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DEVOTE TO THE MANUFACTURING INTEREST OF THE DOMINION

Vol. 32.

TORONTO, FEBRUARY 7, 1896.

No. 3.

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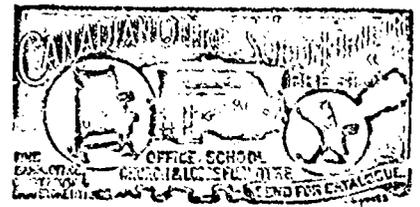
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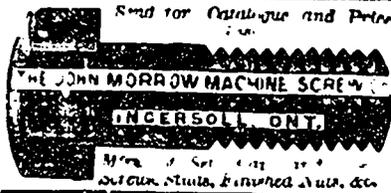
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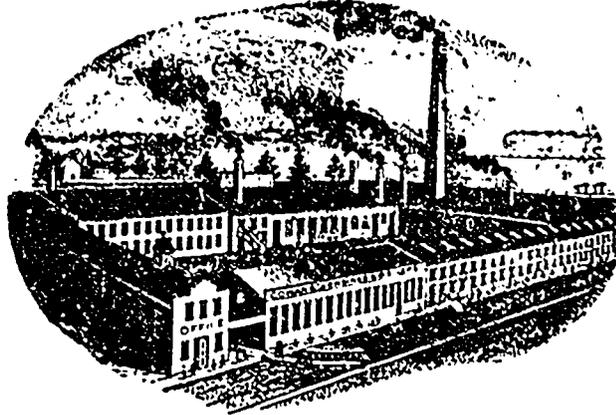
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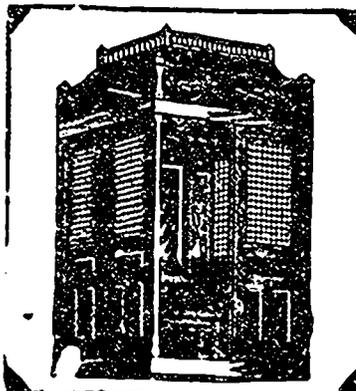
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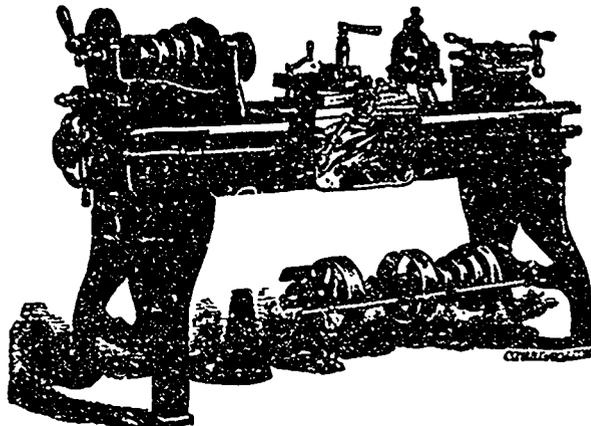
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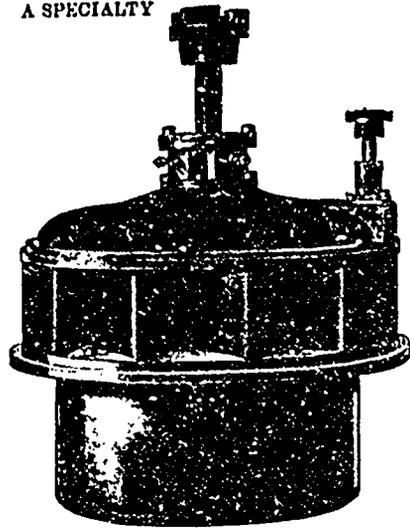
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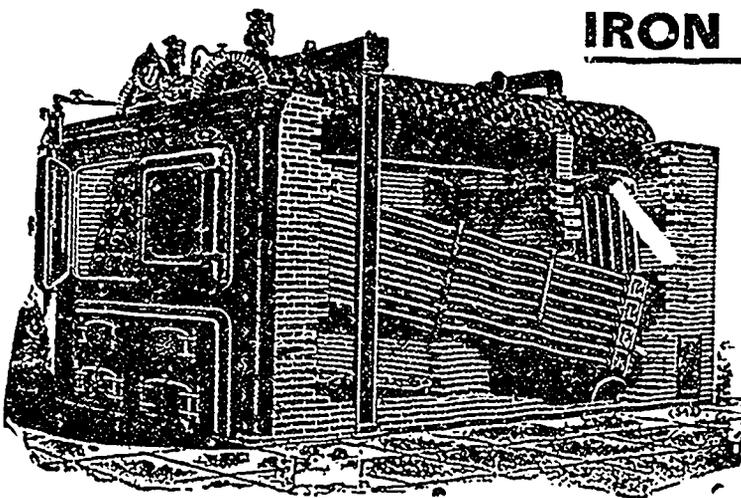
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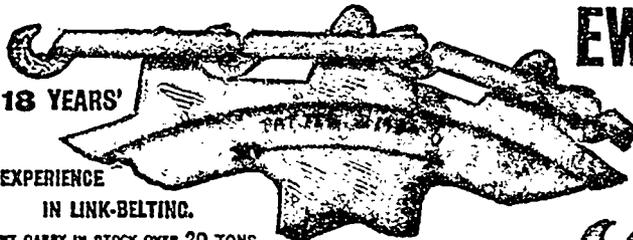
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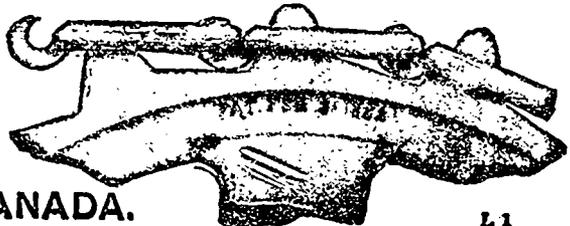
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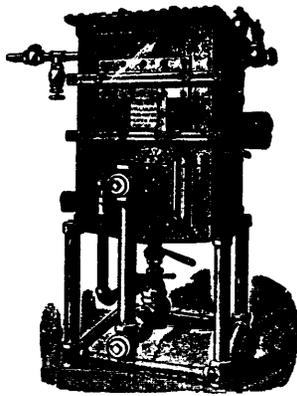
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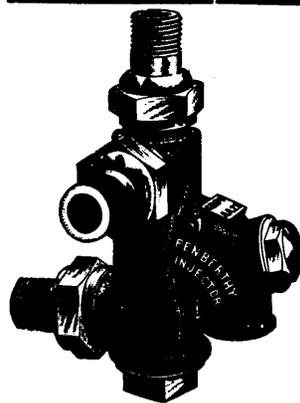
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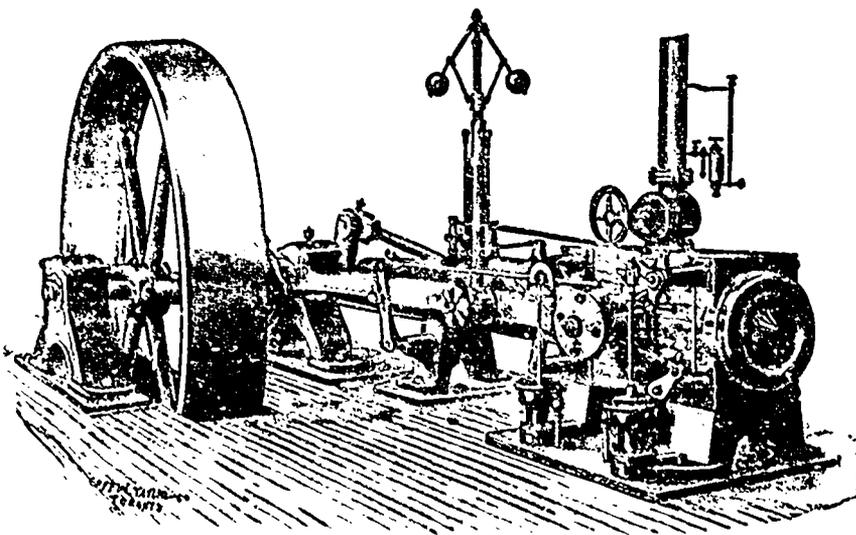
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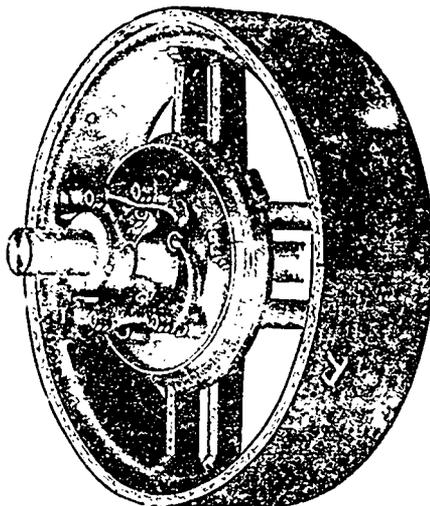
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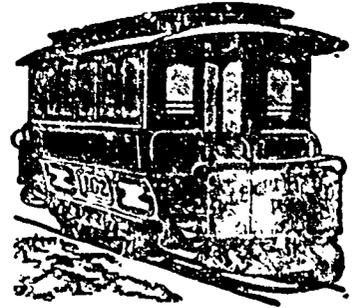
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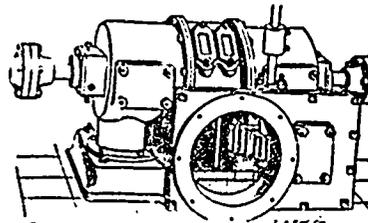
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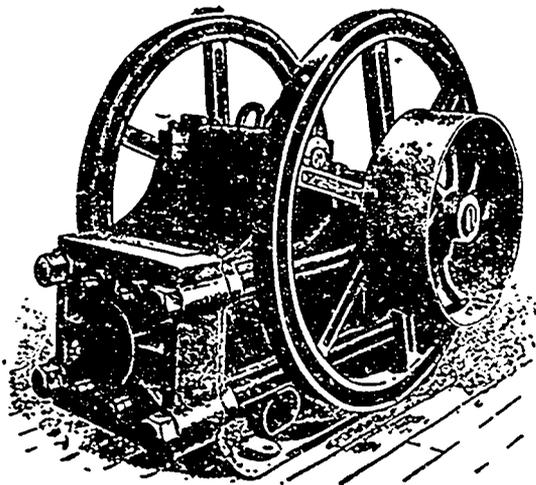
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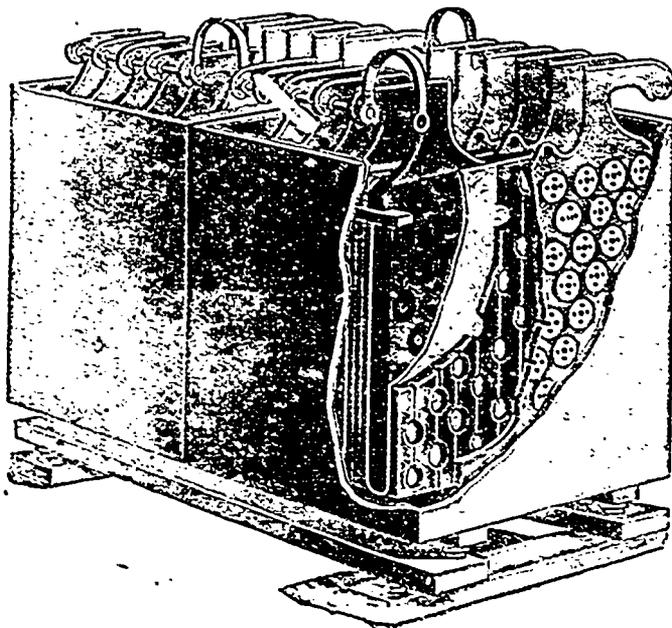
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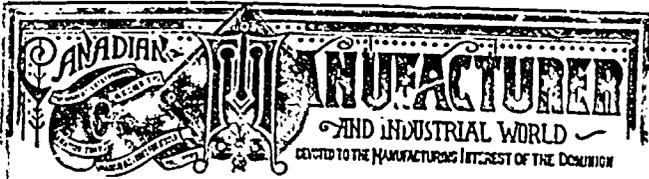
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ESTABLISHED IN 1880.

PUBLISHED ON THE FIRST AND THIRD FRIDAYS OF EACH MONTH

J. J. CASSIDEY, Editor

SUBSCRIPTION - - \$1.00 per year.
ADVERTISING RATES SENT ON APPLICATION.

The Canadian Manufacturer Publishing Company, Ltd.
Room 66 Canada Life Building, King St. W., Toronto.

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J. C. GARDNER, - - Manager and Secretary.

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PRINCIPAL GRANT'S FREE TRADE CORNUCOPIA.

Principal Grant, in the latest of his series of articles on "The Cost and Profit of Liberty," takes strong ground in favor of lowering the duties on imports from Britain. "Think," he says, "of Montreal and Toronto under free trade. They would be the emporia and distributing centres of the continent, and the people of the United States would do their own smuggling! Congress would rage, but every weapon it used would kick, except reciprocal free trade, and that instead of a weapon would be a cornucopia big enough for the continent." He would retain the present duties against all other countries that impose duties on our great natural products for

three reasons "Beginning with our chief customer would be a big enough experiment to start with, because it is reasonable to trade as freely as possible with those who trade freely with you, and the goal in view is inter-Imperial free trade."

Other countries, he says, would have no right to be annoyed. There would be no retaliation, and nothing that could be called discrimination. The present "comparatively low" duties would remain, with a clause stating that they would be reduced one-half in favor of all countries admitting freely the main products of Canada. Should the United States, he says, desire to be included, so much the better.

Dr. Grant says that if we allowed trade to flow in its natural channels we should be really free. We quote:—

Now, we allow a few gentlemen in Ottawa, who would not be trusted with the management of any one of our great industrial establishments, to arrange and disarrange the whole business of five millions of intelligent, enterprising people. This would be incredible were it not a fact. These gentlemen are intrusted with the power of 'binding and loosing on earth' to an extent which Hildebrand never dreamed of. They can make favored individuals, companies or rings wealthy by inserting a clause, and impoverish them by striking it out, and this is actually boasted of as a patent for making everybody rich.

It is to be noticed that when a free trader advances an argument favorable to preferential tariff within the British Empire his ideas incline not to preferential tariff but to free trade. Dr. Grant loses sight of the necessity of Canada for revenue, and that the only feasible method of obtaining that revenue is by the imposition of import duties, and in ignoring this fact he more than keeps step with Mr. Laurier and Sir Richard Cartwright, who would impose import duties for revenue only, and divested of every feature of protection—he leads his leaders and here boldly declares for free trade pure and simple. Why is it that these gentlemen fail to see that Canada can continue to enforce a protective tariff and still give tariff preference to British trade? What is there to prevent? The people of Canada have time and again declared for protection, but while protection they will have, it is no fault of theirs that there is no preferential trade arrangement existing with the Mother Country. They understand that protection is necessary for the welfare of the country. They know that if we are to be anything more than an agricultural community, we must have protection. They must, to be prosperous, have diversified industries, and to have them they must have protection. If tall chimneys are to be conspicuous objects in the Canadian landscape; if we are to have factories, and foundries, and workshops, giving employment to thousands of Canadian workmen, they are to be inaugurated under the guarantee of tariff protection against similar concerns in other countries, and even then perpetuity and success would depend upon the continuance of protection. Dr. Grant has always been aware of these facts, and while he may be a zealous advocate of closer trade relations with the Mother Country, he is not in advance of the country, including the most sanguine advocates of protection, in that respect. There is no incompatibility or lack of harmony in advocating protection and also preferential trade arrangements with Britain, but it should be understood that inasmuch as preferential trade involves a mutual arrangement between Canada and Britain, while Canada stands ready and willing to enter into such an arrangement at very short notice, it is necessary for Britain to

somewhat change her fiscal policy to make the arrangement possible.

Events are rapidly shaping themselves in this direction. It is true that the trade of Britain with her colonies and possessions is somewhat less than with the rest of the world, but it is also true that her per capita trade with those colonies and possessions is much larger than her per capita trade with the rest of the world. At this time Britain finds herself confronted with the hostility, open or covert, of many nations, and if this hostility should break out into violence, as it is liable to do at any time, she would find that her very existence, perhaps, depended upon the material and moral support of her colonial possessions. The question remains with British statesmen to determine whether her markets are to be as free and open to unfriendly foreign nations as to the great Empire upon which the sun never sets, and which delights to exist under the British flag.

Dr. Grant invites Canada to think his free trade ideas over, and as a pointer in the direction in which this thinking should go, he says: "Think of Montreal and Toronto under free trade. They would be the emporia and distributing centres of the Continent." In other words he would like to see the two principal cities of Canada cease to be the distributing centres of the manufacturing industries of Canada in order to become the distributors of the manufactured products of other countries. He loses sight of the fact that even now in many lines of manufactures our supplies come more largely from the United States than from Britain, and suggests that if we love Britain we should give American manufacturers free access to the Canadian market, to the greater exclusion of British manufacturers. And a noble and morally elevating reason for desiring this condition of things, according to Dr. Grant, is, that "the people of the United States would do their own smuggling."

