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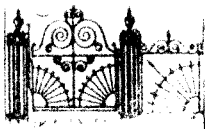
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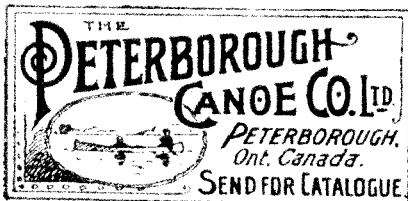
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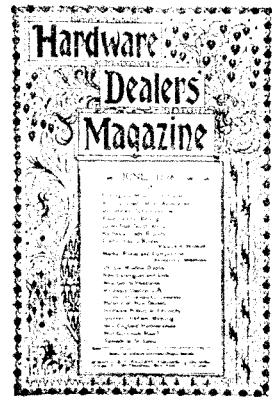


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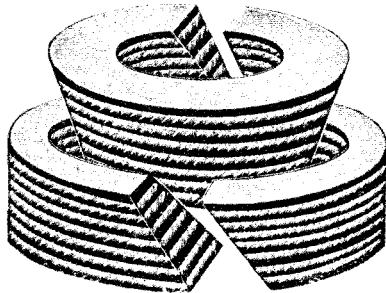


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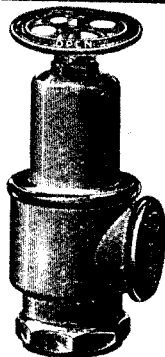


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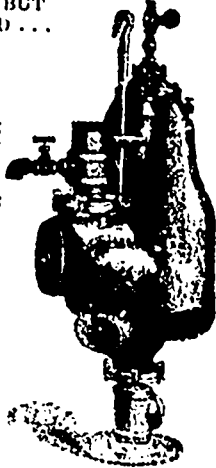
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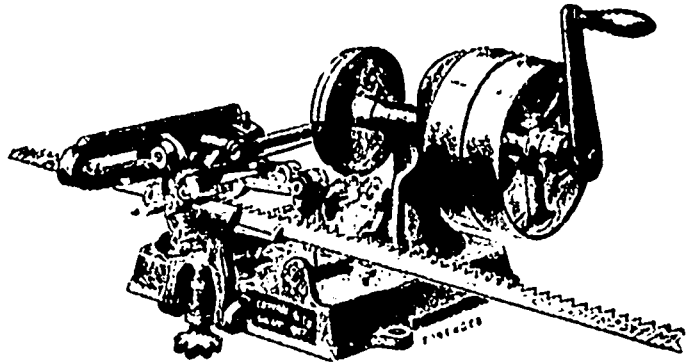


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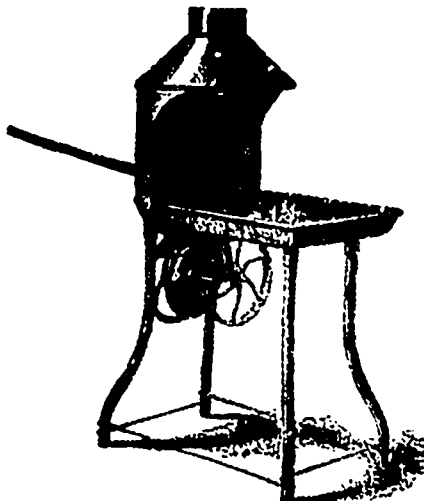
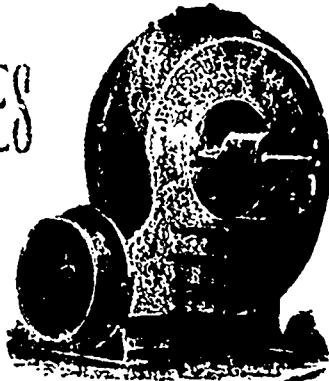
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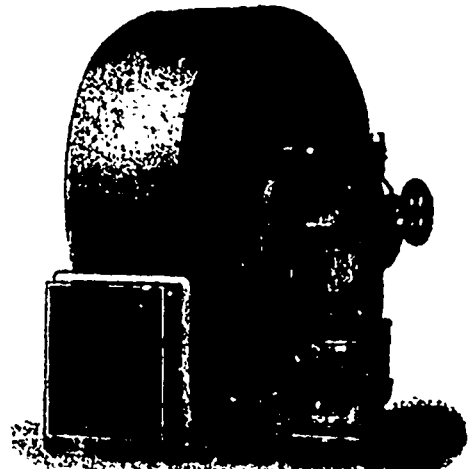
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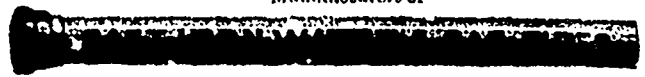
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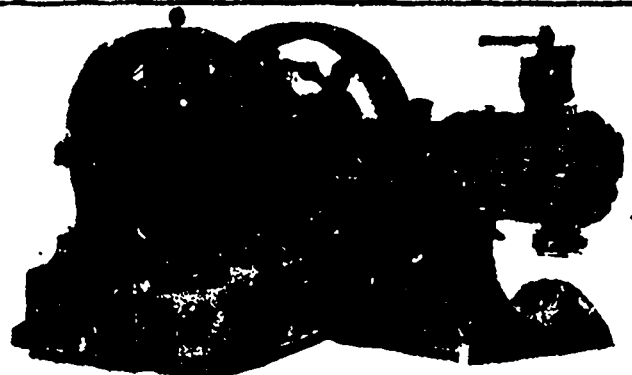
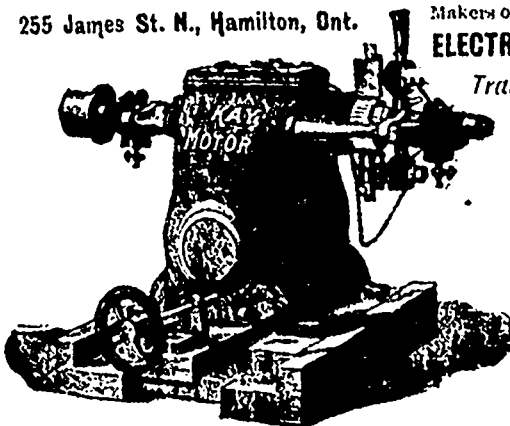
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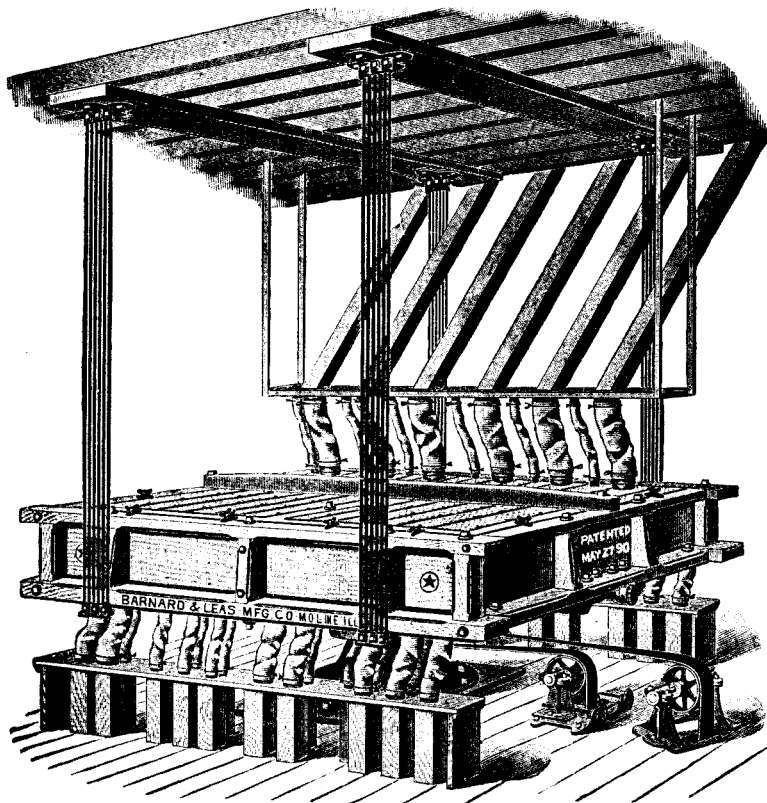
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T. Mather, Tilbury	75
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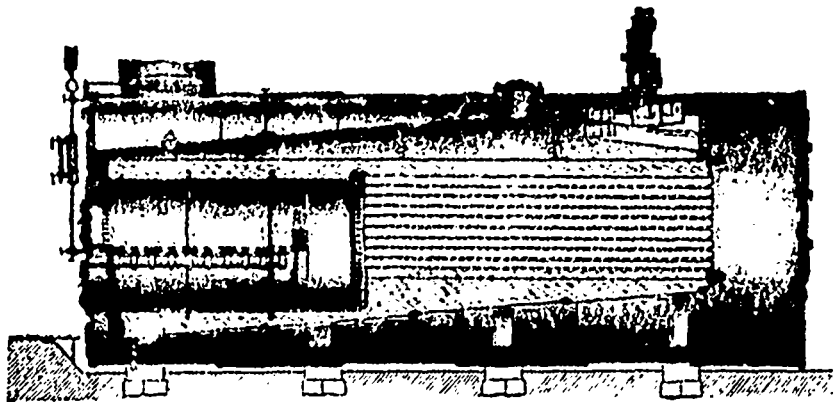
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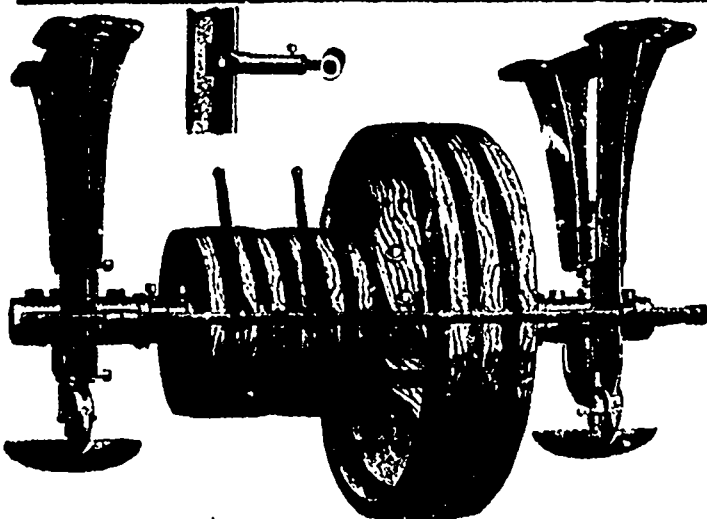
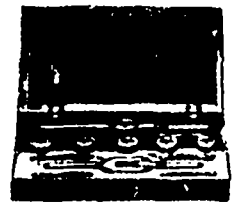
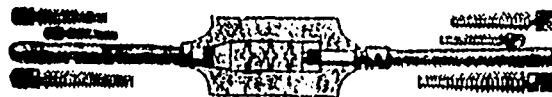


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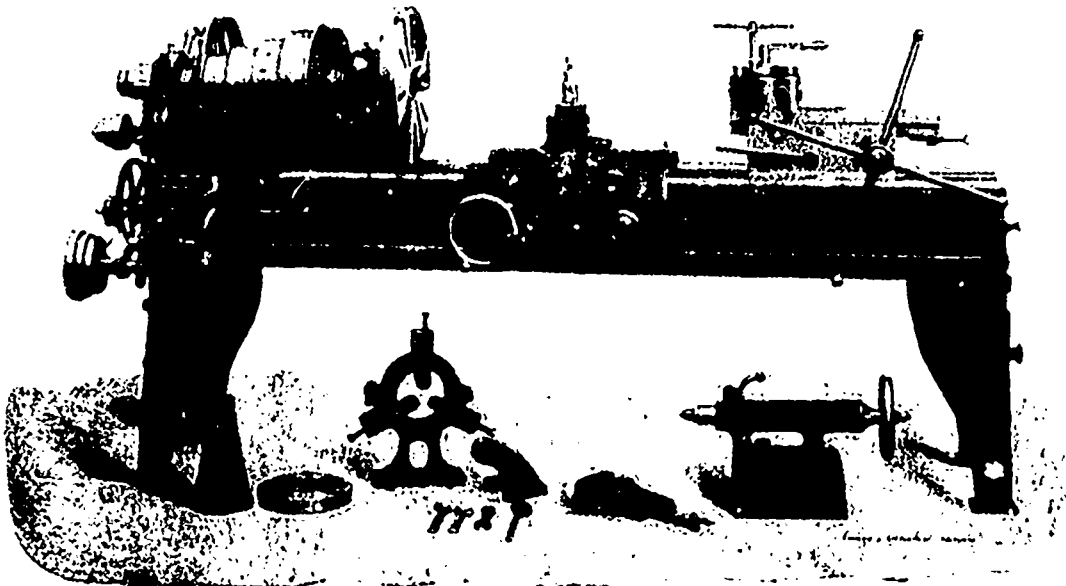
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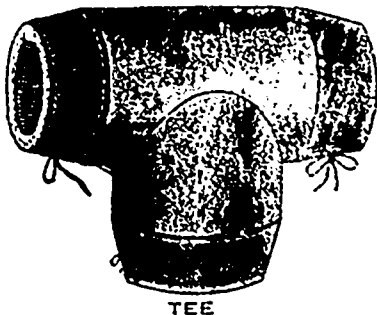
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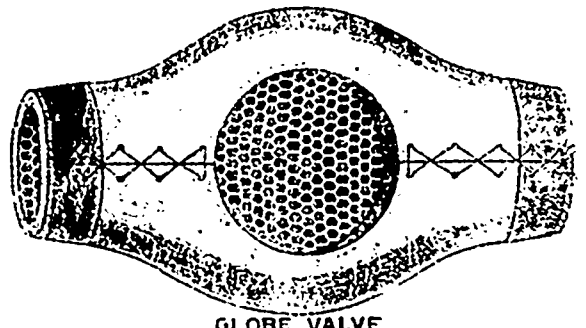
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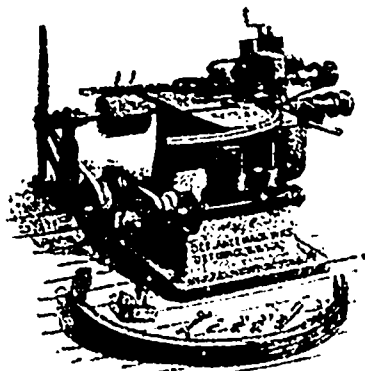
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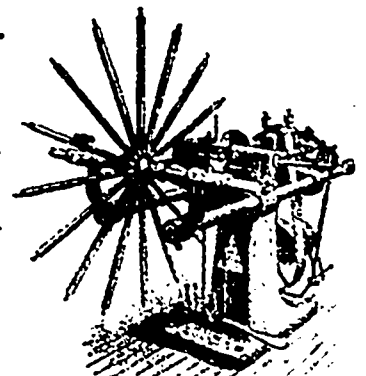
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THE FOREIGN MARKET.

