, and the firemen found a blaze between the ceiling of the first floor and the floor of the second. It was burning quite briskly, but was soon extinguished. The chief of the fire department saw that the fire was a curious one, and as no one could give an explanation of the cause, he went up to the second floor and started to make an investigation. He ripped up the boards over the place where the fire was seen, and discovered a second fire on the top of a timber through which a gas pipe cut. This fire was extinguished, and the investigation proceeded. The chief suspected that electricity might have something to do with the case, but the owner assured him that he had no electric wire in the house. While they were talking smoke was seen coming from a closet under a bowl in the bathroom, on this floor. The chief thought at first that it was confined smoke, but when he opened the door to the closet the smoke appeared to be making, and a closer investigation showed a third fire there. This was put out without difficulty. He then decided upon a complete investigation, and went down stairs and ripped the ceiling down. The firemen worked for fifteen minutes, and finally discovered a fourth fire in the vicinity of a gas pipe, which was found to be red hot. This was plainly the cause of this fire. After a while, the firemen, having extinguished all traces of the fire, went away, with the exception of one man, who was left to look out for a repetition of the trouble. Nothing occurred until the next afternoon, when an alarm was again sounded. The fire at this time was in the cellar, near the entrance of the gas pipe

from the street. An examination showed that the pipe had been partially melted at this point. The chief, becoming satisfied that electricity was in some way responsible, called in the Edison company and the electrical inspectors. The street was opened, and conditions recited above were shown to exist. Further trouble was avoided by repairing the conduit, and separating it from the gas pipe. Loss about \$500."

It is highly desirable that the resources of Canada should be developed. But there are two ways in which these resources can be developed. Canadian timber can be cut down and carried in the form of saw logs to Yankee mills, there to give employment to Americans. Canadian nickel ore can be dug up and carried to the United States to be smelted and to give employment to American workmen. Canadian iron ore mines can be similarly developed, leaving a few dollars in the hands of the Canadian mine owners, and a big hole in the ground to show that "development" has taken place. Canadian spruce can be cut down and carried across the boundary, there to be manufactured into pulp by American labor. It must be remembered that while the American developer may employ American labor in Canada to unearth or cut down his raw material, no Canadian is permitted to find work in smelting Canadian ores, sawing Canadian logs or grinding up Canadian spruce in the American mills and furnaces. There is another way in which Canadian resources can be developed, and which will not only give the mine owner and the timber owner as much money as he gets under the other plan, but compels the smelting of ores, the sawing of logs and the grinding of spruce in Canada, thus giving employment to a large number of Canadians who live here and spend their money here. This can be done by the simple means of the export duty. To put a heavy export duty on spruce logs, or what would be better, to entirely prohibit the export of spruce logs, would be to build up in Canada an enormous business in the manufacture of pulp—a most profitable business in an article that finds a ready market not only in the United States, but in the world at large.—Spectator.

To get things cheap is the chief end of man, according to the free traders. For many years we have been urged to press towards that goal, and now, at last, we have reached it. Never in modern times were prices, all along the line, so low as they are at this moment. A man who can command money may live as well now at half the cost as he could have done twenty years ago. But are the accompanying conditions pleasing? Can any rich man, not actually brutalized by selfishness, look around him upon the industries of his nation, and upon the people who live by them, and find matter for congratulation? Cheapness there is; but the few who are exempt from toil enjoy it at the expense of producers who have no fair recompense for their labors; and, as a necessary consequence, all over the land there is discontent, which is expressing itself in promises of violent political action.

Yes, we have cheapness—cheapness which surpasses all precedents, but with it unprecedented loss and misery for millions who are the victims of the misgovernment that has wrought the ruin of which cheapness is the consummate flower.—The Manufacturer.

.. *Our Automatic Arc Lighting* ..

DYNAMOS AND LAMPS

We Guarantee Superior to Any Others.

Our Electric Motors are the Best and Cheapest.

Write For Particulars,

THE THOMPSON ELECTRIC CO.

Waterford, Ontario.

The Holgate Fielding Company, Toronto, is being incorporated with a capital stock of \$20,000, to manufacture chemical, pharmaceutical, asbestos and magnesia products.

R. C. Tait, Shediac, N.B., is having a new rotary put in his mill, which will largely increase its sawing capacity.

Smith & McLeod, saw mill owners, Vernon, B.C., are building a branch mill at Enderby, B.C.

The Sault Ste. Marie Pulp & Paper Co., have let the contract for the erection of another pulp mill at that place.

Hiram Walker is said to be negotiating with some eastern parties for the erection of a large saw mill on the site of the old sugar refinery above Walkerville, Ont. The mill will be stocked by logs rafted down from the north.

A PROMISING CANADIAN IRON MINE.

The Ontario Legislature at its last session gave a bonus of \$20,000 to "The Ontario, Belmont and Northern Railway" which runs from a point near the junction of the Central Ontario and Canadian Pacific Railways through the township and village of Marmora to the Belmont iron mine on lot 19 in 1st concession Belmont.

The Dominion Parliament recognizing the importance of developing our iron mines, has also granted a bonus of \$32,000 to the same railway, which is now being completed into the iron mine, from which large quantities of iron ore will be shipped this summer.

This ore is of excellent quality, being rich in iron and free from impurities, as is shown by the following articles written by Wm. Molin, M.E., of New York, a well known expert for The Engineering and Mining Journal. Mr. Molin says: "The following analysis represents a large deposit of magnetic iron ore located about 100 miles east of Toronto and but a few miles from the Canadian Pacific Railway, on west half of lot 19 in 1st concession Belmont, viz.:—Metallic iron 65.10; silica 3.83; alumina 2.35; lime 2.93; magnesia .03; manganese none; titan acid 0.04; phosphorus 0.005; sulphur 0.07. Some samples assayed as high as 70 per cent, metallic iron.

The royalty lease of this property has been bought from T. D. Ledyard, of Toronto, by The Belmont Bessemer Ore Co., Limited, New York, who are now connecting it with the C.P.R., after the completion of which shipments will begin.

It has been estimated that this ore bed contains over one million tons of ore within

100 feet of the surface, and the stripping is very light. The ore bed has been thoroughly explored and of the numerous samples which I have analyzed the above example is a fair average. It will be noticed that this ore equals the best of the famous Swedish Dannemora ore in regard to its low phosphorus contents, contains much less sulphur and from 10 to 20 per cent. more iron. Like the Dannemora ores, the Belmont ore varies a trifle in phosphorus, which element however, in no instance has been found to exceed the limit allowed in ores for the manufacture of materials for re-melting in crucible for the highest grades of crucible tool steels.

It is well-known by those familiar with the manufacture of crucible tool steels that the highest grades are made by re-melting Swedish bars, especially those made from Dannemora ores, the superiority of which irons depends on their freedom from impurities, method of manufacture and the nature of the ores used in their production. And when it is also remembered that these ores are magnetic, the inference may be drawn that the best way to make such an ore deposit as the Belmont most profitable to the owners would be to adopt the Swedish method and engage in the manufacture of bars for the crucible steel trade. If the ores can be found there is no reason why this continent should not supply existing needs. Superior steel always fetches a good price and nobody knows this better than the tool maker who insists on having English steel, because he is sure that it is made from Swedish bar, which is the product of magnetic ores.

So that the Belmont ore is not only fitted to make steel, but is suited to make the very finest tool steel. Its peculiar excellence consists in containing a large percentage of

iron and at the same time being very free from phosphorus, the above analysis showing that this ore contains only one tenth as much phosphorus as some other ores which are still considered good Bessemer ores.

The opening up and working of this Belmont mine will stimulate and encourage other enterprises of the same kind. The Ontario Belmont and Northern Railway mean to extend their road northerly through the township of Methuen where there are several mineral deposits of marble, iron and mica, which only await development to make them valuable.

The Belmont ore bed is going to be opened up at a most favorable time, for a demand is now arising for iron ores which contain the least amount of phosphorus.

The New York Engineering and Mining Journal in their iron market review say "The special demand is still for the very low phosphorus ores. The mines that produce these fancy grades are few and the out-put is limited. The Illinois Steel Cos'. purchases of 800,000 tons were largely of this variety and what little the Carnegies have purchased has been of the same grade. The specifications for steel rails and other finished product which call for a considerable lower per centage of phosphorus than usual has created the active demand for the highest priced ores."

The Cleveland Iron Trade Review says "Ores whose phosphorus is about .04 and .045 promise to be well taken up in the next buying of Bessemer in view of the scarcity of ores of lowest phosphorus content."

These ores contain 8 or 9 times as much phosphorus as the Belmont, which therefore ranks in the highest grade of low phosphorus ores.

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AND MANUFACTURERS OF

OAK TANNED LEATHER BELTING

WE GUARANTEE OUR PRICES TO BE AS LOW AS OFFERED BY ANY OTHER RELIABLE MAKERS FOR EQUAL QUALITY.

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TORONTO OR MONTREAL

CAPTAINS OF INDUSTRY.

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

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

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

The Imperial Electric Light Co., Montreal, has been incorporated.

The Ottawa Truss and Surgical Manufacturing Co., Ottawa, is being incorporated with a capital stock of \$30,000.

The Thompson Electric Co., Waterford, Ont., have just installed a fifty arc light plant at Centre Island, Toronto, that is giving the utmost satisfaction.

The Whaley Royce Company, piano manufacturers, Toronto, is being incorporated with a capital stock of \$100,000.

The Francis Frost Company, Toronto, is being incorporated with a capital stock of \$100,000, to manufacture paints, oils, etc.

Chatham, Ont., will spend \$30,000 for waterworks improvements.

A by-law to grant a bonus to a Rubber Manufacturing Company was carried in Bowmanville, Ont., on 15th instant.

The stock of the London and British Columbia Gold Fields, London, England, the first of the series of British Columbia mining companies was placed on the market there on the 15th instant. The capital stock of the company is £200,000. Several others are being formed under prominent auspices.