Dr. Grant desires free trade for Canada for the following reasons as set forth in his article:—Montreal and Toronto would be the emporia and distributing centres of the Continent for the manufactures of other countries; the United States would become a nation of smugglers; reciprocal free trade would be a cornucopia for Canada big enough for a continent; other countries would have no right to be annoyed at our having committed political suicide; there would be no retaliation on the part of the United States, although that country could, and probably would declare and enforce a policy of non-intercourse. His slurs and flings at "a few gentlemen in Ottawa," meaning the Dominion Government, and the House of Commons, the immediate representatives of the people, may be accepted at their value. It may be confidently predicted, however, that protection will not go, that free trade will not come, and that a federated British Empire, a corner stone of which will be preferential trade within the Empire, is within measurable distance.

UPHOLDING RIGHTEOUSNESS AND EQUITY.

A paragraph from Secretary Olney's letter to Ambassador Bayard is as follows:—

To-day the United States is practically sovereign on this continent, and its fiat is law upon the subjects to which it confines its interposition. Why? It is not, because of the pure friendship or good will felt for it. It is not simply by reason of its high character as a civilized State, nor because wisdom and justice and equity are the invariable character-

istics of the dealings of the United States. It is because, in addition to all other grounds, its infinite resources, combined with its isolated position, render it master of the situation and practically invulnerable as against any or all other powers.

Regarding which our esteemed contemporary, The Manufacturer, of Philadelphia, says that this is an utterance that confers honor upon the man who penned it, and that it is "the American theory." It says:—

We are masters here, because this is our part of the world and we are strong enough to maintain mastery, not that we may extend our borders, or fill our pockets, or swell our population; but that we may protect the weak, and keep flying the flag of liberty, and uphold righteousness and equity. Having irresistible power, we have also a sacred calling to use it that justice may reign, and the piratical nations of Europe, used to swooping over the earth in search of weak victims, now understand, if they did not understand before, that the door to this hemisphere is permanently barred to them.

We have no quarrel with the spread-eagleism of our neighbors, but they seem to lose sight of the fact that while the United States is their part of the world the British flag waves unchallenged over one-third of the North American continent, and that therefore this part of this hemisphere is not barred to the Union Jack. But it is the absurd inconsistency of our contemporary that is excessively amusing. The idea that the United States government protects the weak, or keeps flying the flag of liberty, or upholds righteousness and equity, or that having "irresistible" power it is used to the end that justice may reign, is just too ridiculous, absurd and untruthful to be considered in any other light than an hallucination. More than thirty years have passed since human slavery, except as a punishment for crime, was declared forever abolished; the Confederate banner, the emblem of human slavery in an enlightened nineteenth century community, has long since been furled and embalmed in dust, and an amendment to the constitution of the United States, made at the time, declares that the color of a man's skin shall never be an obstacle to the enjoyment of any rights accorded to an American citizen, and yet there are not only neighborhoods, but large sections of the United States, including some of the most progressive states, where there is no more safety for the negro who offends a white man than there is for a lamb in the clutches of a wolf or hyena. There may be laws providing punishment for crime, and guarantees that every man accused of crime shall be confronted by his accusers, that he shall have the benefit of a fair trial by jury, and that he shall be considered innocent until he has been proven guilty; but who ever hears of the observance of any rights of a negro that a white man is bound to respect? To accuse an American citizen of a crime, if he be a negro, is to ensure the filling of his body with buckshot, or a short and futile death struggle at the end of a rope; and burning at the stake in the public squares in some localities is a favorite amusement with the chivalry, with front seats reserved for the ladies. And this in the great country The Manufacturer prates about being under the "flag of liberty," and a government that protects the weak, upholds righteousness and equity, and enforces justice with its "irresistible" power. Bah!

If a man's skin be black, as a citizen of the United States, residing in that country, his "rights" to life, liberty and the pursuit of happiness are of slight value as against the desire of the white citizen to despoil him thereof. If that man

with the black skin should, however, be a British subject, the valor of the white citizen takes counsel of his caution, for he knows that no injustice can be perpetrated in the United States upon a black man, being a British subject, than the perpetrator, or his government, will not have to atone for. Therefore a British subject, being a negro, is far safer in the United States than a colored American citizen. Does our contemporary forget the episode of New Orleans, where certain Italians were murdered by a mob of respectable American citizens, and how the fear of Italian battle ships forced the payment of a heavy indemnity? What indemnity would have been paid if the victims had been American citizens? Talk about upholding righteousness and equity! Ridiculous.

THE TORONTO WORLD AS A METALLURGIST.

A few days ago the Toronto World published the following editorial:

A Toronto firm yesterday received a cable from Germany asking for quotations on 200 tons of nickel matte. Kaiser William has had his eyes opened by the assembling of the English fleets and the departure of the flying squadron on its unknown mission. It is a well-known fact that three per cent. of nickel added to steel produces the strongest armor plate for war ships. The Kaiser evidently wants the best that is going and he consequently wires to Canada, which has larger quantities of nickel than any other country in the world. If the war scare is to keep on, Canada ought to profit extensively by supplying nickel to the belligerent nations of the world. If Germany requires our nickel, why should not also the other great powers? Canada ought to make an effort to extend her market for nickel, not only for armor plate, but for the manufacture of domestic utensils of all sorts. We trust that Canada will be able to supply Germany with this order, and that it will be the means of advertising our nickel all over the world.

This editorial was based upon a news item in the World of the same date which stated that the Toronto firm in question was "probably the largest in that line of business in Canada, and consequently accustomed to heavy orders; but, when Emperor William wired it for figures on 200 tons of nickel matte, half each of low and high grade, the head of the firm nearly expired." This "head of the firm" subsequently told the World reporter "we have never handled more than one ton of this material in our lives."

All of which is as funny as a circus. A high grade of nickel ore contains about five per cent. of nickel metal, say 100 pounds. To minimize the cost of transportation the ore is usually subjected to a roasting process, and then reduced to matte by smelting, which contains from sixteen to twenty per cent. of metal; and as there are no refineries in Canada for separating the pure metal from the matte, the article, matte, is usually shipped away as such. A ton of matte would contain probably 400 pounds, and the 200 tons required by the Germans would contain about forty tons of pure nickel, enough to nickelize perhaps some 1,200 or 1,500 tons of armor plates.

It is surprising that so intelligent a journal as the World should blunder so badly. There is no nickel smelting firm in Toronto, and a commercial transaction involving the sale of even 200 tons of matte would not be considered a very large transaction. It is not unusual for even a small furnace to produce as much as fifty or seventy-five tons of matte per day. It is very amusing indeed to be told, as we are by

the World, that the nickel contained in 200 tons of matte would be sufficient "to plaster a large number of battleships with the best coating known to modern engineers."

BRITISH AND AMERICAN TRADE.

The Bureau of Statistics of the United States Treasury Department, at the request of the Senate, has compiled a statement showing the merchandise trade of that country with Great Britain and her colonies and possessions during the last five years as follows:—

	U. S. Imports from	U. S. Exports to
United Kingdom.....	\$800,340,150	\$2,184,048,634
Bermuda.....	2,222,463	3,620,675
British Honduras.....	902,554	2,065,769
Dominion of Canada.....	179,184,682	237,760,759
Newfoundland and Labrador.....	2,103,627	7,492,483
British West Indies.....	87,556,530	42,230,435
British Guiana.....	21,021,262	9,913,067
British East Indies.....	110,194,324	18,410,214
Hong Kong.....	3,873,663	22,342,235
British Australia.....	30,635,988	49,471,244
British Africa.....	3,732,575	19,482,824
Other British dependencies—Aden, Falkland Islands, Malta, etc....	9,313,582	2,804,060
Totals.....	\$1,231,081,400	\$2,599,653,399

This is a yearly average of \$246,216,280 of imports from these countries, and of \$519,930,679 of exports to them. The United States exports to British countries are more than twice as great as its imports from them, and the British Empire is shown to be by far the best customer the United States has, and that the United States is also the best customer the Empire has.

Our esteemed, and usually fair and sensible contemporary, the Home Market Bulletin, of Boston, commenting upon these facts, thinks that a war between the United States and Great Britain would probably change the maps of the two countries. If the former succeeded in beating the latter, and, as it says, no American ever allows himself to think of the possibility of any other result, Canada and Bermuda would become the property of Uncle Sam, and the British West Indies also if the aforesaid Uncle Sam cared to take them. Of course such talk is of that particular style of spreadeagleism and bluster of which even sensible Americans, most of them, cannot divest themselves, even when discussing an event that the civilization of the age shudders to contemplate.

The economic results of such a war, as estimated by our contemporary, are also remarkable. It thinks that such a war would be but a temporary disadvantage to the United States, although not to the extent indicated by the figures above given, because the stoppage of importation would make the country more self-dependent, thus booming every kind of business. At the conclusion of the war, and at the renewal of commercial relations there would be less use for British imports, and a smaller surplus of national products for exports, because increased manufactures would more nearly supply the demand, and the people engaged in them would probably consume the surplus of the fruits of the earth.

During a term of five years of average prosperity, and under a fiscal system without which the United States could never have become a manufacturing nation, and during which by means of McKinleyism, reciprocity arrangements with Cuba and the South American republics, and every effort known to Yankee

ingenuity to build up a foreign trade, dependence was had upon British trade alone for the disposal of more than \$2,500,000,000 worth of what our contemporary calls "natural products," and "surplus of the fruits of the earth," otherwise farm products, more than \$2,000,000,000 of which went to the United Kingdom alone. It is quite reasonable to suppose that at the conclusion of such a war as is alluded to the United States would present a lessened demand for British products, but this would arise, probably, more from an inability to purchase them than because of the superior and cheaper facilities for producing such goods at home. Before commercial prosperity could again gladden the land the waste of war would have to be made good. Seacoast cities that had been hammered into shapeless masses of ruins by British guns would have to be rebuilt, lines of communication restored, and the too painful evidences of the strife removed before the manufacturing industries of the country could possibly be in a most prosperous and productive condition, giving employment to the greatest possible number of working people. Labor thus employed would not be producing merchandise for export, neither would it be for the enrichment of the country—it would only be expended in restoring the waste places.

Looking at the matter solely from a business standpoint our contemporary sees and acknowledges that it is of the utmost importance that peace be preserved between the two countries, and it thinks that the interests and prosperity of the United States can be increased by an improved tariff far better than by war. "We can and should," it says, "import from these (British) countries less goods that compete with our own, and this will not hinder us from exporting to them more of any surplus that we may have if it is either better or cheaper than the costliest which they continually take from other countries." Of course this sort of commercial independence, if it could be acquired, would be a very nice thing to have, and as a judiciously framed protective tariff would work in that direction no doubt important advances would be made thitherward, but we suggest the possibility of Imperial Federation, or a system of inter-Imperial trade relations that would give all British products some tariff advantages in all British ports not possessed by the rest of the world. Our American friends, chafing under the facts set forth in the above table, showing that their country imports an average of \$140,000,000 worth of manufactured products from Great Britain annually, most of which they think they could and should make at home, impose rates of duties thereon which may be described by the term McKinleyism. At the same time they find that the United Kingdom is the only market in which they can sell their surplus of the fruits of the earth—their agricultural products—to the value of more than \$400,000,000 per year, finding access into that great market without the payment of any duty whatever.

It should be remembered that whatever the United States produces for sale in Britain may also be produced in some part of the British Empire. Already the per capita trade of Britain with the Empire is greater than with the rest of the world, and the British people are fast finding out that the friendship of even the greatest nations is ephemeral and liable to be interrupted at short notices and for insufficient cause, and that not only the welfare of the Kingdom but of the whole Empire could and must be conserved by closer trade relations embracing and including every country over which floats the British flag.

War may have its victories, but the solidification of the British Empire, preferential duties within the Empire, and closer trade relations between all the countries that make that Empire would be a victory for peace more enduring than brass.

NEWSPAPER PERSPICACITY.

To Canadian manufacturers, to the advocates and upholders of the National Policy, and to the country generally, perhaps the most important feature of Minister Foster's financial statement made in his budget speech last week was his reference to the changes that were made in the tariff in 1894. That statement showed that the duty upon but a very few articles had been increased, that it had been lowered upon a very large number of articles, and that upon a large majority of articles no change had been made. The changes that were made were of supreme interest, showing that, wisely or unwisely, the tendency was to depart from whatever symmetry may have previously characterizes the tariff. As is well known, some of the changes have resulted in damage—perhaps it might properly be called disaster, to some of our manufacturing interests, without any possible counter advantage in any direction; but we have been unable to learn from any of the reports of Mr. Foster's speech, published in the daily papers, that that gentleman recognized in any manner, or even alluded to the effect the tariff changes were having upon the manufacturing industries of the country, or that he proposed to remedy the evil that had been done. The sparring, cross firing, repartee, sarcasm and all that sort of thing that usually accompanies debate in the House of Commons, tiresome and unprofitable as such stuff always is, was reported ad nauseam in the daily papers, but what Mr. Foster said regarding tariff changes—information of the utmost importance to the whole country—was not reported, the Mail and Empire and other leading papers informing their readers that the statement occupied several minutes in reading, and would occupy too much space to be given in their reports. The incident is an indication of the perspicacity of some of our intelligent daily newspapers.

EDITORIAL NOTES.

Mr. Taylor has introduced a bill into the House of Commons to prohibit the importation and immigration of foreigners and aliens under contract or agreement to perform labor in Canada. The bill was practically the same as that introduced by him last year, and was based on the principle of the Act in the United States which prevented the importation of Canadian labor.

Sheriff Hayes, of Lake County, Ind., has purchased two full-blooded man-eating bloodhounds, to be used to trail criminals.—Mail and Empire.

Very interesting, and quite correct—with exceptions. There is no such animal as a man-eating bloodhound. It would be quite as correct to speak of spaniels, pugs, terriers and poodles as man-eating animals. A bloodhound is so called because of its ability to follow the scent of a human being, the same as a stag-hound is able to follow the scent of a deer.

We are in receipt of a letter from Mr. James R. Ford, wool and produce merchant, Sydney, N.S.W., in which he expresses a desire to enter into business arrangements with Canadian

woollen manufacturers and others who may wish to purchase wools in Australia. Speaking of the methods of selling wool in that country Mr. Ford informs us that it is usually done by auction, by the brokers, at stated times. Where lots of wool are left over after such auction sales they are sold privately, terms cash on delivery in three days from date of sale. Mr. Ford is in receipt of a letter from Messrs. Huddart, Parker & Co., managing agents at Sydney for the Canadian-Australian Steamship Line, in which special freight rates and preferences are offered him in shipping wools to Canada.

Mr. McLennan, in the House of Commons a few days ago, moved the second reading of a bill respecting the liability of the Government, and of contractors on public works, to employes laboring on such works, for their pay. He stated that the object of the bill was to protect the poor laborer against the fraudulent acts of irresponsible sub-contractors, and to insure the payment of their wages. The bill also proposes to authorize any number of laborers to combine in an action at law against corporations in an effort to obtain moneys due to them for labor. Fortunately there seems to be no political scheming in sight calculated to unduly retard the consideration and passage of the bill. It is a most wise and just measure that should be enacted into a law with as little delay as possible.

The Indian contracts this year call for Canadian products, as for example, "all bacon must be Canadian cured." This is bad news for Mr. Charlton. It indicates that Canada is not dependent upon the United States for supplies as was formerly the case.—Mail and Empire.

Good, but not good enough. A rule that should be adopted in the Department of Public Works would specify that, other things being equal, only Canadian made Portland and native cements should be used in the construction of canals, tunnels, public buildings, or for any other purpose. Canada produces as good cements as are made in the world, but there are a lot of dudes entrusted with the preparation of specifications who are so intensely English, you know, as to imperatively call for foreign cements whenever they have the opportunity to do so. All specifications should read "all cements must be of Canadian make."

Canadian manufacturers have good cause to congratulate themselves upon the election this week in a Nova Scotia constituency of Sir Charles Tupper, thus confirming him in his seat as a Cabinet Minister and Secretary of State. All the industrial interests of the country have been virtually paralyzed for weeks because of the interjection of a question into the affairs of government for which the people were not prepared, and for the consideration of which the members of the House of Commons had not been elected. But while Sir Charles Tupper is a tower of strength to the National Policy cause, manufacturers will naturally feel much anxiety for some time to come. Wisdom dictates that the manufacturers should hold themselves in readiness to act promptly upon any emergency that may arise.

Mr. Casey has introduced a bill into the Dominion Parliament to secure safety of railway employes and passengers, and contains some provisions which are of a most commendable nature. For instance, all cars fitted with brakes are to be

provided with an automatic device in the hose coupling of such air brakes, or in the train pipes, so arranged that after the cars are coupled, the connection between such brakes and the air pump on the locomotive cannot be broken, or the coupling deranged, accidentally or otherwise, without the knowledge of the engineer. Another clause provides that all box freight cars built in Canada must, after the passing of this act, be of a uniform standard height, and provided with attachments for security of railway employes. There are also limitations respecting hours of labor for railway employes, compensation for injuries, etc.

The Department of Trade and Commerce has received a communication from the British Colonial Office, covering a copy of a letter from her Majesty's Charge d'Affaires in Guatemala, reporting the starting of a new line of steamers, carrying passengers and merchandise to Central American ports. The boats will sail about every thirty days from Seattle, Washington, proceeding to Victoria and Vancouver, and thence direct to Ocos, Guatemala, calling at various Central American ports as far as Punta Arenas, Costa Rica. The first steamer was expected to reach the port of San Jose about the first of the present month. While the details of the new project have not yet been fully exposed, it is likely that the line will work to a great extent in connection with the Canadian Pacific railway, and will tend to divert the carrying of large quantities of South American products, especially coffee, which are now shipped to various parts of the United States, from San Francisco, to the Canadian line.