Once more let us impress upon the manufacturers of Canada the necessity to lose no opportunity to secure a foothold in every country where there is a possible market. Every slightest chance should be seized upon. When the manufacturers of other countries are reaching out for new fields, the manufacturers of Canada cannot afford to be out of the running. The London Ironmonger is authority for the

statement that recently in Great Britain orders have been given for American book-binding machinery, hoops, cast iron pipe, files and rasps. It adds that it believes it is correct in stating that an American company has secured an order for 20,000 tons of rails for electric railways about to be constructed in Ireland.

The Toronto correspondent of the Iron Age says that American wire is being shipped from Montreal to Liverpool. He even goes into figures and estimates that one steamer took 360 tons to Manchester, and another took 500 tons of Pittsburg product to the old country. This is another instance in which a line of American goods is finding a market that the manufacturers of Canada should have first claim upon.

A correspondent of the London Times tells of opening the tenders for a certain supply of steel girders for building work. The lowest English tender, i.e., was £4,483. The lowest American tender, i.e., was £3,853. Why are there not manufacturers in Canada who can make just as good steel girders as any firm in the United States? With a preferential tariff removed from probability by the deliberate action of the Knight of the Cobden Club medal, we must depend on our own efforts. Steel girders are not made in Canada. Steel rails also are not made here. But they should be, and they would be, if the iron industry of Canada received the encouragement to which it is entitled from the Government. As it is, our manufactures of steel are made from imported ingots instead of from the product of Canadian mines. Girders and rails are not the only articles imported into Great Britain from the United States.

Does the Canadian manufacturer suppose that the British firms who were the purchasers of all these goods, sent a special announcement of their requirements to the American firms that supplied them? Or is it rather reasonable to think that the American manufacturer put himself to the trouble of finding out where his products might be required, and then took immediate steps to secure contracts to furnish such supplies as were wanted?

The Sydney (Australia) Morning Herald, of July 23rd, says that American hardware is rapidly growing in favor in that continent and "gives promise of gradually supplanting that of English and Continental manufacture." Where is Canada in this case? Some Canadian agricultural machinery is on the Australian market. Our manufacturers are fully capable of supplying hardware of as good grade as American factories can turn out. Let them get into the market quickly, and show the Australians that there is no reason why American products should be given the preference. Inquiries are easily made, and there are always responsible firms to be found that will be glad to act as agents on fair terms. Don't wait till it is too late and then growl because Uncle Sam's manufacturing concerns have control of the whole market. Move now, and get a share of the trade, if you can't get it all.

As the manufacturers of the United States are, perhaps, from the fact of the somewhat similar circumstances surrounding them, more especially our competitors for the world's markets, we must keep a sharp eye on them.

Six firms interested in the manufacture of iron and steel in Pittsburg, Pa., have clubbed together as European firms do rather frequently. It is said that they will employ an agent in London, to which city news concerning tenders and contracts usually comes before it goes anywhere else. It is

stated that a special effort will be made to do business with India, Japan and the South American countries in fields and in lines of trade previously held by British manufacturers. Now, the expense of starting into fresh fields is too great for one firm to bear, unless it should be a firm of great wealth and experience. Let Canadian manufacturers effect organization like that of these Pittsburg men, and enter upon all available fields. And, in conclusion, just a note of some possible avenues of trade.

The paper mills at Appleton, Wis., have received orders within the past two weeks from Japan for 2,000 tons of printing paper. This opens up the market to American paper manufacturers. Why not to us? South America is developing much faster than we in the north are aware. A railway is to be run from Paso del Rio de San Juan, to the Tehuantepec Railroad. This is in Vera Cruz, and the supporters must be secured in some other country.

Immense waterworks and electric lighting systems are to be constructed in Brazil in San Paulo, San Carlos de Pital, Rio Clara, Araraguera, Lenos, Brotas and Porto Ferreira. The Argentine Republic imports annually some \$4,500,000 worth of iron manufactures. Why cannot Canada have some of this trade?

In British Honduras the Government is looking for tenders for building seventy-two miles of railway. A private syndicate will run a line from Amapola to Puerto Cortez, and has secured valuable concessions, while another company proposes an electric railway from Puerto Cortez to Truxillo. Venezuela will now admit iron ore and old iron free of duty. At Angola and at Loudes, in South Africa, there is said to be a good demand for steam engines and cane crushers.

These are a few pointers picked up in the regular course of our weekly reading. Canadian manufacturers cannot afford to neglect the plain fact that there are opportunities always presenting themselves to begin trade with new parts of the earth. Our natural resources fit us to be a supply basis to the world. Let us improve our chances. With proper protection to keep the home market from destruction, and watchful care to improve every chance to extend our commerce in foreign lands, we may yet stand among the pre-eminent manufacturing nations of the world.

EXTENSION OF TRADE.

The Export Steel Company, recently organized by six leading iron and steel concerns, for the express purpose of increasing their sales in foreign markets, is meeting with a gratifying measure of success. Report credits the company with having exported more than 2,000 tons of hoops and bands, one of the largest shipments made in this line being an order placed by Wah Kee Tea Company of Peking, China, and filled at the mills of the Union Iron & Steel Company of Youngstown, O. For other forms of finished material there are orders—received through the company's London agent—from India, China, Japan and South America. —The Age of Steel.

Manufacturers will do well at this time to pay special attention to extension of trade in other countries where they may find a market for large quantities of their commodities. The home market, when its demands have been fairly met by the home manufacturer, should not satisfy any who aims to develop his business to the greatest possible extent. There are hundreds of places where there is a demand for articles

that are manufactured in Canada. The consumer needs them, and some manufacturer must supply them, and all that is necessary for the establishment of profitable and mutually satisfactory commercial relations is that the consumer and manufacturer both become acquainted with the exact existing condition of affairs.

The Dominion Cattle, Sheep, and Swine Breeders' Association is an organization of stock breeders in Canada in the interests of their business. Each man contributes to the other's knowledge from his own experience. Although in competition, they nevertheless find that they may learn from each other. At their recent meeting during the Toronto Industrial Exhibition, they argued upon a proposal to publish a monthly list of all registered stock for sale in Canada, and finally decided to put the idea into practice. They will print thousands of copies of this list and distribute them. Canada is not to be their field of operation, and it might pay the manufacturers individually to follow their example. They will send out those lists to Great Britain, France, Germany, Austria, Russia and to South America. The agricultural department of every government in the world that pays the farmer the compliment of establishing a separate branch of government work for his benefit will be favored with a copy of this list, and they expect, and not without reason, that their scheme will ultimately be productive of great and permanent profit to the stock breeders of Canada.

The "Iron Age" contains a request from M. D. Harri, Ram & Brother, Rawalpindi City, India, that catalogues and other printed matter be sent to them, to enlighten them as to what goods manufactured in America may be advantageously handled by them. Their particular line of business happens to be ironmongery—in its various branches. They deal in general hardware, pick axes, shovels, tools, engineering machinery, waterworks requisites, etc. They want goods from America. Why cannot Canadian manufacturers supply them as well as that they should get their hardware from the iron factories in Uncle Sam's country.

In this age of advertising, and surrounded as men are with every imaginable device to catch trade, it seems strange to think of a chance for profitable trade connection thus seeking the manufacturers. We are accustomed to see scores of agents hustling constantly to drive competitors out of the field. Almost before there is any ground for supposing that a dealer requires a certain line of goods, he is besieged by men who din into his ears the merits of the wares offered by their respective houses. Here is truly a strange case. A market lies open. There is necessity for a supply of hardware to it, and no one has been vigilant enough to forestall the firm of M. D. Harri, Ram & Brother, and prevent them crying out to America:—

"Where can we get the goods we want?"

Canada has Trade Commissioners investigating the possibilities of opening up traffic in Canada's natural or manufactured products in several foreign countries. Why not make immediate use of them? Their reports to the Government will be announced at the next session of Parliament. Yes, and in the meantime the representatives of hustling American concerns will get in the field and contract to supply everything that we could have sent them. Let us have the immediate benefit of the work of our Commissioners. The Government would do well to print pamphlet reports and place them before the manufacturers.

Capable Trade Commissioners are fit and proper officials whose work, if properly performed, will be of immense benefit to the Dominion of Canada at large. Well and good, but the manufacturer wants to know more than simply of what Canadian products Mexico, or the West Indies, or Buenos Ayres or Chili has need. He wants to know how best he can lay before the people of these countries the fullest possible information about the special articles he has to offer. We do not want to convey the impression that Canada's Trade Commissioners should act as the direct agents of any Canadian manufacturer. But we do say, and the Ottawa Government should see to it, that the reports of these Commissioners should indicate something as to the best mode of procedure towards securing a market in foreign lands for Canadian commodities. Sir Wilfrid Laurier should not forget that Canada has no preference in British markets. Popular opinion in Great Britain was fairly clamouring that Canada's imperialism should be recognized by tariff enactments of a reciprocal nature. Sir Wilfrid Laurier gave Great Britain to understand that Canada had no claim to make in this direction. Just when the Canadian manufacturer had every reason to hope that the British Empire's economic policy would put an end to British direct taxation and inaugurate a system akin to that of the United States, Germany, France or Russia, his hopes were dashed to the ground. The immediate future offers nothing in the way of a scheme for preferential trade union of Great Britain and her colonies. Surely the Laurier Government will not neglect any opportunity, under these circumstances, to enable the Canadian manufacturer to supply those foreign countries where he can successfully compete or may even get the market all to himself.

THE RICH AND THE POOR.

A very common statement by writers and speakers in favor of various schemes of social reform is that the rich are growing richer and the poor poorer. General statements of this kind are commonly accepted as veracious. Generalities appeal quickly and strongly to those who most delight to discuss these questions of economics. It is so easy to make sweeping assertions. They have a conclusive sound and cover so much ground that it is very difficult to disprove them. This particular statement has been so frequently made and so generally accepted that Hon. Carroll D. Wright has made a study of the matter, and in the September number of the Atlantic Monthly he discusses and discredits the proposition.

He admits that seven-eighths of the families hold but one-eighth of the wealth, and one per cent. of the remaining families hold more than the remaining ninety-nine per cent. Twelve per cent. of the families hold eighty-six per cent. of the wealth, and the other eighty-eight per cent. of the families only have fourteen per cent. of the wealth. To justify his argument that the poor are growing no poorer, he points out that in 1850 the wealth per capita average was but \$308, while in 1890 it had increased to an average per head of \$1,036. In 1870 the breadwinners composed 32.43 per cent. of the population, and in 1890 they had increased to but 36.31 per cent. A sub-division into different classes shows that the increase is in the ranks of skilled labor, while unskilled labor, which in 1870 was 14.76 of the total population, had fallen in 1890 to but 13.44 per cent.

Taking the rate of wages in 1860 as a standard at 100 per cent., Mr. Wright points out that from 87.7 in 1890, wages rose to 160.7 in 1891. This is a gain of eighty-six per cent. in fifty-one years, although during this period the hours of labor had been reduced by an average of 1.4 hours per day.

Taking 223 different articles of common consumption, which practically include all those commodities that the wage-earner utilize, it appears that in 1891 the price was an average of 7.8 per cent. lower than in 1860. The cost of living (rent excepted), decreased by from four to five per cent. between 1860 and 1861, so that if rent be taken into the estimate it is fair to conclude that the total cost of living in 1891 was not much, if any, more than the total cost of living in 1860.

From all of which it appears that while the rich are growing richer the poor are also becoming better off, and there is no just cause for the statement that the rich are growing richer and the poor are growing poorer.

GIVE US PREFERENTIAL TRADE.

Sir Wilfrid Laurier has paid his promised visit to Toronto, and received with due acknowledgment the honors tendered him here. The feature of his welcome was the banquet in the Pavilion, at which gathered the leading business men of the city.

The post-prandial speeches were of such a nature that we cannot refrain from a note or two of the occasion. Canada's manufacturing industries were never better represented at any gathering in the Dominion of Canada, and Sir Wilfrid will do well to give more than passing consideration to the sentiments expressed by the speakers.

Notable among the addresses of the evening was that of Mr. Edward Gurney, President of the Board of Trade, who was chairman of the function, and gave utterance to words that must find hearty endorsement by every man that has at heart the best interests of this Canada of ours. He spoke out strongly, and in no uncertain phrases. Beginning with remarks upon the broad system of government we have in Canada, intended to be adequate for a much greater population than we have, he came presently to the growth of the national sentiment that we need to make us progress among the nations of the world. What he said along this line is well worth repeating. Here it is:—

This growth of national sentiment has been helped by the benignance of men, though they are our enemies, men who threatened Canada, who threatened the British Empire, but we have unconsciously been growing up into a sense of our manhood, and we are standing together as a nation and empire, as we could not have done, perhaps, if it had not been for the benign kindness of the people who have spurred our slow moving Anglo Saxon blood into movement. While this national life of ours has been strengthened in this way, and while the growth has been slow indeed, as I have said, and while our national life now is something that is short, we are standing in relation to other countries as we stood before, always large enough not to be small. We recognize that we have neighbors, that we have neighbors to the south of us. We recognize that in every product that we make they are competitors, while in many things that they make we are not competitors, and we business men of Toronto assure our leaders in politics that we recognize that fact, and we recognize that a large population in this country is an impossibility without we supply it employment. We are not to be a nation of farmers, fishermen or miners, but we are to cover all the grounds of production throughout the whole range.