The Montreal Transportation Co. is about to lay the keel of a large barge at Kingston, Ont., similar to the Minnedosa, that will cost \$75,000. She will be capable of carrying 70,000 bushels of wheat on a fourteen foot draught.

Truro, N.S., will spend \$7,000 in the construction of waterworks.

Last year Canada exported \$15,000,000 worth of cheese to Great Britain. The combined exports of cheese of all other countries to Great Britain during the same period amounted to only \$10,000,000.

The Consolidated Electric Railway Company has purchased the electric railway lines in Victoria, B.C., that were sold at auction recently. The company is an English syndicate and owns the Nanaimo, Vancouver, New Westminster and Victoria electric railways.

The Maritime Wrapper Factory Co., Woodstock, N.B., is erecting a large factory and the town council has exempted the industry from taxation for a short period. The factory when in full operation will employ some sixty girls.

The following American Gold Mining Companies have been registered in British Columbia—The Morrison Gold Mining Co., Spokane, Wash., capital stock \$1,000,000; the Monarch Gold Mining Co., Northport, Wash., capital stock \$750,000; the Republic Gold Mining Co., Spokane, Wash., capital stock \$750,000; the Hattie Brown Gold Mining Co., Spokane, Wash., capital stock \$1,000,000; the Beaver Gold Mining Co., Spokane, Wash., capital stock \$750,000; the Gold Stream Mining Co., Cudahy, Wis., capital stock \$1,000,000; the Crown Point Gold Mining Co., Spokane, Wash., capital stock \$1,000,000; the Mayflower Gold Mining Co., Spokane, Wash., capital stock \$1,000,000; the Acme Gold Mining Co., Spokane, Wash., capital stock \$600,000; and the Monte Christo Gold Mining Co., Spokane, Wash., capital stock \$1,000,000.

The Royal Electric Co'y

MONTREAL, QUE.

Western Office.... TORONTO, ONT.

S.K.C. Two-Phase Alternators

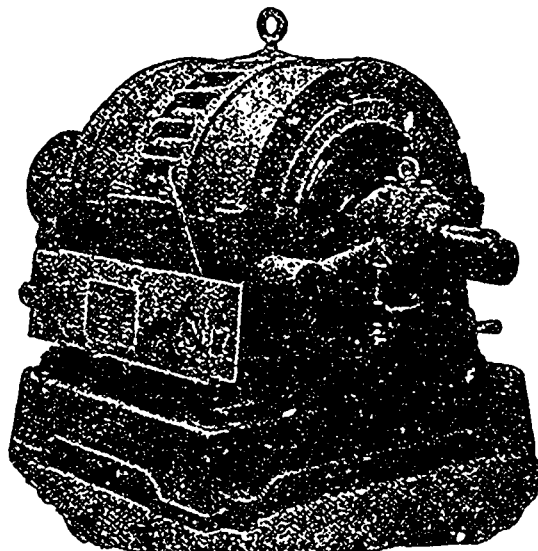
Incandescent Light, Arc Light and Power from same Dynamo and Circuit.

Highest Efficiency

Best Regulation

Slow Speed

Least Attention



No Collector

No Moving Wire

No Exposed Parts

No Compounding

S.K.C. 50 Kilowatt Two-Phase Generator

The Bean Pot Gold Mining Co., Spokane, Wash., capital stock \$500,000 has been registered in British Columbia.

The Farnham Que., beet sugar factory buildings are to be utilized as a cereal foods factory.

The Toronto Brass Co., Toronto, is being incorporated with a capital stock of \$25,000 to manufacture articles of steel, copper, brass, etc.

The Globe File Works Port Hope, Ont., are now making fine files for use by dentists and jewelers. These have heretofore been imported from Sweden.

The Springhill, N.S., Board of Trade is urging the expenditure of \$100,000 for water-works.

The Sault Ste. Marie Pulp and Paper Company is exporting wood pulp via Montreal to England, where the samples sent by them for examination have been highly spoken of by the experts who have seen them.

The Beet Factory property at Coaticook, Que., so long in litigation, has by a recent decision been awarded to the original Pioneer Beet Root Sugar Co.

It is reported that the machinery of the beet sugar factory at Farnham, Que., has been sold to an American firm and that the property is to be put to other uses. It is strange that while the manufacture of beet sugar is steadily increasing in the United States it has proved a failure in Canada, and this in the face of the fact that the Canadian beets are exceptionally rich in their percentage of sugar. There is something wrong.--Sherbrooke, Que., News-Letter.

A new High School building to cost \$40,000 will be built at St John, N.B.

The Morden, Man., Woollen Mill Co., have put in an other new broad loom.

If we hear, one of these days, that wood has become suddenly superseded as the staple material for paper, let us prepare not to be surprised. Experiments are being carried on in some of our mills to discover, if peradventure any way can be found, how to make paper economically out of the wheat straw of the North-West. That straw has an excellent fibre. It is for the ingenious paper expert to work himself into the secret of making that fibre into strong, cheap paper. That once discovered, the question of the export duty on pulp wood would vanish from practical politics. Last year the North-West—Manitoba and Territories—yielded a crop of 60,000,000 bushels of wheat, with a tremendous crop of straw. To be sure, if straw were turned to this use, some mode of fertilizing the land as cheap as that of returning the straw to it would have to be discovered.

Several alterations are contemplated in the Valleyfield, Que., paper mills, but they will not be made until after the elections. There are some other mills in which large plans of improvement are to be carried out, if the event of the elections on June 23rd does not prove unfavorable to protection. These alterations are understood to be undertaken on the strength of increasing export business. One of these manufacturers states that he feels encouraged to go to very large expense in fitting his works to furnish the class of goods for which inquiries are springing up from several export sources. He shows correspondence from

Australia, Peru, Chili and other South American countries, on some of which letters he had made considerable shipments. The paper, was all of the finer kinds. Another instance of the cropping up of export demand is the case of an order from a large book printing house in England, which, having been struck with the quality of the paper in a Canadian publication, communicated with the publishers to know where the paper could be got, and at what price. The result was a good-sized order for the Canadian manufacturers.

The Ottawa Public School Board have awarded the contract for covering four of the boilers in the public schools in that city, to the Mica Boiler Covering Co., Toronto.

An order for covering the six boilers and all the steam pipes of the new steamship "Corona" of the Niagara Line, has been placed with the Mica Boiler Covering Co., Toronto.

The Weddell Dredging Co., Tronton, Ont., and Montreal, have ordered covering for two large boilers at Lachine, Que., from the Mica Boiler Covering Co., Toronto.

Grimsby, Ont., contemplates the construction of waterworks.

The Canadian Watch Case Company, Montreal, has been incorporated with a capital stock of \$10,000.

The Takush Harbor Timber Co., London, England, capital stock £80,000, has been registered in British Columbia.

The Kootenai Water Supply Company, Rochester, N.Y., capital one million dollars, has been registered in British Columbia.

MICA BOILER and STEAM PIPE COVERING

WHAT IS THOUGHT OF IT!

To whom this may concern.

This is to certify that we have used some of the Mica Pipe Covering on one of our main pipes in the tannery during the present winter and must say that it has given the very best satisfaction, there is no heat that escapes from the outside covering, it hardly being warm, in consequence there is very little condensation in the pipes. We can cheerfully recommend it to any parties wanting pipe coverings.

Yours truly,
(Sgd.) BREITHAAPT BROS. & HALL.

PETROLIA, April 22, 1896.

MESSRS. THE MICA BOILER COVERING Co., Toronto, Ont.
GENTLEMEN:—In regard to the Mica Pipe Covering on which you have asked us to report, we would say that we placed this covering on the steam pipes in our block of stores and offices last winter and at once noticed the largely increased heating capacity of our plant and a great saving in fuel. The covering was put on by our own men without any difficulty whatever.

Yours faithfully,
(Sgd.) VANTUYL & FAIRBANK.

TORONTO, December 3, 1895.

THE MICA BOILER COVERING Co., City.
GENTLEMEN:—We have tested the Mica Covering which you put on the boiler of the Dredge "Atlantic" in September last and find that it has effected a saving of about one-half ton of coal per day, or about twenty-five per cent. We believe it is the most durable covering for marine boilers in

the market, and will stand the wear and tear incidental to such boilers. We consider it a valuable improvement over the cement coverings, owing to the convenience of removal and replacing same, for inspection or repairs to boiler.

Yours truly,
TORONTO DREDGING & CONTRACTING CO.
(Sgd.) F. DOTY.

THE TORONTO FERRY COMPANY, (LIMITED),
North of Scotland Chambers,
18 King Street West.

TORONTO, December 12, 1895.

THE MICA BOILER COVERING COMPANY, Toronto.

GENTLEMEN:—I have much pleasure in certifying that the Mica Boiler Covering placed by your company on the boiler of our steamer "Thistle" has proved satisfactory in every respect and has fully proved every claim you made for it. I find that since it has been put on, the consumption of coal has been reduced no less than twenty per cent. My chief engineer's report of the Mica Covering is very favorable, not only for its extraordinary coal saving qualities but also on account of the ease with which any part of it can be removed and replaced without injury. After the season's work I find the covering in perfect condition, and from the flexible nature of it and its inability to crack or crumble I anticipate a very long life for it.

All the steam pipes at our Electric Power Station at Hanlan's Point are covered with the Mica Covering and my engineer there also reports it as a first-class piece of work. From my experience of the above covering during the past season, I have no hesitancy in pronouncing it to be the best that has come under my notice.

Yours truly,
W. A. ESSON, Manager.

Full Particulars, Reports of Trials, Prices, Testimonials, etc., from

The Mica Boiler Covering Company (Ltd)

9 JORDAN STREET, TORONTO.

The John Hume Canning Co., New Westminster, B.C., has been incorporated.

A consignment of slate from Canada has recently been received in London. It has attracted attention because of its excellent quality, and several inquiries have been made at the high commissioner's office on the subject.

The Eddy Company, of Hull, Que., has received a large order for paper from the Dublin, Ireland, Freeman's Journal.