Mr. Lepine, M.P., of Montreal, is going to test the feeling of Parliament on the principle of an eight-hour day on Government works. His bill provides, among other things, that eight hours shall be the length of the working day for all workmen and laborers employed either permanently or temporarily, by the Government of Canada, or by contractors or sub-contractors under or for it. Every employe of the Government, and every contractor or sub-contractor, who has under him or who employs workmen or laborers on a public work, and who wilfully violates the provisions of this act, is guilty of an indictable offence and liable to a penalty not exceeding \$1,000, or to imprisonment for a term not exceeding six months, or to both penalty and imprisonment, in the discretion of the court. This act shall not apply to contractors or to sub-contractors now having contracts with or for the Government of Canada, for the execution of a public work, nor shall it apply in cases of pressing emergency or of absolute necessity.

As illustrative of the immense amount of wood pulp daily consumed in the newspaper business, and of the vast quantities of paper which it takes to publish a metropolitan newspaper, we would refer to the fact that the New York World last Sunday, in what it was pleased to call its Christmas edition, issued 525,000 papers, each of which contained 68 pages of reading, advertising and pictorial matter. This immense edition consumed over 270 tons of white paper, which required in its manufacture about 230 tons of ground wood pulp and about 50 tons of sulphite pulp. To produce this amount of pulp at least 310 cords of spruce wood were necessary, or fully 200,000 feet of spruce logs. It is almost beyond

the imagination that a single newspaper printed in New York could run through its presses in a single night 270 tons of white paper. On that amount of white paper over 4,000,000 eight-page newspapers of the size of the World could be printed. The paper was brought direct from the pulp and paper mills on special cars, and trucked to the World building. The average daily consumption of the World is upwards of 75 tons. It will be seen that such papers as the World are consuming an average of about 100 cords of spruce wood per day, ground into pulp and manufactured into white paper—North Eastern Lumberman.

Mr. Nicholas Flood Davin, the eloquent speaker but erratic protectionist from the wild and woolly plains of Regina, has introduced a resolution into the House of Commons to the effect that, in the opinion of the House, the duty on agricultural implements should be removed. He contends that the manufacturers of agricultural implements do not require for their own protection the duty which now exists, for they had shown in other countries that they could hold their own in competition with American manufacturers. Only a few days ago while the question of agricultural implements was being discussed in the House it was shown that such articles were sold to consumers in Canada at as low or lower prices as similiar implements are sold to consumers in the United States. This being the case of what benefit would it be to Mr. Davin's constituents to have agricultural implements placed in the free list? Does he desire to ruin the Canadian industry when there can be no compensating benefit to Canadian farmers? Does he desire to hand over the Canadian market to American manufacturers because the Canadian manufacturers can hold their own in foreign markets? Mr. Davin's logic is not sound.

It affords us pleasure to record the fact that the Toronto Globe has again become established in its own home. It will be remembered that in January of last year the Globe building, which included the Globe offices and printing house, was destroyed by fire. Upon the ruins of that establishment has been erected what is perhaps the most complete and convenient newspaper printing office in Canada, equipped with the very best machinery and most modern and approved appliances. As a collector and disseminator of news the Globe occupies a most enviable position in Canadian journalism, and that feature of it has given it a high place in the estimation of the people. Of course there is a great and lasting objection to the Globe in that it is always on the wrong side of the political fence. This, we can assure it, is a grave error which should consign it to the bad place to which Sir Richard Cartwright wanted to send certain Canadian manufacturers. Come to think of it, if Sir Richard's pious wish could be gratified, and if our consignment of the political features of the Globe could be made effective, the heat of the place would probably be somewhat tolerable by the entertainment afforded by the presence of a good newspaper.

A case involving an important point of customs law has been advanced on the calendar by the Supreme Court of the United States. This case, that of the United States vs. Zucker et al., arose under section 9 of the Customs Administration act of 1890, whereby importers who made false returns of the value of invoices consigned to them are liable to the

United States for the full value of the goods. Suit was brought against the defendants to recover the value of certain invoices of artificial flowers imported by them. In the course of the trial the District Attorney offered to read in evidence an affidavit taken in Paris as to the value of the flowers. To this defendants' counsel objected, for the reasons that the action, though civil in form, was in substance a criminal one, and the defendants were entitled to be confronted with the witnesses against them; that this constitutional right was not secured by giving them notice of intention to take affidavits in Paris, and their failure to attend at a place 3,000 miles from the place of trial, out of the district and in a foreign country, did not operate as a waiver of their constitutional right, if it could be waived. The trial court sustained the objection and the jury returned a verdict for the defendants, whereupon the United States appealed to the Supreme Court of the United States. The Solicitor-General says that in this, as in many other actions of the same nature, it is impossible to prove the facts alleged in the declaration or complaint, if it be necessary to confront the defendants upon the trial with the witnesses against them, the necessary witnesses being in foreign countries and their personal attendance unobtainable, and that many cases involving a large amount of money depend upon the decision of the court.

The attention of the government is to be drawn by the Board of Trade to what that body stigmatizes as the "black-mailing lawsuits instituted by irresponsible parties without reasonable grounds" with a view to putting a stop to the now almost unbearable evil. Speaking of the matter the Toronto News says:

The evil grows out of the fact that there is a horde of shyster lawyers in this city who are starving in scantily furnished rooms, rather than go out to the woods and work for a living. They must live somehow, and in the plight which some find themselves it is no wonder that they resort to the disreputable means they do to gain a few dollars. They must exist, they argue, and if in order to do so they have to prey upon others, so much the worse for the others. Their code of honor is the law. Whatever that sanctions is good enough for them, and any evasion—especially a new one—is looked upon as a particularly clever and meritorious accomplishment. The only limit to the dishonorable things this class of lawyers will attempt is their liability to prosecution, but it is astonishing how far one of the legal profession can go in shady transactions and still escape punishment. It is almost impossible for a merchant to protect himself from them.

One of the practices of these men is to examine every paragraph in the daily papers for a cause of action by any person against another, and having found it they make the most strenuous efforts to persuade the one party to enter an action against the other, agreeing to take their chances of getting their fees out of the verdict. They so magnify the damages sustained that those who before such a visit had no sense of injury become bitterly incensed at the alleged transgressor, and agree to allow an action to be instituted in their names. In this way many a wound that could have been healed by mutual explanations is kept open for months and years and causes life-long bitterness.

A Toronto representative in the Ontario Legislative Assembly has volunteered the opinion that only lawyers can be statesmen, but it is to be observed that our lawyer statesmen are not exerting themselves much to correct the evil here complained of.

Speaking of Principal Grant's recent article on "The Cost

and Profit of Liberty," in which a very impracticable fiscal policy is advocated, the *Globe* says:—

We agree with Principal Grant that the duties on British imports ought to be lowered, and the Liberal party has placed itself on record in favor of that reform. We believe that course would result in benefit both to Canada and Great Britain, that the natural result of buying more from Britain would be selling more to Britain, while waiting for Britain to give us preferential trade will never accomplish anything. We would not confine the reduction to British goods, but there is every reason why we should give Britain more or less favorable treatment than other countries.

Suppose the *Globe* advocate the converse of its proposition and declare that if we could sell more to Britain we would buy more from Britain. It thinks that waiting for Britain to give us preferential trade will never accomplish anything, but that is supposing that Britain will never give us preferential trade. There are strong indications that preferential trade is within measurable distance, and when it comes we will certainly sell relatively more to Britain than countries that are not included in the preference, and then, if we sell more, we will be able to buy more. Canada's policy would then be to maintain protection at as high a point as may be found necessary against foreign countries, throwing off a certain portion of that protection in favor of the Mother Country in consideration of the preference Canadian products would enjoy in the British market. The *Globe*, however, is in favor, so it says, of lowering duties on British imports, but it also declares that it would not confine the reduction to British goods. In other words it wants preferential trade with Britain by lowering duties on British goods, but it wants the reduction to apply to American goods also. Rather a queer way to express a preference.

The Department of Trade and Commerce has received from Mr. J. S. Larke, commercial agent for Canada in Australia, a long report, which practically includes a resume of his work since his arrival on the scene of his labors, nearly a year ago. Mr. Larke expresses himself generally as much encouraged by the results which have so far attended the efforts made to promote closer trade relations between Canada and the Australian colonies, and gives a good deal of valuable information, as to the condition of business there and the best means to take for the extension of business relations with Australian houses. Regarding the Pacific Cable scheme, he says that the Governments of the Australian colonies have already taken steps to select their members of the joint commission, and will work in harmony together. The question of colonial federation will be taken up by all the colonies there early this year, and in four at least, he expects will be favorably received. Mr. Larke deals at some length with the question of how best to extend Canadian trade in Australia, placing foremost among the necessities to that end a much cheaper cable service and an extension of the present steamship line by the addition of a third steamer. He gives a great many interesting facts relative to the prospects for business in the various lines of Canadian goods, and advocates the selection of enterprising agents on salary and commission, and the opening of a joint sample room by Canadian exporters, which would cost comparatively little to each firm. The Pacific cable enterprise, he finds, has awakened the admiration of the people for Canada, and many requests for information are continually being re-

ceived by him from Australian firms. Business in the colonies, which had begun to revive from the crisis of a couple of years ago, received a set-back last year on account of the severe drought, and men were cautious about venturing into new enterprises, but the recent rains have improved matters considerably, and the prospects for the coming year are good. Mr. Larke says that the apples shipped from Ontario last summer were nearly all spoiled in transit, but that the price realized for the remainder, \$3.75 per bushel, was such as would have brought a handsome profit had the fruit remained sound.

Several of the articles in the February number of the *Methodist Magazine and Review* are of special and timely interest, as the picturesque aspects of Venezuela and its wonderful mountain railway, with a map of the disputed territory; "Britain's Keys of Empire" in the Levant and Red Sea, with numerous engravings; and discussion with map of recent South African affairs. Principal Grant pays an eloquent tribute to the U. E. Loyalists, founders of Upper Canada. Dr. Rose contributes a graphic sketch, with engravings, of Dr. MacKay's mission work in Formosa. The story of "Trusty," by a Canadian writer, is as good as anything in Dr. Brown's "Rab and His Friends." "The World's Progress," "Current Thought," and other departments are well maintained. Toronto: Wm. Briggs; \$2.00 a year; single number, 20 cents.

Outing for February is excellent in text and illustrations. The contents are as follows: "The Llewellyn Setter," by L. H. Smith; "Sweet Marjory," by Sara Beaumont Kennedy; "Modern Snipe," by T. S. Van Dyke; "Shooting at Swatow," by A. B. Hoff; "The Wizard of the Cascade," by S. C. Kendall; "Hunting the California Lion," by L. D. Rees; "A Thread of Mystery," by Louise D. Mitchell; "Cruising on the Gulf," "Lenz's World Tour Awheel," "Rugged Labrador," by R. G. Taber; "Cycling in Mid-Atlantic," by O. Howarth; "Paddling a Pipanti in Honduras," by E. W. Perry; "About the Balearics," by Chas. Edwards; "Rabbiting," by H. Rave; "The New Hampshire National Guard," by G. H. Moses, and the usual editorials, records, poems, etc.

In a most invitingly dainty cover, the February Ladies' Home Journal, resplendent with illustrations and attractively varied in its literary features, is unique. A suggestion of approaching spring is given in an article, by F. Schuyler Mathews, for which W. Hamilton Gibson has drawn a series of illustrations. James Whitcomb Riley sings of "Little-Maid-O'-Dreams," a fanciful poem, the spirit of which Rosina Emmet Sherwood has presented in a full-page picture. Mary Anderson de Navarro reaches the most interesting point of her memoirs, telling of her first appearance in the larger cities. In an article upon "The Little Queen of Holland" Arthur Warren writes of the beloved young sovereign's daily life, her pastimes, her toys, pets and her studies. Half a score of pictures lend interest to the recital. The Curtis Publishing Co., Philadelphia. One dollar per year.

Scribner's Magazine for February might be called a mid-winter out door number, as it contains an unusual number of articles of life and adventure in the open air. First among these is an article on the "Colorado Health Plateau," by Lewis Morris Iddings, which is a delightful social study. Of a very different description is the brief account of "Hunting the Musk-Ox," by Frank Russell, a skillful naturalist, who made a journey with only Indian companions into the barren lands of Northwest Canada. Still another article of adventure is the account of the "Ascent of Mt. Ararat" in Armenia by H. F. B. Lynch. This ascent was the fifteenth of which there is any record. In fiction also there is a story of adventure entitled "A Long Chase," describing a night ride on a bicycle over a road of packed snow in the Canadian Northwest. The exciting episode in the story is a description of a hot pursuit of a rider by a pack of hungry wolves. The tenth instalment of President Andrew's history is called the "Neo-Republican Ascendency," which describes the close of Cleveland's first administration, the campaign of 1888 and Harrison's victory. Other topics are the Billion Dollar Congress, the McKinley Bill, the Johnstown Flood and the lynching of Italians in New Orleans.

CAPTAINS OF INDUSTRY.

This department of the "Canadian Manufacturer" is considered of special value to our readers because of the information contained therein. With a view to sustaining its interesting features, friends are invited to contribute any items of information coming to their knowledge regarding any Canadian manufacturing enterprises. Be concise and explicit. State facts clearly, giving correct name and address of person or firm alluded to, and nature of business.

G. M. Brown, Tilbury, Ont., is enlarging his foundry.

W. J. Mular will erect a carriage factory at Hensall, Ont.

Messrs. Brodie & Co., will start a shoddy mill at Hespeler, Ont.

Fredericton, N. B., is contemplating extensive additions to its waterworks system.

Porth, Ont., and Andover, Ont., will unite in establishing a waterworks system.

Messrs. Vogan & Plowes' flour mill, at Walkerton, Ont., was destroyed by fire Jan. 16th.

The Kensington Furniture Factory, London, Ont., will remove their works to Goderich, Ont.

The Standard Gas Co., Montreal, are applying for incorporation with a capital stock of \$100,000, to manufacture gas, etc.

The Ripley Flax Co., Ripley, Ont., have been incorporated with a capital stock of \$10,000 to manufacture flax, etc.

Messrs. Harris, Youngheart & Co., cigar manufacturers, Montreal, are contemplating the removal of their works to St. John, P.Q.

Authority has been conferred upon the Chanteloup Mfg. Co., Montreal, to increase its capital stock from \$10,000 to \$200,000.

Messrs Wm Kennedy & Sons, Owen Sound, Ont., are applying for incorporation with a capital stock of \$95,000, to carry on a general foundry business.

Mr. G. Walter Green, Millbrook, Ont., has purchased the plant and machinery of the McWilliams Pump and Windmill factory at Peterboro, Ont. He will conduct business at both places.

Mr. Penchen will erect a chemical factory at Kinnmount, Ont. Joseph LeBlanc will build a cheese factory at Langley, Prairie, B.C.

The Car Wheel Co., Perth, Ont., will put additional machinery in their works.

Messrs. T. Lavole & Co., will operate a saw, grist, and carding mill at St. Martin, Que.

The Chatham, Ont., Gas and Electric Co., will place new machines and engines in their works.

The Alexandria Furniture Factory, Alexandria, Ont., was destroyed by fire Jan. 21st. Loss about \$20,000.

S. Goldstick's hat and cap factory at London, Ont., was damaged by fire Jan. 14th, to the extent of about \$200.

Messrs. Washburn & Brownell's furniture factory at Winchester, Ont., was destroyed by fire Jan. 14th. Loss about \$3,500.

Wallaceburg, Ont., is to have a new foundry in the spring. Messrs. W. Bromner, W. Leo and Jas. Leo are interested.

The Pelco Gas & Oil Co., Kingsville, Ont., have been incorporated with a capital stock of \$30,000 to bore for natural gas, oil, etc.

Fire recently damaged the machinery of Messrs. Park, Blackwell & Co., pork packers, Toronto, to the extent of about \$4,000.

The Goldie & McCulloch Co., Ltd., Galt, Ont., have shipped to the Okanagan Milling Co., Armstrong, B.C., six carloads of milling and elevator machinery.

The Cape Breton Boot & Shoe Manufacturing Co., North Sydney, N.S., have been incorporated with a capital stock of \$10,000 to manufacture boots, shoes, etc.

The Selkirk Transportation & Cold Storage Co., Selkirk, Man., are applying for incorporation with a capital stock of \$50,000, to preserve fish, etc., by means of cold storage.

Messrs. Dalton and Ravell have started a foundry at West Toronto Junction where they are prepared to do all kinds of iron and brass castings.

The town of Alliston, Ont., on a very recent occasion was left in darkness for several nights owing to the burning out of the armature of their incandescent lighting plant lately installed by the Canadian General Electric Company.

DRY KILNS

and HEATERS

CHEAP

One Second-hand Sturtevant Heater, 1,000 feet one-inch Pipe and Fan to match, has been used only about four months.

One Sturtevant Heater, 5,500 feet one-inch Pipe and Fan to match; in first-class order.

The above have been used in lumber dry kilns, but are also applicable to heating buildings, etc.