Thus, in a few words, Mr Gurney condensed the argument which THE CANADIAN MANUFACTURER is at all times trying to consistently keep before its readers. Develop our industries. Fill the country with manufactories. We have the natural resources. We are just beginning to realize our possibilities. They are unbounded. Let us leave no stone unturned that may lead one step farther toward the realization of a high ideal—for there is no ideal too high for Canada to aspire to with the best prospect of success. Once the people of Canada are thoroughly imbued with a national spirit nothing can stop us. Ever loyal to the mother land across the sea, we are none the less able to become a great nation—the Britain of the Western Hemisphere. We have every advantage that we need to this end, and enthusiastic perseverance will carry us to the goal. Listen to Mr. Gurney again:—

I desire to say that we stand to-night in an attitude of expectancy toward Great Britain and toward the other colonies of the empire. We stand also prepared to fulfil our own destiny by our own work. We ask no man to take from us anything that is not equal to anything he can get from any other man or from any other nation. We stand on our own merits, and are able to provide things equal to anything that can be provided in the round world.

The necessity of preferential trade is clear. With Great Britain and her colonies banded together in one world-encircling trade league, the most desirable markets in the world would be thrown open to Canada, and such goods as we must import will come to us upon much more favorable terms. But we must not forget that we cannot afford to present Canada as a market, even to Great Britain, unless there are suitable and sufficient advantages allowed to our manufactured and natural products in the markets of Britain. Our natural competitors are just across the line to the south of us. The conditions under which manufactures are carried on there are too similar to the conditions in Canada to permit the Canadian government for one moment to remove from our industries that protection which they must have to develop them. As it is to-day, there are altogether too many ways in which Uncle Sam's manufacturers have profitable access to Canada, either to sell their products, or (which is equally wrong) to secure our raw material without putting in circulation in this country five per cent. of the money that would be set afloat here under proper regulation of our forest and mining resources. Let Sir Wilfrid Laurier see to it that we have these regulations, and that soon. Then gave us preferential trade with Great Britain and her colonies, and we shall see the population of Canada doubled in ten years, and the manufacturers of the United States driven to admit the commercial supremacy of the British Empire over the whole world.

Mr. Gurney strikes a chord that should thrill across this continent and bind Canadians closer than ever together in the struggle to place Canada in the fore front among nations. He dwelt upon the necessity for a more effective expenditure of the vast sums of money that we spend yearly to promote immigration (\$6,000,000 since Confederation), and the desirability of impressing it upon the people of Great Britain and of Europe generally that Canada is a country where a man's success depends upon himself. That has been a powerful factor in the attraction of desirable immigrants into the United States. Mr. Gurney very clearly sums up the exact condition of affairs in this respect in relation to Canada:—

You know, as I do, that the political conditions in this country are perfect, more perfect than they are in any other country in this round world. You know, and I know, that the social conditions here are as perfect as they can be in any country in this world. Any political and social preferment lies in the man's own endowment, moral and mental, and you and I know that, though we have this knowledge, the people of Europe are lacking in this knowledge. The man who has lived in the older countries has always associated a monarchy with the idea of limitations in these directions. Now, it is with our Government of to-day, it lies with us by every agency in our power to make this known to the people of Europe, and, if the people of Great Britain are under the same misapprehension, to let them know, as you and I know, that no man is held down, either politically or socially, by anything except in so far as his own moral and mental power is lacking.

AGRICULTURAL IMPLEMENTS AND THE RUSSIAN MARKET.

The October number of the Consulars' Reports of the United States on Commerce and Manufacture contains a letter from Mr. Thomas E. Heenan, U. S. Consul at Odessa, Russia, dated June 15, 1897, in which he speaks of the trade in Russia of agricultural implements as follows:—"The meeting of agriculturalists and those who are interested in agriculture, which has just finished its sessions at St. Petersburg, was called for the purpose of discussing and recommending to the Imperial Government measures to improve the conditions of agriculture and agriculturalists. One measure which will be of great interest to United States agricultural machine and implement manufacturers was, after full discussion, favorably recommended to the consideration of the Russian Government, viz., that harvesters, binders, mowers, plows and threshers be admitted into Russia free of duty. It was recommended also, that threshing engines be admitted free when they are devoted exclusively to farming purposes and proof of this purpose is furnished. The principal reason advanced for this action on the part of the meeting was the fact that none of the items enumerated are manufactured in Russia—at least, not on a sufficiently large scale to be taken into consideration."

"The duty on a harvester and binder is, at present, about \$33. The duty on a threshing outfit (including the engine) is \$450; the duty is estimated by weight. On the thresher, it is 38½ cents for thirty-six pounds; on the engine, 92½ cents for thirty-six pounds, provided the engine and thresher are imported together, otherwise the duty on the engine will be \$1.24 for thirty-six pounds. The duty on a traction engine is \$2.00 for thirty-six pounds."

"Should the Russian Government favor this scheme (and there is good reason for believing that it will do so) great relief will be granted to the agricultural interests. I am informed that, in all probability, on and after January 1, 1898, the machine and implements mentioned will be permitted to enter Russia free of duty."

"In harvesters and binders, the American manufacturer already holds the field, and is not likely to be ousted, though he must be prepared to meet strong competition from Germany. The Russians are afraid of our threshing outfit. They say that both threshers and engines are much too lightly constructed for the use and abuse to which they will be subjected in a country like Russia. It is impossible to make them understand that to be strong does not necessarily

mean to look heavy, and it is to be feared that if we could not compete successfully with the heavy English threshing machine and engine when they paid a duty on weight, we are not likely to do so when that duty is taken off.

"The duty on plows has for many years prevented their introduction into Russia in large numbers. This duty was purposely made high in order to enable the Russian manufacturer to supply the market with plows at a reasonable price. The Russian-made plow is an inferior article, and costs nearly as much as the imported plow, so that the only persons who have benefited by the high duty were the manufacturers. Our American-made plows will easily capture the Russian trade, if our manufacturers are sufficiently active and are early in the market. It is desirable that they should be advised at an early date that so enormous a field as Russia is about to be opened to free competition in plows. In harvesters, binders, mowers, reapers, hay rakes, etc., we are already in a position to almost defy competition in Russia, and with the duty taken from plows, there is no reason why a similar condition should not exist."

"The information which I have received, and which I regard as reliable, indicates that the articles I have enumerated will shortly be placed on the free list, and, believing this to be true, I feel it my duty so to inform the Department."

According to the June 1897 Monthly Summary of Finance and Commerce of the United States, there was exported by that country to Europe (exclusive of exports to the United Kingdom, Germany and France) during the twelve months ending June 30, 1896, agricultural implements valued at \$1,032,764, as compared with \$1,070,241, in year ending June 30, 1897. The value for Russia alone is not given. Probably part of the exports to Great Britain and Germany were to be forwarded to Russia.

The Annual Report on the Foreign Commerce and Navigation of the United States for 1896, gives the following details of the exports to Russia for year ending June 30, 1896.

Mowers and reapers, and parts thereof.....	\$384,698
Plows and cultivators.....	22,818
All other agricultural implements, and parts thereof	70,106
	\$457,622

The Annual Report of the Canadian Department of Trade and Commerce for the fiscal year ending June 30, 1896, shows that the exports of agricultural implements from the Dominion to Russia amounted in 1894-95 to \$42,657, and in 1895-96 \$23,535. With the customs duty remitted, there may, and ought to be, a large opening in Russia for Canadian implements. It is seen from the above long extract from Mr. Heenan's report, that there is a strong probability that the policy of free admission for goods of this description will come into operation as early as on January 1, 1898.

It would be advisable, if not already done, that Canadian manufacturers of agricultural implements should press it on the attention of the Government at Ottawa, that they should obtain through our High Commissioner in London, the earliest information possible as to the intention or action of the Russian Government; and also as to the styles, capacity, etc., of the different kinds of implements in most general use and favor in the Russian Empire. Also, as to what ports in Russia afford the best prospects for a market, and the probable cost of transportation thereto from London, Liverpool, etc.

WANT EVERYTHING IN SIGHT.

Attorney-General McKenna, of the United States, has given his opinion against the discriminating duty of ten per cent. that the new tariff tried to place on goods imported into the United States by way of Canadian ports, or brought into American ports in British vessels from other than British Possessions.

Senator Elkins, of West Virginia, was one of the gentlemen who had a large part in the construction of these regulations. He is quite put out at the Attorney-General's decision, which he says practically nullifies what he believes was the intention of Congress and would have preserved the interests of American institutions to a greater extent than anything that has been done by Congress for twenty-five years.

Newspaper opinions from the American press prophesy that the American people will not like the decision of Mr. Attorney-General McKenna. The Philadelphia Press is one of the most fervent of these jingo journals, and it howls itself fairly hoarse with righteous indignation over the "serpents" it is "nourishing."

Some Canadians will tell you that in Uncle Sam's laud exists a widespread feeling of love for Canada. That is the truth; they do love us. They love us so well that they would like to gather us in—body and bones, part and parcel, and add to them our immense natural resources. Then, too, they realize that Canada is on the eve of a tremendous industrial development. They would dearly love to take us under the Stars and Stripes, and point to our progress in the next ten years as a result of our stepping from free monarchy into circumscribed republic.

The Philadelphia Press, in the course of its editorial treatment of the subject, says the Canadian Pacific Railroad was constructed as a military road and heavily subsidized by the Canadian Government. Its steamship line on the Pacific, the Press points out, is constructed for use by the British navy in case of war. How facetious the Press unconsciously is to speak thus gravely of Britain condescending to take Uncle Sam's periodical effervescence in seriousness.

These steamship and railroad lines take a large trade from American lines, according to the Press. And because the American business man persists in not going to unnecessary expense, or wasting time by patronizing American means of conveyance, when Canadian lines better foot the bill, therefore the American government should promptly take steps to try and force him to do that which his business training and experience teach him is the very thing he ought not to do.

Two hundred million dollars a year is the estimate the Press makes of the amount Americans annually pay to foreign ship owners. Why do they do it? Does the Press mean to say for one moment that the vesselmen of the United States are two hundred million dollars a year out of pocket? Are there thousands of men and hundreds of vessels idle in American harbors because British or Canadian steamships are carrying cargoes that should be reserved for these idle vessels? Surely it is by some oversight that the Press has put itself in such a ridiculous position. Surely it is aware that the United States cannot supply these vessels and these men. It has attempted to do so. For a century it has tried to compete with the merchant marine of Great Britain, and the result is a complete vindication of our assertion, that its inability is now an historical fact.

Vorily the United States has a curious idea of protection. If Canada puts an export duty on logs, the American consumer must pay it and an equal amount added to the American import duty. And if Uncle Sam puts on ten per cent. tariff on goods brought into his harbors by British vessels, the American consumer will pay the ten. It is not as though there were an alternative in either case. If all these duties were imposed Canadian logs would still be sent into the United States, and foreign products would still reach America in the holds of British vessels. And the extra money must come out of American pockets without any benefit to any American industry but that growing industry among Americans, the industry that leads to possession of the big chest at Washington by some one political party.

EDUCATE THE ARTISAN.

In developing the manufacturing industries of a country due consideration should always be given to indirect, as well as to direct, means. There is the panacea of protection that nourishes industries in general, but there is more than that required if we would keep ahead (or even abreast) of the other manufacturing countries of the world. Technical education is necessary in the first instance to ensure development. Money and time spent in educating young men to understand the theory and the practice of any line of manufacture are not by any means wasted. No extra return for the extra expenditure may appear forthwith, but the extra value is there, and some day it is bound to give evidence of its existence. The well-trained man is bound to be of more service than the man whose knowledge is limited to the operation of the machine which he handles.

Electrical inventions are lying unused to-day in the vaults of a big American company that paid immense prices for the patents. Just at present they do not care to go to the expense of introducing the apparatus demanded by these inventions, but they laid out large sums to secure the sole rights to them, so as to preclude any wealthier corporation from obtaining the advantages to be derived from their practical application.

In Toronto we have a technical school. More power to it. The far-seeing manufacturer will do all in his power to assist his employe to reap the benefit of technical training. Look at the development of Germany recently in manufactures. She steadily forges to the front in the markets of the world. Her strength lies in her trade and technical schools. Exact knowledge is a necessity to successful manufacturing. Factories must be run upon a scientific basis. Complete understanding of every step in a process will bring greater results than a merely automatic knowledge that enables the workman to put raw material through a certain course of treatment. He very often knows what the results should be, but has not the least idea what has gone wrong if the results are not as expected. This is the sort of artisan that deserves, as soon as possible, to be replaced with a workman who has enough interest in his work to obtain all information possible bearing on the work, and likely to help him to better and more scientific understanding of it.

Skilled labor should be the demand of the manufacturer, and the pride of the artisan to supply. The manufacturer can support, and, in his own interests, should support, any institu-

tion that assists in this direction. The outlay will amply repay him. On the other hand, the young man who is just mastering his trade will do well to obtain every available bit of information about his work. Knowledge and power are synonymous, and proper training of his mind, as well as his body, may in after years, mean to him the difference between a place among the rank and file of his trade, and a place at the head of a shop, or in a profitable partnership brought about by thorough, practical and scientific knowledge of his calling. A national system of technical education, on the very widest lines, is what has made Germany what she is to-day—the most to be feared rival of any country in the workshops of the world.

A man should train his mind to think. It is only by this that he can climb up the rounds of the long ladder that leads to success. It is only by training his mind thoroughly that a man is ready to make use of opportunities. Thinking is something that can be developed. If you think an hour to-day, you can think longer to-morrow with the same fatigue. The mind can be trained and developed, and its usefulness will be manifold what it would have been had it not thus been trained. Only in the instruction of our artisans does permanent industrial success lie. We must teach our workmen to be thinkers, and the regular application of brain-power to the aid of handicraft will place Canada in the forefront of the manufacturing nations of the world.

FUNNY MR. RICH.