The volume of traffic at the Soo during May was another record breaker. The east bound freight amounted to 2,003,087 tons, and the west bound to 464,564 tons, a total of 2,467,651 tons.

Mr. F. H. Clergue of the Lake Superior Power Company has written the bureau of mines that works for the production of calcium carbide were to be established at Sault Ste. Marie, Ont. The plant is planned to make from three to five tons of calcium carbide daily. The letter also states that the reduction of nickel, copper and other metals by electricity is in prospect.

It is stated that sixty million feet of logs will be exported from Byng Inlet, Ont., and one hundred and fifty million feet from French River this year.

At the annual meeting of the Eastern Townships Bank held in Sherbrooke, Que., on the 3rd instant, Mr. R. W. Hencker, the president, in speaking of the development of Eastern Township industries said:—"The Directors feel that it becomes them to express their satisfaction at the course taken by the citizens of Sherbrooke in endeavoring to promote the establishment of new industries in that city. They view with favor the enlargement of the Jenckes Machine Company's works, and the advantages which that company must derive from the change made in the location of their shops. Through the facilities now secured to them, the company can ship the heaviest machinery by rail directly from their works to any part of the continent. The action of the Sherbrooke Board of Trade in making known the advantages offered by the city as a great business centre, is worthy of praise and promises well for the future of the city. The Directors are also pleased to notice the development of

manufactures at other business centres, such as Granby, for instance, where the Rubber Works have been successfully carried on for some years, and other new industries are being established. The city of St. Hyacinthe is also an energetic, prosperous, business centre, and presents a picture of life and activity worthy of notice. At the village of Magog, the great Print Works and Cotton Mills are kept always full of work, and the industries of Coaticook are also flourishing.

The Amherst (N.S.) Car Works recently built twelve cars for the Halifax Street Railway, a first-class passenger car for the Coast Railway and a number of hoppers for the I. C. Coal Mining Company. The wheel foundry at that place has a large order for wheels from the Quebec Central Railway.

The pulp making and water power scheme continues to engage the attention of the people of Port Arther, Ont. A town meeting has been held, and another will soon be called to consider means for starting the enterprise. There is an abundance of raw material to be had in the vicinity and the water power is magnificent.

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DUNDAS, ONT.

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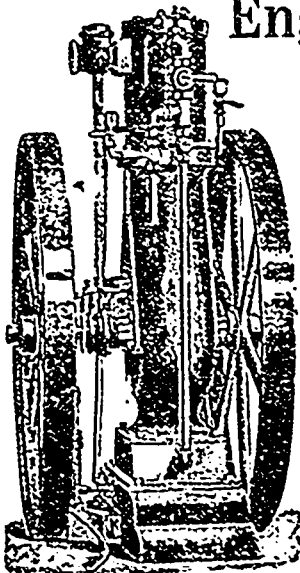
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FULLING MILLS;
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REELS,
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Rag Dusters,
Dead Spindle Spooler
(For Warp or Dresser Spools),
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Machinists

PULP AND PAPER MILL

AND

MINING MACHINERY

DESIGNED, CONSTRUCTED and REPAIRED

This space is one inch high. It may be used for advertising purposes at the rate of 50 cents per issue.

The iron turned out of the works of the Guelph-Norway Iron and Steel Company, Guelph, Ont., seems to be a superior article. Several cold tests were made of that and other brands by the city architect at Toronto recently which determined his choice in favor of the Guelph product.

Hall's furniture factory, Galt, Ont., which was damaged by fire May 25th is in operation again, the necessary repairs having been made.

According to a report compiled by the Treasury Department at Washington, dutiable imports of Canadian lumber for March of the present year, consist of 31,309,000 feet, valued at \$351,428, against 31,265,000 feet imported from British America in March, 1895, and representing a valuation of \$360,325, indicating thereby a slight decrease in the shipments this year.

An addition and alterations are to be made to the Western Wire and Nail works, London, Ont.

The Nanaimo, B.C., Free Press says: "At Alberni, on Vancouver Island, yesterday, a ledge of gold bearing ore was discovered 300 feet wide and extending for 6,000 feet. The rock assays a fair per cent in gold and improves downward the same as the great Rossland Mines. It is said that the famous Treadwell could be easily put inside of this latest big British Columbia mine. The ore is close to navigable water. In the last fortnight fifty mines have gone into the hands of British capitalists.

The Kootenay Mine Exploration Company, Toronto is being incorporated with a capital stock of \$200,000.

The Union Cold Storage Company, Montreal, ask incorporation with a capital stock of \$100,000.

The town of Woodstock, N.B., has voted \$10,000 for the completion of a system of sewage.

Work is about beginning on the Newfoundland Railway. It is intended to complete the line to Port au Basque, a distance of 130 miles, this summer, and 2500 men will be employed. The line from St. John's to Port au Basque will measure 560 miles, and cost about \$8,000,000.

Goderich, Ont.—D. K Strachan recently shipped a Champion street sprinkler to New Glasgow N.S. and another to Stratford, Ont.—The Henderson Bicycle Co. have replaced their old boiler by one much larger. The buildings of the Kensington Furniture Co. are about completed.—At the Goderich Organ Factory a good business is being done in interior woodwork as well as in organs.

It is proposed to connect Montreal with the south shore of the St. Lawrence by a bridge the span of which would be 1,250 feet.

The British Columbia School of Mines, Victoria, B. C. is being incorporated, with a capital stock of \$30,000.

The Hansard Gold and Copper Mining Co. Nelson B.C. is being incorporated, with a capital stock of one million dollars.

The H. A. Lozier Co. of Cleveland, O., and Toronto, makers of the Cleveland wheels, have decided to build new tube works at Greenville, Pa. The plant will cost \$250,000, and will employ 500 men.

Chicoutimi and St. Alphonse, Que., are to be connected by an electric railway.

The business of the Laskay Woollen Mills, Laskay, Ont., hitherto carried on by J. Graham has been transferred to Wm. Graham.

Messrs Wrigley Bros.' bamboo factory Toronto, was destroyed by fire June 7th loss about \$3,000.

The firm of Stevens, Hepner & Co., will succeed Mr. J. Hepner, Port Elgin, Ont., on July 1st. They will manufacture brushes, brooms etc. besides doing a planing and saw mill business.

The Beatty Gold Dredging and Mining Company, Niagara Falls, Ont., is being incorporated with a capital stock of \$50,000 to do a general mining business in British Columbia.

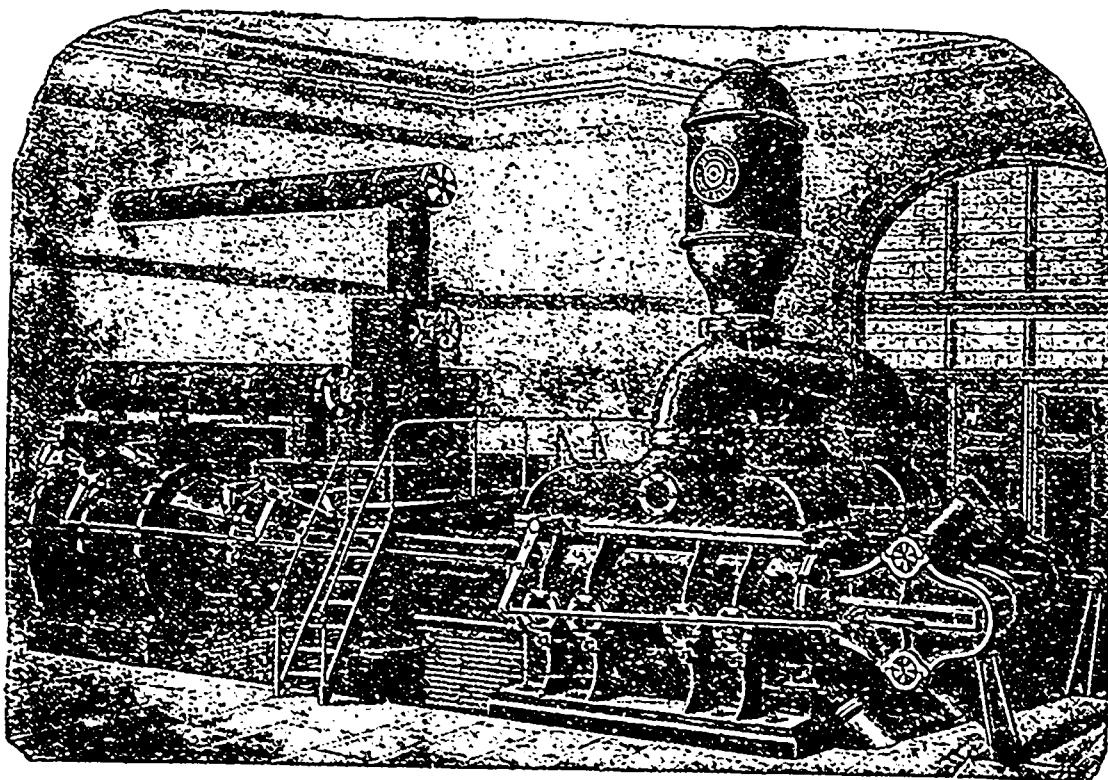
The Buffalo Gold mining Co., Spokane, Wash., has been registered in British Columbia.

The almost innumerable uses to which asbestos is now put have attracted attention in a special manner to the asbestos mines of the Eastern Townships, Que., the most valuable deposits of that mineral in the world. It covers an area of 200 miles in length by six or eight miles wide. The total exports of crude asbestos from the Dominion in 1888 was 3,936 tons but for the past three years the output has been a great deal more than double that quantity. Asbestos is now manufactured into cloth used principally for filtering purposes from straining molten metal to clarifying saccharine juices in beet root sugar refineries and for straining acids and alkalies in chemical laboratories; for plastering interior walls; for paper and for the electrical engineer it is almost indispensable.

