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AND INDUSTRIAL WORLD

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*INDUSTRY THAT MANUFACTURES FOR ITSELF PROSPERS*

J. JONES TORONTO.

Vol. 18.

TORONTO, JUNE 20, 1890.

No. 12.

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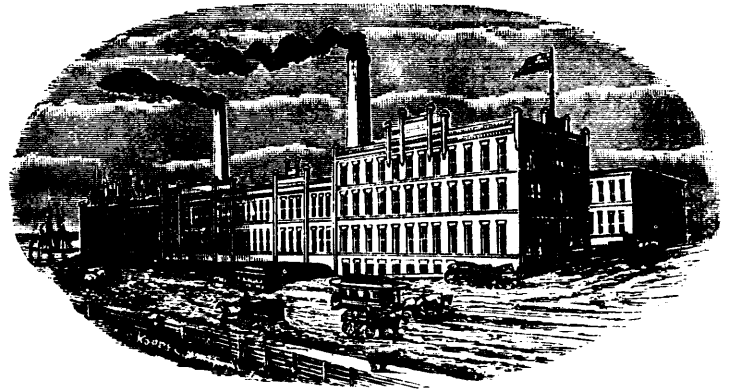
1. Its simplicity, strength, lightness, and the facility with which it can be adapted to the various sizes of pipe.
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### ADVANTAGES:

The advantages of the BATTEN FIRE ESCAPE over all others are:

That the balconies are made of the best wrought iron, of any ornamental design or pattern, and securely bolted through the walls. Can be made any length or width. The brackets and flooring are capable of bearing any number of persons standing on them. The ladders, with wide steps and of easy grade, can remain down permanently, or folded up, as desired, showing the ornamental balcony only in sight, which does not mar the architectural beauty of the building, and can be instantly released when desired. No ice or snow will remain on them, neither will the working parts rust; and they will work admirably in any weather.

A Stand Pipe is also connected for high buildings, with valves at each door and on the roof.

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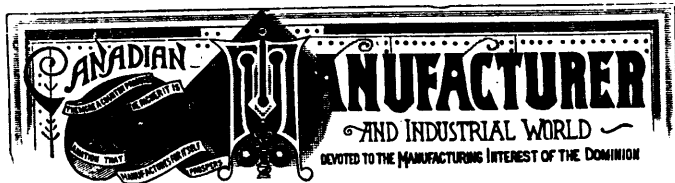
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#### PRICES AND PROTECTION.

A CORRESPONDENT of a city newspaper, discussing "Prices and Protection," answering an argument advanced in these pages to the effect that in consequence of the duty placed upon wheat the Canadian farmer gets a higher price for his wheat when consumed in Canada, says:—"If that were true, then Canadian farmers would have ceased to export wheat, which is not yet the case, for the price of wheat is fixed by the Liverpool market, and will be so until Canada can consume all the wheat raised within its borders." The writer ignores the fact, and it is a fact, that the Canadian farmer just as surely controls the price of wheat in Canada, within the bounds afforded him by the duty on wheat, as that the price of his exported wheat is controlled by the Liverpool market, where it comes into full competition with the wheat of all the other countries of the world. Wheat can be brought from Dakota, or Minnesota, and laid down in Toronto for just the same charges as if brought from Manitoba. Now, if American wheat could be laid down in Toronto, duty free, for less than Canadian wheat, it is clear there would be no demand for Canadian wheat in this market; and it is also clear that the demand would be supplied with American wheat. This would extend the market for American wheat and contract the market for Canadian wheat. It is evident, then, that the Canadian farmer would, in addition to his other shipments to Liverpool, have to include what he would have otherwise sold in Toronto, and contributing to that extent to the congestion and depression of the Liverpool market, and in competition with American wheat which could be produced cheaper than his own.

But here the National Policy intervenes and raises a barrier against the importation into Canada of American wheat to the extent of fifteen cents a bushel. Who gets the benefit of the

fifteen cents? The Canadian farmer of course; and he gets it on every bushel of wheat consumed in Canada. The duty gives him the entire command of his home market to the exclusion of all foreign wheat. But it does not benefit him in the least as regards the surplus wheat he is obliged to send to Liverpool for sale; nor has he any voice whatever in fixing the price of wheat in that market; therefore, he is greatly interested in any policy of his Government that tends to increase the home consumption of wheat. If that policy tends to establish industries that did not before exist, and which could not otherwise exist; giving employment to large numbers of persons, all of whom would be consumers of wheat, of course he would be benefited thereby, for it would be extending and enlarging his home market, which would be, within the bounds of the duty on wheat, under his control.

But why produce wheat alone? It is all right for the Canadian farmer to produce all the wheat required for the Canadian market, and if there is no Canadian demand for any other product he must confine himself entirely to the production of wheat, and send his surplus to Liverpool. We say his surplus wheat, for there is no other crop that he can grow to as good advantage, that will bear the long transportation across the ocean. But our farmer would not produce more wheat than would supply the home market if he could raise and sell other things that would bring him more money. He is not tied to wheat, only in that he can produce more wheat than can be consumed at home, and there is nothing else that can bear the transportation abroad. With fifteen cents a bushel protection on the home demand he can make money on wheat. With cities, towns and villages springing up all over the land; with factories and foundries; with mills, workshops and tall chimneys, and with thousands and thousands of men and women, boys and girls employed therein, each and every one of whom wants and must have three good square meals a day, he sees that something more than wheat would be in large demand, and instead of growing that article in competition with the ten cents a-day labor of India, he would turn his attention to producing milk and butter, knowing that even every quart of buttermilk he carried to market would have a money value. He knows that though they would not bear transportation to Liverpool, every bushel of potatoes and turnips, every head of cabbage and bunch of carrots would find ready purchasers at remunerative prices in a near-by manufacturing town, and, therefore, he concludes that a protective policy that would produce these conditions would be just the thing for him. With these things prevailing he would not desire to raise much wheat anyhow, certainly not for the Liverpool market, but would aim to grow pigs and potatoes; hogs and hominy; cabbages and all manner of garden truck; knowing that in doing so he would be entirely independent of Indian competition and arbitrary Liverpool prices.

But this correspondent wants to know what would be the actual increased value of this garden truck and farm produce, beyond what they would ordinarily sell for; and, having computed the full increased value to the favored farmer who lives near manufacturing towns, and put against it the extra amount the farmers who are not thus favored have to pay in additional duty cost upon the goods they consume, where the balance would lie. He disputes our assertion that without protection

we would have no tall chimneys and manufacturing towns, declaring that this is simply an assertion, which, if correct, must convict Canadian investors in manufacturing enterprises, and Canadian artisans, of being below the world's average.

It will not be disputed, even by the most rampant Free Trader, that with a manufacturing town close at hand, where there are large numbers of consumers of garden truck and farm produce, a farmer would find it much more profitable to grow such crops than to confine himself to wheat and have to send it to Liverpool for sale. This being admitted, the further fact is evident that the more manufacturing centres there are in the country the greater the number of farmers there will be who will be benefited by their existence: and it does not effect the question to argue that because there may be farmers living in remote districts where there are no manufacturing establishments, who may not be able to diversify their crops, that the system that benefits the other farmers is wrong and vicious. It would be just as sensible to denounce railroads for the same reason. The farmer who lives contiguous to a railroad is in a better position to prosper than a farmer who lives remote from them; but even the remote farmer would not denounce railroads merely because the contiguous farmer was benefited by them. Without doubt the general consensus of opinion would be in favor of the railroads.