There is humour in almost every phase of life. The American lumbermen who interviewed the Ontario Government have caused a report of their interview to be published. As business men of putative acumen and knowledge, they surely would never have permitted the publication of their interview had they realized for a moment what a ridiculous position they placed themselves in. The business man who enjoys a good laugh need not turn for amusement to the comic papers. These American lumbermen are funnier than anything that ever was published in that line. Ex-Governor Rich, of Michigan, acted as speaker for the delegation, and, in the light of his political experience, it is hard to believe that he had even taken ten minutes to consider what he would say. The now shop-worn argument of injustice to American lumbermen owning timber limits in Canada, was first taken up by Mr. Rich. That was to be expected. He also claimed that the rough ground of North Ontario rendered the cost of cutting logs and getting them out of the woods some thirty or forty per cent. more than the same operation would cost in Michigan. The cost of manufacturing the logs into lumber was less than one dollar per thousand feet, and the loss on account of not having the sawing done in Ontario did not amount to much. The cost of getting the logs out was far greater. And Ontario reaped the benefit of this. Magnanimous Mr. Rich. Because we get part of the money expended therefore we should be satisfied. Because we get one dollar we shouldn't try to add another dollar to it. For the benefit of the unfortunate, ill-used, poverty-stricken Michigan lumberman we are to sit quietly down and let good hard cash be spent in Michigan where the aforesaid lumberman sometimes makes political capital out of the prominence his lumber business gives him. And if the poor fellow had to spend a few more thousands in Ontario, those few

thousands wouldn't assist him in gaining influence where it could be turned to his political account. Really, the proposition is remarkable. Perhaps Mr. Rich could show us when the Washington Government showed such kindly consideration for the interests of the manufacturers of Canada.

But that is not all. After Mr. Rich had put in his claims to pity he bethought himself of other arguments. Mr. Hardy was undoubtedly surprised to find that the lumbermen of Michigan had tried to keep the Dingley tariff on lumber down to one dollar per thousand feet. It must have been touching when Mr. Rich told of the efforts of the Michigan-ers at Washington, and how they were still organized and would bring pressure to bear on Congress again to have the duty reduced from two dollars a thousand. One can almost fancy the Ontario Cabinet furtively wiping away a tear as they listened to this additional reason why the delegation were entitled to consideration, but the report shows no record of any such sympathetic demonstrations, and, considering the tenor of the remainder of Mr. Rich's remarks, it is hardly credible that the Government's consideration for the gentlemen from Michigan will manifest itself in any but the one proper way—insisting upon the manufacture in Canada of every stick of timber cut in the Province of Ontario. Here is Mr. Rich's clincher, taken from the official report:—

The imposition of the order now asked for by interested parties in Ontario would be equivalent to confiscation of their property, as they could not then export their logs, and they would not dare to make provisions for the manufacture of these logs in Canada, as beyond question retaliatory action on the part of Congress would result, which might go to the extent of prohibiting the importation of lumber into the United States from any country prohibiting the export of sawlogs to the United States. The ex-Governor dwelt with considerable force upon the effect that the proposed course would have upon Congressional action, and said that it would not fail to provoke intensely bitter feeling. The proposition to practically confiscate 4,000 square miles of timber holdings in Ontario held by American citizens would certainly invite and secure Congressional action of a character more or less decided in the nature of reprisal, and as for himself he felt that the consequences of prohibition of log export could not be less serious to the Canadian lumber interest than would be the consequences under the present proviso with regard to export duties, if such were imposed.

Let us make a little resume of the proceedings. First, Mr. Rich pleads injury to himself and his colleagues. Second, he claims to be a parent of our lumber interest. Third, he threatens terrible reprisals by Congress in the event of prohibition of the export of Canadian logs. Here are some pointers for Mr. Rich:—

First, as a business man he was aware, when he bought an Ontario limit, that the Government had a right to impose additional provisions. Second, a dollar per thousand duty on our lumber is very effective protection when the narrow margin of profit in lumber manufacture is taken into account. Third, should Congress prohibit the importation of Canadian lumber Americans must find a substitute for lumber, an impossibility that renders such an act by Congress an absurdity that would be out of the question were the American Congress any other legislative body in the world. Verily the reported utterances of Mr. Rich are subtly humorous, and it will be a sad day for Mr. Hardy should he decide to pay heed to the claims thus set forth by the men from Michigan. Their

own arguments should warrant the case being taken out of court immediately and the recording of a verdict against them.

OUR CHANCES IN CHINA.

The policy of the United States is to preserve its own markets for its own manufacturers, and extend its manufacturers' sales into every corner of the earth where profitable markets may be found. The Republic realizes that upon the success of manufacturing industries depends the prosperity of the country. In Canada it has been a favorite saying that the agricultural interests are the backbone of the country. Whereas, it appears, that the market for agricultural produce lies with those who derive from the factories their ability to purchase the products of the farm. The tendency in the United States is to find supplies for the country within the country. Acting upon this principle we find that imports into the United States grow steadily less and exports steadily larger—a condition of affairs that indicates a healthy state of trade.

American exports during August are in excess of those of any other August in the country's history. They amounted to \$79,497,820, an increase of \$12,807,939 over August, 1896. Since January 1st their exports amounted to \$629,431,371, or \$62,217,387 more than for the past eight months of 1896. Exports exceeded imports during the same period by \$95,229,213. The volume of imports during August was \$39,876,640, the smallest since June, 1879, when it totalled \$38,890,451. In this statement lies food for thought. Business is better. To that there seems to be united assent. Take the iron market. There have been advances in pig iron, steel pellets, muck bar, and skelps, and in the manufactured products of iron there is also an improvement. These improvements are adding to confidence, and confidence is always the prime feature in improvement. The Dingley tariff is law, and a certain "settling" of trade ensues from it, that makes progress healthier. The "boom" prices of 1879-80, when prices in iron went up nearly 100 per cent. all along the line are not desirable, but the present modest advances from the acute stage of 1895 indicate steadiness.

Another noticeable improvement is in woollens. The American Wool and Cotton Reporter says:—

The prices in men's wear fabrics are hardening from day to day. The recent practical withdrawal of a very large mill's goods from the market, has tended to make the situation still stronger. There are practically no spring goods being offered for sale by manufacturers, with a few possible exceptions, which are manufacturers who are really sold up to their fullest capacity for at least ninety days to come, but who prefer to take a few more orders so as to protect themselves against possible cancellations later. Here and there also may be found a new line of goods shown, but such a price is asked as will not induce heavy sales. For instance, one manufacturer is offering a new line of spring fancy worsteds at \$1.70 a yard, identical in quality with a line which he has long ago withdrawn at the closing price of \$1.35 a yard.

Now, the United States manufacturer, with more confidence in the stiffening up of trade, reaches out to other places. His most energetic competitors are the Germans and British. An Imperial Blue Book just issued, gives the replies of the Colonial Governors to the dispatch of the Secretary of State for the Colonies, Hon. Joseph Chamberlain, in 1895, sent with the view of ascertaining the extent of the displace-

mont of British goods by foreign goods. The main conclusions reached are that the British manufacturer is still supreme in the best classes of goods, with the exception of machinery and tools of certain pattern, in supplying which the United States is most successful, although Canada is often a successful competitor in these lines.

United States Consul Read, at Tientsin, China, has forwarded to the Department of State, at Washington, a letter from an Armenian company in China. Canadian manufacturers might do worse than take note of these extracts from its contents, which apply to Canada equally well as to the United States. Again let us impress upon Canadians the necessity of taking every possible means to secure a fair share of the new foreign markets that are constantly opening up. These are some valuable hints. In Canada there are car shops where fifty men to-day are employed. Ten years ago these same shops kept five or six times as many mechanics at work. Let them look out for a chance to restore activity to these workshops, and set dollars circulating in the land —

China in the next few years will be a buyer for all classes of machinery, and especially railway materials. It has been demonstrated that America has chances as good as those of any other country to secure orders.

A commercial representative should be selected, care being taken that he has influence in the proper quarters, which, as you know, is absolutely essential. This representative should be the sole agent in the east, he should be authorized in the proper form, as are the representatives of European houses with the seal of the Foreign Office; and his name should be registered here in the consulates.

In the construction of a railway the Chinese require rails,

sleepers, couplers, and structural iron for bridges and locomotives. If the best houses in America will place their respective business interests in the hands of one good business firm in Tientsin, this firm can bid for everything wanted, will appear strong in the eyes of the Chinese, and each transaction will, perforce, strengthen the mutual business relations between America and China.

Another part of the communication refers to another important feature. At present the American armor plate manufacturers use Canadian nickel. The American firms in China hold up an inviting prospect to these manufacturers, and we should have a share of it. Here is what they say:—

We have information that the Chinese Emperor has issued an imperial edict authorizing the purchase of six first-class cruisers, six second-class cruisers, and twelve torpedo boats. The Chinese Government is going to create a loan of 100,000,000 taels, a part of which will go toward purchasing the vessels.

His Excellency Li Hung Chang (who is now at the head of the Tsung-li Yamen), in recognition of the assistance of America in bringing about peace in China's war with Japan, is anxious to do something for America, and if there is half a chance we can secure a large share of this business for that reason.

In China there is an opening for the development of an enormous trade within a short time. With proper display of energy it can be in some measure diverted to Canada, and our manufacturers have but to exercise proper enterprise to secure to themselves handsome returns, and to their workmen thousands of dollars in wages.

Another opening for trade is in the progressive little Empire of Japan. There is, perhaps, better chance there for

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us than in China. Just at present the Japs do not bear the friendliest relation to Uncle Sam, owing to the difficulty that exists over the annexation of Hawaii to the United States. We should not let pass this golden opportunity to establish trade relations with this progressive Empire of the Occident.

EDITORIAL NOTES.

According to statistics, recently published by the United States Treasury Department, British vessels are carrying over fifty-five per cent. of the merchandise of the United States, both imports and exports.

About the middle of October an exhibition will be opened at the Imperial Institute of all the jubilee gifts and addresses presented to the Queen during the celebration of her jubilee. Half of the proceeds will go to the Prince and Princess of Wales' Hospital Fund.

On his return from a recent trip to Europe, Mr. H. C. Frick the great coke manufacturer of Pittsburgh, Penn, paid between \$300 and \$400 in duties on his baggage, and said that he was glad of it. "I am a believer in this tariff," he added, "and I never paid money more cheerfully in my life."

Asked what he thought of the condition of business Mr. Frick said: "Prosperity is assured and close at hand."

The latest development in the use of waste is a scheme to produce hot water at a halfpenny per gallon from the waste heat of the street gas lamps. A machine for this purpose has been exhibited, and appears to work effectively. The various parish authorities of the poorer districts of London are considering its introduction into the streets. It is already successfully operated in some of the provincial cities.

Sir George Turner, Victoria, in interviews with various press representatives in London, stated that he was prepared to maintain the present tariff for British, and increase it for foreign imports, if Great Britain would give such subsidies to the shipping companies as would enable them to reduce freights. Sir Hugh Nelson, Queensland, would not object to impose differential duties in favor of Great Britain. Unless Great Britain gave the preference to colonial sugar over that from foreign countries, the industry would not expand in Queensland. Mr. Reid, Premier of New South Wales, stated at a banquet of the British Chamber of Commerce at Paris, that no policy worthy of consideration had been unfolded which would secure closer political and commercial relations

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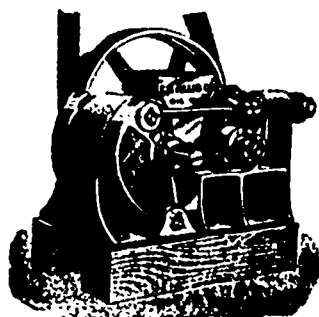
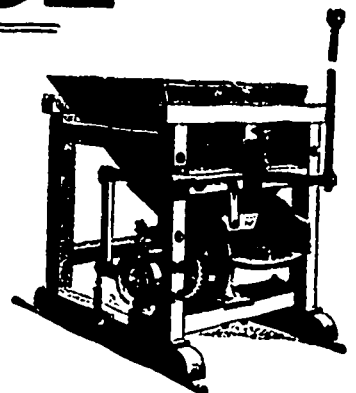
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between the mother country and the colonies. At a banquet of the London Chamber of Commerce he said all Australians, whatever might be their fiscal views, desired to give a trade preference to those living under the same flag. These are the most significant statements cabled from London during the month on the subject of the relations between the mother country and her colonies.—The Australasian Ironmonger, Melbourne.

A man standing on the bank of the Yukon River, 150 miles from its mouth, cannot see the other bank. The Yukon is twenty miles wide 700 miles from its mouth. With its tributaries it is navigable 2,500 miles. It discharges one-third more water than the Mississippi. The water is fresh fifteen miles from its mouth. Its color is beautifully blue to its junction with the White River 1,100 miles above its mouth.

The New York Sun declares, in a long editorial, that union with Canada is the only practical way to bring about the construction of a ship canal from the lakes to the Atlantic seaboard, that would be suited to the requirements of vessels capable of engaging in ocean traffic. The Marine Record, of Cleveland, comments on the above as follows :—

In the opinion of a great many practical vessel owners on the lakes, the Sun is correct, as the construction of a ship-canal by any route other than the St. Lawrence would involve an expense so great that serious consideration is never given to estimates on the subject presented by engineers. Canada's fourteen foot water-way has been so long under construction that the 6,000-ton ships of the lakes transferring their cargoes at

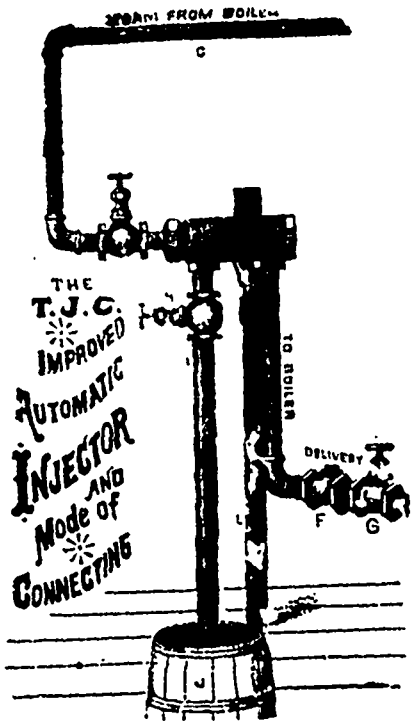
Buffalo have already discounted all chance of competition from the new St. Lawrence waterways. But if the St. Lawrence was within the United States territory the situation would be different. Funds for the development of its canals, undoubtedly on a scale more important than a fourteen foot waterway, would have been provided long ago, and lake ships would be passing through to the Atlantic seaboard in great numbers. The effort of the Sun in behalf of Canadian annexation is, however, another and a bigger matter. It is more of a dream than the hope of joint action with Canada in developing the St. Lawrence route.