JOHN McDOUGALL

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Pumps
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Machinery
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Water Works
Supplies

WORTHINGTON PUMPS ARE UNEQUALLED FOR EFFICIENCY AND ECONOMY

The New York legislature has passed a bill providing for a trolley bridge over the Niagara River at Lewiston, N. Y.

The Hamilton & Dundas, Ont., Railway, is to be electrified at once. The line will be changed so as to enable freight cars to be drawn between the two towns over it.

The Consal Gold Mining Co., Spokane, Wash., with a capital stock one million dollars, has been registered in British Columbia.

The Camp-Bird Gold Mining Co., Spokane, Wash., with a capital stock one million dollars, has been registered in British Columbia.

The Wolverine Gold Mining Company, Trail, B.C., is being incorporated with a capital stock of \$500,000.

The British Columbia Mining and Development Syndicate, Rosland, B.C., is being incorporated with a capital stock of two million dollars.

The Alexander Duplex Tire Co., Toronto, is being incorporated with a capital stock of \$200,000 to manufacture pneumatic tires.

Dairying in the North-West is booming. Mr. Moorehouse, superintendent of the Moosejaw creamery, run under Dominion auspices, reports to the department of agriculture that an average of nearly 4,000 lbs. of butter is being turned out daily. The milk is not all collected in the immediate neighborhood of the dairy stations, some of it being forwarded by rail from farms nearly twenty miles distant. The output, however, is considered a most encouraging indication of the capabilities of that section of the territories, which is by no means the most favorably circumstantial portion of the North-West for dairy farming.

Oil was struck on the farm of Mr. Alex. Elliott near Bothwell, Ont., recently and in eight hours the well produced fifty-six barrels.

The Canada Iron Furnace Co., of Radnor Forges, Que., is sending considerable quantities of its product to the United States. This is a charcoal iron and is in demand there for making car wheels.

The new electric power house at Trenton, Ont., has been completed and furnished with machinery at a cost of \$50,000. It will supply light for Trenton and also for Belleville, fourteen miles distant.

Trail, B.C., now only four months old has a million dollars worth of buildings, including smelting furnace, hotels, restaurants, general stores, hardware stores, meat markets, a bank, jewellery stores, blacksmith shops, a brewery, newspapers, churches, schools, two stations etc. The population is 1,500. Last year \$4,000,000, worth of mineral was taken out of the Trail Creek country.

It is said that Messrs James Ross, a director of the Montreal Street Railway and Wm. MacKenzie president of the Toronto Street Railway have had an offer to purchase the tracks of the Central Tramways Co., in Birmingham, England, and convert them into an electric system. The bid of the Canadian capitalists amounts to £500,000.

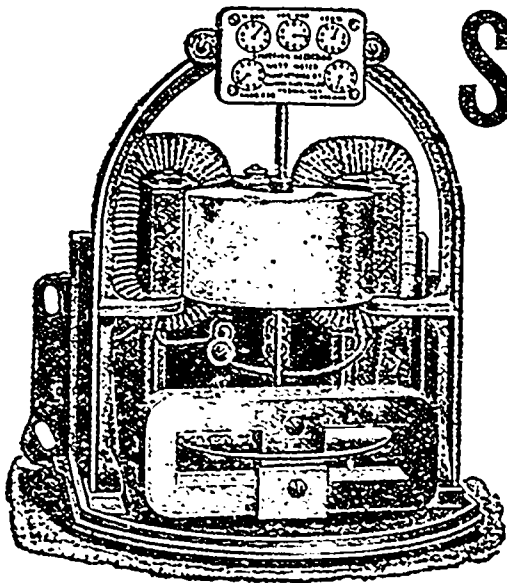
At a meeting of the shareholders of the Annapolis Manufacturing Co., Lequille, N.S., on June 4th, the provisional directors were authorized to get the mill into working order by ordering machinery at once. The Company will manufacture a hard wood barrel for use in shipping apples to England and potatoes to the West Indies.

The Londonderry Iron Company, Acadia Mines N.S. have received a large order for castings etc. for the coke ovens of the People's Heat and Light Co., of Halifax, N.S.

A definite proposal has been laid before the Belleville, Ont., city council for the erection of a blast furnace for making charcoal iron, the capacity to be sixty tons a day. This will be built and operated in return for a free site, exemption from taxation and a \$100,000 bonus.

The Electric Storage Battery Company, Philadelphia, Pa., has the contract from the Hartford Electric Light Co., to construct what will be the largest storage battery in the world. It will contain 140 Chloride Accumulators of 10,000 ampere-hours capacity.

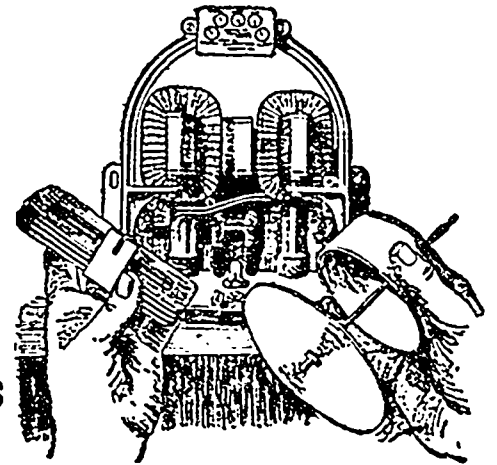
It is said that three of the largest mines in the Rosland camp, in British Columbia, the Le Roi, the War Eagle, and the Iron Mask, had been sold in London, England, to British Capitalists for \$5,000,000, \$2,000,000, and \$1,000,000 respectively. These sales when compared with the price of stocks of the same mines not long ago, indicate the wonderful development that has taken place in the district. The Le Roi was capitalized for \$2,500,000 in \$5 shares. They sold two years ago for six cents a share. Last year they jumped from forty cents a share in April to \$4 a share in December, and recently they have been held at \$10 a share, a price just equal to the result of the sale. The War Eagle shares also advanced from fifteen cents a share in February, 1895, to \$1.85 a short time ago. There are now twelve mines working in the Trail Creek region, while in the famous Cripple Creek, in the United States there are seventeen.



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Accurate from 4 C.P.
Lamp to full load.

No Commutator
No Brushes
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We are now manufacturing all our TRANSFORMERS

We guarantee Efficiency, Regulation and Insulation

Incandescent Lamps from 5 C.P. to 500 C.P., 3 to 4 Watts per C.P.

The PACKARD ELECTRIC CO., LTD. ST. CATHARINES, ONTARIO.

AGENT FOR MONTREAL, R. E. T. PRINGLE, IMPERIAL BUILDING.

The Babcock & Wilcox Co., announce that after July 1st. they will consolidate their Canadian sales department with their general sales department at New York City. With offices in Boston, New York, Buffalo, Cincinnati, Chicago, Minneapolis and San Francisco, it is expected that Canadian business can be attended to much more promptly and with less expenso than is possible by the present system of operating the whole of Canada from one central office. No change will be made in the manufacturing department, and the Canadian shops will be maintained, and all boilers built here as at present.

The Pennsylvania Steel Company, at Steelton, Penn. has closed a contract with the Niagara Falls Suspension and Niagara Falls International Bridge Companies for the erection of a steel arched bridge to take the place of the present suspension bridge, built by Roebling in 1855. The arch measures 550 feet, and the centre will be 260 feet above water level. This is the longest single steel arch ever designed. The entire length of the bridge will be more than 1,100 feet. The bridge will be a double-decked open structure. On the upper deck two tracks will be laid, and on the lower one will be two electric car tracks, a roadway, and two footwalks. There will be two ribs or main arches, 550 feet long by 4 feet deep and 3 feet wide, which will be shipped in 25-ton sections from the steel plant. The structural work will be done by the cantilever process, and no superstructure will be necessary. The traffic of the steam and electric lines will not be interfered with, yet the new bridge will occupy the exact position of the old one. The structure will cost about \$500,000. And will be completed in one year.

NAPHTINDONE BB, METHYLINDONE B AND R.

Wm. J. Matheson & Co., sole United States and Canada agents, have sent us the following, having reference to these articles in which they call attention to three basic dyestuffs, manufactured by Leopold Cassella & Co., viz. Naphtindone B B, Methylmaone B and R. which deserve the attention of dyers of cotton and linen as excellent substitutes for Indigo.

Naphtindone BB is better adapted for dark blues, Methylindone R and B are best suited for producing light blue shades.

Naphtindone B B can be fixed fast to washing on goods dyed with either Diamine Colors or Indigo; thus it will render excellent service for topping purposes.

We have received the following receipt from industrial quarters in Europe for dyeing Naphtindone BB on yarn.

For mordanting the following quantities are used:

For a one per cent. dyeing seven per cent sumac, three-quarters per cent. antimony salt.

For a one-and-a-half per cent. dyeing ten per cent. sumac, one per cent. antimony salt.

For a two per cent. dyeing thirteen per cent. sumac, one-and-a-quarter per cent. antimony salt.

For a two-and-a-half per cent. dyeing sixteen per cent. sumac, one-and-a-half per cent. antimony salt.

After mordanting, the yarn is entered into the dyebath to which from two to three per cent. sulphate of alumina have been previously added. Turn four times, lift, and add one-half of the dyestuff required; turn six times, and add the remainder of the

dyestuff; turn another six times, lift, heat to 122 degrees F., turn again six times at this temperature, and work for half an hour at the boil.

In dyeing with more than two per cent. dyestuff leave the goods in the dyebath for another quarter hour.

If the dyeing turns out too red, it is only necessary to work it for another half hour at the boil. If even then the shade should be too reddish or if a duller blue is required, take the goods once more through the first mordanting bath to which some more sumac has to be added, and work for one-half hour thereat at the boil. If, however, a coppery blue is required, dye as above stated, and after having added the second portion of the dyestuff, add for every 100 lbs. yarn a solution of from eight to twelve ounces acetate of lime.