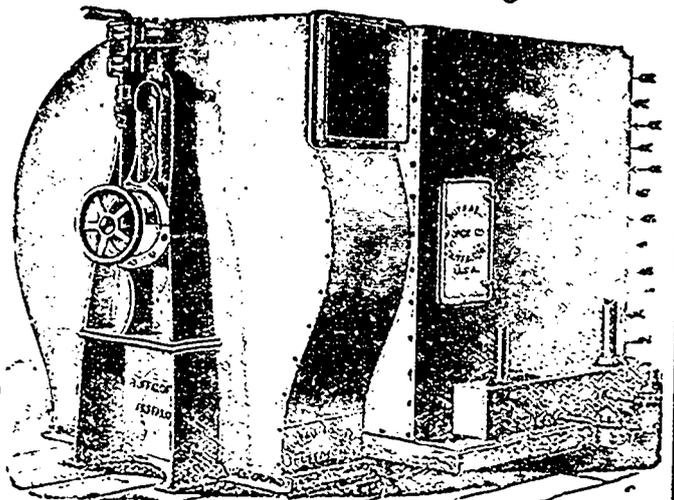
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McEACHERN

Heating and Ventilating Company

GALT, - ONTARIO

Buffalo Lumber Dry Kilns



THE LARGEST DRIER IN AMERICA IS EQUIPPED WITH A "BUFFALO" HOT BLAST APPARATUS. THE OWNERS ARE ENTHUSIASTIC.

All users of Buffalo Kilns write letters similar to this one: "The Kiln answers every purpose to perfection. The Dry Room, with its exhaust steam at mere nothing in the way of cost, compared with the old way. Your arrangement is very simple and easily managed, besides being a money saver in operation. We are able, with the Kiln you sent us to dry soft woods in three days, and hardwoods in five days. That's good enough for anyone."—SMITH BROS., Sayre, Penn.

Send for Catalogue.

Buffalo Forge Co., Buffalo, N.Y., U.S.A.

SOLD IN

Toronto, Ont., by H. W. Patrio.
 Brantford, Ont., by Canadian Machinery and Supply Co.
 Montreal, Que., by Canada Machinery Agency.
 Chicago Store, 22 and 24 West Randolph Street

L. Seebach will build a flour mill at Fullerton, Ont.

Norwood, Ont., is to have a new foundry. The Mayor will give information.

A. Simuol's tannery at St. Paul's Bay, Que., was recently destroyed by fire.

The Kerr Water Motor Co., Niagara Falls, Ont., have lately shipped two Kerr water motors to Cologne, Germany.

Messrs. Wideman & Clomons, Guelph, Ont., have installed a 25 h.p. Kay motor in their sash and planing factory.

The Robert Mitchell Co., Montreal, are applying for incorporation with a capital stock of \$200,000, to acquire the business now carried on by Robert Mitchell & Co., and to manufacture all kinds of metal goods, etc.

The lighting plant run by a Kerr Water Motor, which was installed in the Odd Fellows Hall at Niagara Falls, Ont., eighteen months ago, has given entire satisfaction. The Kerr Water Motor Co. say they are having considerable sale for their motors for lighting purposes.

The city of St. Catharines, Ont., was in darkness for two evenings a short time ago by the burning out of the 60 K. W. machine in the power house of the St. Catharines Electric Light Co. It was nearly a new machine of the Canadian General Electric Co.'s make.

The Hobbs Hardware Company, London, Ont., have sent us the illustrated descriptive catalogue and price list of the Stormer bicycles, of which they are sole agents for Canada. These wheels are manufactured by the Acme Mfg. Co., Reading, Penn., and are described as possessing all the merits desired by those who know what perfect wheels should be, and which are included in the very best wheels made. The well known reputation of the Hobbs Hardware Co. is a sufficient guarantee for anything they may say regarding the Stormer bicycle.

The Metallic Roofing Company's new factory at the intersection of King and Dufferin streets, Toronto, is rapidly approaching completion, and will be one of the finest and best arranged for the purpose in the city.

N. Nelson, Sapperton B.C., will erect a brewery and cold storage plant.

Messrs. W. Doherty & Co., manufacturers of the celebrated Doherty organ, Clinton, Ont., have sent us a copy of their new catalogue having reference to their business. The publication is beautifully illustrated, and contains full descriptions of the organs alluded to. If any man, woman or child has any music in his, her or its soul, and is capable of receiving pleasure by a concord of sweet sounds there is interest in this catalogue for him, her or it. The man incapable of enjoyment under the sounds of a Doherty organ should be relegated to the back benches of the Opposition where his great and only enjoyment would be to croak like a frog in a swamp against the National Policy.

The Ingersoll Rock Drill Co., have placed an air compressor 14½ x 18 in. in the coal mines at Sydney, N.S., to pump the water from the shaft bottom. The air is carried a distance of one mile underground to the furthest pump. The compressor also operates two cutting machines, this being the first application of machinery to coal cutting at this colliery. Steam is supplied to the compressor by a tubular boiler at a pressure of seventy-five or eighty pounds to the square inch. The underground pumps employed in connection with the compressor plant are a Northey 7½ x 4 x 10 inch, and a Worthington, 4½ x 3¾ x 4 inch.

Mr. William Masterman is building an extensive pulp mill at Mill Cove, on the Miramichi, N.B. The store-room is 100 x 50 feet, and the paper mill rooms adjoining are 150 x 50 feet, while to the rear of these is the engine and boiler building, 100 x 40 feet in extent. There are also two other buildings through which the pulp passes in different stages of its manufacture 100 x 20 and 50 x 40 feet. The digester building is 84 x 32 feet and has a tank house adjoining, 84 x 30 feet, which is connected with the waters of the Miramichi by a slip 240 feet in length. It will turn out thirty tons of dry pulp per day, wet pulp being thirty and forty per cent moisture. This will give employment to about seventy men.

The Halifax, N.S. Herald says that extensive repairs are to be made to the International pier. Also that the Victoria pier will be repaired this winter, and new pumping and other machinery placed in the Victoria mine, with a view to improved facilities for a larger output of coal from this mine next season.

ROBIN, SADLER & HAWORTH

Manufacturers of

OAK TANNED LEATHER BELTING

MONTREAL AND TORONTO.

Orders addressed either to our Toronto or Montreal office will have prompt care
Goods will be forwarded same day as order is received.

The Island City White Lead and Varnish Works at Montreal were destroyed by fire Feb. 3rd. Loss about \$50,000.

The Toronto Junction Foundry Co., Toronto Junction, Ont., have been incorporated with a capital stock of \$24,000, to carry on a general foundry business.

The Modern Office System Co., Toronto, have been incorporated with a capital stock of \$10,000, to manufacture office supplies, etc.

The Temiscamingue Lithographic Mining Co., Vankleek Hill, Ont., are applying for incorporation with a capital stock of \$100,000, to mine and manufacture lithographic stone, etc.

The Kerr Water Motor Co., Niagara Falls, Ont., inform us they have just installed a dynamo with one of their water motors at the pumping station of the water works at Niagara Falls, Ont., for lighting purposes.

The Londonderry rolling mills at Acadia Mines, N.S., have resumed work after a silence of nearly four years. Nine puddling furnaces are being rebuilt, and will run night and day, employing about one hundred men. The management of the rolling mills expect to put a good article of puddle bar on the market. The output has been sold to the Montreal Rolling Mills, there to be still further refined and manufactured. They have now quite a busy hive of industry—rolling mill, blast furnace, pipe shop, machine shop, roundry and coke oven.

Several years ago the Buffalo Forge Company supplied what they say was the largest dry kiln that had ever been placed in the Pacific section of the United States, and they are now in receipt of a letter from the Tacoma Mill Company, Tacoma, Washington, bearing date January 11th, referring to the service derived from that kiln as follows:—“Buffalo Forge Co., Buffalo, N.Y. Gentlemen,—Replying to yours of the 13th of Dec., answer to which has been deferred by reason of the writer's absence from the city, would say that the lumber dryer which you installed for us some time ago, has so far given very satisfactory results and we have no complaint to make and could recommend them to anyone seeking similar machinery. Yours truly, Tacoma Mill Co., Wm. Hanson, Manager.

Jas. Richardson has erected a saw mill at Korwood, Ont.

John Palmer has purchased the Fredericton Patent Leather Works, Fredericton, N.B.

The Aurora Canning Co., Aurora, Ont., are applying for incorporation with a capital stock of \$20,000, to preserve and can fruit, vegetables, meats, etc.

The Canadian Composing Co., Montreal, have been incorporated with a capital stock of \$21,000, to manufacture machinery for type-setting, printing, etc.

The Ontario Safety Elevator Co., Chatham, Ont., are applying for incorporation with a capital stock of \$300,000, to manufacture elevators, hatchway covers, etc.

The New Barnes Bicycle Co., Woodstock, Ont., are applying for incorporation with a capital stock of \$25,000, to manufacture the New Barnes wheel.

Messrs W. H. & H. Lawrence of Keswick Station, Ont., will build a tannery at the mouth of Cardigan Stream, York County

A contract has been signed for the construction of an electric street railway in Cornwall, Ont., which will be completed before September.

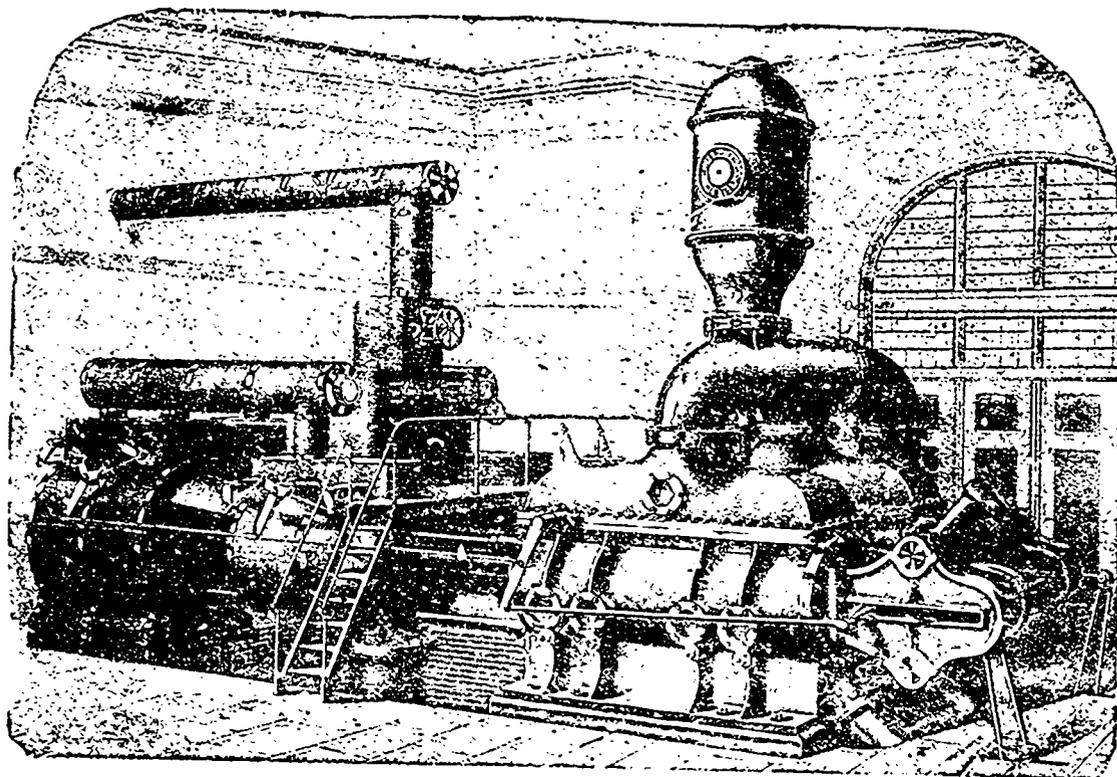
The Gibson Foundry & Machine Co., Gibson, N.B., are applying for incorporation with a capital stock of \$20,000, to manufacture iron, brass, and other metal goods.

Messrs. Cowan & Co., Galt, Ont., inform us that they have recently shipped two carloads of wood working machinery to Vancouver, B.C., one carload of wood working machinery to St. John, N.B., one carload to Rat Portage, Ont., three variety saws, three planers, two power feed rip saws, and an invincible sander to Toronto, heavy planer and matcher and a buzz planer to Bic, Quebec, one power feed rip saw and a Moffat patent feed water heater and purifier to Sarnia, Ont., one 40 h.p. slide valve engine to Watford, Ont., one 50 h.p. Harris-Corliss engine, a 30 h.p. slide valve engine and a Moffat patent feed water heater and purifier to Brantford Ont. besides a number of wood working machines to different parts of the Dominion.

JOHN McDOUGALL

CALEDONIAN IRON WORKS,

MONTREAL, QUEBEC.



General Agents
in Canada for

THE FAMOUS

Worthington
Pumps

Hydraulic
Machines

Condensers

Water Works
Supplies

WORTHINGTON PUMPS ARE UNEQUALLED FOR EFFICIENCY AND ECONOMY

The Niagara Falls Metal Works Co., Niagara Falls, Ont., have let the contract for their new factory and have ordered the machinery. The building will be of brick with stone foundation, two stories high, 120x40 feet with two wings, one 80x40 ft. and one 120x40 ft. also two separate buildings one 48x36 ft and one 30x14 ft. The buildings are to be ready for occupation by May 15th next. The company will manufacture hardware such as chains for every purpose made from stamped sheet metal, saddlery hardware, etc. They say this will be perhaps the most complete factory in Canada of this description.

THE STRATTON SEPARATOR.



The accompanying illustration is of the Stratton Separator manufactured by the Goubert Manufacturing Company, New York, and for which Mr. Wm. T. Bonner, 415 Board of Trade Building, Montreal, is general agent for Canada.

The following are a few of the situations in which the Stratton Separator will be found of very material advantage :

Between boiler and engine, to remove the entrained water from the steam and thereby increase the power and efficiency of the plant ; to be a safeguard against foaming or the sudden lifting of water from the boiler, thus avoiding the most common cause of the breakage of engines.

Between the high and low pressure cylinders of compound engines, to extract the water due to cylinder condensation and work done in the first cylinder. This, according to D. K. Clark, often amounts to from eleven to forty-two per cent. of the total amount of steam entering the cylinder.

Between engine and condenser, to relieve the air pump, increase the efficiency of the condenser and remove the oil, so that the tubes remain clean and the boilers can be fed from the hot well with hot water free from grease.

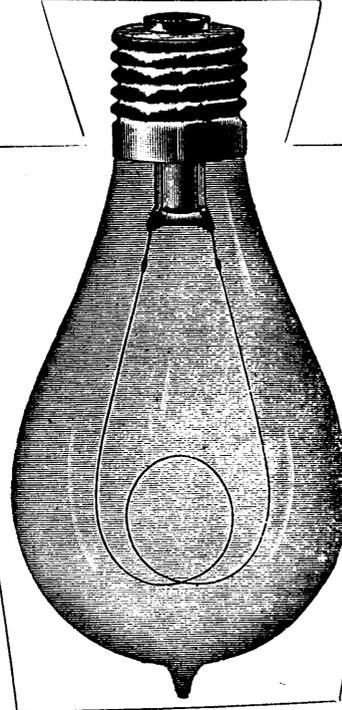
As an oil and grease extractor, where exhaust steam is used to supply heating coils, thereby preventing the clogging up of radiator pipes and keeping up their efficiency.

KEYSTONE INCANDESCENT LAMP

FOR MULTIPLE OR SERIES CIRCUITS

Standard Bases and Sizes in Stock.

Not Excelled by Any Lamp



ARC LAMPS



MOTORS



DYNAMOS



Wagner Transformers



SUPPLIES

Walker Steel Railroad Motors and Direct Connected Generators
○
Alternators

W. A. JOHNSON ELECTRIC CO.'Y

34 YORK STREET, TORONTO, ONT.

The Royal Electric Co'y

MONTREAL, QUE.

Western Office.... TORONTO, ONT.

S.K.C. Two-Phase Alternators

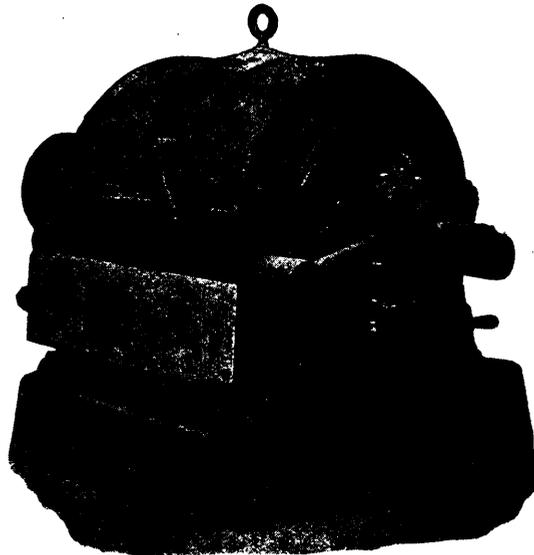
Incandescent Light, Arc Light and Power from same Dynamo and Circuit.

Highest Efficiency

Best Regulation

Slow Speed

Least Attention



No Collector

No Moving Wire

No Exposed Parts

No Compounding

S.K.C. 30 Kilowatt Two-Phase Generator.

On evaporating apparatus, such as boiling kettles and vacuum pans using exhaust steam, greatly improving the evaporative capacity, keeping the interior surfaces of worms clean, and insuring proper drainage by relieving the traps.

On long lines of pipe, particularly out-doors, in yards, on docks, in mine shafts, where condensation is so great, however well the pipes may be covered and protected, the Stratton Separator delivers the steam in even a drier condition than if the engine were close to the boiler.

On superheaters: steam can be easily superheated when dry, but when it contains moisture, this has to be all turned into steam before a single degree of superheat can be obtained. A Stratton Separator greatly increases the capacity of the superheater.