If the iron and steel manufacturers of this country, who are trying to build up an export trade, make as much progress in the next two years as has been made in a like period just past by manufactures of electrical and other machinery, there will be no excuse for the complaint that has been raised against big combinations in the iron industry. While the big interests are directing attention to a foreign trade, the smaller concerns will find work enough at home. The very large foreign patronage now held by manufacturers of American machinery has been built up almost entirely within the past two or three years. An idea of the extent of this trade may be gained from the following list of foreign orders booked recently by one concern :—Six cross compound engines having cylinders twenty-three and forty-six by forty-eight inches to run ninety-four revolutions, and be coupled direct to electric generators of 800 kilos, for the London underground railway. five engines coupled direct to 500 kilo. generators, three of which go to Barcelona, and two to Madrid; four engines to be coupled direct to 800 kilo. electric generators for the government tramways of Sidney, New South Wales, Australia.

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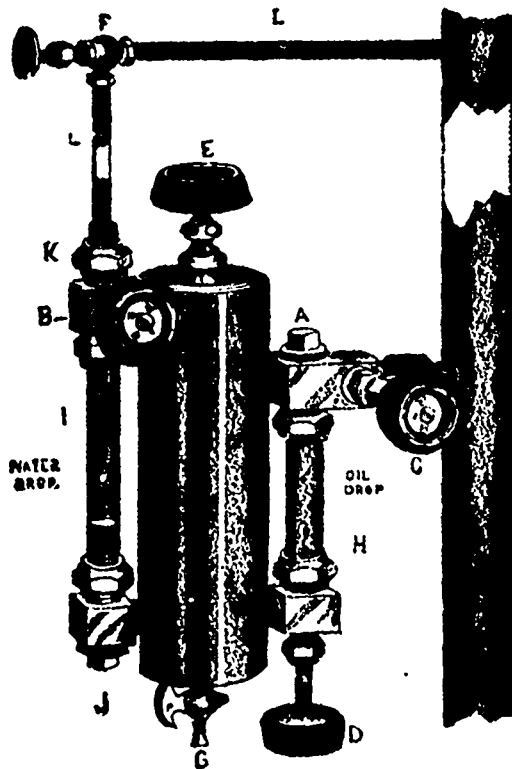
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also one tandem compound, with cylinders twenty-two and forty-two by forty-eight inches, for running a stamp-mill at Johannesburg, South Africa.—*Cleveland (Ohio) Marine Review.*

Senator Elkins, who has been looked upon as the leading advocate of the discriminating-duty plan of helping American shipping, has made a statement of the part he took in changing Section 22 of the tariff act, and he admits some things that will, undoubtedly, result to the disadvantage of the supporters of this kind of legislation when the shipping question is again before Congress. It must be admitted, to say the least, that the over-zealous advocates of discriminating duties have greatly injured the vessel interests in their tampering with the tariff bill. The administration, through the recent decision of the Attorney-General, has "turned them down," and it is right that this has been done, as the vessel interests of the country want no help from hidden methods or tricks of legislation. In effect the statement of Senator Elkins is that his endeavor to make an effective, discriminating duty provision was thwarted in committee; that after the bill was passed he discovered his object had been gained by indirection, and that the law went farther than he had planned, of which he was glad; but who made the changes, and whether the section as it stood was the result of deep design, or of fortuitous bungling, he professes to be as yet ignorant. He denies that unusual precautions for concealment were taken, but admits that he "did not proclaim from the capitol steps the intelligence of the efforts he was making to render assistance to American shipping." He practically admits also that he was indifferent as to methods, so long as the end was attained, and if, by intention or accident, more was made possible than he had planned as practicable, so much the better. All this is contrary to a fair and upright settlement of the shipping question. It is certain to work to the disadvantage of the scheme of discriminating duties, and the vessel interests have reason to complain of the manner in which they have been misrepresented in this manner.—*Cleveland (Ohio) Marine Review.*

On August 17th, a large gathering of representative Canadian lumbermen in Toronto decided to send a deputation to interview the Ontario Government in the matter of log exporting. On Oct. 5th Hon. J. M. Gibson, Ontario Commissioner of Crown Lands, replied to the deputation. On Oct. 6th his letter was read to a meeting of some seventy-five lumbermen here. The letter contained no further information than that the Government was still considering what policy should be pursued after the expiration of the existing timber limit licenses, and hoped soon to be able to announce results. The meeting of lumbermen, after some discussion, in which Mr. John Charlton, as usual, upheld the interests of the Michigan saw mill owners who cut their logs in Canada, passed the following resolution:

That without expressing any opinion on that part of the Government's policy relating to current licenses, we declare it to be in the public interest that when new licenses are issued after April 30, 1898, a regulation be embodied in every license that all timber cut on the Crown lands of Ontario shall be sawn and made into square timber, or otherwise manufactured in Canada. The resolution also calls upon everyone who favors this policy to support its advocacy by every legitimate means in his power.

That the Dominion Government be urged to give notice at the earliest practical moment by order-in-council of the application of an export duty of two dollars per thousand feet of lumber in log or lumber form, and an equivalent duty on spruce pulp wood cut during the season of 1897-98, and exported to the United States, and that a copy of this resolution be forwarded by the secretary of this meeting to the Hon. the Premier of Canada, with the names of those supporting this resolution;

That a committee be appointed to consider the advisability of petitioning the Government of Canada to grant the request contained in the resolution just adopted by the meeting and that the committee is hereby authorized to obtain signatures to such petition if deemed advisable, and to present the same to the government;

That the Dominion Government be urged to impose an import duty of two dollars per thousand feet on all sawn lumber imported into Canada.

Outing for October is a seasonable and beautifully illustrated number. The promise of a richly tinted cover is more than fulfilled by a charming assortment of elegant illustrations and seasonable sketches of autumn sports. Notable features include "Football," by Walter Camp; "All-Round Athletic Championships," by Malcolm W. Ford; "Four Days on the Prairie," by Ed. W. Sandys; "International Tennis of '97," by J. Parnly Paret; "The Beginnings of Fox Hunting in America," by Hanson Hiss. The editorial departments are ably handled.

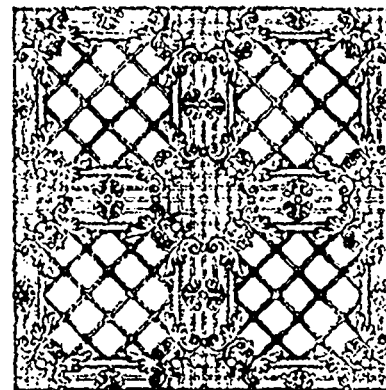
A MISLEADING "VOICE."

To the Editor of THE CANADIAN MANUFACTURER.

Sir.—In The Templar of August 27th there is quoted from The Winnipeg Voice (a labor periodical), data said to be obtained from a recent report of Mr. Carrol D. Wright "Commissioner of Labor

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for the United States Government." The data represents that of each "\$100 worth of goods produced, labor received slightly over eighteen per cent and the capitalist (the manufacturer) a little over eighty-one per cent," and Voice asks, "Is it any wonder labor is restless?" The wonder is that the editor of a "labor" periodical should know so little about labor and the factors that enter into the cost of production as to give currency to so misleading a report, and so untruthful that the writer doubts if the said Commissioner ever thus reported. Let us see the facts.

FACTS TO REMEMBER.

The census returns of the United States for 1890, upon which the report was founded, and which, in relation to the matter, can be found in the Canadian Government Year Book for 1891, page 195, together with similar data for Canada. This data, in the first place, shows, that "labor" received over twenty per cent. in place of eighteen, and that of the eighty-one per cent it said the capitalist received, fifty-five per cent went for raw material, the product of labor, which must be added to the eighteen per cent., making seventy three per cent. that labor received, and proving that capital could not have received over twenty-seven per cent. Voice should have known that there are other important factors to be deducted from that twenty-seven per cent. to show the net amount the manufacturer received.

(1) The interest on the capital invested and the wages of the employers at only \$1.50 per day—for it should be clear that they should not be expected to work for nothing and board themselves—and allowing only one for each establishment, the total with the interest can, by the government returns, be seen to average about six per cent. on the "out-put."

(2) The usual allowance for the annual depreciation in buildings, machinery, and tools is ten per cent., which, on the capital invested, will be seven per cent. on the "out-put."

(3) The least safe allowance for bad debts and the periodical depreciation of goods, through over-production, but more through tariff changes, unwise tariffs, and excessive over-importations. This can be seen by the serious losses of the banks, by bad debts, in such periods, when it is well known that, in that of 1877-8, the Canadian banks lost twenty-five per cent. of their capital, and that agrees with a reported statement by the Hon. Mr. Foster, ex Minister of Finance, that the manufacturers had lost one hundred million dollars of capital, and that agrees with a statement two or three years ago in the daily press, that the cotton manufacturers had sunk half-a-million dollars of capital—and he might have added, caused by the importers flooding the market with shoddy goods—sufficient of them in two months to have paid the wages of all the cotton operatives in Canada; and because the shoddy goods returned them fifteen per cent. profit, while pure cottons only yielded seven per cent. These losses were the result of the legislation of incompetent rulers, which no manufacturer or capitalist can guard against. Such losses cannot be safely estimated at less than eight per cent. on the "out-put."

(4) The cost of insurance, and losses on the excess which the insurance companies will not cover, and which, together, are not less than one per cent. on the "out-put."

(5) The commissions on sales and other incidental factors which cannot well be apportioned for, but which, together, will make, say two per cent.

These five factors make twenty-four per cent. of the twenty six, and thus leaves only two per cent. net for the manufacturer on the

THE ACME ROCKING GRATE CO.



The Acme Rocking Grate Bar is composed of two zig-zag bars connected together; the centre bar is 5 1/2 inches deep, the two bars next the centre are three inches, and the two outer ones are two inches. They are connected every six inches, thereby giving a very strong and durable bar, with very little iron on surface, giving a larger percentage of air space than any bar made, and will burn screenings as

well as lump coal, while there is no trouble whatever in crushing the clinkers. We guarantee ten per cent. saving in coal in every cast.

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R. H. FRASER, Sec. and Manager.

Messrs. The Acme Rocking Grate Company.

GENTLEMEN,—The Grates put in by you in our Power House have shown a decided saving in coal. Yours truly, R. H. FRASER.

TORONTO JUNCTION, April 29, 1897.

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THE CROCKER TURBINE.

The cut shows the direct connection of two 20 inch.

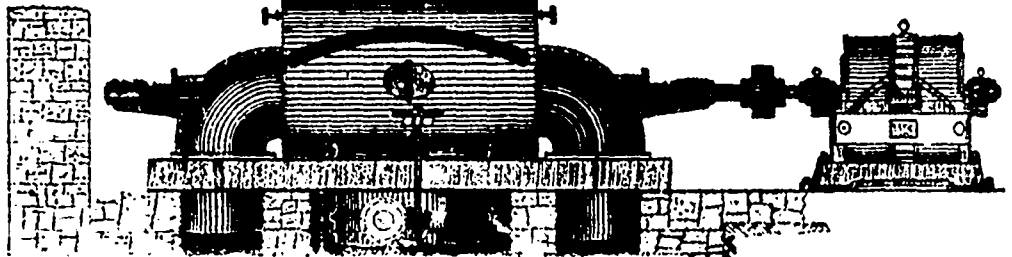
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17 Miles Distant from Power Station



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COMPLETE WATER POWER PLANTS BUILT AND INSTALLED.

\$9,370,000,000 of "out-put" shown in the Census returns, or not quite \$19,000,000 in place of the \$758,000,000 which the eighty-one per cent. as stated by Voice, would give on said "out-put," or only one dollar of every forty that Voice reports the manufacturer capitalist receives.

The said returns show that the labor host numbered 4,711,000 souls, who, at 300 days to the year, worked 1,313,000,000 days. The \$19,000,000 of net profit to the manufacturers is 1,900,000,000 cents, or not one-and-a-half cents profit to the manufacturer for each day's work done by each producer.

Voice cannot disprove this data. Is he, in his sympathy for labor, willing to make a business of employing labor that does not return two cents per day profit per head?

It should here be added that the Canadian census shows similar results for both countries.

LOWER RATES OF INTEREST.

The United States census returns show that the capital used to give employment to the 4,711,000 producers is \$6,524,000,000. On a large proportion of the amount the employers, on the average, pay, at least, six per cent. interest, which on the \$6,524,000,000 used is \$391,000,000, or nearly twenty times as much as the net profit on the labor of the 4,711,000 producers. Is it not as clear as the sun at noon-tide that Voice and all with it who are branding the manufacturer as an oppressor, and are fighting for higher wages and shorter hours, are fighting their best friends, in place of the high rates of interest, which should, at least, be lowered to the average rates in Britain, France and Germany. The saving of interest to the manufacturer, which proportionately could be divided among the 4,711,000 producers in the United States, would average about \$50 to each, or to about 5,000,000, if we include one employer for each establishment.

THE LESSON TO LEARN.

The lesson Voice and its friends should learn from this exhibit of the relative position of the manufacturer and those he employes is not to, by the utterly untruthful data it has furnished its readers, cause dissatisfaction and strife; and to learn from this exhibit that strikes for higher wages and for shorter hours without lower rates of interest, means one of two things—higher prices for the necessaries of life, which would devour any increase of wages, or

the gradual and ultimate consumption of the capital essential to carry on production, and to secure individual and national prosperity.

The writer is in perfect sympathy with those who would divide the annual net profits on the "out put" between the manufacturer and labor, but so long as the following four great factors which rob labor and the employers, also, and beggar the country exist, the net profit on production will be so small and so uncertain—as seen in the bank losses quoted—that no general system for such division is practicable. The four factors are: Dear government, dear money, shoddy and fraudulent goods and these other two great curses of Christendom, "poisonous herbs" and all beverages which "add drunkenness to thirst" in violation of the Divine Prohibition Act recorded in Deut. chap. 29, from 1 to 29.

(1). The cost of our Canadian governments—Dominion, Provincial and Municipal—in 1867, was only \$24 per family; it is now about \$60, an increase of \$36 per family, and in place of a decrease with the increase of population, as it should be.

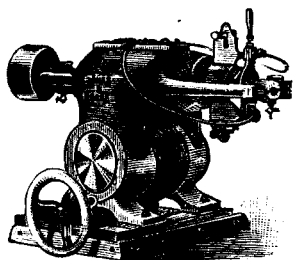
(2). The interest paid per family, in so far as it relates to excess of imports over exports, which no wise government would permit, has been from \$17 to \$45 per family. That is \$17 per family more than all the Dominion Government collects by tariffs and excise, and yet no member of parliament has risen up to make an end of this curse upon production.