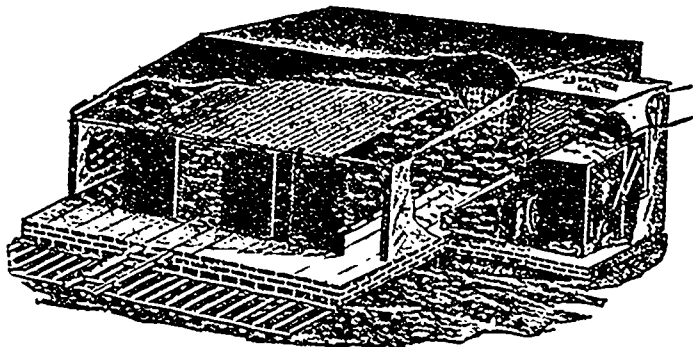
Indigo dyeings may be topped with Naphtindone without previously mordanting the goods; a better fastness, however, is obtained in the following manner: The yarn dyed with Indigo is first washed, then passed through a weak tannin or sumac bath, then through an antimony bath, then washed again, and finally dyed as above indicated.

In general a sumac is considered the best mordant for Naphtindone, however, mordanting with tannin is to be preferred when Indigo dyeings are to be topped, as by applying sumac the shade of Indigo becomes too greenish.

The fastness to washing of dyeings done with Naphtindone is very nearly equal to that of Indigo dyeings; washing in strong lye only renders Naphtindone dyeings duller. If repeatedly washed with soap, however, the shade remains bright blue and loses less in depth than Indigo.

McEachren's System of Drying, Heating and Ventilating

Under Recent Patents.



In construction and process of drying this Kiln differs widely from all others in use. They have given entire satisfaction where all others dry Kilns have failed. They will season More Lumber in a Given Time, with a given heating surface, and a given quantity of steam than any other Kiln now in the market. Their construction and mode of operating is such as to season lumber without Case Hardening, Checking or Warping. They work equally well on Lumber Right from the Saw and on Air Seasoned Lumber, the only difference being that one takes a little more time than the other. By a Peculiar Arrangement Found Only In Our Dry Kilns we extract the moisture from the heated air, return it through the heater again and thus preserve the heat passing from the Kiln instead of wasting it as is the rule with all other Blast Kilns.

Ventilating Fans, Shaving Fans, Pressure Fans, all sizes.

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Second-hand Heaters and Fans made by the best American Manufacturers, only in use a short time, for sale at great reduction. Send for Illustrated Catalogue and Prices to

McEACHREN HEATING & VENTILATING CO.

GALT, ONT.

Buffalo Planing Mill Exhaust Fans



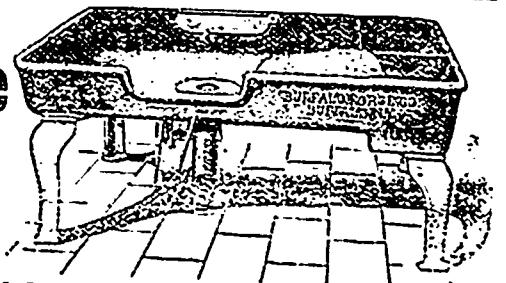
EFFICIENCY UNEQUALLED
DURABILITY UNSURPASSED
SMOOTH RUNNING
INCOMPARABLE

THE LARGEST

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IN THE WORLD

Thirty-Eight other Designs of Portable and Stationary Types.



BUFFALO LUMBER DRY KILNS

Blowers, Blacksmiths' Tools, etc.

Sold in—Toronto, Ont., by H. W. Petrie.
Brantford, Ont., by Canadian Machinery & Supply Co.
Montreal, Que., by Canadian Machinery Agency.
Chicago Store, 22 and 24 West Randolph Street.
New York Office—26 Cortland Street.

In fastness to light Naphtindone B B is as our Metaphenylene Blues and in this respect ranks, especially in dark shades, among the fastest substitutes for Indigo.

The fastness to acids of Naphtindone B B dyeings is good, and, if interwoven with white wool, they resist cross-dyeing in an acid bath. This fastness may still be improved by taking the cotton after dyeing a second time through the sumac and antimony bath.

Second.—For Topping. As above mentioned, Naphtindone is excellently adapted for this purpose, it acting as a fixing agent for direct dyestuffs, as we have found by experimenting in this direction; thus dyeings of direct dyestuffs topped with Naphtindone tint white cotton washed together with them much less than untopped dyeings.

On Indigo dyeings Naphtindone B B can be fixed just as well.

In topping as well as in dyeing on a sumac and antimony mordant care has to be taken to dissolve the dyestuff well in condense water and to add the solution gradually to the dye bath.

The topping with Naphtindone is done with the addition of two per cent. alum of the weight of the goods, starting cold or tepid, and only boiling for quarter to half hour when the dyestuff has nearly been absorbed.

Although Naphtindone dyeings fixed with alum are not quite equal with regard to fastness to light to those dyed on sumac and antimony mordant, the application of Naphtindone B B for topping purposes promises to become of great importance, its fastness to light being at least as good as that of the blues used at present for topping.

The advantage which Naphtindone B B possesses for topping purposes consists in its covering much better than similar blues, which renders it possible to produce deep coppery shades on comparatively light Indigo bottoms and also very bright and cheap dark blues on a bottom of Diamine Colors.

The Diamine Colors which are especially well adapted for this purpose are Diamine Violet N and Diamine Black B II dyed by themselves or in mixtures according to the desired shades.

KERR WATER MOTORS

1/8 TO 20 HORSE POWER.



Noiseless Running; Require No Attention, operated with water at a pressure of 30 pounds and upwards.

RELIABLE intending purchasers can have our Motors on trial by writing us, stating water pressure available, power required and class of work to be done.

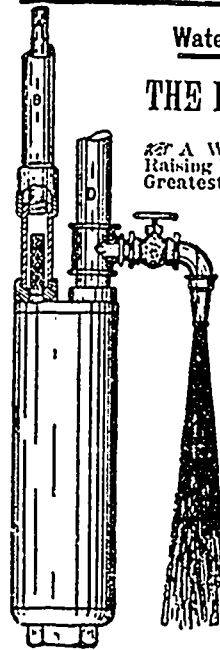
Our Motors are sold on their merits. Our prices are low. Write us. Enquiries solicited and cheerfully answered.

Kerr Water Motor Co.,
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Water for Country Use

THE DOMESTIC PUMP

A Wonderful Invention for Raising Water. The Windmill's Greatest Rival.



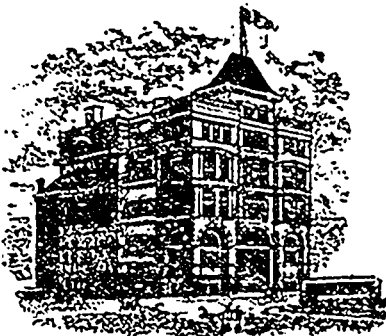
Used with our New Water Supply System for Country Homes, Hotels, Summer Resorts, also for Irrigation, Railroad Tanks, Stock Yards and Factories. THIS SYSTEM Supplies the Conveniences, Comforts and Luxuries of the City for every Country Home.

General Agents wanted for every State. Send for Descriptive Circular.

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RATES \$1.50 and \$2 PER DAY



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Opposite entrance to Union Station.
CHARLES A. CAMPBELL, Proprietor

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HAVE the following spaces to let, including steam power and use of railway sidings, which run directly into the premises:—

THREE STORIES AND BASEMENT, 20x60, suitable for machine shop or Bicycle factory. The machinery now on the premises, consisting of lathes, drills, planer, etc., would be sold to lessee if desired.

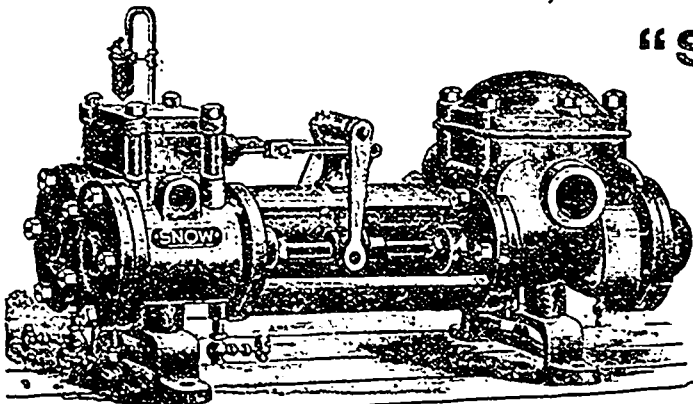
40x80 BASEMENT AND GROUND Floor Space only, with power.

60x120 PLANING MILL PROPERTTY, with full set of machinery. These premises were formerly occupied by Galt & Co.

For further particulars apply to N. V. KUHLMAN, on the premises, or at 71 Freehold Building, Toronto.

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“SNOW”

DUPLIX
STEAM
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EVERY SERVICE

Iron Tools, Wood-Working Machinery

STEAM ENGINES, BOILERS OF EVERY TYPE, SAW MILL MACHINERY, ETC.

CANADA MACHINERY AGENCY, W. H. NOLAN, Manager
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George White Fraser

C.E., D.T.S., A.Am. Inst. Elec., Eng.

CONSULTING ELECTRICAL ENGINEER

Electric Railways and Electric Light Construction Superintended.

18 IMPERIAL LOAN BUILDING
TORONTO

F. H. MASON, F.G.S., Consulting Chemist and Metallurgist
Analytical Chemist and Assayer, may be consulted on all matters pertaining to Chemical Technology and Metallurgy. Analyses of Alloys, Metals and Pigments, Mineral Water, Waters for economic and boiler purposes, and all kinds of chemical products and by-products Assays of all kinds of ores. The treatment of refractory gold ores and concentrates a specialty. Laboratory, Queen's Building, HOLLIS STREET, HALIFAX, N.S.

The threads in linon piece goods dyed first with these Diamine Colors and topped with Naphtindono BB are well penetrated.

Methylindono B and R are dyed in the usual manner on cotton mordanted with tannin and tartar emetic. They give level dyeings more easily than Naphtindono BB and are for this reason as mentioned before better adapted for the production of light Indigo shades.