Where short of steam, for you can then force your boilers to their utmost capacity, and yet deliver dry steam.

In short, whenever liquid or solid particles, water, oil or grit, are carried and held in suspension by any fluid, vapor steam or gas, the Stratton Separator entirely removes them, leaving the gaseous fluid pure and free from any foreign substances that would reduce its elastic force or cause injury to the machinery.

A breakdown of an engine means the stoppage of the entire plant nine-tenths of the breakdowns are due to water in the cylinder. The Stratton Separator removes all water in the steam and delivers absolutely dry steam to the engine.

Mr. Bonner, at the address above given, will take pleasure in supplying further information regarding the Separator, prices, etc., and on application will send free his Company's publication "Dry Steam the Foundation of Economy."

THE JOHN ABELL ENGINE AND MACHINE WORKS
COMPANY, LTD., AS MAKERS OF EASTON
ELECTRICAL APPARATUS.

There can be no effect without cause, and the sole cause of uniform mechanical success can only be uniform excellence in manufacture and design. The intellect of man may be deluded by airy figures of speech, but natural law cannot be brought into compliance with any but the hard figures of fact, and therefore the uniform success of the John Abell Engine Works Co., Toronto, in their new

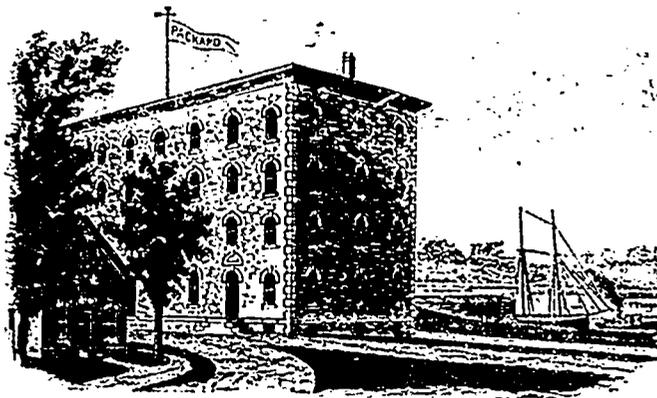
departure of a little more than a year ago in the manufacture of electrical apparatus, argues more than volumes could otherwise do in proof of the excellence of the Easton designs and the skill of the Abell employees in this field of labor.

The mention of the excellence of the machinery associated with the name of the Abell Company needs no repetition among the practical men of the country, and the expressed hope of Mr. Abell is that in the closing years of a long and useful life he may become known as well and favorably in the field of electrical enterprise as he is now in the field of engines, and farm and mill machinery.

Although the Abell Company entered into the electrical field about November 1894, their electrical engineer possesses a varied and extensive experience and technical knowledge, as well as an enviable reputation as a designer of successful electrical apparatus, and their principal lamp builder, and the chief winder, are also men of long and varied experience in their special occupation. The E.E., Mr. James W. Easton, was from 1881 to 1886 an important factor in the development of the Ball system, and a great majority of the ideas which elevated that system from being a laughing-stock to that of a formidable and successful competitor in the manufacture of electrical apparatus were due to his mechanical ingenuity, technical acquirements and hard common sense. The development of electrical science, and practical experience, having proven that defects were incorporated in that system which were incurable if the patented features of it were retained, Mr. Easton developed and designed the Reliance arc system which even now is used to light perhaps a majority of the towns in Ontario, and with a remarkable freedom from the cost of repairs.

This excellence of the Easton electrical apparatus enabled the Ball Company, who had retained the services of Mr. Easton, to become celebrated as a manufacturer of electrical apparatus, but unwise experimenting with a railway system invented and designed by another engineer quickly dissipated their cash, destroyed their credit and forced them out of business. Mr. Easton, however, having canvassed the situation thoroughly, was convinced that the best prospects for success included the uniting of the electrical industry, as is done in Europe, with a first-class engine and machine business as a department thereof, and he therefore allied himself with the John Abell Engine & Machine Works Company.

The apparatus now manufactured by this concern under the



THE ABOVE IS A PICTURE OF OUR

HOSPITAL

For **BROKEN-DOWN ELECTRICAL APPARATUS**

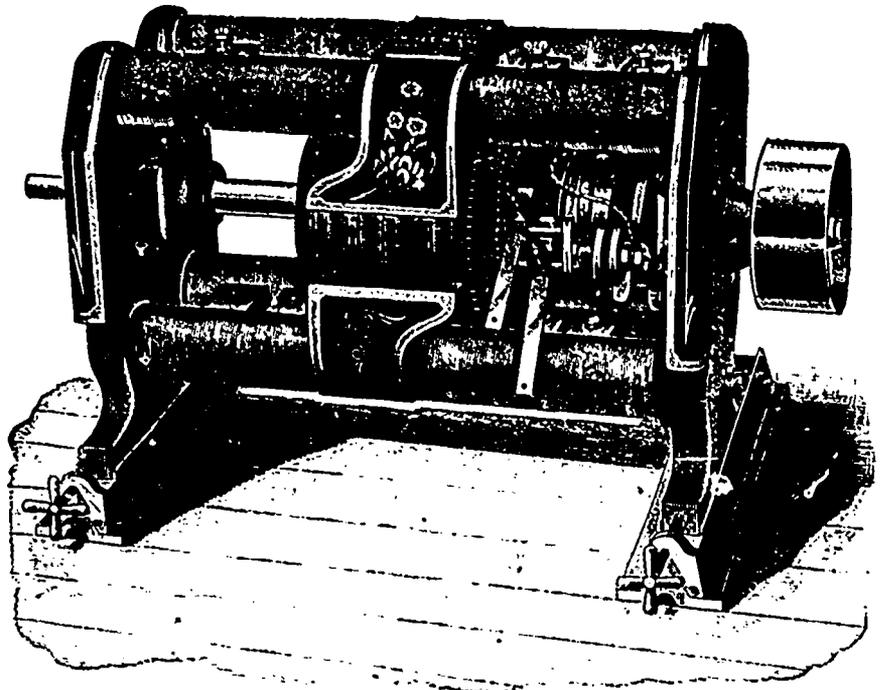
REWINDING OF TRANSFORMERS AND

STREET RAILWAY ARMATURES A SPECIALTY.

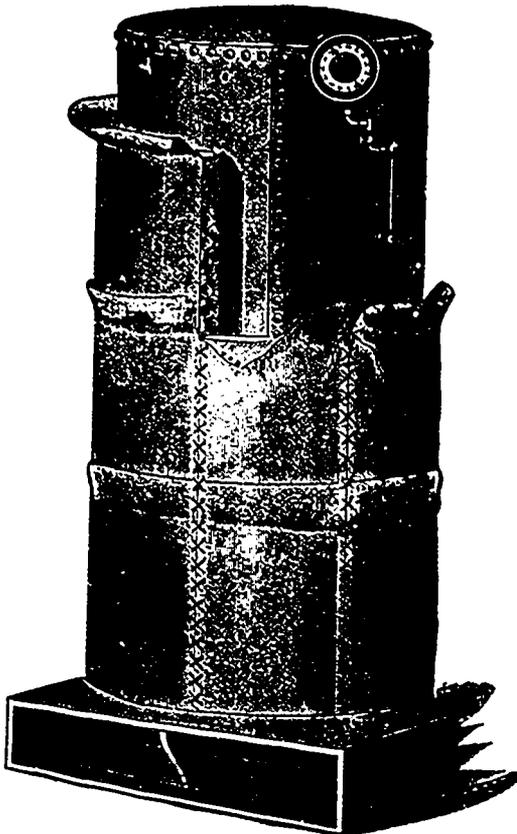
WRITE US FOR PRICES ON ALL KINDS OF REPAIR WORK.

**The PACKARD ELECTRIC CO., Ltd., St. Catharines,
ONTARIO.**

supervision of Mr. Easton, is as superior to his earlier types and designs as those were to the crude attempts made in the first development of the industry. All the known defects of his earlier efforts have been eliminated and many important details have been added to secure the highest attainable perfection in the operation of each portion of the system, retaining, however, all the features of the earlier types that had proven to be important and valuable in operation. A most prominent and novel feature of the Easton system is that of separating the iron forming the field of magnetic force into separate and distinct parts, magnetically insulated from each other in such a manner that each part acts to direct the force in the predetermined and desired way and manner, thus largely overcoming the tendency to distortion of the flow of magnetic force that is universally present and highly detrimental to the action of other types of electrical machines. Another important feature, and covered by the same patent as the separation of the iron of the field, and also covered by wire winding in the machine so that it cannot be seen and appreciated until the fact is stated, is that of reducing the diameter of the iron in the armature core at the corner only and inserting additional insulating material at that particular point. In other machines which are not so protected, the usual result is for the wire of the windings to work through the insulation and connect across the metal of the core with serious damage resulting. The frame work of all the new type Easton machines are solid and compact having the greatest stability and strength possible; all bearings are of the ring-oiling type which often run for months without need of attention of any kind. All parts of the machines are amply large and capable of withstanding any possible strains and stresses without injury and they are well-finished. All classes of electrical apparatus for all purposes are included in the present and prospective output of the electrical department of this progressive Company.



The Consolidated Milling Company recently formed at Peterborough, Ont., have taken over the Otonabee Roller Mills, recently conducted by Messrs. Davidson, Munro & Co., and the Peterboro' Roller Mills, formerly conducted by Meldrum & Davidson. The Consolidated Co. will go into the milling and grain-buying business extensively. Mr. P. M. Clark, late superintendent of the Ogilvie Mills, Montreal, is the general manager of the new company.



1895.

The Latest Invention in Coal Saving Appliances

“MICA”

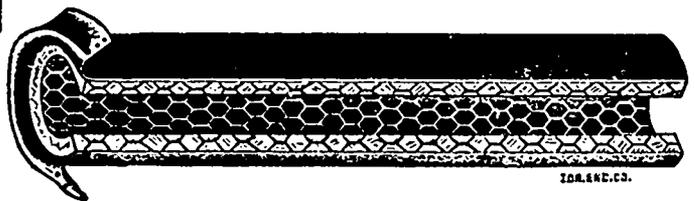
The well-known **Electrical Insulator** successfully adapted as an insulator of **Steam heat. Enormous Saving of Fuel Guaranteed** by the use of **Mica** boiler and steam pipe covering.

Patented

1894

and

1895



Now being used with great success by the Toronto Street Railway Co., Niagara Navigation Co., Toronto Ferry Co., etc., etc. Has been tested and thoroughly examined by the highest authorities and pronounced the most effective in the market. Impervious to the extremes of heat or cold, damp or vibration. Made in any size mats in any shape. Can be applied and removed as often as desired without injury.

SOLE MANUFACTURERS

The Mica Boiler Covering Company (Ltd.)

9 JORDAN STREET, TORONTO.

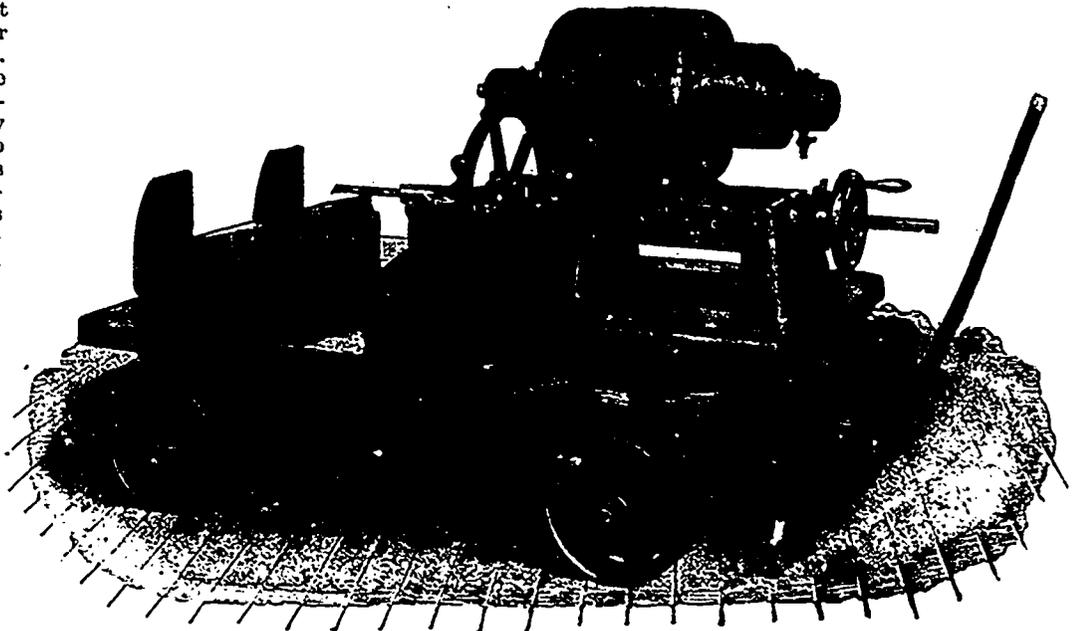
STOREY ELECTRIC PORTABLE DRILL.

The Storey Motor and Tool Co., of Hamilton, Canada, and Philadelphia, Pa., some time ago put on the market a compact and efficient portable drill, which we illustrate herewith. This machine is adapted for drilling pig iron and copper for test work, drilling rails and for various other kinds of work. Owing to the type of the motor, which is entirely enclosed, it is suitable not only for indoor work, but can also be used for outside purposes without requiring any specially arranged covering for its protection. The outfit complete consists of motor and drill combined, together with regulating rheostat, for obtaining desired speed, and a drum with 100 feet of flexible cord, all mounted on a truck, with or without rack for holding material to be drilled, as desired. These machines drill in sizes up to 1 1/2 ins. in steel and 2 ins. in cast iron and are furnished with both automatic and hand feeds.

The rapid adoption of electricity in machine shops and factories makes a tool of this kind extremely useful as it can be moved at will wherever it is needed.

These drills can also be placed on a table or in any stationary position and will cover a large range of work of different classes. As an illustration two of these drills are mounted on bed-plates, one at each end of a large callender roll, drilling two holes in flanges at

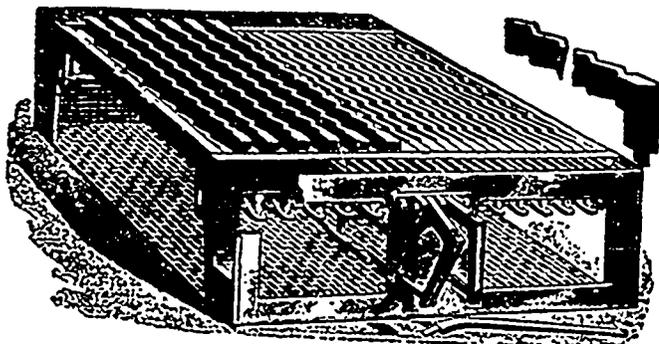
the same time and tapping them in the same operation, before the roll is moved. Another adaption of this drill is where it is fitted with a telescoping shaft and is used in yards for drilling holes for the construction of switches and crossings for street car and railroad work.



A different type of portable drill, combining all the features of an up to date drilling and tapping machine, is being brought out by the above company and will be ready for the market in a few weeks. In our last issue we fully described and illustrated the Storey motor and dynamo which is manufactured by this company.

THE VOLCANIC PATENT SHAKING GRATE

MANUFACTURED BY THE GURNEY FOUNDRY CO., Ltd., Toronto.



Toronto, June 17th, 1895.

THE GURNEY FOUNDRY CO., LTD., Toronto.

GENTLEMEN.—With reference to the Volcanic Patent Shaking Grates—I am glad to say that I am well satisfied with the working of the grates and am convinced there is a very considerable saving of fuel by their use. Since putting in the "Volcanic" we have no clinkers at all, and use common uncleaned slack coal. We only clean out the fire once a week. When shutting down at night, the dampers are closed to shut off the fire and the next morning a few shavings thrown on top with a little fresh coal, is all that is needed to start the fire. This alone adds materially to economy in coal consumption.

My first impression that it was a first-class device and the best I had ever seen has been fully confirmed by the work the bars have done. I have no hesitation in recommending them as the best grate bars I have seen or used since I first entered the engine business eight years since.

F. W. BARRETT,
Late of the Polson Iron Works Co.

THE GURNEY FOUNDRY CO., Ltd., TORONTO.



**THE WEBBER PATENT
-STRAITWAY VALVE-**

For Steam, Water or Gas.

EVERY VALVE TESTED.

The Kerr Engine Co. Ltd.

WALKERVILLE, ONT.

SOLE MANUFACTURERS FOR CANADA.

SEND FOR PRICE LIST

TORONTO ELECTRIC MOTOR CO



BEWARE
of the
PIRATE

A large and pretentious concern doing business in Canada, having no regard for the rights of others, are manufacturing a motor copied, as far as possible, from that made by us, but without the name of the Toronto Electric Motor Co., thereon. Pirates exist in all communities, and the one here alluded to is a big one, sailing under a high-sounding title. The public should be on their guard against the big pirate.

Toronto Electric Motor Co., 107-109 Adelaide St. W. TORONTO

FOUR POWERFUL TURBINE WATER WHEELS.

Regarding further water power improvements at Niagara, we quote as follows from the Paper Trade Journal:—"The greatest work now in process of construction is the new electric power plant of the Niagara Falls Hydraulic Power and Manufacturing Company. . . The water for the new power plant will be taken from the hydraulic basin in an open canal to a forebay near the top of the high bank of the gorge. The power house will be situated in the gorge near the river's edge, and penstocks built of flange steel 8 ft. in diameter, will conduct the water over the high bank 210 ft. to the power house below. . .