No doubt England is Canada's best customer for cattle and cheese, and that without this outlet both these products would fall below their present value. But the argument for protection holds good here also; for no matter what prices they may command in England, the producers of them certainly obtain higher prices for them at home, to the amount of the duty, than if there were no duty, for the duty gives them the control of the home market. It is also true, as in the case of wheat, that when Canadian cattle and cheese are thrown on the English market, it is in competition with like products from all other countries. These are but few of the many things in the production of which Canada excels, but it is equally true that the best way to bring out her natural capacity is by affording them a reasonable amount of protection while they are being developed—not by forcing them into active and unrestricted competition with the world.

PROSPERITY UNDER PROTECTION.

THE first results of the census now being taken in the United States have been made known, and relate to State and local finances, the published reports showing the indebtedness of the United States as a whole, and the indebtedness of the different States and the counties comprising them. It is shown that at the present time the principal of the State debts amounts to \$228,679,000, of which \$194,954,000 is bonded, and \$33,725,000 floating debt. During the ten years since the last census the bonded debt of the various States has been decreased by \$64,083,000, and the floating debt increased by \$9,623,000, making a net decrease in the decade of \$54,459,000. In each of the geographical groups of States, namely, Eastern, Middle, Southern and Western, there has been a decrease, the greatest being that in the Southern group, the smallest that in the Western. Taking the bonded indebtedness alone of the various States the following reductions are shown:

	1880.	1890.
Eastern States.....	\$50,066,164	\$38,807,887
Middle States.....	44,649,379	32,861,911
Southern States.....	128,496,701	96,677,562
Western States..	35,825,211	26,606,845
	\$259,037,455	\$194,954,205

The reduction in the national bonded debt during the same decade has been still greater in proportion. In 1880 that debt was \$1,709,993,100; to-day it is only \$719,178,570. Taking the national and State bonded indebtedness together we find the following results:

	1880	1890
United States.....	\$1,709,993,100	\$719,178,570
Several States.....	259,037,455	194,954,205
	\$1,969,030,555	\$914,132,775

In ten years there has been a reduction of no less than \$1,050,000,000, or over fifty per cent.

The report also shows the indebtedness of the 2,809 counties of the United States and Territories, in which there has been an increase during the decade. In 1880 the bonded debt of the counties amounted to \$104,493,752, and the floating debt to \$16,745,331; while at the present time the bonded debt is \$130,734,959, and the floating debt \$14,958,881. There has thus been an increase in the total debt during the ten years of \$24,454,756. It will thus be seen that while the several States are following the example of the nation in reducing their liabilities and discharging their obligations, the counties are not.

In 1866, just after the close of the war of the Rebellion, the national debt of the United States amounted to \$2,773,000,000, while at this time it is only \$1,000,000.

The *causus belli* that induced the firing upon Fort Sumter, in Charleston harbor, and the precipitation of open hostilities, was the election of Abraham Lincoln as President of the United States. Up to that time the fiscal policy of that country embraced a tariff for revenue only, and, in the later days of President James Buchanan, who preceded Mr. Lincoln, the finances of the United States were in such deplorable condition that the Government found difficulty in floating a loan of a few millions, issued to meet its current expenses, upon which it paid interest at the rate of twelve per cent. per annum. The revenues from duties upon imports were sadly deficient, domestic manufacturing industries were in a demoralized condition, capital, proverbially timid, was locked up, and the general appearance of things indicated what was a fact, that the incubus of Bourbon Democracy brooded over the land. An idea of the tariff at that time may be had from the fact that the duty upon pig-iron was but twenty-four per cent. *ad valorem*, while the domestic production of the article was, (in 1861) but 731,000 tons. This was the condition in which Mr. Lincoln found the country on his accession to the Presidency.

The struggle for the perpetuity of the Union was expensive, as we have shown, and exhaustive; and there can be no doubt that in any other hands than that of the Republican Party, and under no other financial system than that inaugurated by it at the time, the Union could not have been preserved, and the debt could not have been carried. Dissolution and insolvency would have been inevitable. In 1867 the population of the country aggregated but a little over 36,000,000, and the national debt per capita was \$69.26, the

interest per capita thereon being \$3.84; and this was exclusive of State and municipal indebtedness. But a quarter of a century has elapsed since the close of the war, yet, as we have shown, under the operations of protective tariffs the revenues of the Government have accumulated so rapidly, the wealth of the country increasing phenomenally, that at this time the national debt is almost obliterated, or could be obliterated in a few years if it were desired to do so. Last year, with a population of less than 65,000,000, the per capita of the United States' national debt was but \$15.12.

While this is a remarkably good showing for the United States as a nation, the aggregate debt of the different States and of the counties and municipalities contained therein is very large. According to the census of 1870 this debt aggregated \$868,676,758; and in 1880 it was increased to \$1,048,084,041, the per capita apportionment being \$20.90. We have not got the figures regarding the county and municipal debts of the different States for 1890; but the reports herein alluded to show that at this time the aggregate debt of these States amounts to \$228,679,000, which is over \$2,000,000 more than it was ten years ago. (There seems to be some inaccuracies in the figures herein given, but they are all taken from official reports; and it is to be supposed that these inaccuracies exist in the hasty reports just sent out from the Bureau of Census Statistics.)

In 1880, the national debt of the United States was \$38.27, and of the several States, and their counties and municipalities, \$20.90, a total of \$59.17.

Canadians need take no pessimistic view of the situation as regards their country from what we have shown as regards the United States. The approximate population of Canada is about 5,000,000, and the debt about \$200,000,000, the per capita debt being say \$40. It is likely that the per capita debt of the United States and its integral parts has been reduced to some extent since 1880, but probably not lower than that of Canada. A very large portion of Canada's debt was incurred in promoting railroads for the development of the country—the United States does not subsidize railroads—and one great, heavy and constant drain upon the Dominion treasury is the money paid out of it to the different Provinces for the support of their civil government, while the United States makes no such appropriations. As compared with the United States, Canada is a very new country. Containing more square miles of territory, and extending across the continent co-terminously with the United States, but with only a twelfth or thirteenth of the population, Canada has more miles of railroad and more post-offices, according to that population, than her neighbor. If the future of the United States is bright, that of Canada is brilliant. Protection has made the United States the wealthiest and almost the most powerful nation on the earth. When Canada has enjoyed as many years of such influence she, too, will be correspondingly wealthy, prosperous and powerful. The perpetuation of Protection is the hope of Canada.

It is related of our own Sir John Macdonald that while in Toronto last week, while cogitating over the N.P. he was heard to sing:—

Not being sure of the life to come,  
We'll make a heaven of our Canadian Home.