The fastness to washing of these colors is as good as that of Naphtindono BB.

Their fastness to light is excellent; especially Methylindono B is very near to Indigo in light shades and surpasses Naphtindono BB.

For topping purposes they are not as suitable as Naphtindono BB.

Mr. Wm. T. Bonner, resident manager at Montreal, for the Babcock & Wilcox Co's Canadian business for nearly two years past, will remove to Atlanta, Ga. after closing up the Montreal office, having been appointed manager for the same Company's South Eastern territory. Although this district comprises but six States, North Carolina, Tennessee, South Carolina, Georgia, Alabama and Florida, the total area of which is but little larger than the Province of Quebec, the population is double that of the entire Dominion of Canada.

MACHINERY AND SUPPLIES WANTED.

If any subscriber to THE CANADIAN MANUFACTURER who may desire to purchase any machinery or supplies whatever, and so inform us, we will publish the fact in a conspicuous manner, and will make no charge therefor. These wants will be stated similar to the following:—

WANTED.

SITUATION as foreman or leading dyer by a Scotsman, 25 years' practice. Dress goods, tweeds, flannels, hosiery, ribbons, laces and garments. Dyeing and cleaning the latter preferred. Address SCOT, care of The Canadian Manufacturer.

A WOOD Pulp Mill Site for Sale. One of the most eligibly located in Canada. Easily accessible by both railway and water. Virgin spruce timber limits. Unlimited water power. Saw mill of 60,000 feet daily capacity in operation. Doubtless the Government that will be returned to power next week will place an export duty on pulp wood. Splendid chance for a profitable investment. For further particulars write W. R. H., care of Canadian Manufacturer.

WANTED—Address of parties who make machinery for the manufacture of horse shoes. Address G. P. T., care Canadian Manufacturer.

Wm. KENNEDY & SONS, OWEN SOUND, ONT.

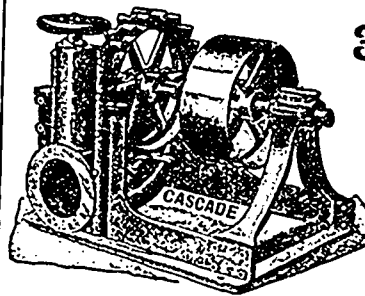
MANUFACTURERS OF HIGH-CLASS

WATER WHEELS,
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... PROPELLER WHEELS AND MARINE REPAIRS A SPECIALTY....

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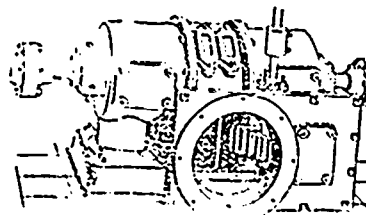
NEW IMPROVED
STANDARD TURBINE

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One Type of Horizontal.

Built in 17 Standard Sizes and 27 Special Sizes, making a range of 44 different wheels in vertical and horizontal cases.

We solicit correspondence from those interested in developing or improving water power.

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J. C. WILSON & CO., Glenora, Ont.

CANADIAN PATENTS.

The following patents have been issued from the Canadian Patent Office, from March 12th to April 14th, 1896.

Information regarding any of these patents may be had on application as follows:—

Fetherstonhaugh & Co., Bank of Commerce Building, Toronto.

Ridout & Maybee, 103 Bay Street, Toronto.

C. H. Riches, Canada Life Building, Toronto.

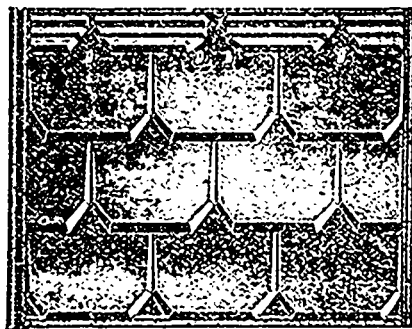
A. Harvey, Central Chambers, Ottawa.

Copies of any American patents can be procured from either of these attorneys for the sum of twenty-five cents each.

51,643 Apparatus for cooling air etc., Thos. B. Lightfoot, 35 Queen Victoria St., London, Eng.

51,644 Rotary engine or pump, Henry Sexton, Neosho, Mo.

Eastlake Steel Shingles



Beware of Worthless Imitations.

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Ripans Tabules cure bad breath.
Ripans Tabules cure biliousness.
Ripans Tabules: one gives relief.
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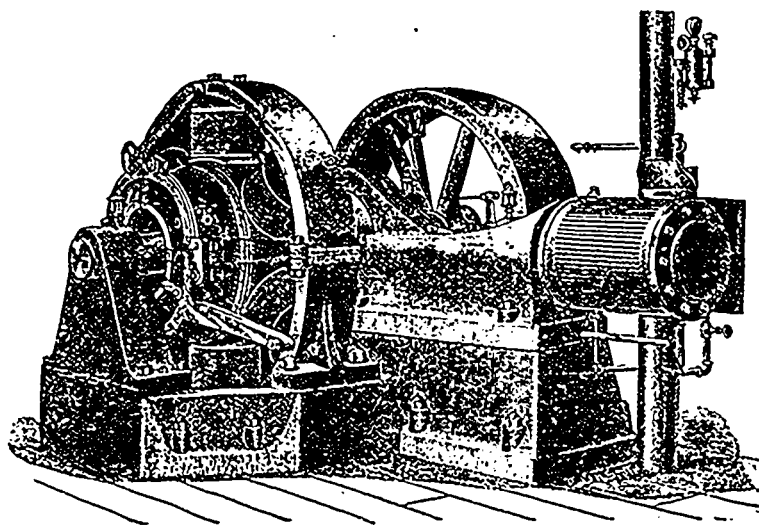
51,645 Hydraulic ram, George Yellott, Towson, Md.
51,646 Piano stool, Wellington Shupe, Galt, Ont.
51,647 Shaft tug, Jefferson P. Crews, Denver, Colo.
51,648 Wind mill, Eli J. Schrock, Goshen, Ind.
51,649 Telephone transmitter, Walter L. Wilhelm, Buffalo, N. Y.
51,650 Baling press, John J. Burnshire, Dayton, Va.
51,651 Ironing board, Granville H. Ashworth, Sedalia, Mo.

51,652 Rock drill casing, Jos. W. Cameron, Vancouver, B. C.
51,653 Car coupler, Joseph E. Forsyth, Chicago, Ill.
51,654 Device to prevent railroad rails from spreading, Calvin Keeler and Geo. Simmons, Hobart, N. Y.
51,655 Means of repairing pneumatic tires, Chris. W. Youngman, Chicago, Ill.
51,656 Electric heater, The Consolidated Car Heating Co., Albany, N. Y.
51,657 Composition for protecting leather enamel, The Patent Leather Protector Co., New York.

ROBB-ARMSTRONG ENGINES.

Simple, Tandem and Cross Compound.

Correct Design

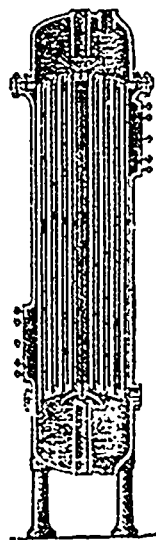


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We highly recommend the Robb-Armstrong Engine for direct connection to Dynamo.

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William McKay, Seaforth, Ont., Traveller.



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415 Board of Trade Building, Montreal, Quebec
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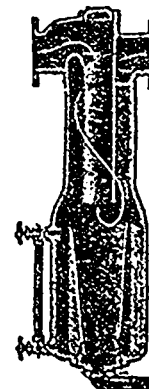
Heats Feedwater to nearly the boiling point by exhaust steam.

ECONOMICAL, EFFICIENT, DURABLE
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All Sizes—50 to 5,000 h.p.

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Separates entrained water from steam and ensures delivery of DRY STEAM to Engine. Doing away with that fruitful cause of accidents—
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- 51,658 Clamp for holding doors etc., George Spires, Stephen Mallery, Wm. Fink and Wm. Gilson, Lake Odessa, Mich.
- 51,659 Tobautograph, Elisha Gray, Highland Park, Ill.
- 51,660 Tobautograph, Elisha Gray, Highland Park, Ill.

- 51,661 Nut lock, Wm. Halletts, Truro, N. S.
- 51,663 Axle nut, David Spicer, Exeter, Ont.
- 51,664 Dish washer, Chas. Allen, Woodstock, Ont.
- 51,665 Table for finding wages, Chas. E. Stewart, Woodstock, Ont.

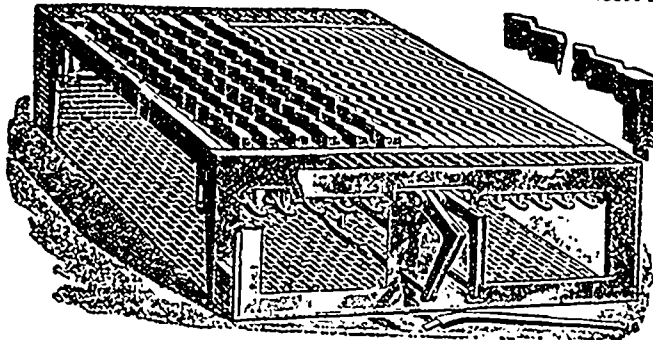
- 51,666 Ink eraser, Fred. C. Zinko, Brooklyn, N. Y.
- 51,667 Mud guard for carriages, Stanley Munday, Naseby, Wooleys, Rugby, Eng.
- 51,668 Apparatus for raising liquids, Jules Lemichel, 52 rue Lourmel, Paris, France.
- 51,669 Machine for destroying weeds, Robt. S. W. Corbett, Springfield, Mass.
- 51,670 Tidal motor, Johann F. R. Knobloch, Hamburg, Emsbittel, Germany.
- 51,671 Label for bottles, Arthur S. Jackson, Montreal
- 51,672 Apparatus for treating solid and pasty substances with gases, Ludwig Mond, 20 Avenue Road, Regents Park, Eng.
- 51,673 Telephone transmitter, John J. Carty, New York, N. Y.
- 51,674 Device to prevent dust escaping from hot air furnaces, Aldo Doro, Buckingham, Que.
- 51,675 Apparatus for toe fastening and loosening of ropes, Axel Sabroe, Hadersleben, Germany.
- 51,676 Method of increasing the flow of oil wells, John W. Van Dyke and Herman Frasch, Lima, Ohio.
- 51,677 Box making machine, Abner Carey, Cairo, Ill.
- 51,678 Tobacco moistener, Melchior Brazeau, Montreal, Que.
- 51,679 Feed water heater and purifier for boilers, Wm B Braucher and Arthur C. Braucher, Danville, Ill.