"The present plans provide for turbine wheels of the horizontal type, furnishing in all about 8000 h.p. James Leffel & Co., of Springfield, Ohio, have been awarded the contract for supplying the turbines, as their wheels of the horizontal pattern of 1200 h.p. each now in use in the Cliff Paper Company mill have given the most gratifying results. . . The wheels will be placed on the ground floor of the power house, and will work under a head of 210 ft. This is the highest head under which water has ever been used for power in the quantity which it is proposed to use it in this plant. The pressure exerted is something enormous, and as a consequence the utmost care has been taken in every detail of the penstocks and water wheels, so that they will hold it. . . Three of these James Leffel turbines are specified to generate 1700 h.p. each, under a head of 205 feet, at a speed of 250 revolutions per minute. The fourth turbine, it is calculated, will develop 1900 h.p. with the same head, at 300 revolutions per minute. As the ordinary head will be from 210 to 215 feet, the power of these wheels will be from 1800 to 2000 h.p. each.

"The new turbines will be mounted on horizontal shafts of the double discharge design. They will also be fitted with runners seventy-four in. in diameter, made of an extra quality of bronze metal, and fitted with balanced gates. The turbines are so designed that the wheel runners are absolutely balanced. This is due to the equal discharge of water on each side, thus doing away with all end thrust on the shafts. The wheels are fitted in cases eleven ft. in diameter, made of exceedingly heavy plate steel, double riveted. The feeder connection to these large wheel cases is on the bottom of same, being riveted directly to the five foot hydraulic cylinder valves. The draft-tubes from the turbines pass down each side of the main feeder pipe, connecting with the tail water. . . The shafts are of the

best quality of hammered wrought iron, and are carried in adjustable ring oil bearings, mounted on heavy iron bridge trees. On each side of each wheel will be placed an electric generator which will be coupled direct to the shaft of the turbine. Either one of the wheels can be uncoupled at pleasure, and only one run at a time if so wished. The details of the designs will be worked out by James Leffel & Company, subject to the approval of Mr. Wallace C. Johnson, engineer.

"It is four years since James Leffel & Company put up their famous horizontal turbines in the Cliff pulp mill. These work under a head of 125 ft., and develop 1200 h.p. each, at a speed of 220 revolutions per minute. The success of these wheels is what decided Mr. Johnson to adopt the same style of wheel in the new plant. The new wheels, however, will embrace several new and important features, which have not been attempted before in turbine construction.

"The work on the new electric power house for the Cliff paper and pulp mill is also being conducted by Engineer Johnson. This will be a stone building 20x30 ft. James Leffel & Company will furnish the wheel for this plant also. It will be 250 h.p. capacity, of the horizontal type, and the generator will be coupled to the water wheel shaft direct. The electricity will be taken to the paper mill on cables. Two 100 h.p. motors will be attached to each machine, and two 5 h.p. motors will be set up in the mill at convenient places to run the other machinery. This will be the first attempt to run a paper mill by electricity as a motive power, and the experiment will be watched with considerable curiosity."

We may add to the foregoing that the illustration herewith of the new double discharge wheel of the James Leffel Company is a good representation of the wheels mentioned in the foregoing, except that they will take the water underneath instead of on top, and will have no pulleys, but will connect direct to the generators.

Quotation is also made as follows from The Electrical Journal. "The development of electric railway work at Columbus, Ga., is now in a very interesting stage, particularly as regards the utilization of water power for the work. . . The new power house is now built and equipped, James Leffel & Co., Springfield, Ohio, furnishing a complete plant on contract, of their well-known Samson wheels. A consolidated electric company has been operating about twenty electric cars of the Thompson-Houston make by

...INCANDESCENT LAMPS...

Manufactured by....

THE EDISON AND SWAN UNITED ELECTRIC LIGHT CO.

STAND HIGHEST IN THE MARKETS OF THE WORLD
FOR GENERAL ELECTRICAL AND MECHANICAL
PERFECTION, AND ARE MADE FROM 1 TO 2,000 C.P.
IN ALL VOLTAGES. COLORS AND SHAPES . . .

Electrical Supplies of Every Description

JOHN FORMAN, 650 CRAIG STREET
MONTREAL



FOR
Pleasant Flavor, Perfect Solubility,
Positive Strength, Peerless Purity,
and Perpetual Uniformity.

“BLUE  SEAL”

Birch Beer

Extract stands unrivaled. We make it of the finest ingredients, sell it on its merits, and, knowing its worth, agree with pleasure to take back at full price every ounce of it that is not absolutely satisfactory. You buy it always under this guarantee, but if you want to test it before ordering, send to-day for

Free Sample Bottle.

*Requires but one ounce to the gallon.
 Costs but \$5.00 a gallon.*

No charge for Packages.

Send for Bottler's Price List.

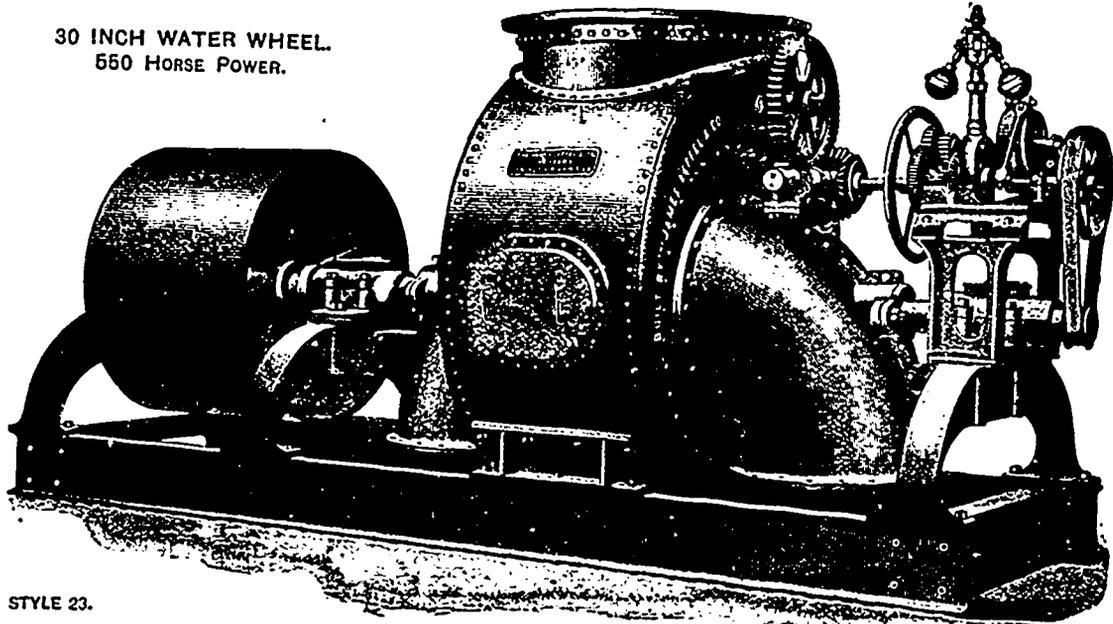
McKEY & CO.,
Boston, Mass.

steam power. The new plant for generating purposes comprises four 68 inch upright shaft James Leffel 'Samson' Wheels of about 1,000 h.p. Our cut simply shows half of the equipment. Upright

own road, but to furnish motive power for all the small industries in the city."

We might further add, that this plant has been completely in-

30 INCH WATER WHEEL.
550 HORSE POWER.



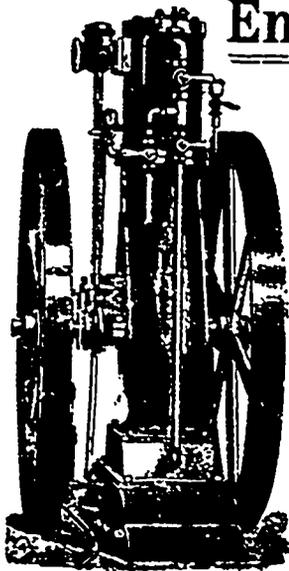
STYLE 23.

DOUBLE DISCHARGE JAMES LEFFEL WATER WHEEL.

shafts are used, with a fine outfit of steel beam work, bridge trees, gearing, shafting, pulleys, clutches, and governors. When this plant is fully equipped the company proposes not only to run its

stalled, and has been several months in daily practical and successful operation. The James Leffel Company furnished a complete steel beam and iron column penstock, in which the wheels

THE ELECTRICAL GAS OR GASOLINE...
Engine



WRITE FOR PRICES AND TESTIMONIALS

J. R. BAIRD

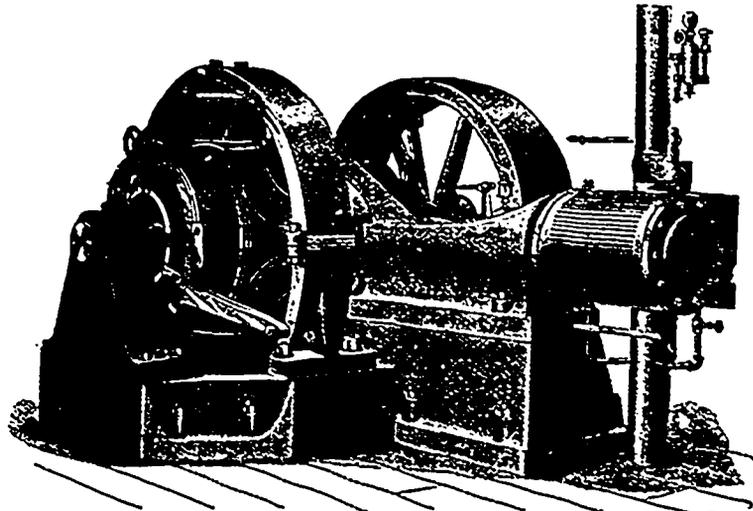
WOODSTOCK, - - - ONTARIO

Firstbrook Bros.

Dovetail and Packing Boxes
Top-Pins, Side Blocks and Cross Arms. Wood Printers, Etc.
Cigar Boxes. Shipping Cases.
TORONTO, ONTARIO. Write for Prices.

ROBB-ARMSTRONG ENGINES.

Simple, Tandem and Cross Compound.



Correct Design

Superior Workmanship

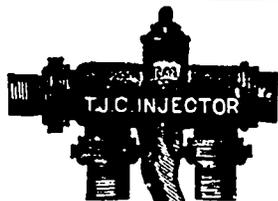
We highly recommend the Robb-Armstrong Engine for direct connection to Dynamo.

Robb Engineering Company (Ltd.)

AMHERST, N.S.

AGENTS-- Canada Machinery Agency, 321 St. James Street, Montreal
William McKay, Scaforth, Ont., Traveller.

Above
all



COMPETITORS

Coal is money, why not save it by using the

T.J.C. INJECTOR

the most economical boiler feeder in the world.

20 Per cent.

saved in coal over any other make. Absolutely automatic. Easily attached. Applicable to all kinds of boilers.

NOT EXPENSIVE

Will outwear any other make and is simple in construction. It is easy to operate, and is the most powerful feeder in the world.

The T. J. C. Injector

is the best because you cannot possibly go wrong with it. With high or low steam the result is equally satisfactory.

It combines the utmost simplicity with perfect efficiency, and any boy can operate it.

PRICE LIST :

No.	PRICE.	HORSE POWER.
7.....	\$ 7 00	4 to 8
10.....	7 00	8 to 16
15.....	10 50	16 to 40
20.....	15 00	40 to 72
25.....	22 50	72 to 120
35.....	30 00	120 to 220
45.....	45 00	220 to 300

HAMILTON BRASS MFG CO.

LIMITED

HAMILTON, - ONT.

were placed ; also complete iron head gate apparatus ; the whole being the most complete water power outfit from head race to dynamo that has yet been furnished in this country. The James Lefell Company have also recently furnished complete power plants for a number of the large new cotton mills in this section, and are prepared to undertake water power plants for that character of work of any capacity, how ever large or complicated."

A MODEL NEWSPAPER OFFICE.

The new home of the Toronto Globe is a handsome structure on the southwest corner of Yonge and Melinda streets, extending westward to Jordan street. The building consists of three storeys and basement, and is built of Don Valley pressed brick and red sandstone. The Yonge street front is surmounted by a round tower carried a considerable height above the main building. The main entrance is richly decorated with Tennessee marble, and the whole building appears rich and solid. The north frontage, 200 feet, is on Melinda street, affording excellent light and splendid facilities for the handling of the tons of paper turned out from day to day.

The building is fireproof and constructed upon the most approved modern principles. Upon each flat is a standpipe with hose attachments, which are kept ready for use at any moment. The solid nature of the building prevents vibration, a matter of importance in a building where machinery is in constant use.

The Globe was the first newspaper in America to use electricity for power for all purposes, and its mechanical department is an object lesson in the varied uses to which electricity can be put. The news is flashed into the building by electric telegraph and telephone wires. The editors scan it by electric light. The operators put it into type upon linotype machines operated by electric power, and when it is ready for the press the power is supplied there also from electric motors. Electricity everywhere, giving possibilities of cleanliness and order that were not to be had in the old days of steam. The only service that is not performed by electricity is the heating of the building. The boilers, coal chutes and storage space for this are in the basement ; the remainder of which is occupied by the mailing and press departments. In the boiler room which is 24x28 feet, there are two boilers, one of eighty horse power, built by the Waterous Company of Brantford, and used for heating purposes only ; the other an upright 10 horse power boiler supplied by the A. R. Williams Company, and used for the stereotyping department.

The electric lighting is performed by the three-wire system. There are 220 lights distributed throughout the building, and the mains are large enough for any extension that may be required in the future. To make the insulation of wires doubly secure, each wire wherever it passes brickwork, ironwork or under floors, is encased in Vulca, thus making it practically impossible for any fire to be started through defective wiring. The switchboard is so constructed that each flat in the building is independent of the others. There are five motors for driving machinery : one 20 horse power slow-running motor, used in driving the presses ; a three horse power for driving machinery in stereotype room ; a three horse power for linotype machines ; a three horse power for elevator, and a two horse power for folding machine and Gordon presses.

Instead of driving machinery from overhead, as in past years, the management of the Globe devised a scheme whereby all driving apparatus, such as shafting, pulleys and belting, is now completely hidden under a second floor.

The principal feature of the press-room is the huge Potter inserting press, which can print either a four, six, eight, ten, twelve or sixteen page paper at the rate of 24,000 eight-page papers per hour. This press is supplemented by a single Hoe press, producing two, four or eight pages, and with a capacity of 10,000 eight or 40,000 two-page papers per hour. The Potter press, is two-storey, each storey being independent of the other and capable of being operated alone, and can turn out, when both storeys are working, a constant stream of Globes at the rate of 400 a minute, or almost seven per second. The white paper is drawn in at one end from the rolls as they are received from the paper mill and the big press prints, cuts and folds the papers, and when ten pages are being printed pastes in the extra sheet in the centre of the paper. The printing of newspapers on a cylinder press is comparatively familiar, but the pasting apparatus is not so often met with, and its operation shows the wonderful adaptability of modern mechanism. On the Potter press every Saturday sixteen pages of The Globe are printed simultaneously and dropped into the receiving chutes with the pages numbered consecutively and the paper folded ready for delivery.

Scarcely less delicate in construction than the presses in the

basement are the eight linotype machines in the composing room at the top of the building. These machines, before which the operators sit and make type by the pressing of the letters they require on the keyboard and the touch of a lever now and then, do as much work as thirty-five men did under the old order. Of the typographical excellence of this work the reader can judge. The *Globe* has never presented a neater appearance than since their introduction. The conquest of the typesetting machine has been extremely rapid, and the result has been a distinct advantage to the purchaser of newspapers, who now gets ten and twelve page papers where formerly six and eight were the standard.

The first floor of the building is used as business offices. The counting house is a spacious room almost 100 feet long and twenty wide. It is reached from the main entrance on Yonge street by a lobby finished in marble. The finishings in the room are of cherry, handsomely decorated, and clusters of electric lamps give it brilliant light at night. The office of the business manager is provided with a house telephone by which the press-room, editorial rooms and composing room can be called up when required.

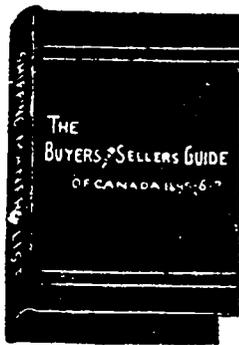
To the editorial rooms on the second flat access is had by an ornamental iron stairway from the business office. The rooms, like the other parts of the building, were designed for the convenience of their occupants, and the result has been that *The Globe's* new home as a whole is a model and up-to-date newspaper office.

The Packard Electric Company, St. Catharines, Ont., have recently opened a well-equipped repair shop and are now in a position to quote on all kinds of repair work on electrical apparatus, making a specialty of rewinding all kinds of street railway armatures and transformers of any type. They are also carrying a full line of Homer Comutators. Although they have only opened the repair department of their business a short time, they have quite a quantity of work on hand.

Mr. Richard Roschman, manufacturer of ivory buttons, Waterloo, Ont., has sent us a circular announcing that he has taken into copartnership with him in his business, his brother, Mr. Rudolph Roschman, who has been an assistant in the business for the last fifteen years, the name of the firm being Richard Roschman & Bro. This is an old and well known concern that has been in the business for many years, and has always, and most deservedly, possessed the confidence and esteem of the business community.

IT IS UP-TO-DATE.