(3). The shoddy and fraudulent imports are the factors which have created the \$1,000,000,000 of debt upon which that \$45 per family of interest is now annually paid. This debt no wise government would have permitted the importers to load the country with as they have done.

(4). The cost of beverages which "add drunkenness to thirst" and "the poisonous herbs" for excise, associated therewith that are a violation of the Divine Prohibition Act, recorded in Deut. 29, 1 to 29, and which no righteous government will permit, average about \$60 per family, and which, in a multitude of ways, the non-consumers have to help to pay for.

These factors consume one-fourth of the earnings of the people, or about \$124 per family. These evils, in so far as they relate to this matter, a wise government can remove, and the sooner the oppressed unite to secure cheaper government, cheaper money and

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the removal of the other curses mentioned, the sooner the long looked for deliverance of labor will be secured and the foundation be laid for an endless era of individual and national prosperity, and which neither strikes nor shorter hours will secure so long as these four great crushing burdens remain.

GEO. D. GRIFFIN.

PARKDALE, 1897.

SHEEP SHEARING BY THE AID OF ELECTRICITY.

Great Falls, Mont., has for some time been credited with being in advance of other places in the numerous uses to which electricity is applied, and now it again comes to the front with a claim that it is the only place on earth where sheep shearing is done with the aid of electricity.

Many attempts have been made to construct a sheep-shearing machine for use here which would do the work formerly done by hand, but none proved successful until the Woolsey shearing machines, brought from Birmingham, England, were put in operation this spring. These machines have proved their merit, and five or six sets have been in use in different parts of the United States. One set of twenty was installed at Great Falls, Mont., which has become by far the largest wool shipping point of the North-west.

Shearing sheds were erected at Black Eagle Dam, near the terminus of the street railway company's line, and this company furnishes the power to drive the shearing machines. The amount required was only six horse-power, and there being at the time no shunt-wound motor available, a street railway motor, type W P. thirty, was taken from one of the cars, the armature pinion being replaced by a small pulley which was belted to the main overhead shaft. Because of the small amount of power used, two rheostats were required to keep the speed low enough.

After the machines were started no difficulty was experienced in keeping the speed uniform, as there were twenty of them constantly at work. The foreman of the shearers, after five minutes' instruction, took full charge of the motor, giving it all the attention

necessary, in oiling, starting and stopping. The machines were operated for nearly three weeks by this motor, and in that time sheared 16,184 sheep, averaging nearly 100 sheep per day per machine.

The shearing proved quite an attraction, the street railway company carrying a large number of passengers to witness the novel sight. — W. D. Dickinson in *The Electrical World*.

PROGRESS IN ARC LIGHTING.

It is a singular fact that arc lighting, which was the first step in the progress of electrical illumination, has been until quite recently in a very backward state of development as compared with incandescent lighting and other applications of electricity. For over fifteen years the methods in vogue for arc lighting remained practically the same as at the beginning, in 1876. Improvements were made from time to time in the generating apparatus and in the lamps, but to all intents and purposes there was no novelty of any considerable importance introduced into the art of arc lighting until the appearance of the constant-potential circuit lamp some years ago. Following upon this the enclosed arc has opened an almost new field for this variety of illumination, and has proved of great importance and value. Still, to-day, in the greater number of stations, the methods of arc lighting in vogue in the early days of Weston, Farner and Brush are in use. The dynamos are relatively small and are belted to the prime movers. The whole appearance of the average arc-light station is crude, and suggestive of a neglect on the part of engineers and inventors.

There seems now, however, a considerable vitality in the field of arc lighting. Large dynamos of many circuits are an accomplished fact, and upon the successful construction of very large machines of this class arc lighting will take on entirely another phase. The desideratum is a machine which can be directly connected to a large engine, and which will supply many circuits of lamps without the necessity of dangerously high potentials in any



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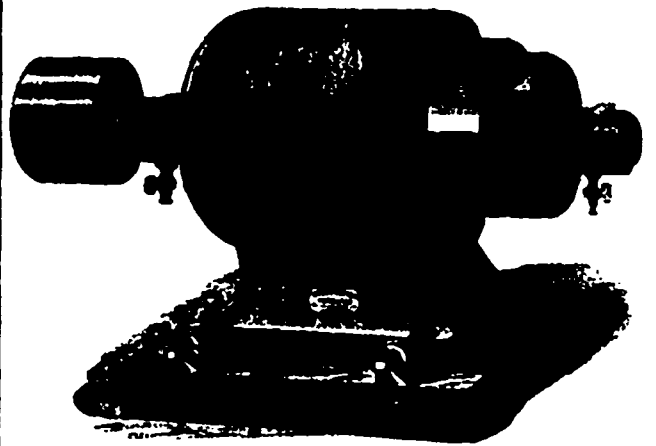
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The Canadian Manufacturer

of them. With the improvement of dynamo construction resulting from experience, and the invention of new details and methods, it has been possible to construct machines which are commercially satisfactory in their operation in sizes as large as 125 lights. This means a potential at the brushes of somewhere about 6,300 volts, a pressure which is certainly not a comfortable one to handle. While the dynamos operate without much trouble at this voltage, still the dangers of such pressures upon wire in city thoroughfares and the elaborate precautions that have to be taken in connection with them are a source of constant annoyance and trouble to the station using such apparatus. It is to be hoped that we shall soon see large direct-connected units furnishing many circuits at reasonable pressures up to, say, 2,000 volts.

The arc light has a very large field, which has not been invaded in any degree by the incandescent lamp. Its future seems to be particularly bright, and it is to be hoped that the efforts of inventors will not be spared in the direction of its improvement. What are needed are large direct-connected generating units, better carbons, and some further elaborations of the present methods for the operation of enclosed arcs. Electrical World.

EARTH'S GREATEST EMPIRE.

Recently the people of the United Kingdom have been making merry over the sixty years' reign of their Queen. But what has been one of her principal tactics during these sixty years? In the June number of "Pearson's Magazine," Mr. J. H. Schooling is responsible for an article which brings to light at least the territorial expansion of the British Empire. Mr. Schooling says that:

Of every 100 square miles of land in	Their share is— Square miles.
Europe.....	3
Asia.....	10
Africa.....	19
America.....	24
Australasia.....	24
The world.....	21

The American Economist, quoting these figures, says:— These facts are certainly remarkable. There are many great nations on the earth besides theirs. There are five great powers

in Europe, to say nothing about those nations who, from being great in the past, have become small in the present—such as Spain and Holland—whose interest is now, for the most part, historical or romantic, rather than of practical effect in the conduct of the world's affairs. There are in Asia, huge China, Persia, small Japan, Japan the England of the East, the United States in North America, and hosts of minor nations on this earth. We have named ten only (including the United Kingdom, and excluding Spain and Holland), and yet the British Empire takes as its share of land more than one-fourth of all the land there is to take. An extraordinary thing to be the result, primarily, of activities that have come out of two small islands of insignificant size which, many years ago, formed a tiny part on the great Plain of Europe, but which have since those early days found themselves placed between the North Atlantic Ocean and the North Sea. Raise the bed of the North Sea only a paltry 100 yards above its present level, and Great Britain would again form part of the continent of Europe! But those 100 yards of salt water have meant to them the existence of our vast Empire. Then there is a diagram showing the comparative sizes of the colonies belonging to the various great empires:

	Times its own area.
1. From the United Kingdom is hung in colonies, etc.	92.6
2. From France is hung in colonies, etc.	12.3
3. From Germany is hung in colonies, etc.	4.9
4. From Russia is hung in colonies, etc.	3.6
5. From Italy is hung in colonies, etc.	2.5
6. From Austria-Hungary is hung in colonies, etc.	0.1

The United Kingdom has added to the British Empire during these sixty years only, an area of square miles of the land of the earth equal to thirty-one times its own area! This means that on the average, in every two years of the Queen's reign, the British Empire has increased to the extent of the area of another United Kingdom. Half-a-United Kingdom added per annum is not bad work. Again, in every hour of the day or night of the Queen's long reign more than seven square miles of land have been added to the British Empire, i. e., one square mile has been added every eight minutes or so. If we take the weight in tons of the land added to the British territory during the Queen's reign we find it is about equal to one and a half times the weight of the Moon!

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BOTH COLONY AND NATION

Premier Laurier's heart leaps with joy at the thought that since the denunciation by Great Britain of the Belgian and German treaties this Canada of ours is no longer a colony, but a nation.

Until the Premier made this startling announcement, the great rank and file of the people were quite unaware that any material change had taken place with regard to Canada's standing among the nations. The pulse of the people has been quite normal. No salvo of artillery have been fired, no celebration has taken place, no poet has been even commissioned to bring in a new national

anthem. To the ordinary observer we seem to be about the same Canada we have been for, at least, a decade past. But Premier Laurier is a high authority, and if he says we have lately become a nation, why we must take his word for it, even if we had not heard of the matter before.

But still there will, no doubt, be some who will believe that in the sense that we were a colony before the Premier sailed for England, in that sense we still remain a colony. And in the broader sense that we are a people under one central government elected by ourselves, living harmoniously together, and having common aims and aspirations, we are a nation just as we have been ever since Confederation.

The Canadian Government continues to dabble with the matter of placing an export duty on pulpwood, giving no indication of its intentions to the lumbermen and cutters of pulpwood. It is trying to placate Canadians, who call for an export duty, by imposing new and ill-considered restrictions upon the cutting of timber on Crown Land. But the new restrictions are simply petty annoyances which irritate owners of timber-cutting licenses, and please nobody. The fact is, the Canadian Government finds itself forced into the alternative mentioned somewhere in the Scriptures, and may get drowned in the end in a flood of adverse votes, without having accomplished anything in the matter. At all events, there will be no export duty for some time to come. Paper Mill.

The Birmingham Iron Trade Circular (England's) says:—"Some more of the Welsh tinplate makers are about to turn their attention to sheet rolling instead of tinplate making. Tin plates are down thirty-one per cent., due to Germany and United States. Our trade with the last-named country can now be looked upon as dead. The new tariff bill, which recently became law, put the last nail in the coffin when duty on tinplates was put up twenty-five per cent. Our tinplate makers must look out for new markets. An eye must be kept on America. We fear she will not only supply her own wants, but will ere long be in the open market a strong competitor. The growth of the tinplate industry in America has been very rapid."

The London Ironmonger of August 21, says:—"Now that there is some question of the iron-ore deposits of the Bilbao district of Spain giving out, or becoming leaner, it might be advisable for our ironmasters to investigate the iron ores of Newfoundland. According to Dr. Grenfell, there are immense—even unlimited—quantities of hematite ores of excellent quality at Bell Island, magnetic iron and pyrites in many places, and chrome-iron ore in abundance at Port-a-Port. There are also deposits of nickel ores, asbestos, copper, coal, etc., in many parts of this, our oldest and nearest colony. We ought not to let these minerals drift into the hands of American firms." An admirably written and freely illustrated paper on "The Undeveloped Mineral Wealth of Newfoundland," by A. E. Outerbridge, Jr., will be found in the Journal of the Franklin Institute, of Philadelphia, for September.

French paper-makers, who have been using Scandinavian pulpwood, are giving trial orders to Canadian shippers, believing that the material can be had more cheaply. The situation, touching both politics and pulp, is briefly this: There is an ample, profitable and growing market for pulp and paper in Great Britain, Australia, Africa and South America. Canada has a very large supply of the best pulpwood in the world. The United States are receiving large orders for wood pulp and paper from the countries just mentioned, and are filling these orders by virtue of being able to get pulpwood free of duty from Canada. The Dominion Government have full power to restrict by an export duty, the ruinous export of pulpwood, and thus to encourage large pulp manufacturing and paper-making industries in Canada, at once preserving our forests from over-rapid depletion, and affording much profitable employment to capital and workmen in Canada. The duty of the Dominion Government is, therefore, plain, but that plain duty they neglect and refuse to perform.—Herald.

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Granted to the holder of the 20-year DISTRIBUTION POLICY of the **Manufacturers' Life** IF HE SURVIVES THE PERIOD HE MAY

- (a) Surrender his policy and receive (1) Cash, (2) Paid-up Insurance (3) Annuity; or,
(b) Retain his policy and take his profits as (4) Cash, (5) Bonus addition, (6) Annuity.

If he dies during the term his beneficiaries receive the face value of the policy. These options, together with the liberal benefits guaranteed in the policy, render this plan one of the most attractive ever offered.

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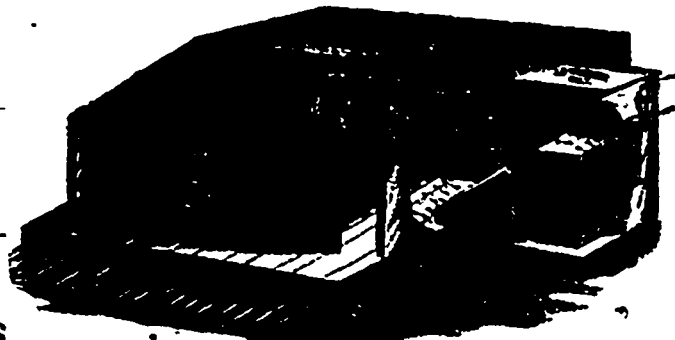
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CAPTAINS OF INDUSTRY.

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

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

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

A Bathurst, N.B., despatch says. The extension of the Gulf Shore Railway towards the Big Tracadie, N.B., river, was commenced recently. It is expected the work will be completed by November. At the terminus of extension, the Tracadie Lumber Company are erecting a large mill which will probably cut twenty million feet annually.

The Winnipeg Heater Company, of Toronto has been incorporated with a capital stock of \$24,000, to manufacture Winnipeg heaters, and all kinds of fuel burners, radiators, etc.

The Hay Island Mining Co., of Rat Portage, Ont., placed an order with the James Cooper Manufacturing Co., Montreal, through the Rat Portage branch office, for a complete mining outfit, consisting of Ingersoll Sergeant air compressor, rock drills, hoisting engine, etc.