Volcanic Patent Shaking Grate

MANUFACTURED BY

THE GURNEY FOUNDRY CO. (Ltd.), TORONTO

Tests of Volcanic Patent Shaking Grates under Boilers of Hamilton Street Railway



February 27, 1896.
EVAPORATION TEST.

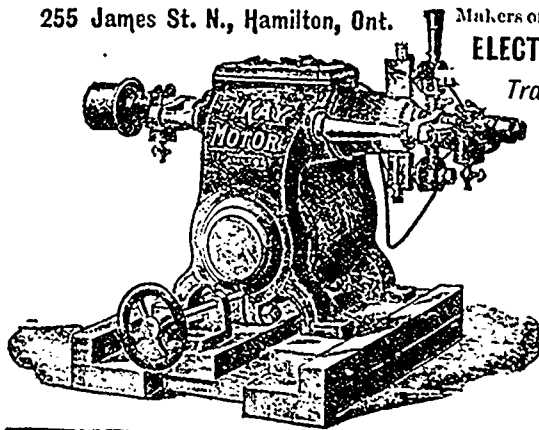
Hamilton Street Railway Co.'s Power House.
Using Eight Sets of Grates, Volcanic Grate Bars, size 16 square feet. Test fourteen hours. Fuel consumed 1,000 lbs. Water consumed 32,262.1 lbs. Water evaporated, per one pound coal, equal 7.85 lbs. Common Grate Bars, size 16 square feet. Test 14 hours. Fuel consumed 3,500 lbs. Water consumed 26,352.9 lbs. Water evaporated, per one pound coal, equal 6.57 lbs. Saving in favor of Volcanic Grate Bars equal 1,108 lbs. equal 16.4 per cent. increase in evaporation; equal 14 p. c. saving in coal. Temperature of Feed Water 131 degrees. Water measured by an Empire Hot Water Meter. Coal used, one-half each hard and soft coal screenings. Both Grates fired by own fireman.
THOMAS BUCHANAN, Chief Engineer Hamilton Street Railway.

THE GURNEY FOUNDRY CO., Limited, TORONTO

Kay Electric Manufacturing Co.

255 James St. N., Hamilton, Ont.

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ELECTRIC MOTORS

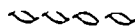
Transformers

DYNAMOS

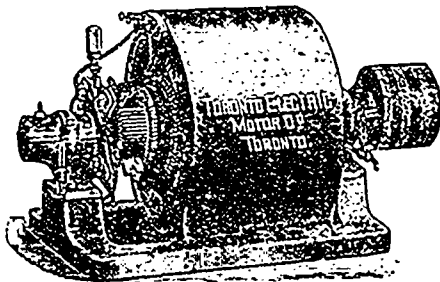
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In sizes down to 6 h.p. and speed down to 125 revolutions per minute.

At this speed it is especially adapted for direct connection. We have over 300 motors running in Toronto.

Our Sales in Toronto for the past three years exceed the combined sales of all others.

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- 51,680 Protection tire or cover for pneumatic and other elastic tires, Friedrich H. Fischer, Colln, Saxony, Germany.
- 51,681 Device for feeding salt to stock, Wm. F. Lawler, Anderson, Ind.
- 51,682 Combined driving gear and brake, Jas. T. Bustin, St. John, N. B.
- 51,683 Hopper for corn elevators, John W. Stone, Morrill, Iowa.
- 51,684 Jug bail, Albert P. Woodward, Little Rock, Ark.
- 51,685 Awning shutter or blind, Andrew Schmitt, Brooklyn, N. Y.
- 51,686 Building brick, Oscar Kleinbergor, St. Louis, Mo.
- 51,687 Switch for electric heaters, The H. W. Johns Mfg. Co., New York.

- 51,688 Process of the electrolytic production of zinc, Messrs. Siemens & Halske, Berlin, Germany.
- 51,689 Writing telegraph, Thos. Ewing, jr., Yonkers, N.Y.
- 51,690 Grating machine, Reuben J. Pannbaker, Preston, Ont.
- 51,691 Globe cleaner for incandescent electric lights, Henry Emmelen, Vancouver, B.C.
- 51,692 Means for removing paraffin, etc., Joseph S. Beeman, Riversdale Road, Camberwell, Victoria.
- 51,693 Self-locking nut, Thos. L. Henderson, Birmingham, Ala.
- 51,694 Brake for revolving machinery, The General Electric Co., Schenectady, N.Y.