## CANADIAN IRON ORE.

THE *Iron Age*, a competent authority on the subject, says the profits of the Lake Superior iron ore mining companies are very large. For example, the Metropolitan Iron Company recently paid a dividend of \$6.50 per share. The capital stock of this concern is \$2,000,000, divided into 80,000 shares of a par value of \$25. The dividend, it will be perceived, is over twenty-five per cent. of the capital stock. The shares are quoted at \$75, and the dividend for the coming year will probably be larger than the dividend lately paid. There are other mining companies that have paid their owners, according to the statement of the *Iron Age*, "almost if not quite as heavy proportionate profits on the business of 1889." The demand for the Superior ores is so keen that it is a question whether the output for the coming year has not been already oversold at prices which will certainly make next years' profits excessive. The iron mines on the Canadian shore of Lake Superior are quite as rich as those on the American shore, but unfortunately we cannot develop our mines owing to the want of a market. The United States duty on iron ore is seventy-five cents per ton, and that on pig iron \$6.72 per long ton.—*Toronto Mail*.

Rot. The *Mail* should remember that many of its readers are not chattering idiots as might be supposed if it was supposed that they swallowed such stuff as that embraced in the statement that Canadian mines cannot be developed "owing to the want of a market." According to Mr. T. D. Ledyard, who owns a valuable iron mine near Peterborough, Ont., the ore from his mine can be laid down in Cleveland, Ohio, duty paid, at \$3.90 a ton; which ore, he says, is the equal in all respects of any Lake Superior ore. As the *Mail* says, the iron mines on the Canadian shore of Lake Superior are quite as rich as those on the American shore; and it would cost no more to mine and market these than it would the American ores. According to Hon. Geo. H. Ely, of Cleveland, President of the Western Iron Ore Association, the average daily wages paid per man to miners in the American Lake Superior mines during the past eight years was \$2.10; that the average cost per ton of ore mined in that time was \$2.32, and that the labor cost per ton was \$1.60, the explanation being made that the difference between "labor cost" and "total cost" per ton was the expense for tools, explosives, timber, etc.; the figures not including cost of general administration. This leaves a very handsome profit to the mine owners, seeing that these ores are worth from \$6.50 to \$7 per ton at Cleveland. The *Mail's* quotation from the *Iron Age* shows that stock in these mining companies is worth \$75 for each \$25 invested, and that the annual dividends are over twenty-five per cent. of the capital stock. Mr. Ledyard is our authority for stating that the ores from his Canadian mine can be placed f. o. b. cars for \$1 a ton, and that the cost, delivered at Cleveland, duty paid, is only \$3.90. This includes an all rail haulage which is more expensive than water transportation: and if we are correctly informed, vessel freight from Lake Superior to Cleveland is only about eighty-five cents a ton. Mr. Ledyard claims that cheap labor in Canada would enable him to put his ores on cars at mines at \$1 a ton; and we presume the same cheapness would work similarly at the Canadian Lake Superior mines. This being so these ores would cost laid down at Cleveland as follows: mining \$1, freight, eighty-five cents, duty seventy-five cents, total \$2.60 per ton. This is but slightly in excess of what Mr. Ely says his American ores cost

him at the mines, the difference not being enough to cover transportation to Cleveland.

It is clear, then, that, according to the very best authority, both Canadian and American—Mr. Ledyard and Mr. Ely—the Canadian ores can actually be laid down in Cleveland, duty paid, for less than American ores; and this fact being established the rottenness of the *Mail's* assertion is apparent. If all the facts stated regarding the matter—the possible productiveness of the Canadian mines; the richness of the ores; the cost of labor in mining, and the cheapness of transportation, are true, the conviction forces itself that the owners of these mines don't know enough to go under shelter when it rains. It is not to be supposed that the owner of a valuable iron mine will refuse to operate it merely because it costs him seventy-five cents a ton more to deliver it than what it costs to deliver ores from other mines, particularly when there is a margin of profit represented by the difference between \$2.60 or \$3.90 a ton cost on delivery, and \$6.50 to \$7 a ton selling price.

The *Mail* should be ashamed to publish such rot and rubbish, expecting sensible people to believe it.

#### THE BEET-SUGAR INDUSTRY.

IN our last issue we referred to the fact that steps were being taken to organize a company to prosecute the beet-sugar industry in the Province of Ontario.

It is to be expected that this project will have many difficulties to overcome, and considerable misapprehension and prejudice to contend with, before the promoters can succeed in arousing much interest, or securing liberal support for the enterprise. They will find it necessary to account for the numerous failures which resulted to several similar enterprises in the Province of Quebec, and must show that the causes which produced these failures were such as do not exist in Ontario, or may, with ordinary care, be avoided or overcome. Mr. Wilfrid Skaife, B.A., manager of the Berthier Beet-Sugar Company during the season 1887-88, attributes the failure there to the immense difficulty, or rather to the impossibility, of obtaining anything like the supply of beets required to meet the capacity of the sugar factory. That company canvassed during fall and winter over forty parishes to find growers; they distributed large quantities of seed; circulated an immense number of instructions to growers, and expected from the number of promises received to find a sufficient area seeded to beets to furnish a satisfactory, if not an ample, season's supply for the factory. The result was, total supply of roots received 1,600 tons, for works having a capacity for converting into sugar 30,000 tons in the season. Owing to the extremely wet season in September and October 1888, a large proportion of the beets proved to be very deficient in quality. The part of the crop which was grown on high land and properly cultivated, proved very rich in sugar and profitable in manufacturing.

In order to the proper and successful cultivation of sugar beets, the land intended to be sowed to this crop in spring, should be thoroughly manured and ploughed at least twice in the preceding fall. Owing to the lateness of the harvest in

Quebec, this is often impossible to accomplish there, although always practicable in Ontario. Early seeding in spring is most desirable, so that the young beets may attain good growth before the hot dry weather sets in. In this respect Ontario has an advantage of two or three weeks over Quebec. Another important advantage in Ontario is the experience and skill of its farmers in all kinds of root crops, and their general appreciation of the benefit derived by their lands from the thorough cleaning and cultivation secured therefrom. While a Quebec sugar company would be compelled to seek for its supply of roots over a territory extending to 100 miles from its factory, an Ontario company can select twenty locations in this Province, where it can easily procure an abundant supply of roots from an area within ten miles from its works.

From a large number of experiments made last season in the territory lying between Toronto and Cobourg, and also on a larger scale at the Ontario College Farm at Guelph, it was demonstrated beyond doubt that large sections of this Province can produce immense crops of sugar beets, far exceeding in yield per acre the average crops of Germany and France. The general percentage of sugar was very satisfactory, but in some instances the purity of the sugar was deficient. This, it is thought, was attributable to mismanagement in cultivation, as farmers were not informed of many of the rules which must be observed in raising sugar beets. The experiment on the Guelph farm was an unequivocal success as to yield, percentage of sugar and its purity. This shows what can be done. The promoters of the proposed company have over 300 experiments being made this season from imported seed, and will be able to determine what sections of the Province and what kinds of soil are likely to produce the best results.