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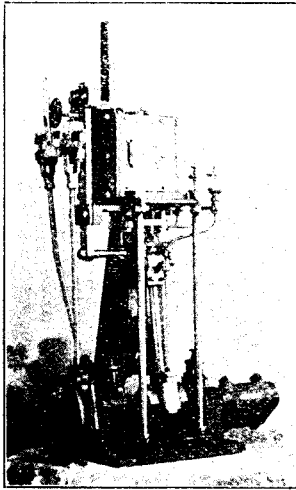
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**ARC LIGHTING MACHINERY, LEATHER BELTING,
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THE MONTMORENCY ELECTRIC POWER CO., - QUEBEC.

ALBERT BELL
DUNNVILLE, ONT.



Maker of
YACHT ENGINES, 1 H.P. to 50 H.P.
Safety Water Tube BOILERS
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Stationary Engines and Boilers
WRITE FOR CIRCULARS

ATLAS **ATLAS** **FACTS**
METAL Speak louder than words, and

ATLAS does not rely on empty talk for its UNSURPASSED REPUTATION.

It Has Been Undeniably Proved that ATLAS METAL is Superior to all and has stood under Enormous Pressures and Phenomenal Speed.

TRADE MARK. TRY ATLAS METAL WHERE ALL OTHERS HAVE FAILED.

WE CHALLENGE A TEST
Against any Anti-Friction Metal on the Market.

THE ATLAS METAL CO., Limited
75 Queen Victoria St., London, Eng.

H. G. McLAREN, General Agent for Canada,
318 ST. PAUL ST., MONTREAL, QUE.

Kemp Mfg. Co.
TORONTO.

Galvanized Steel Pails

FOR FIRE PURPOSES ONLY.
NO HOOPS TO FALL OFF.
PRICES ON APPLICATION.

The Booth Wagon Company of Ontario, with head office at Toronto, has been incorporated with a capital stock of \$25,000, to let contracts for the manufacture of garbage wagons.

We have received from the Norton Emery Wheel Company, Worcester, Mass., their new catalogue just issued, which, besides containing illustrations and full description of the company's grinding machinery, emery wheels, etc., given in previous catalogues, contains description of the company's new line of grinding machinery, improvements in the Walker universal tool and cutter grinder, and a bicycle cup, cone and hub grinder with magnetic chuck, which they have recently perfected and placed upon the market.

Fire did about \$5,000 damage to the stock of James Cowan & Co., London, Ont., wholesale carriage hardware.

Among the losses by the recent conflagration which wiped out the village of Casselman, Ont., were A. McLennan's saw mill, loss, \$12,000; J. N. Coupal, flour and lumber mill, loss, \$15,000; Casselman Cold Storage Company, \$8,000; G. A. Guertin, foundry, loss, \$5,000; D. McLean, blacksmith, loss \$2,000; J. Monpetit, carriage maker, loss \$2,000; the Roman Catholic church, \$12,000; the Presbyterian church, \$2,000; Roman Catholic Separate school, \$4,000.

Mr. Michael Sheridan, of Montreal, will build a saw mill at Aylmer, Que., to cost \$50,000.

Messrs. M. S. McKay & Co's woolen factory at Galt, Ont., was destroyed by fire a few days ago. The loss on machinery was about \$5,000.

Mr. H. Corby, of Belleville, is lighting his distillery and warehouses with electricity, and has placed his order for the dynamo, etc., with the Royal Electric Co.

E. C. Squire's cheese factory at Norwood, Ont., was destroyed by fire a few days ago. Loss about \$1,500.

The completion of the Newfoundland railway is a notable event not only for the people of the island, but also for the people of Canada, of which the island is one day destined to be an important and prosperous province. The railway runs from St. John's, on the south-east coast north-westerly to the Exploits river, near the north coast, and then, turning south-west, terminates at Port au Basque, on the south-west coast. The route is a very circuitous one, but it was intended for the development of the resources of the island, and runs through very rich mineral districts. It was proposed to run the line to the north coast, near Cape St.

John, through the copper district. Coal and iron have been found in several districts through or near which the railway runs, and more recently coal was discovered quite near the south-west coast terminal, Port au Basque. The proximity to the sea of this coal will render it very valuable. The distance traversed by the railway from St. John's to Port au Basque is about 550 miles. A steamship will be run in connection with the railway between Port au Basque and Sydney, Cape Breton Island, which will shorten the ocean voyage to a 100 miles, and the whole new route will greatly lessen the time spent in the journey from Canada to Newfoundland and from Sydney to St. John's, Newfoundland.—Witness.

The Crow's Nest Mine, Melrose, N.S., have placed an order with the James Cooper Manufacturing Co., Montreal, for a duplex cross compound Ingersoll-Sergeant air compressor, drills, receiver, etc.

The moulding shop of Messrs. Terreau, Racine & Co., Quebec City, was burned a few days ago. Loss about \$8,000.

A. C. NEFF, Chartered Accountant. JAMES WOOD, Late Sec. The T. Eaton Co., Ltd.
NEFF & WOOD
PUBLIC ACCOUNTANTS, AUDITORS ASSIGNEES, ETC.
Room 500 McKinnon Bldg., Toronto

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OF TORONTO.

Offers exceptional facilities to young people in its several departments for **SHORTHAND, Typewriting, Telegraphy, and all Commercial Subjects.**

Fall Session now open, and students are admitted at any time. Good results guaranteed, and graduates assisted to positions.

Particulars free. Write

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Canada Elevator Works,
Queen and Peter Streets, Hamilton, Ont.
Patent Safety Hydraulic... **POWER ELEVATORS**
Hand and... Telephone Connection.

BENT RIM WOOD SPLIT PULLEYS

(REID'S PATENT).

THE STRONGEST, LIGHTEST, AND BEST BELT SURFACE

IN THE WORLD.

No Glue, no Nails in Rim like Segment Rim Pulleys, to be affected by Steam, Dampness or Moist Temperature.

EVERY PULLEY GUARANTEED

The Reid Bros. Mnfg. Co., of Toronto, 102-108 Adelaide St. West, Toronto.

The oil refining plant under construction the past summer at Sarnia, Ont., by the Bushnell Oil Company, has been completed and operations were commenced a few days ago. The works cover thirteen or fourteen acres of ground, and include the site of the old refinery property on the bank of the St. Clair on the south part of the town. It is said, by experts, to be the most complete and best equipped oil refinery in America, containing all the latest modern improvements and facilities known to the trade.

The Merchant's Fire Insurance Company, Toronto, is being incorporated with a capital stock of \$500,000.

Messrs. Genard & Brophy, lobster packers, Merristown, N.S., have sold their factory to Burman & Morrill Company.

The Edwards Trading Company's saw mill, D. B. McDonnell's saw mill and G. H. Perley's shingle mill, all at South Indian, Ont., were burned a few days ago.

Messrs. Wm. and J. G. Greay, Toronto, a few days ago shipped \$12,000 worth of flour mill machinery to South Africa.

The design for a new postage stamp has been approved by the Postmaster-General. There is a portrait of Her Majesty as she appeared at the coronation, except that a coronet is substituted for a crown. The portrait has been engraved from a photo procured during the jubilee ceremonies. The corner of the stamp will be decorated with a maple leaf. The present stock of stamps will take some months to exhaust, and not till they are done will the new stamps be issued. It may be about December of this year.

The Oliver Lumber Company, Toronto, has been incorporated with a capital stock of \$10,000.

The Graham Nail Works, Toronto, was slightly damaged by fire a few days ago to the extent of about \$1,500.

The Kootenay Air Supply Company, Nelson, B.C., has been incorporated to render water power available for use by the erection of dams, etc., the use of water for hydraulic mining purposes, and for milling, manufacturing, etc. To construct and operate electric works, power houses, etc.

The Yukon Express Company, Montreal, is being incorporated with a capital stock of \$1,000,000, to carry on a general express and transportation business from certain points in the North-West Territories to the International boundary line.

The Duryea Motor Company of Canada, Toronto, is being incorporated with a capital stock of \$250,000, to manufacture gasoline, petroleum, electric and other motors.

The North British Columbia Navigation Company, Victoria, B.C., has been incorporated with a capital stock of \$100,000, to carry on the business of ship owners, forwarders, etc.

The Coldbrook Iron and Steel Company has been incorporated with a capital stock of \$20,000 to acquire and operate the Coldbrook Rolling Mills in St. John, N.B.

The Sackville Machine and Foundry Company, Sackville, N.B., has been incorporated with a capital stock of \$15,000 to carry on a general foundry and machinery business.

The corporate name of the Ambrose-Windlow Brewing and Malting Company, Port Hope, Ont., has been changed to The Port Hope Brewing and Malting Company.

The Williams Shoe Company, Galt, Ont., has been incorporated with a capital stock of \$20,000, to manufacture boots and shoes.

The Kemptville Milling Company, Kemptville, Ont., has been incorporated with a capital stock of \$50,000, to manufacture flour, oatmeal, etc.

The Rex Cash Register Company, Toronto, has been incorporated with a capital stock of \$10,000, to manufacture cash registers and to take over the business now carried on in Toronto under the name of The Bentley Manufacturing Company.

The Gravel and Construction Company of Toronto, with head office in Toronto, has been incorporated with a capital stock of \$40,000 to construct public and private works, and to manufacture building and paving material.

The Mortimer Company, Ottawa, has been incorporated with a capital stock of \$90,000, to carry on the business of publishers, engravers, lithographers, etc.

The brown factory and twine factory at the Central Prison, Toronto, were destroyed by fire a few days ago. Loss about \$60,000.

The Viger Manufacturing Co., knitted goods, St. Catharines, Ont., have sold out to Perfection Knitting Company.

The Goldie & McCulloch Co., Galt, Ont., a few days ago shipped four immense boilers, a Wheelock tandem compound engine, and an Ideal engine to Parry Sound, where they will be placed in a large grain elevator just constructed; also two boilers, a Wheelock engine and a safe to South Africa.

The Locked-Wire Fence Co., of London, Ont., have just made a shipment of their fencing material to Wellington, New Zealand, which they confidently expect will be the forerunner of a large business with that colony.

(From "Free Press," London, Ont., December 9th, 1896.)

Number two Committee of the Board of Education met last night. . . . It was decided to put in two No. 25 Heeson Fire Grates in the Collegiate Institute furnaces. One of these Grates is said to have saved four tons of coal at Princess Ave. School last winter."

These Grates, 16 x 26 inches, are supplied by

The HEESON ROCKING GRATE BAR CO. OF TORONTO (Limited),
Phone 1924. 120 VICTORIA STREET.

Twelve additional sets of these bars have since been put in for the London Board of Education.

ALEX. GARTSHORE, President. J. G. ALLAN, Sec.-Treas. JAS. THOMSON, Vice-Pres. and Gen. Mgr.

THE GARTSHORE-THOMSON PIPE & FOUNDRY CO., Limited



3 in. to 60 in. diameter.

For Water, Gas, Culverts and Sewers

Special Castings and all kinds of **WATER WORKS SUPPLIES** FLEXIBLE AND FLANGE PIPE. **HAMILTON, ONT.**

JOHN J. KELLER & CO.

104 and 106 MURRAY ST.

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220 Church St., Philadelphia.

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**Aniline Colors,
Dyewood Extracts,
Sumac and
Nutmeg Extracts.**

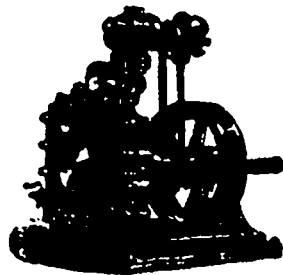
FAST COLORS for Wool Dyeing.
One Dip Cotton Colors, Novelties
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For Running Dynamos in



Small Isolated Plants.

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STEADY AND EVEN MOTION.

ALSO FOR

Attachment Direct to Fans, Blowers, Centrifugal
Pumps, Stokers, Steering Gear, Etc.

Correspondence Solicited.

Phelps Machine Co'y,
EASTMAN, P.Q.

The title of the Deloro gold mines, which the Canadian Gold Fields Company (Limited), have been working, was in dispute until about two weeks ago, when the Company purchased it at a public sale in London, England. The working force, which is now some three hundred men, will be largely increased, and the company will erect near

the mines large reduction works. The present works, which are situated more than a mile from the mines, will in the future be used for assaying and the reduction of the products of other mines. The company have purchased a large area of mining lands, and several of these lots will be developed and operated next season. — Belleville Intelligencer.

The woolen mill of Messrs. Boyd, Caldwell & Co., Lanark, Ont., has been closed during the past week to allow of further extension to the dye-house and repairs generally. It is expected to be in full operation again next week, as with the general revival of business the orders are coming in rapidly. — *Almonte Gazette*.

T. J. McLaughlin, of Ottawa, has been awarded the contract to build a new swing bridge over the Rideau canal at Bank street. The sum of \$25,000 has been voted for this work.

Messrs. C. A. Ahrens & Co., boot and shoe manufacturers, Berlin, Ont., finding their present factory too small for their increasing business, have purchased property in the central portion of the town and will build a new factory as soon as possible.

The Massey-Harris Company, Toronto, recently shipped sixty-eight car-loads of binders and ploughs, and two car loads of bicycles to Australia.

Mr. W. H. Meldrum, Peterborough, Ont., has purchased the Paris Roller Mills at Paris, Ont., and has given Messrs. Wm. and J. G. Greey, Toronto, a contract to install in it a complete Plansifter plant of 200 barrels capacity.

NEW DYESTUFFS.

From a pamphlet, recently received from Messrs. Wm. J. Matheson & Co. (Limited), 182 and 184 Front street, New York, agents for the United States and Canada for Leopold Cassella & Co.'s dyestuffs, we clip the following:

Wool dyers have frequently expressed the desire for dyestuffs which, when simply dyed in an acid bath, yield dark blue shades fast to light, and which do not rub off. This has induced us to seek for such dyestuffs, and we have succeeded in producing a new group of colors which we have named alizarine lanacyl colors, and of which we at present bring the following upon the market:

Alizarine lanacyl blue BB, pat., alizarine lanacyl blue R, pat., alizarine lanacyl navy blue B, pat., alizarine lanacyl violet B, pat.

The principal value of the alizarine lanacyl colors is their usefulness for dyeing piece-goods, and for this industry they promise to become of the same importance for producing blue shades as our well-known naphthol blacks and alizarine blacks have become for dyeing blacks.

Also for yarn-dyeing they will become of great interest for producing blue shades which are to be fast to light, and which do not rub off.