- 51,695 Apparatus for making fabrics impregnated with celluloid or varnish or the like, The Publishing, Advertising and Trading Syndicate, London, Eng.
- 51,696 Electric motor, The Canadian General Electric Co., Toronto.
- 51,697 Controller for electric motors, The Canadian General Electric Co., Toronto, Ont.
- 51,698 Multiphase current motor, The Canadian General Electric Co., Toronto.
- 51,699 Steel sleigh, Robert Hill, Portage la Prairie, Man.
- 51,700 Water closet, John H. Hamilton, Detroit, Mich.
- 51,701 Brick veneer, George S. Balsley, Detroit, Mich.
- 51,702 Road cart, Edward Homming, Toronto, Ont.
- 51,703 Furnace for smelting, etc., ores and mattes, James A. McArthur, Copper Cliff, Ont.
- 51,704 Car coupler, John M. Gifford, Cayuga, Ont.
- 51,705 Composition of matter for removing paint, Charles S. Bailey, St. Augustine, Fla.
- 51,706 Combination lock, George W. Hill, New Berlin, Ohio.
- 51,707 Grain dampeners, Wm. H. Hill and Geo. G. Arthur, Cleveland, Ohio.
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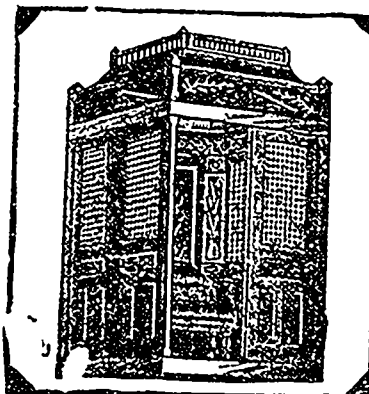
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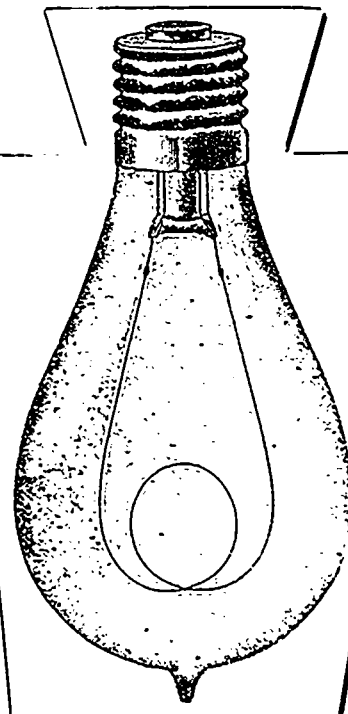
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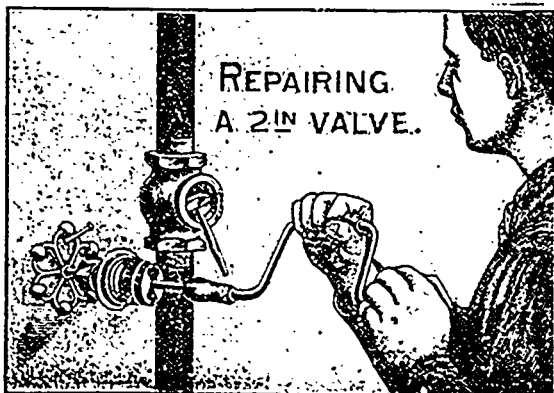
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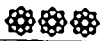
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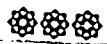
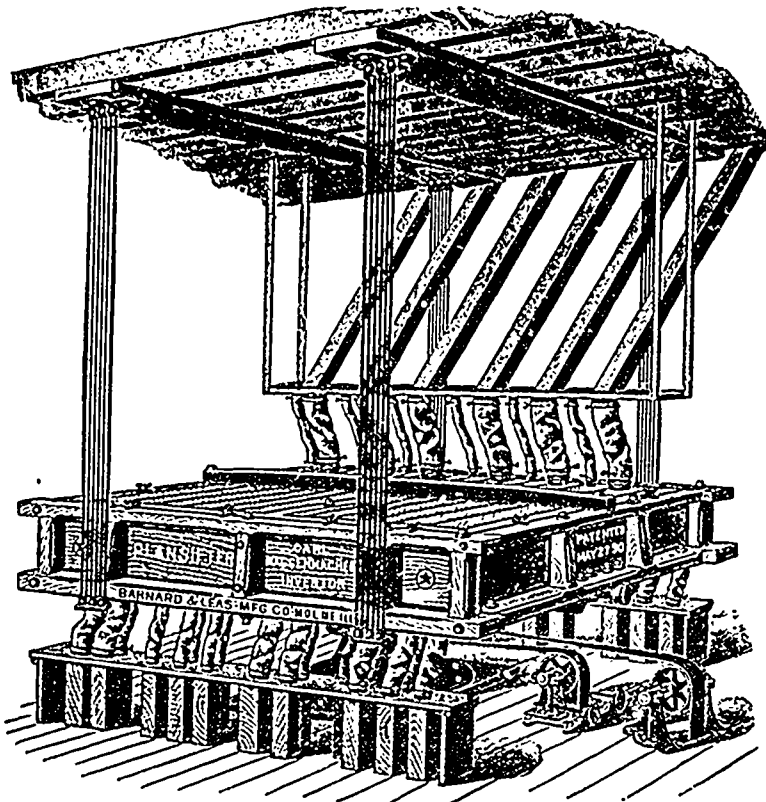
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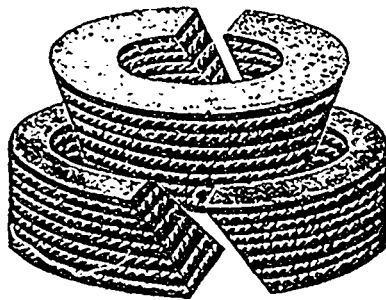
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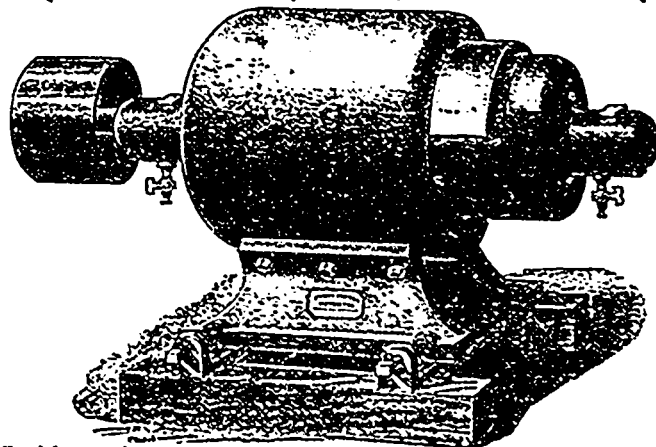
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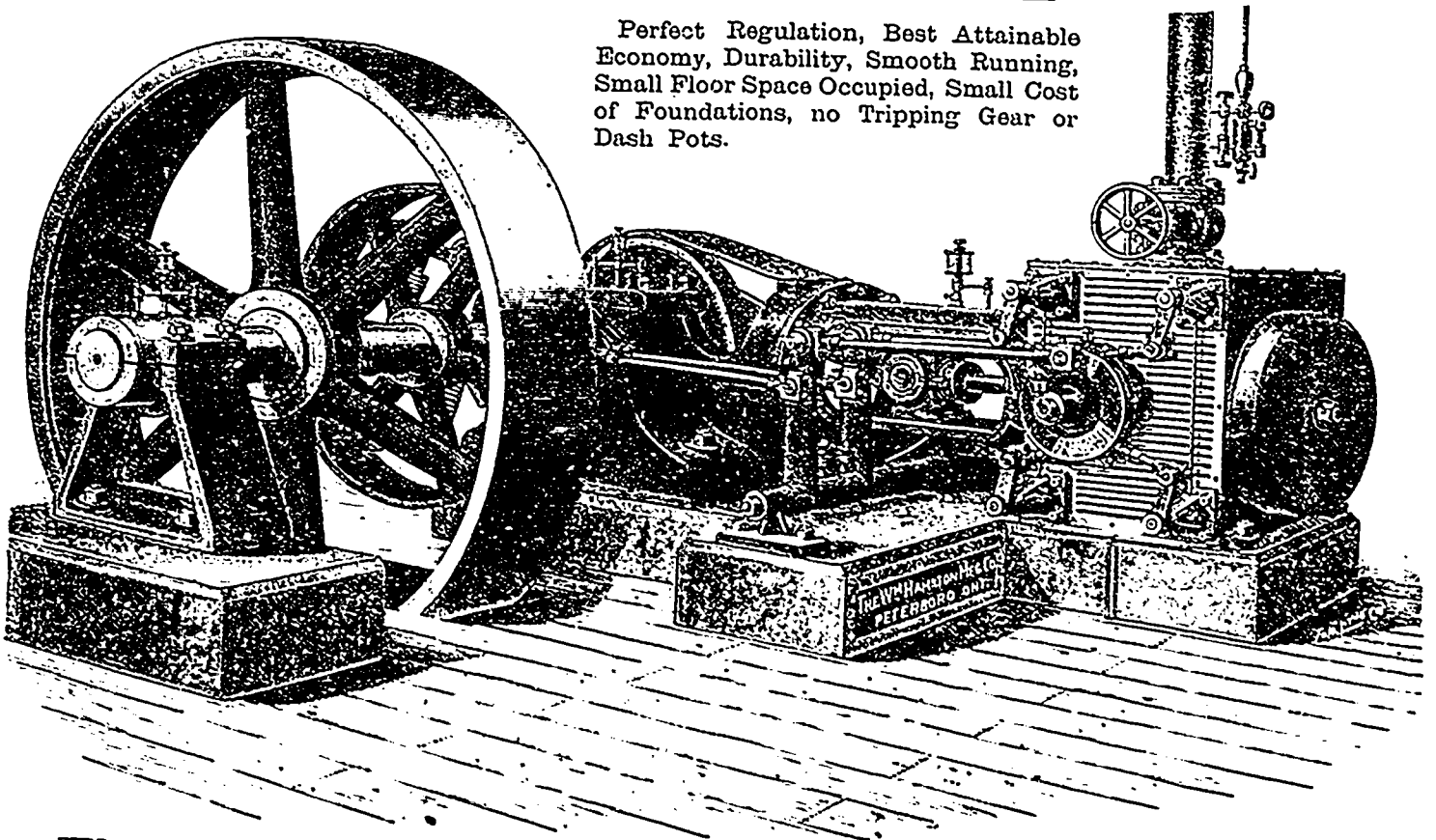
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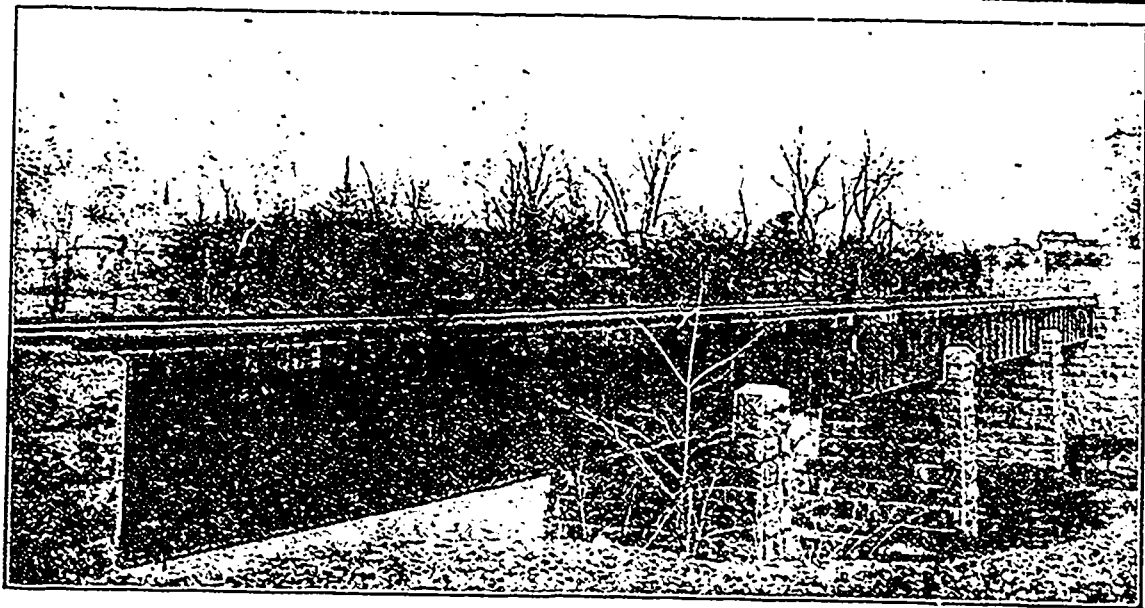
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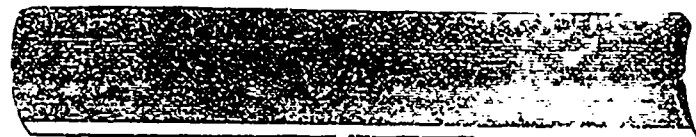
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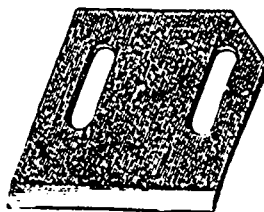


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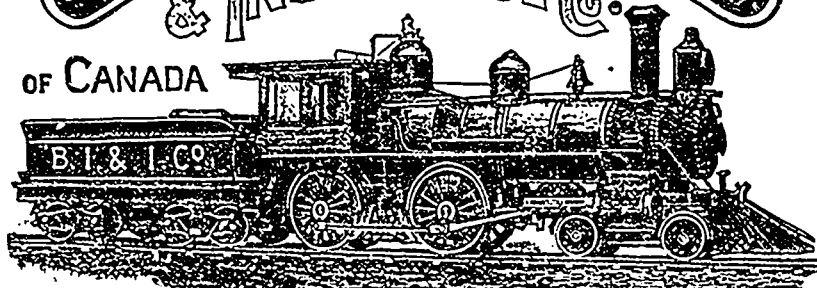
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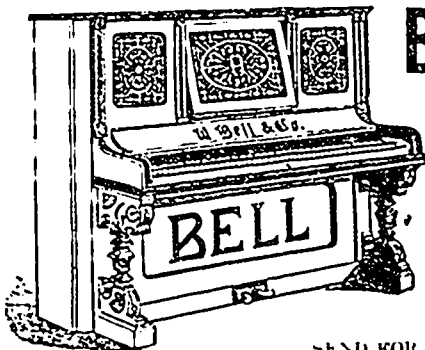
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