In addition to the objections urged against the beet-sugar enterprise on climatic grounds, or inadaptability of the soil of Ontario, the promoters will have to contend against considerable prejudice against beet-sugar, which is frequently asserted to be of much less value and of much lower quality than cane sugar. It must be admitted that raw beet sugar is not fit for use for domestic purposes. Even in exclusively beet sugar consuming countries in Europe it is never used until it has been refined. Then, thoroughly refined beet sugar is identically the same as cane sugar. Mr. Lewis S. Ware, M.E., probably the best expert in sugar in the United States, says: "Beet sugar is now being accepted as an excellent substance, and the supposed difference between it and cane sugar is only occasionally discussed. Sugar refiners have not the slightest hesitation in using beet sugar, and the product subsequently placed on the market is known as granulated, etc., just as it was when only West India sugars were worked;" and again: "We have frequently assured our readers that cane and beet sugar are identical when perfectly pure. Some recent interesting experiments by Dr. T. L. Phipson prove beyond doubt that there does not exist the slightest difference between the sugars obtained from cane or beets. Such being the case, the terms "saccharose" and "betose" to distinguish between them are unnecessary. The long discussion as regards the quantity of beet sugar required to make jam, etc., as compared with cane sugar, we hope will now end. Samples experimented upon were pure white crystals of refined cane sugar from the West Indies, and absolutely pure crystals of Austrian



beet sugar. The crystalization in both cases was identical, the modifications on the edges and angles being also alike. They were both devoid of odor, and when equal weights of each were mixed with equal volumes of water, the sweetness was identical. Their chemical composition did not differ."

There is a general impression that beet sugar can only be utilized for refining, by being mixed with cane sugar. A very few facts taken from the statistics of the sugar trade of Germany will show the incorrectness of this idea :

	TONS.
In the year 1886-7 the entire imports of sugar into Germany were	4,678
"          "          German manufactured the equal in raws ugar	990,306
"          "          "          exported of sugar.....	661,128
The export value of which was a little over.....	\$69,000,000

The imports formed less than one-half per cent. of its manufactures. The quantity and value of its exports show the magnitude of its foreign trade outwards.

There is a very general misapprehension with respect to the difference in value between refined cane and beet sugar. The following quotations from the London *Economist* of May 31st last, are conclusive evidence of the erroneousness of this opinion. Granulated sugar is quoted there at 17 shillings per cwt. ; Dutch crushed is quoted at 15/9 for No. 1 ; 15/6 for No. 2 ; 15/3 for No. 3. f.o.b. Holland. These are beet sugars. Add to 15/9 the freight to London, landing charges and commissions, and it is seen that there is hardly any difference between the values of the two kinds of sugar.

We believe that all the objections to the proposed enterprise can be frankly met and over-ruled ; that all the difficulties will be overcome ; and that before many weeks a general and generous support will be accorded to the project. California has several beet sugar factories in successful operation, and others are being constructed ; Nebraska and Wisconsin also have large beet sugar works now erecting ; Pennsylvania and other States have similar projects in contemplation. Why should the Province of Ontario prove less enterprising than these States ? It has fully as many advantages as to climate and soil, and its farmers have a much longer and more extensive experience in root cultivation than the farmers of any State in the Union. It is hardly possible to exaggerate the importance of this subject, or to overestimate the benefits which will result from the successful operation of the beet sugar industry. To furnish the supply of beet roots required to produce the same quantity of raw sugar as is now annually imported into Canada for refining purposes alone, would absorb the crops of 70,000 acres, on which over fifteen hundred thousand dollars worth of labor would be expended, and for which the farmers would receive a return per acre fully four times as large as for any grain crop. Thousands of laborers and mechanics will be employed in erecting and operating the sugar factories, and in building houses for the operatives. The railway companies will obtain an enormous traffic in the transportation of building materials and machinery, the carriage of the roots, coal, limestone, coke, etc., required at the works, and of the sugar, molasses, etc., to market. The proposed industry is one which will not compete with or displace any existing interest ; on the contrary, its operations will be a clear gain and advantage alike to the agricultural and to the commercial interests of the Province, and of the Dominion at large.

### SIR RICHARD'S NEW FAD.

THE people of Canada are informed that Sir Richard Cartwright is a supporter of a protective tariff. We get this information from the *Toronto Mail*, together with the further information that the protective tariff to be championed by Sir Richard is that which was in vogue prior to 1879. We are kindly told that that system was not a tariff for revenue only, although it is commonly described as and believed to have been such, but a tariff for "Moderate Protection." The *Mail* has issued an *ipse dixit* declaring the old tariff to be as stated, and that henceforth in all controversies on the subject this meaning must be attached to it. Sir Richard, we are told, would not venture to recommend the adoption of a tariff for revenue only in a country situated as this is, his ideas now being so modified as to make him a convert to Protection. For this many thanks. That is, thanks to Sir Richard if we want Canada to frame its protective tariff to suit itself ; but we fear that this is not his idea. He probably wants Canada to adopt the "moderate protection" of the American tariff, which is fifty per cent. higher than the present Canadian tariff, and this adoption to be effected by Unrestricted Reciprocity with the United States. This would take the tariff making power away from the Dominion Parliament at Ottawa, composed of Canadians, and give it to the American Congress at Washington, composed of men who are not Canadians, but many of whom are determinedly in favor of the annexation of Canada to the United States. The *Mail* says :

The pressure of the McKinley tariff upon the Canadian farmer will probably secure a better hearing for the arguments (of Sir Richard) in behalf of unrestricted trade with the United States than they have hitherto obtained. Sir Richard's main task will be not to convince the Tory farmers that Reciprocity would be beneficial, so much as to prove to them that Congress is prepared to talk about it seriously.

Which means that during the canvas pending the next Dominion election, Sir Richard will stump the country in favor of a policy of "moderate protection," fifty per cent. higher than the present tariff, but formulated at Washington, against Sir John Macdonald and the present National Policy, which gives us "immoderate" protection much lower than what Sir Richard proposes.

Of course Sir Richard does not tell us that if he heads the Government after the next election we are to submit to having our tariff dictated from Washington, but that is just what he means. We know that this is so because the drift of all his arguments in the recent Parliament was in that direction. He endeavors to conceal and disguise this fact, and to throw Canadians off their guard, by coming out now and declaring himself in favor of "protection," for the dear, good man "would hardly venture to recommend the adoption of a tariff for revenue only in a country situated as this is ;" but the protection he affects to favor at this time is such as was in vogue prior to 1879, which was no protection at all, and under which Canada would soon relapse into the deplorable condition of that time.

It is a very pretty scheme Sir Richard and the *Mail* are proposing. In the next election the woods and cross roads will be full of Sir Richard, declaring to the Canadian farmer that if the "protection" offered by Sir John and the Tories was a good thing, that offered by Sir Richard and the Grits will be

better. Of course it will be new to hear the thundering voice of Sir Richard declaring for protection of any sort, whereas previously it had always been loud in denouncing Protection as a villany, and the supporters of it villains. He will remember that the farmers of Canada voted for Sir John and Protection, and that the N.P. has been sustained at the polls time and again since 1879; and he hopes that by judicious wool-pulling he can convince the electors that at this time his fad should be granted a trial. He will ask for "rotation"—to have the Tories rotated out of the Government and Sir Richard and the Grits rotated in.