360
Pages



Cloth
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It gives you the address of reputable manufacturers of any article you may want in any line.

If you want Farm Products it gives you the address of reliable merchants in Ontario and Manitoba who handle such products for shipment.

The list of Flour and Feed merchants in the Province of Quebec and Maritime Provinces (who buy in car lots) is carefully compiled and reliable.

The Hardware merchants of the Dominion are in alphabetical order and by Provinces.

It has the best classified list of Lumber Manufacturers ever published for Canada.

Also a General List, alphabetically arranged, for addressing purposes only.

Address—

The Manufacturers' List Co.
MONTREAL, - CANADA.

Mr. E. Chant, Chantry, Ont., will enlarge his grist mill. Messrs Beckler & Co., will erect a large saw mill at Sarnia, Ont. S Allen will rebuild the vinegar factory recently burned at Norwich; Ont.

Petrolia, Ont., has authorized the expenditure of \$172,000, on a system of sewerage.

Lanark, Ont., will shortly vote on a by-law granting \$10,000, for an electric railway to Perth, Ont.

E. W. Stickney has erected a machine shop and foundry at Newburg, Ont.

Chas. B. Williams' planing mill at Toronto was destroyed by fire on Jan. 30th.

The Halifax Chrome Co., Halifax, N.S., are applying for incorporation with a capital stock of \$60,000, to manufacture and refine all products of chrome, iron ores, etc.

The Westville Foundry & Machine Co., Westville, N.S., are applying for incorporation with a capital stock of \$12,000, to carry on the business of iron founders, and to manufacture stoves, furnaces, saw mills, etc.

The Beaver Saw Works of Hamilton, Ont., have been sold to the W. R. Gardner Tool Company, of Brockville, Ont., and the plant and machinery have been moved to Sherbrooke, Que., where the business will be conducted under the old name of the Beaver Saw Works.

The Kerr Engine Co., Walkerville, Ont., inform us that they have received the contract from the Walkerville Light and Water Company for a new compound condensing pumping engine of 3,000,000 gallon capacity. It is pleasing to learn that with the Kerr Company their special lines of trade are daily increasing.

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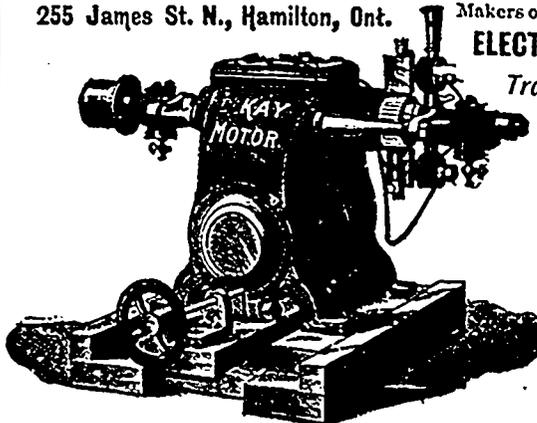
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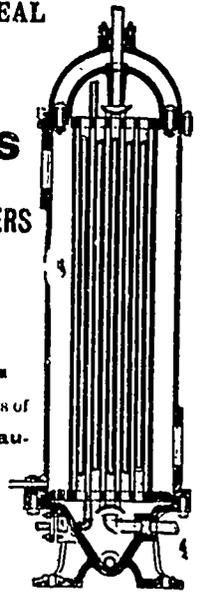
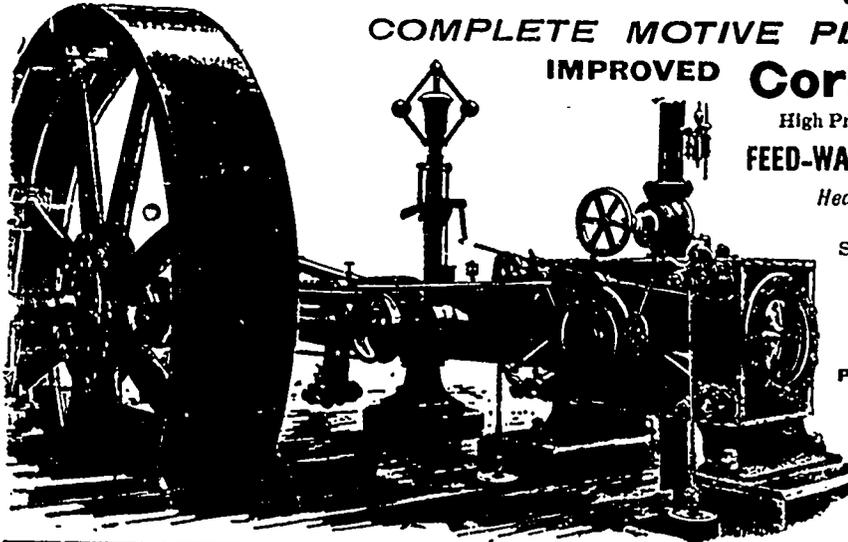
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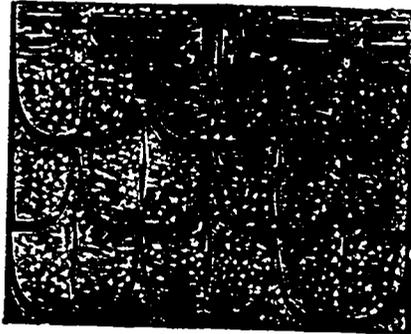
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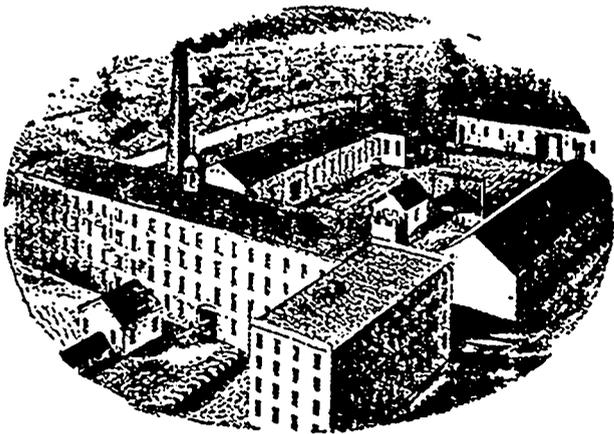


Half Tones Made Direct
from Photos

The Buffalo Forge Company are just issuing two very beautiful brochures that will certainly commend themselves to any who may fortunately receive them. The first, entitled "A French Iron Foundry in 1789," gives some very realistic pictures of how the operations of an iron foundry were conducted at that time, which are in strong contrast with the methods observed at this time. Contained in the little book are illustrations and descriptions of the appliances manufactured for foundries and other metallurgical works by the Buffalo Forge Company including pressure blowers, exhaust fans, down-draft smoke exhaust forges, combined blower and exhauster, the Buffalo fan system of heating, ventilating and drying, etc. The other publication, of style and excellence similar to that above mentioned, and entitled Air as an Industrial Factor, makes special reference to the air moving appliances made by this concern, beautifully illustrated and described. We are informed that within the next few weeks every iron foundry and large industrial works in the country will receive a copy of one or both of these unique books with the compliments of the Buffalo Forge Company.

Weston Woolen Mills.

This valuable Seven Set Mill, including 25 acres of Land, with 10 dwellings, etc., is now offered **FOR SALE**. It contains seven sets of 60 inch manufacturing Cards, 2,500 Spindles (Tatham Mules), 45 Broad Looms, and all other machinery to match. It is advantageously situated on the banks of the Humber River, and has an excellent water power.



Weston is a Suburb of Toronto, on the Main Lines of the Grand Trunk and Canadian Pacific Railways, having also an electric car service direct to Toronto.

As this fine property is offered at very reduced figures an eminently favorable opportunity is afforded to intending purchasers.

I also have for sale, one set of 48 inch Cards, 2 sets of 60 inch Cards, 4 Tatham Mules, 20 Broad Looms, 2 English Gigs, 2 Chinchilla Machines, Eight 60 inch Shoddy Cards, 2 Fulling Machines, 3 Shoddy Pickers, 1 Rag Duster, etc., etc.

GEORGE REID, 118 Duke St., Toronto.

ELECTRICITY IN PAPER MILLS.

After careful consideration the Canada Paper Co., of Montreal, have decided to use electricity altogether for the operation of its large paper mills at Windsor Mills, Que. Hitherto the works have been run by a combination of steam engines and water wheels, the water of the Watlapaka river not being of sufficient quantity to furnish altogether the required power; while the paper machines, themselves, which demand practically constant speed during the entire period of running have been operated by individual steam engines, in order to obtain that condition. The Paper Co. recently acquired an excellent water privilege on the St. Francis river and constructed a dam and power house, distant about three quarters of a mile from their mills. The engineering of the dam and water power has been done by Mr. Wm. Kennedy, hydraulic engineer, and Mr. J. Massey, civil engineer, both of Montreal, while all the electrical features of the enterprise, including the methods of generation, transmission and distribution throughout the buildings, have been placed in the hands of the electrical engineer, Mr. George White-Fraser of Toronto, the magnitude and importance of the undertaking rendering it advisable that an electrical specialist should take charge of them.

The entire amount of power to be used will be nearly 1,000 horse power and the conditions are such that the generator plant must be divided into such units, and the motor plant so arranged and distributed, that the entire factory can be operated exclusively by electricity from the power house, or partly by electricity and partly by the local wheels that have hitherto run it, the steam engines in both cases being entirely superceded. The conditions require that the exchange from electrical to water power operation, must sometimes be made at half-an-hour's notice. The motor plant will consist of a number of units, ranging in power from 5 h.p. to 160 h.p. each, so arranged that different parts of the factory may be operated independently of each other. The buildings and yards will also be lighted by a large number of incandescent arc lamps, it being proposed to ultimately extend the lighting system to the town of Windsor Mills.

The freighting of pulp, etc., between the pulp mills, the factories and the railway station, hitherto done by carts, will be done entirely by means of an electric railway which is to be constructed for the purpose.

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Complete protection from dust, dampness and external injury.

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Slow speed combined with lightness and compactness.

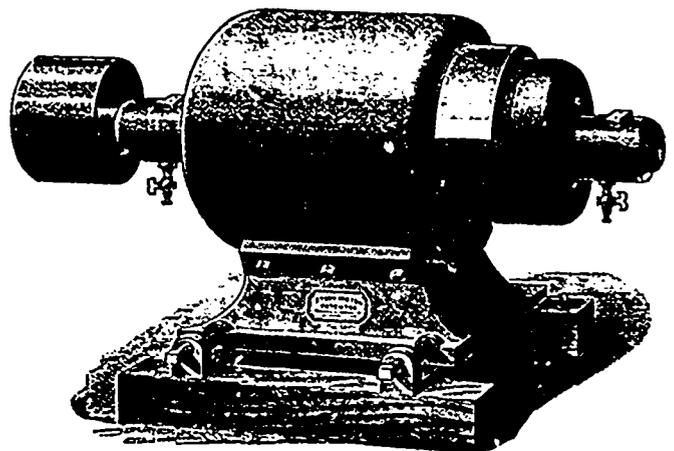
Absolutely sparkless, even under wide range of load.

No External Magnetism.

No undue heating when running continuously under full load.

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The Storey, while it rivals every other direct current motor made anywhere, has no competitor for direct driving and special purposes where the closed-in features, efficiency, sparklessness, speed, size and weight, are taken into consideration.



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everything in connection with the repairs.Wishing you the compliments of the season, I remain, yours truly,
(Signed), J.L. BUCK.**LATEST IMPROVED ROLLER MILL MACHINERY, ENGINES, BOILERS,
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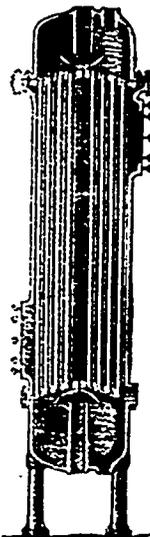
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CANADIAN PATENTS.

The following patents have been issued from the Canadian Patent Office, from November 13 to November 27, 1895.

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

Fetherstonhaugh & Co., Bank of Commerce Building, Toronto.
Ridout & Maybes, 103 Bay Street, Toronto.

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

A. Harvey, Central Chambers, Ottawa.

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

50,556 Snap hook, Wesley Eckert and Chas. H. Freeman, Elk Point, S. Dak.

50,557 Process of and apparatus for treating, working and handling bituminous, etc., Eugene F. Badgley and Mrs. A. P. Phillips, San Francisco, Cal.

50,558 Stack adjuster for power transmitting machinery, Chas. G. Emery, New York, N.Y., assignee of Edward G. Shortt, Carthage, N.Y., and Jos. E. Normand, Watertown, N.Y.

50,559 Aerial hoisting and transfer apparatus, Willis D. Sherman, Brooklyn, N.Y.

50,560 Carriage pole tip, Daniel O. Fisher, Grand Rapids, Wis.

50,561 Picture, Ludwig Knoefel, New York, N.Y.

50,562 Device for straining and spacing fence wires, Elmer H. Stowell, Drayton Plains, Mich., and Geo. W. Terry, Pontiac, Mich.

50,563 Burglar-proof fastening device for doors, Josef Wanek and Josef P. Tovis, Esztergam, Hungary.

50,564 Window sash, Emily E. Tichenor, Lake View, N.J.

50,565 Nozzle regulator, Andre Chavanne, Grass Valley, Cal.

50,566 Clothes boiler, Alexander Adams, Montreal.

50,567 Manufacture of inflatable inner air tubes for pneumatic tires, Fred W. Morgan, Chicago, Ill.

50,568 Electric railway, John C. Henry, Westfield, N.J.

50,569 Box corner binder, Albert A. Wood, Atlanta, Ga.

50,570 Electro depositing device, John Bossard, Dubuque, Ia.

50,571 Manufacture of saponaceous products from petroloum, Chas. Woygang, Hants, Eng.

50,572 Apparatus for transporting loads by means of travelling ropes or cables, John P. Roo, London, Eng.

50,573 Manufacture of electrical conductors, Lewis W. Downes, Providence, R. I.

50,574 Car coupler, David J. Schulte and Alexander L. Chambers, Latrobe, Pa.

50,575 Method of and apparatus for drying malt, etc., Louis Wagner and John Marr, Baltimore, Md.

50,576 Chair, John D. Howe, St. John, N.B.

50,577 Adjusting device for drills, Wm. J. Mewer, Old Orchard, Me.

50,578 Steam boiler furnace, Enoch R. R. Hoyt, New York, N.Y.

50,579 Car fender, John Landau, Wm. H. Harvey and Thos. J. Kenna, Brooklyn, N.Y.

50,580 Lobster trap, Edward A. Wheeler, Botsford, N.B.

50,581 Composition to cure spavins, etc., on horses, Jos. Lachance, Montreal.

50,582 Seed planter, Jos. A. Mengel, McKeansburg, Pa., Geo. K. Binkley, Orwigsburg, Pa., and Geo. H. Gerber, Pottsville, Pa.

50,583 Steam boiler, John Bonner, Tiburon, Cal.

50,584 Pipe or rod coupling, Samuel M. Jones, Toledo, O.

50,585 Petroleum burner, John J. Montgomery, Oakland, Cal.

50,586 Washboard, Lewis Peterson, Madrid, Ia.

50,587 Bicycle crank and pedal, Reuben Lester, Toronto.

50,588 Pack saddle, Abraham A. Anderson, New York, N.Y.

50,589 Clevis, John L. Colbert, Ogden, Kan.

50,590 Folding berth, Peter Fraser, Brooklyn, N.Y.