The alizarine lanacyl colors can be mixed at will with each other for the production of a great variety of blue shades, and can also be applied for dark blues, and blue-blacks in combination with naphthol blue, naphthol black or alizarine black.

The fastness to alkalis of these products is good, and their fastness to washing equal to that of naphthol black.

The fastness to light of alizarine lanacyl violet B is eminently good; comparative tests against the blue and violet artificial dyestuffs now in the market have proved its superiority, and that in this respect it is equal to indigo.

Alizarine lanacyl blue R and BB, and alizarine lanacyl navy blue B are also very good in fastness to light, almost as good as alizarine lanacyl violet, and therefore they may be counted among the blue wool dyestuffs fastest to light.

HAHLO & LIEBREICH, BRADFORD, ENG.

Machinery Merchants and Exporters

NEW and GOOD
SECOND-HAND

WOOLLEN MACHINERY

SHAKE WILLEYS, TEAZERS, RAG PICKERS, GARNETS,
AUTOMATIC FEEDS, WASTE CLEANERS, CARDS, CONDENSERS, SELF-ACTING
MULES, TWISTERS, LOOMS, HYDRO-EXTRACTORS,
SHEARING MACHINES, Etc.

GOOD Second-Hand COTTON and WORSTED MACHINERY

BELTING, CARD-CLOTHING, PICKERS, PICKING BANDS, etc.

Hamilton Blast Furnace Co.

HAMILTON, - - ONTARIO

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Manufacturers of

HIGH GRADE PIG IRON

THE . . . DOMINION WATER

IMPROVED

SPECIAL FEATURES

**Economy in Use of Water, Great Power
Equal Efficiency at any Gate-Opening
Steadiness and Strength of Motion
Sensitiveness to Change in Gate-Opening
Ease for Regulation by Governor
Strength and Durability
Freedom from Trouble with Step
Not Clogged by Ice
Accessibility to all Parts**

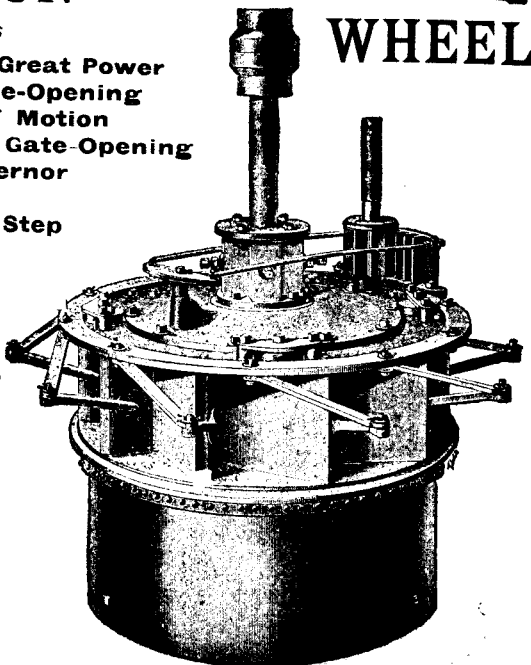
ST. CATHARINES,
February 9, 1897

Messrs. Wm. & J. G. Greey,
Toronto.

GENTLEMEN,—Your favor of the 5th to hand. Have been away from home, and hence delay in answering your letter. You ask us how your Dominion Wheel compares with the . . . Well, sirs, the comparison is this—we have been using two . . . 38 inch diameter, double wheels, and your 54 inch Dominion wheel we put in December last gives us as much power as both, and does not use but very little more water than one of the 38 inch wheels. Yours truly,
COOKE & SON

MANUFACTURED ONLY BY

WM. & J. G. GREEY
TORONTO



The alizarine lanacyl colors are not fast to staining.

The fastness to sponging or potting of alizarine lanacyl navy blue and alizarine lanacyl violet is very good, so that they can be applied, without hesitation, to goods which must stand a severe potting or sponging process.

For dyeing goods composed of wool and cotton the following brands are of particular interest for this industry:

Alizarine lanacyl violet B, pat. and alizarine lanacyl navy blue B, pat. If dyed together with the diamine colors suitable for dyeing union goods in baths charged with Glauber's salt, they go principally upon the wool, and enhance the fastness to light of such dyeings. Although the shades obtained in this manner are not as bright as the blues produced with our formyl and alkaline violets, the alizarine lanacyl colors are to be preferred where a superior fastness to light is required.

Owing to the very good fastness to light and rich shades the alizarine lanacyl colors are of special interest for dyeing silk in skeins as well as piece-goods.

A great advantage is that they yield in dark shades dyeings which do not rub off in the least.

The dyeing is done in the usual manner in acidulated boiled-off liquor.

The alizarine lanacyl colors possess to a high degree the property, so much desired for dyeing goods composed of wool and silk, of dyeing the wool only, and leaving the silk almost entirely undyed.

ILLUMINATING GAS FROM GARBAGE.

An interesting exhibition of a new method of disposing of garbage is at present being given in Toronto. Mr. L. G. Harris, the

originator of the system, some months ago carried on a series of experiments at Glen's Falls, N. Y., and as a result is able to show an experimental plant, in which a good quality of gas of eighteen candle power is produced at the rate of 14,000 cubic feet to the ton of garbage, with an expenditure of eight bushels of coke for fuel, and a few gallons of chamois which cost only six or seven cents a gallon. The inventor represents that he saw a four h.p. gas engine, and a twenty light dynamo running twenty 16 c.p. electric lights operated by gas from this generator. The plant is very simple, and its action is equally rapid. The system would appear to be especially adapted to street lighting, as it affords a means of doing away with the ordinary refuse about a city, and at the same time utilizing it in the production of light, heat and power. Messrs Ryan and Arnett of this city are the proprietors of the Dominion right to the process, and are organizing a company to put it before the public.

THE ELECTRICAL CONSTRUCTION CO., OF LONDON, LIMITED, LONDON, - - ONTARIO.

DIRECT-CURRENT MULTIPOLAR LIGHTING MACHINES, From 2 to 40 K.W. BELTED OR DIRECT-CONNECTED.

MULTIPOLAR MOTORS, up to 50 k.w.

Knife Switches, all Sizes and Kinds.

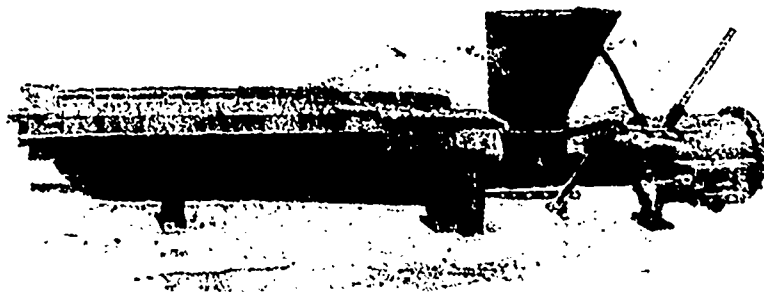
REPAIRS ON SHORT NOTICE.

Two Second hand 150 k.w. Multipolar, and two 50 k.w. Bipolar 500 Volt Generators for Sale at a Bargain.

THE WEEKS-ELDRED CO. OF TORONTO, LIMITED

Mechanical, Civil and Sanitary Engineers

GENERAL CONTRACTORS, STEAM POWER, HEATING and VENTILATING. Sewage Disposal Plants a Specialty



Sole Canadian Manufacturers of the

Improved Jones Under-feed Mechanical Stoker

Perfect Combustion. No Smoke. No Ash.

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DO YOU REQUIRE 
Rubber Belting?

IF SO, BUY THE BRANDS MADE BY

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CAPITAL \$2,000,000.

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ONTARIO BRANCH—Cor. Front and Yonge Streets, TORONTO.

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BOILERS

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Are You
Sure

THEY ARE

SAFE

AND IN

Good
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A.B.C. Code Used.

WILSON BROS. BOBBIN CO.

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Bobbin and Shuttle

Manufacturers . .

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High-Class Workmanship.

Seventy Years' Reputation.

LARGEST BOBBIN MAKERS IN THE WORLD

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OFFICE AND SHOW-ROOMS:

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ESTABLISHED 20 YEARS.

A. KLIPSTIEN & CO.

122 PEARL ST., - NEW YORK.

**ANILINES, DYESTUFFS, AND
CHEMICALS**

Of every variety, of the best quality and at the lowest price.
Delivery made at New York, Montreal or Hamilton

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HAMILTON, ONTARIO**



**KERR
Water Motors**

1/8 to 20 HORSE POWER.

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

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

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

**KERR WATER MOTOR CO., NIAGARA FALLS,
CANADA.**

The LONDONDERRY IRON COMPANY

(Limited)
A. T. PATERSON,
President and Managing Director.

R. L. MILDRETH,
Secretary.

.... Manufacturers of.....

PIG IRON **PUDDLED BARS**
BAR IRON **NAIL PLATES**
WATER PIPES, ETC.

Office.... **MONTREAL**

Works... **LONDONDERRY, NOVA SCOTIA**

CANADA IRON FURNACE CO., LIMITED

Montreal, Radnor and Three Rivers

Manufacturers of the well-known

"C.I.F." Three Rivers Charcoal Pig Iron

Suitable for Car Wheels, Cylinders and Fine Castings,
where the utmost strength is required.

UNSURPASSED IN STRENGTH BY SWEDISH, RUSSIAN
OR AMERICAN CHARCOAL IRON.

Offices: *Canada Life Insurance Bldg., Montreal.*

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MANUFACTURERS OF

BRIGHT COMPRESSED STEEL SHAFTING

FROM $\frac{3}{8}$ TO 5 INCHES IN DIAMETER. GUARANTEED STRAIGHT AND TRUE TO WITHIN $\frac{1}{16}$ OF AN INCH.

Spring, Reeled Machinery, Tire, Toe Caulk, Sleigh Shoe, Angles, Special Sections
and all Merchant Bar Steel. Sheet Steel up to 48 Inches wide.

RAILWAY AND ELECTRIC RAILWAY CAR AXLES
FISH PLATES, SPIKES AND TRACK BOLTS

Tee Rails, 12, 18, 24 and 28 lbs. per yard

==HEAVY FORGINGS a Specialty==

"FERRONA" PIG IRON, For Foundry Use.

Works—NEW GLASGOW, N.S., and FERRONA, N.S.

Head Office—NEW GLASGOW, NOVA SCOTIA

The Wellington Mills, **LONDON, ENGLAND**

GENUINE EMERY

Oakey's Flexible Twilled Emery Cloth.
Oakey's Flint Paper and Glass Paper.
Oakey's Emery Paper, Black Lead, Etc.
Prize Medal and Highest Award Philadelphia, 1876, for Superiority
of Quality, Skilful Manufacture, Sharpness, Dura-
bility, and Uniformity of Grain.

Manufacturers....

JOHN OAKEY & SONS, Ltd., Wellington Mills, Westminster Bridge
Road, London, Eng.

Inquiries should be addressed to

JOHN FORMAN, 650 CRAIG ST.,
MONTREAL.

BICYCLE CHAINS

—MADE WITH—

HARD PINS AND HARD BLOCKS

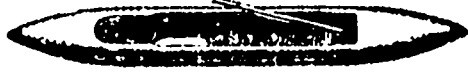
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ST. CATHARINES, ONT.

SHUTTLES



BOBBINS
SPOOLS
PICKER
STICKS
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ROLLS, Etc.

JOHN HOPE & CO., - - LACHUTE, QUE.

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FINE TWEEDS, CASSIMERES, AND FANCY
WORSTED SUITINGS AND TROUSERINGS.

FERGUSON & PATTINSON
PRESTON, - - ONTARIO.

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Guelph Woolen Mill Co., Limited
GUELPH, ONTARIO

Manufacturers of

Underwear, Hosiery, Wheeling, Fingering and Worsted Yarns
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AUBURN WOOLEN COMPANY
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Manufacturers of Fancy Tweeds, Etc.
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GALT MACHINE KNIFE WORKS

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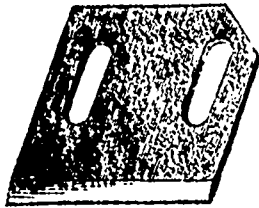
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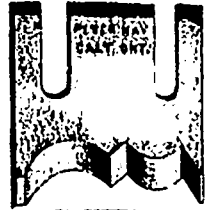
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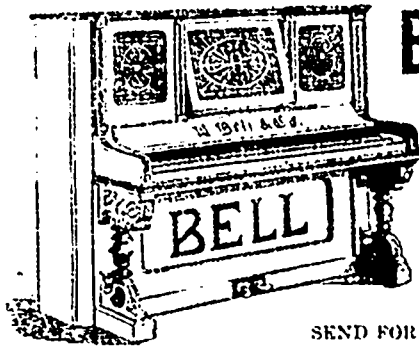
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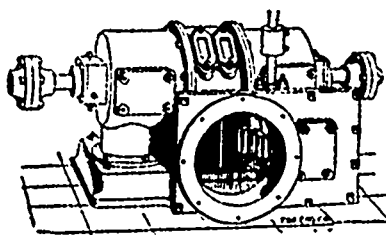
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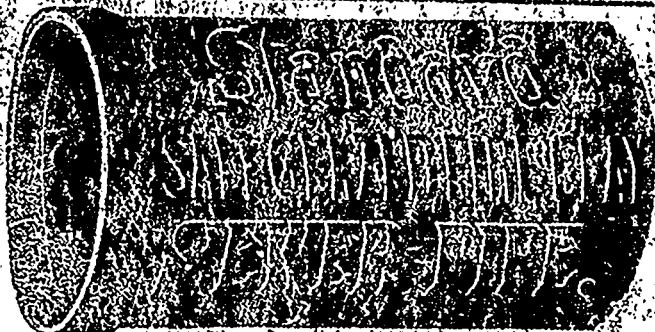
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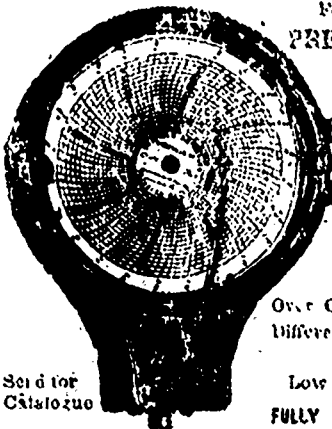
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