Unfortunately for the scheme the *Mail* gives it dead away. Sir Richard's main task will be to convince Tory farmers that the American Congress is prepared to give them Reciprocity, and that Canada will certainly accept it if he is put in power. But how silly it is to talk about any Canadian tariff whatever, in the event of Sir Richard's accession to power. The term "Reciprocity" implies that Canada would have to adopt the American tariff. Reciprocity also means that there would be Free Trade between Canada and the United States, and the American tariff wall extended all around Canada to the exclusion of trade with Great Britain or any other country.

Canada does not desire and will not have any such "Moderate Protection" as Sir Richard Cartwright proposes. It don't smell good.

#### WHICH IS WHICH ?

IN discussing the tariff question, it is important to know the meanings that apply to the different kinds of tariffs, and this the *Toronto Mail* very kindly undertakes to show. It supposes that we all understand the meaning of the words "Free Trade;" but it explains the difference between a "tariff for protection" and a "tariff for revenue only." It says:—"A tariff for revenue only can be levied in two ways and no more. Either you must tax foreign commodities which are not produced in the country, or, if you tax foreign commodities which are produced in the country, you must impose corresponding excise taxes upon the home made articles. England has a tariff for revenue only. There is no other known method of levying a tariff for revenue only. It is obvious that if foreign products which can be made at home were taxed without corresponding duties being imposed on the home-made products, the home producer would enjoy a measure of protection equal to the amount of the Customs tax." It explains that the tariff system, which was in vogue in Canada prior to 1879, was a very different thing from either a tariff for protection, or a tariff for revenue only—that "it was not a tariff for revenue only, though it is commonly described as such, but a tariff of moderate protection." In beginning any controversy on the subject, the *Mail* says, it is necessary to agree upon these definitions of these words and phrases.

The *Mail* would have made its lexicography more intelligible if it had said, in explaining what a tariff for revenue only is, that, "either you must tax foreign commodities which cannot even under moderate protection be produced in the country; or, if you tax foreign commodities that can be produced in the country, you must also impose corresponding excise taxes upon the home-made article." We suppose this is what it means.

The illustration of the first part of this proposition is in the fact that England taxes tea and other articles which cannot be produced at home, but from which last year she derived a revenue of over £20,000,000—more than \$100,000,000—about one-fourth of which was derived from the duty on tea alone. Now, we all know the value of tea in considering the comfort of every family in the land, and we all know that revenues must be had wherewith to maintain the Government; and the question presents itself whether it would not have been to the advantage of all the families in England to have been spared this heavy tax upon one of the most important necessities of life, even if the money had to be raised by imposing a duty on some product of some other country, the like of which was also produced in England, without the imposition of a corresponding excise tax on the home product. Suppose, for instance, that the duty had been levied upon textile fabrics instead of upon tea. The manufacture of textile fabrics in England gives employment to a larger number of people than any other industry, and in it not only men, but women and children, hundreds of thousands of them, find their living. These are the ones who consume tea, and it is out of their scanty earnings that the revenue derived from tea must come. But the English Government could never be induced to levy an excise tax on textile fabrics, although the tax would be no more onerous to those who paid it than the tax upon tea; and if there was a duty levied upon fabrics, those employed in the manufacture of fabrics could buy more tea than at present with a heavy duty on tea. As it is, however, the English market in certain lines is surfeited with the fruit of the looms of France, produced by cheaper labor, while English labor is, to that extent, thrown into enforced idleness. If English textile manufacturers were actuated by any regard for the welfare of English textile operatives, they would favor the imposition of duties upon foreign textile fabrics, because, by keeping foreign fabrics out of England, and controlling their home market, they would be able to pay their operatives higher wages; and with these higher wages these operatives would have more money with which to buy tea and other necessities, as is the case in Canada and other protected countries. But the selfishness of English manufacturers is proverbial and extreme; for they would rather, with Free Trade, sacrifice their smaller home market and the interests of their employes, than give up their clutch upon the larger market of the rest of the world, although it is retained chiefly by means of the extremely low wages they pay to their starving employes. Without doubt the working classes of England would be wonderfully benefited by protection, but the greed and avarice of English manufacturers, with their strong pull with the Government, are able to deprive the poorer classes of this benefit.

The present prestige and glory of England is maintained upon the suffering necks of her working classes. Under her financial system the poor are made poorer that the rich may be made richer. Her customs revenue is derived chiefly from duties imposed upon the commonest necessities of life; and the duties imposed upon things that are luxuries—expensive wines, etc.—that only the rich can use, are extremely light. Every industry in which her working classes find employment, pays largely in excise taxes which, last year, amounted to \$125,000,000. Every valuable paper must have income stamps

attached, which, last year, were valued at more than \$75,000,000. The land tax and house duty added \$15,000,000, and the tax upon property and incomes more than \$63,000,000. These immense revenues are required to support royalty, to maintain empire, armies and navies, and to subsidize every English ship employed in foreign trade that conforms to certain requirements. It is all right for England to have these luxuries if she wants them, but it is the working classes, not the rich, who pay for them. The *Mail* argues that the tariff is a tax, and that every one who buys an article produced in a protected industry is taxed to the extent of the protective duty. But, how is it in England? Under the English system even the hairs of one's head are all numbered and pay taxes accordingly, the thick-haired sons and daughters of toil paying the heaviest, while the bald-headed manufacturers, merchants and ship-owners escaping unscathed.

The *Mail* sugar coats its tariff for revenue pill, which it is preparing with the hope that Canada may be induced to swallow it, by proclaiming that "the tariff system in vogue prior to 1879 was not a tariff for revenue only, but a tariff of moderate protection," and then intimating that Sir Richard Cartwright will plant himself on that platform and invite Canadians to rally around him as against Sir John Macdonald and that National Policy of Protection that has raised Canada from the deplorable position she held prior to 1879, and which has made her the great and prosperous country she is to-day. Canadians, however, will not be hoodwinked by either the *Mail* or Sir Richard Cartwright, nor will they accept the "tariff system in vogue prior to 1879" as being anything more or less than just what it was—a system that could be but a stepping stone to Free Trade, or, worse still, to Unrestricted Reciprocity with the United States. The people of Canada know which is which.

#### PARTY AND THE PRESS.

THE *New York Tribune* warns the members of its party that the Democratic press has, since the last Presidential election, been much strengthened, and that if the Republicans do not wish to be taken at a disadvantage they must follow in the example of their opponents. "The Republican press needs to be actively employed at once in counteracting the systematic Free Trade propaganda of the Democratic press." Further, the Republicans are advised to support their own papers, and are reminded that an investment one-tenth or one-twentieth as great as will be made by the party politicians in the campaign funds of 1892, if employed during the next two years by clubs and leagues in enlarging the circulation of the Republican press, would determine in advance the result of the election. These observations are in the main applicable to this country. When the election campaign is as yet far off, Liberals cannot be better employed than in increasing the circulation of Reform journals. In Ontario, especially, they can take a pride in this work, because of the splendid character of the city and Provincial press. The need for this activity is all the greater because of the existence of so called independent papers which are ordinarily mild and inoffensive, but just before election times suddenly become vicious Tory sheets.—*Toronto Globe*.