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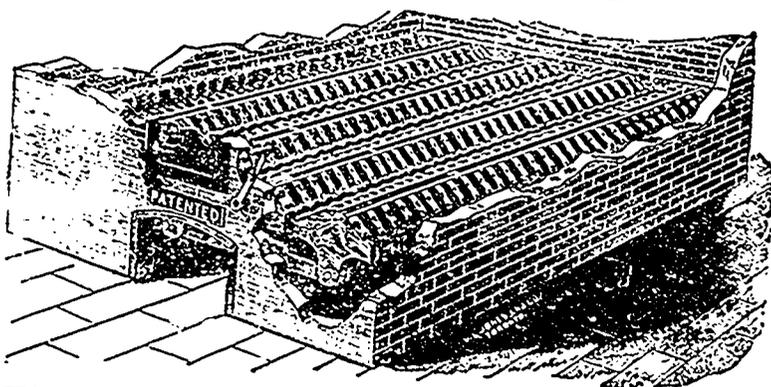
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- 50,592 Steam shovel and dredge, Jas. C. Brindlo, Ashland, O.
- 50,593 Cement injector for repairing pneumatic tires, Chas. G. Page, Chicago, Ill.
- 50,594 Apparatus for making mortar, Thos. D. McClary, Washington, D.C.
- 50,595 Snap hook, Richard A. Breul, Bridgeport, Conn.
- 50,596 Driving mechanism for bicycles, Henry L. Humphroy, Detroit, Mich.
- 50,597 Pressure regulator, Wm. G. Tafel, Newark, O.
- 50,598 Circulating water bar grate, Jas. Reagan, Philadelphia, Pa.
- 50,599 Bottle seal, Leroy S. Bullington, Minneapolis, Minn.
- 50,600 Dredging apparatus, Fred E. Youngs, Allegheny, Pa.
- 50,601 Apparatus for turning inner air tubes for bicycle tires, Fred W. Morgan, Chicago, Ill.
- 50,602 Means for insulating electric conductors, Theodore Guillaume, Mulheim-on-the-Rhine, Germany.
- 50,603 Folding chair, John F. H. Evers and Hermann Woerner, New York, N.Y.
- 50,604 Railway rail joint, Wm. Morrison, Toronto.
- 50,605 Stretcher and ammunition carrier, Frederick Remington, New Rochelle, N.Y.
- 50,606 Device for repairing pneumatic tires, Fred. H. Nies, Brooklyn, N.Y.
- 50,607 Boot and shoe, Edward Roche, Providence, R.I.
- 50,608 Ore separator, Geo. H. Patterson, Denver, Col.
- 50,609 Basket making machine, Emmet Horton, Dundee, N.Y.
- 50,610 Electric motor, Frank H. Williams, Greene, N.Y.
- 50,611 Electric railway system, The Canadian General Electric Co., Toronto, assignee of Elihu Thompson, Swampscott, Mass.
- 50,612 Series parallel controller for electric motors, The Canadian General Electric Co., Toronto, assignee of E. D. Priest, Schenectady, N.Y.
- 50,613 Gas stove, Robt. Pringle, assignee of Robt. Morton, London, Eng.
- 50,614 Pedal grip for bicycles, Marmaduke Matthews and Agnes Jardine, Bracondale, Ont.
- 50,615 Fire grate, John Burns, assignee of Frederick J. Gilman, Montreal.
- 50,616 Electric motor, Chas. Riordan, assignee of Wm. J. Still, Toronto.
- 50,617 Grain separating screen for threshing machine, The Cloz and Howard Mfg Co., assignee of Chas. Cloz, Webster City, Ia.
- 50,618 Screen for separating grain for threshing machines, The Cloz and Howard Mfg Co., assignee of Chas. Cloz, Webster City, Ia.
- 50,619 Mica lamp shade, Wilbur Reuben Hitchcock, Cornwall, Ont.
- 50,620 Car wheel, Francis D. Taylor, Toronto.
- 50,621 Water heater, Alexander D. Gordon, Buffalo, N.Y.
- 50,622 Safety controller for elevators, John J. Ness, and the firm of Ness, McLaren and Bate, Montreal.
- 50,623 Mop, Patrick J. Graco, assignee of De Lacy E. Bullam, Brooklyn, N.Y.
- 50,624 Furnace door, Erwin W. Harris, Palisade, Nevada.
- 50,625 Exhaust nozzle and operating mechanism therefor, Erwin W. Harris, Palisade, Nevada.
- 50,626 Method of lining tubes, etc., Chas. A. Noll, New York, N.Y., and John H. R. Ward, Stoughton, Mass.
- 50,627 Handle for culinary and other heated utensils, J. A. Choquette, Ottawa.
- 50,628 Device for opening and closing window shutters, Heinrich Sommerfeld, Canton, Kan., and Abraham Quiring, Nowton, Kan.

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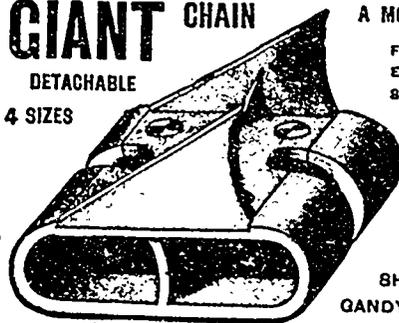
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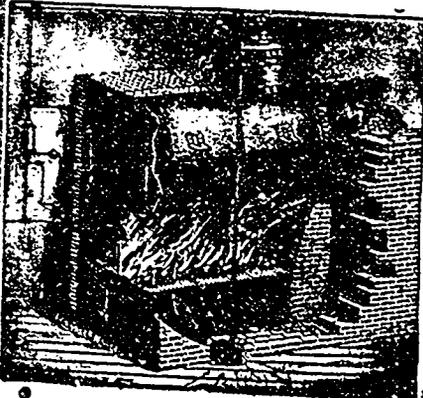
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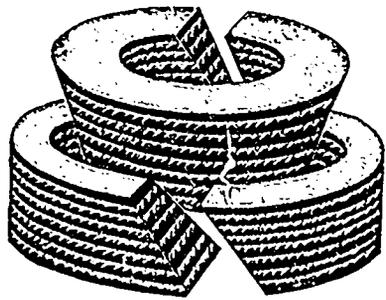
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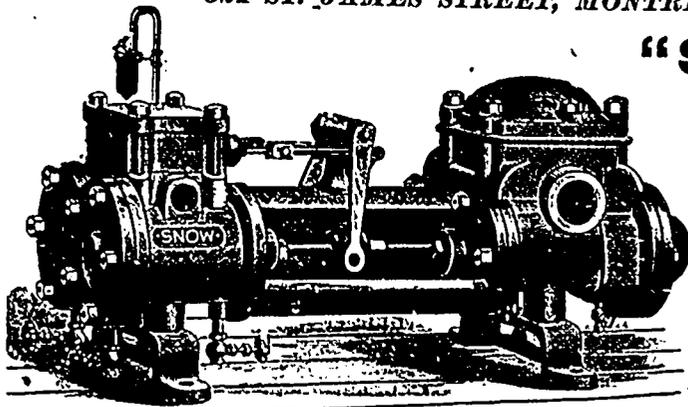
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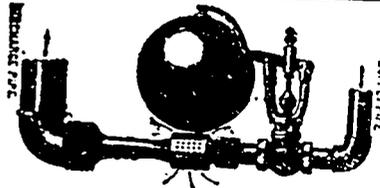
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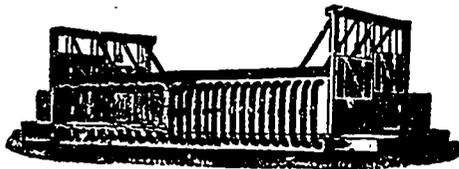
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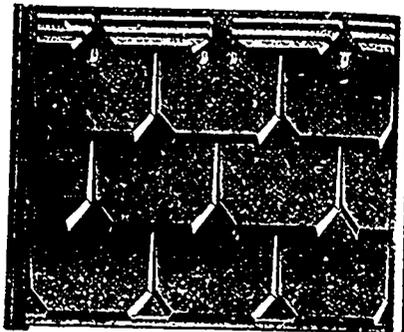
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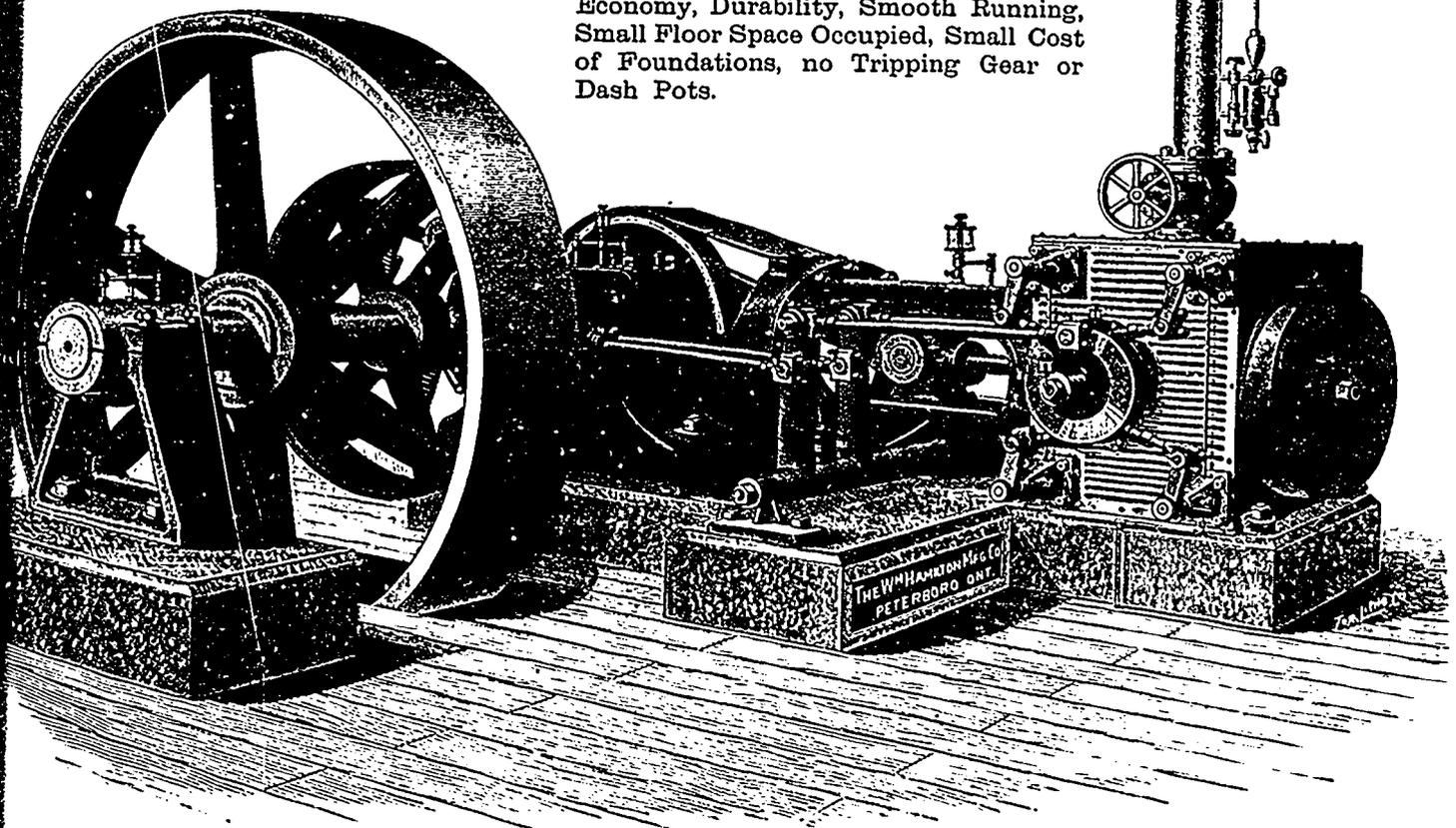
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- 50,667 Air-brake valve mechanism, Chas. G. Emery, New York, N.Y., assignee of E. G. Shortt, Carthage, N.Y.
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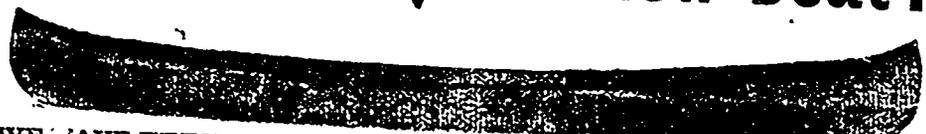
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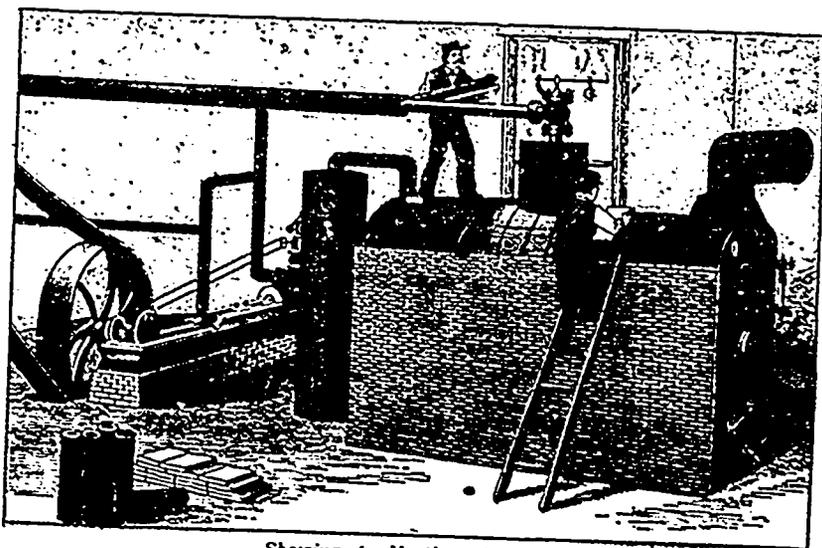


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- 50,671 Throttle actuating mechanism for locomotives, Chas. G. Emery, New York, N.Y., assignee of E. G. Shortt, Carthage, N.Y.
- 50,672 Method of and mechanism for operating air brakes, Chas. G. Emery, New York, N.Y., assignee of E. G. Shortt, Carthage, N.Y., and Jos. E. Normand, Watertown, N.Y.
- 50,673 Air-brake graduating mechanism, Chas. G. Emery, New York, N.Y., assignee of E. G. Shortt, Carthage, N.Y.
- 50,674 Machine for cutting soles, etc., The Canadian Rubber Co. of Montreal, Montreal, assignee of the Wellman Sole Cutting Machine Co., Boston, Mass., assignee of A. M. Stickney, Medford, Mass.
- 50,675 Ice creeper, Adelard E. Charron, Montreal, and Louis Charron, Ottawa.
- 50,676 Disinfecting apparatus, etc., Rudolph A. Rosenblatt and Martin F. Schmidt, New York, N.Y.
- 50,677 Printers' galley lock, Joshua T. Johnston, assignee of Wm. Young, Toronto.
- 50,678 Caster, Chas. H. Gaffney, Gloucester, Mass.
- 50,679 Chain link, Richard A. Bruel, Bridgeport, Conn.
- 50,680 Grain meter, Frederick F. Kaune, Waterville, Minn.
- 50,681 Instrument for carving, etc., Gustav A. Kleinknecht, Peter Keltch and Paul Keltch, Erlangen, Bavaria.
- 50,682 Pipe, Wm. Bohrer, Montreal.
- 50,683 Pipe joint, Michael Sexton, New York, N.Y.
- 50,684 Bicycle crank, David K. Strachan, Goderich, Ont.
- 50,685 Hydraulic engine, Fred Starr, Chicago, Ill.

United States Patents to Canadian Inventors.

Since our last issue, United States patents to Canadian inventors were issued as follows, as reported by Mr. Chas. H. Riches, Solicitor of Patents, Canada Life Building, Toronto:—

- 552,892 Fare box, Jos. H. Coleman, Tottenham, Ont.
- 552,914 Blackboard, S. J. Laughlin and J. Hough, Guelph, Ont.
- 552,916 Railway frog, D. McPherson, Montreal.
- 553,072 Sportsman's cabinet, Geo. Porteous, Guelph, Ont.
- 553,098 Casting brake shoes, A. Brake, Toronto.
- 553,106 Automatic closing telegraph key, J. A. Coleman, Perry Station, Ont.

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- 553,114 Harness, G. Fierholler, Markham, Ont.
- 553,183 Fire escape, Wilbrod Bourdon, Valleyfield, Quo.
- 553,254 Saw filing machine, J. L. McDougall, Winnipeg, Man.
- 553,255 Letter slip, C. C. McPhee, Chatham, Ont.
- 553,263 Ratchet drill, Napoleon Samson, Riviere du Loup, Quo.
- 553,320 Electric register for sleeping car berths, S. C. Shanks, Toronto.
- 553,514 Metallic shingle, Fred Crawford, Toronto, Ont.
- 553,529 Bottle filling device, James Irondale, Toronto, Ont.
- 553,582 Means for changing motion, J. J. Hamilton, Neepawa, Man.
- 553,611 Corset clasp protector, J. C. Gilroy, Clinton, Ont.
- 553,747 Steam engine, W. F. & E. W. Cleveland, Rounthwaito, Man.
- 553,773 Roller bearing for railway car axles, P.N. Boucher, Sherbrooke, Ont.
- 555,574 Incinerator, Chas. Thackeray, Montreal, Quo.

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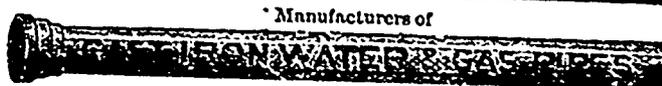


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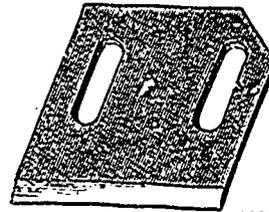
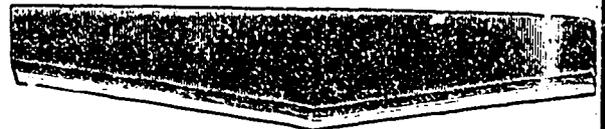


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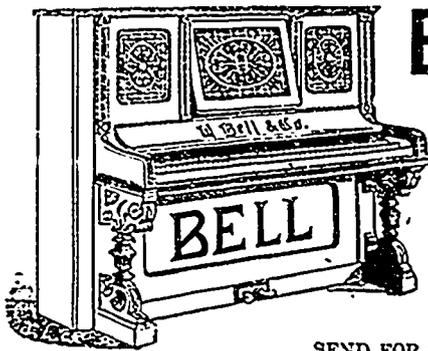
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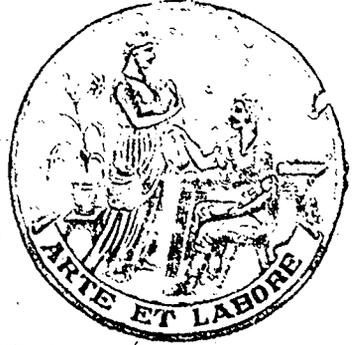
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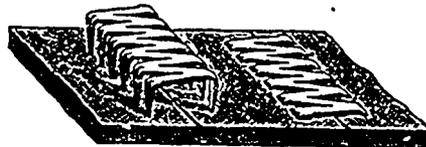
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