It may be all right for the newspapers of both parties to endeavor to increase their circulation; and their influence is certainly an important factor in all political contests. But in our opinion this influence is greatly overrated, both by the

politicians and by the newspapers themselves. In Canada, as in the United States, newspaper political articles are less of arguments than of blackguardism and abuse, entirely devoid of sense, and extremely disgusting and distasteful to all persons who have any respect for themselves or confidence in the good sense of the community. Ordinarily now a-days when a candidate is presented for the suffrages of the electors, if what is said of him by the other side is to be believed, he is a villain and scoundrel whose deserved retreat should be in the depths of perdition; while, on the other hand, the beslobberment of his friends is more disgusting than the vomit of dogs. The influence of such literature is chiefly with the unthinking and unreasoning classes who can be swayed by appeals to passion and prejudice; and as far as this influence goes with such classes—for they include many voters—the daily newspapers are a power in politics which politicians appreciate.

It is to be hoped, however, that the more respectable elements in the political parties of Canada will do as such elements are doing in the United States, which make their appeals to the reason and understanding and patriotism of the people. Denouncing a party as a party of thieves and traitors, and calling its candidates and supporters venal and corrupt, is not an argument that appeals with much force to the minds of honest and impartial men. Those who hurl such epithets do not themselves believe them, and it is inflicting a great wrong on the credulous to try and make them believe them. This sort of electioneering influence tends to the great and rapid deterioration of public virtue and love of country. In some minds the influence of such pernicious teachings is never eradicated, and as in many instances the unfavorable impressions are against those who have been elevated to power and authority; the effect is to bring our prominent men into disrepute and the laws and traditions of the country into disrespect. The other method is better. Clubs are organized and proper literature is prepared which presents the claims of the party in the most favorable aspects; and from which even those who are not political students may gather assortments of arguments which, when delivered from rostrums and political gatherings, enables the speaker to present his case intelligently, and impresses his audience that he knows what he is talking about.

Many of these clubs raise large sums of money for such purposes. Attractive premiums are paid for meritorious essays and papers on specified topics, and they usually come from men who have well considered the propositions on which they write. College students are frequent contributors of this sort of literature; and frequently these students find opportunities to themselves go before political gatherings and discuss political questions. But while many classes of the community contribute in these ways, probably the most effective work is done by the leading business men. If the club is organized to promulgate Free Trade doctrines, those whose interests lie in that direction busy themselves in remodelling Cobden Club arguments; and if Protection is to be advocated, every tariff speech that has been delivered on that subject, and every able speechmaker above ground is called into service and made to do duty.

This is legitimate political warfare; but we regret to observe that in Canada the fighting is not done on this line as extensively as it might be. The matter should command the

attention of those whose interest it is to perpetuate Protection ; for if they hope to preserve it they will necessarily have to fight for it in the next campaign ; and the way to prepare for that fight is to organize now.

#### EDITORIAL NOTES.

A CENSUS enumerator in Richmond, Va., has discovered a colored woman who has given birth to thirty-seven children since 1868. Six times has she given birth to triplets, six times to twins, and seven times to solos. This under freedom and Protection—such could not possibly have occurred under slavery and Free Trade.

THE Canadian Minister of Finance has brought in a motion to double the bounty on pig iron, which is at present \$2 a ton. The increased bounty is proposed for seven years.—*St. Louis Stoves and Hardware Reporter*.

As usual our contemporary's facts are fiction. The present bounty on pig iron is one dollar a ton, and the increase is to be to two dollars ; and the term of the bounty is for five years, not seven. There is nothing like accuracy when stating facts.

It takes about three seconds for a message to go from one end of the Atlantic cable to the other—about 700 miles a minute.—*Toronto Globe*.

Infant class in Arithmetic stand up. What is the length of the Atlantic cable? Ans. About 2,800 miles. If an electric message can be sent 2,800 miles in three seconds, how far will it go in one second? Ans. One third of 2,800 miles, or over 900 miles. How far would it travel in one minute? Sixty times as far, or 56,000 miles.

A CURIOUS phase of the cotton weavers strike in Hamilton developed in a church in that city, when an employee of the Ontario Cotton Mills, who had returned to work while the strike was still on, and who was also a member of the choir of that church, found on a recent Sunday that the balance of the choir were deaf mutes as long as he retained his place in it. This is the very quintessence of the esthetics of labor unionism in connection with Christianity—that is, with such Christianity as prevails in that church choir.

AN expedition is to be sent out by the Dominion Government, to explore the oil regions in the extreme north-western part of Canada. Prof. Dawson, who has traveled in that part of the country, expressed his opinion of it in these words : " If the indications of oil are correct, Canada has the largest oil bearing district in the world, comprising nearly 150,000 square miles, and as the indications extend down the Mackenzie river below Athabaska, the above area may only be a part of the oil bearing country. Some of the lakes and rivers in the north are covered to a depth of several inches with oil which has exuded from the banks."

WE are pleased to learn from a letter received by Mr. Robert H. Lawder, that Mr. Trostorff, of the firm of Messrs. Langen & Hundhausen, Grevenbroith, Prussia, celebrated manufacturers of sugar-house machinery, will visit Toronto at an early date, for the purpose of enquiring into the adaptability of the soil and climate of this Province for the cultivation of sugar beets. He will meet the promoters of the Ontario

beet sugar enterprize, and furnish them with all necessary information as to size and description of the buildings required for sugar factories, and the cost of the latest and most approved machinery for works of various capacities.

It is always best to avoid danger, if possible ; therefore, there is one rule which ought to be taught in every school in Canada, and that is, Never lift an electric wire off the ground. As long as it is on the ground it is harmless, no matter what pressure may be on it. The moment it leaves the ground it may be dangerous.—*London Advertiser*.

The *Advertiser* should observe this rule when considering the N.P. The best way to avoid danger to the country is by not meddling with that which gives it light, warmth and power. As long as the N.P. stands as it is it accomplishes all that can be hoped or expected of it ; but the moment the pressure and influence of it is broken, danger to Canada is imminent.

THE *Montreal Herald* quotes a long list of iron products on which the Canadian duty averages about 35 per cent., and argues that this duty enhances the cost of the Canadian-made articles. Now the American duty on such products is much higher than the Canadian duty, while England imposes no such duty, having Free Trade. Yet American pig iron, made under a protective tariff of \$6.72 a ton, can be imported into Canada and manufactured into these products, and the products themselves, manufactured under a duty much higher than ours, can be imported into Canada and sold for less money than either pig iron or iron products imported from England. Is it a fact then, as the *Herald* claims, that the duty is added to the cost? We think not. Certainly not in the case of pig iron and manufactures of iron and steel.

CANADIAN manufacturers and the manufacturers of all the rest of the world are waiting with bated breath to hear the *Toronto Empire* explain what "raw materials" really are. It says that "the war debt of the United States has been reduced by the the expedient of retaining the oppressive war taxes through all these years of peace, many of them imposed on raw materials or other articles, contrary to sound financial principles." The aforesaid manufacturers would also like the *Empire* to expatiate awhile in explaining its views regarding "sound financial principles." The impression has gone abroad that the financial principles of the United States Government include a protective tariff, which the *Empire* denounces as "unsound," although that inconsistent journal is loud-mouthed in upholding the protective tariff system of Canada. It is evidently affected with Yankeeophobia. Will the *Empire* please tell what it knows of "raw materials"—if there is really any such things—and where they are produced.

A COMPARISON of the prices of farm implements and supplies required for agricultural purposes, now and ten years ago, show that the aggregate decline in all things the farmer has to buy is much greater than the decline in the prices of the products he has to sell.—*Winnipeg Commercial*.

Canada is sadly in need of some manufacturers who can compete in a foreign market. The conflicting arrangements of a rascally tariff system, in which the protection of one industry is a tax upon the raw material of another, makes production at export prices a simple impossibility in nineteen out of twenty of those protected industries. It is pleasing to note

such exceptions as the Massey Manufacturing Company.—*Winnipeg Commercial.*

Consistency is a jewel, but our respected contemporary is not possessed of such a gem. In one breath it denounces the N.P. as "a rascally tariff system" that injuriously affects the manufacture of farm implements and machinery, and in another breath it shows the wonderful benefit of the N.P. to Canadian farmers in that farm implements and machinery can be bought very much cheaper now than ten years ago. Only a dyed in the wool pessimist would be guilty of such ridiculous inconsistency.

A CONTEMPORARY calls Mr. Meredith the Ontario Sisyphus. Sisyphus, it will be remembered, was kept employed by Pluto in rolling up a hill a huge stone, which invariably rebounded just as he thought he had it safely to the top. Mr. Meredith's efforts to roll up a majority in Ontario invariably result in the same way, and the parallel drawn between him and the ancient dweller in Tartarus is a happy one.—*Toronto Globe.*

Sir Richard Cartwright is the Sisyphus of Canada. He keeps himself employed in rolling stones up-hill. Sometimes the stone is called "Abuse of Canadian Manufacturers," but it always gets back at him and crushes him beneath the load of his own vulgar abuse. Sometimes it is called "Unrestricted Reciprocity," sometimes "Commercial Union," sometimes "Annexation," but the result is always and uniformly the same. Just as he hopes his stone is at the top of the hill, down goes Sir Richard Sisyphus McGinty to the bottom, and the rolling has to be begun again. The last stone Sir Richard Sisyphus has put his shoulders to, he calls "Moderate Protection," but it is but a rolling stone at best, and the only moss it will gather will be that which is scraped from the epidermis of Sir Sisyphus as it goes bounding to the bottom of the hill, carrying Sir McGinty Sisyphus along with it.

In an address at Boston recently, Assistant Postmaster General Clarkson, who is a citizen of Iowa, said of the tariff question in the West: "In Boston a stranger may not come to discuss the tariff. It is a product of New England. I can only report from a new portion of the Republic of the growing strength of this fidelity to American interests. Twenty-five years ago there was not a Protection paper printed in the State of Iowa; They were all practically for Free Trade. We have learned wisdom, and to-day the manufacturing products of Iowa equal half in value the agricultural products. We have our own interests to protect now in adhering to Protection. The claim of the North-West for Free Trade is not true. In the last Republican National Convention the East said that the West must stand a strong Protection plank. The West accepted it, and in the campaign and at the election stood by it better than the manufacturing centres of the East stood by their own faith. The best Protectionist in the United States to-day is the Western farmer. As a Western man I resent the pity bestowed upon the Western farmer. He is passing through a temporary depression, but he is meeting it bravely, and he will come out of it by his strength and wisdom."

PROTECTIVE tariff sentiments are extending and chrysalizing by leaps and bounds in many parts of the world. The French people are felicitating themselves that in a couple of years more all their outstanding and objectionable trade treaties will expire by limitation, when they will make only such arrange-

ments with other nations as will leave themselves free to enforce their ideas of protection to their own industries to suit themselves. China is doing similarly by increasing her import duty upon cotton goods, opium, etc.; Spain is moving in the same direction; Germany imposes high protective duties; Servia is heading off the dishonesty of importers by declining to accept their valuations of imports except under the inspection of her own customs appraisers, and, as we have heretofore shown, even in England a strong party is being formed looking to a protective financial system. We all know how it is in Canada and the United States. It is to be observed that whenever allusion is made to this fast and wide-spreading sentiment in favor of tariff protection, the information is promulgated that "British traders and manufacturers protest" against proposed changes. These protests do not retard the movement, and Britain will soon have to join the procession.

ALL the evidence extant on the subject points to the fact that Canadian iron ores are as rich in metal as American ores; that they are as easily mined, and that mining and other labor is cheaper in Canada than in the United States. The manufacture of pig iron in Canada is ridiculously small, although it is protected by a duty of \$4 a ton, and encouraged by a bonus of \$1 a ton, the production being only about 30,000 tons a year. The importations of pig iron are about twice as much; and the annual consumption of iron and manufactures of iron in Canada amounts to about 300,000 tons. There is no duty upon mining machinery, nor upon coke fuel when consumed in manufacturing, and no country possesses better facilities for manufacturing iron than Canada, and yet the industry is neglected. The consumption of iron in Canada is large enough to keep many iron furnaces in blast; yet those who own the mines fold their hands and whine for Reciprocity and grumble because Canada don't choke it out of the United States. If they wait for Reciprocity, or for iron ore to be placed on the American free list, they will die of old age without their hopes being realized. If the Canadian duty on pig iron is not high enough, let them appeal to the Government to raise it. The duty should be raised to at least \$7 or \$8 a ton.

It is gratifying to observe that some of the opponents of Protection to Canadian industries are veering around and proclaiming themselves in favor of Protection. Among these we name the *Toronto Mail* and Sir Richard Cartwright, for whom the *Mail* speaks. It is true that at this instant these do not proclaim for the N.P. as it stands; but it is encouraging to learn that these distinguished exponents of Free Trade with all the world; of Commercial Union with the United States; of Unrestricted Reciprocity with that country, and of all modern anti-Canadian fads as fast as they arise, now, abandoning all that they have heretofore advocated, come out boldly for what they call "Moderate Protection." Moderate Protection is good enough for Canada, by which we mean that the National Policy of the Dominion Government affords the country just the Moderate Protection it requires. Of course if Sir Richard and the *Mail* repent them of their evil ways in opposing the Government and its policy, they may be assured of forgiveness, but they must remember that recent and unproved converts must find their places in the rank and file, not at the head of the procession. Sir Richard

can never lead the advancing host. It is already captained by a grand and glorious leader who will die in the harness, and may God spare him in his usefulness for yet many, many years.

A VICTORIAN Protectionist has recently told the Sydney tradesmen that when a duty of £3 a ton was placed on wire nails in Victoria, the price was forthwith reduced from £20 to £16 a ton. The Sydney Free Traders say this is an absurdity, and point to the fact that while in Sydney wire nails were selling at £13 a ton, in Melbourne, with a £5 duty, they cost £18 a ton. It so happens that all the facts are about right, and if there were no other consideration, the absurdity would have to be admitted. But the Sydney writers forget, or do not know, that when the duty was first imposed in Victoria there was in existence a strong combination of merchants who had artificially maintained the prices of nails so long as all were imported, but when there was a prospect that a local manufacturer would start, the charges were reduced. Now, however, they have found their level, the difference in the two colonies being about the amount of duty.—*Australasian Ironmonger*.

This indicates the usual method of the importers, and we respectfully request the attention of Mr. Stapleton Caldecott, importer, of Toronto, to the fact here given. In the absence of Protection there was no home production; and in the absence of home production there was a strong combination of importers who artificially maintained prices; but as soon as Protection was assured the industry was started; and as soon as the home production began the farmers and other consumers ceased to be subject to the rapacious greed of the importers and obtained the home-made goods at less than the importers' prices. Protection did it.

At a recent dinner of the Home Market Club, of Boston, Hon. Thomas B. Reed, Speaker of the United States House of Representatives, delivered an address on Tariff Legislation in which he said:—

"We have just passed through the House of Representatives a Tariff Bill, and with a unanimity of action on the part of the Republicans which is without parallel in the history of the country. The Committee on Ways and Means truly represented every great interest in this country. If you will look at the list of names you will see they will stretch from one end of the country to the other, leaving out no great interest which the Republican party desired to preserve, and, therefore, no great interest of the country at large. Doubtless here in Massachusetts and elsewhere in New England there is an idea prevalent, that under other circumstances you might carry on some of your own industries to greater advantages if you had what was called free raw material. You might be able to go on with your affairs with less complications and less trouble. That may be so, but the simplest course in this world is not always the safest. Remember that the principle upon which Protection is founded is not the fostering of a few pet industries but the preserving of the American market to the American people. If you demand it you must grant it. If you believe in it for yourselves you cannot stand up and disbelieve in it for others. What you need is not only the business of to-day but the business of to-morrow. What you need is not a boom but a steady regular business. How can you get this if you shut out from the American market your own fellow citizens? If you want stability you must broaden."

It is not unlikely that 500,000 tons of iron ore will be shipped from Port Arthur annually to the United States,

beginning in a year or two, notwithstanding ore has to pay an import duty to the United States of seventy-five cents per ton, this being more than counterbalanced by low wages and the moderate price by which iron properties can be purchased, and by the Bessemer ore which is found in the district. If the Canadian Pacific decides to build the Antikokan branch it can be completed by September 1st. The ore docks will be built on the Kammistiqua, three miles from its mouth, where the banks are fifty feet high. It is stated that 100,000 tons could be shipped this year, were the road to be built at once, but this is probably a physical impossibility. The Antikokan range is simply a continuation of the Vermilion of Northern Minnesota, and its ore is about the same quality. Of its great beds a goodly share is owned by Duluth capitalists.—Duluth, Minn., *Herald*.

HERE is an object lesson for Mr. T. D. Ledyard and other owners of iron mines in central Ontario. Antikokan ore can be mined and laid down at Cleveland, Ohio, at about the same cost as Minnesota ore, which is of precisely the same quality. The duty of seventy-five cents a ton will not exclude it from the American market, and the Duluth capitalists think they see big money in it—probably several dollars a ton. Mr. Ledyard says his ores are equally valuable, and that they can be laid down in Cleveland, duty paid, at \$3.90 a ton. If he is too patriotic a Canadian to sell his ores to the Yankees, he should manufacture them into pig iron, upon which he could make a very large profit.

If the duty on tinplate were removed could the housekeeper who now pays 25 cents for two cans of corn get the same for 24  $\frac{2}{10}$  cents? Hardly, for the price is made as much if not more by competition among the dealers as by the tariff. Then, if the duty were a little more than doubled would the housekeeper have to pay 26 cents for the two cans? Hardly, and for the same reason relating to competition. A middleman might be struck slightly in the matter of profit, but middlemen are of the kind who toil very little and "spin yarns" only, yet they get more "purple and fine linen" than workmen or employers.—*Pittsburgh Labor Tribune*.

If there is any difference in the prices Canadians have to pay for canned fruits, vegetables, etc., or for tinware of any description from what is charged in the United States, it is imperceptible. Canadian canned goods are the equal, and Canadian tinware is as well made and serviceable as any produced by our neighbors, and there is no difference in prices. But in the United States tinplate pays a duty of one cent a pound, while in Canada it is free. Free tinplate in Canada has never induced the manufacture of the article here, nor has the one cent duty started the industry in the United States. There seems to be no doubt, however, that when the American duty is increased to 2  $\frac{2}{10}$  cents, tin plate works will be erected there which will, after a while, supply the domestic demand. Our Pittsburgh contemporary shows that to consumers at least, increasing the duty will not increase the price of canned goods; nor would it increase the price of tin ware. Nor would it in Canada. Then why should not Canada have tinplate works? Canada needs a full grown, healthy Morrell tariff.

OUR respected friend, Prof. G. A. S. O'Leone, sends us a newspaper clipping which, he says, throws light on the nature of gasoline. The item alludes to a fire that recently occurred in Philadelphia, in a shed in which a quantity of gasoline was stored. A fool of an employe was drawing some of the gasoline, when fire from his pipe set fire to the fluid, causing the explosion

which resulted in the serious burning of a number of firemen. Our respected friend is a savant and philosopher, and he is opposed to the use of gasoline because of its explosive character. We think he is unnecessarily prejudiced against the article. As he himself knows there are many drugs and chemicals in constant use that are quite as dangerous. The act of a foolhardy employe caused the explosion of the gasoline. What caused the explosion of the ammonia retorts at the Toronto Gas Works a few months ago? Carelessness also causes deaths from overdoses of opium, laudanum, chloroform and many other things manufactured by chemists and in constant use. With ordinary care they are not dangerous, nor is gasoline. A properly arranged and managed gasoline stove is a blessing to housekeepers in hot weather; but they need not forego the use of it because ammonia tanks explode, and because careless druggists dispense overdoses of poisonous medicines. Are electric lights to be abandoned because imperfect insulation of wires causes so called accidents? Shall we cease using illuminating gas because fools leave the taps open and asphyxiation ensues? Our respected friend, the Professor, should "come off."

It is always amusing to hear a pot commenting on the blackness of a kettle. A few days ago the Toronto *Empire* printed a column editorial on "Questionable Morality," in which it scolded Mr. John Wannamaker, a wealthy dealer in clothing, etc., in Philadelphia, for selling a very cheap reproduction of the Encyclopædia Britannica at a disgustingly cheap price. That is, disgusting to the British and American publishers, and to the book trade generally. The *Empire* did not claim that there was any intrinsic difference between Mr. Wannamaker's edition and that of the authorized publishers, or that there was any difference whatever, except in the quality of the paper, ink and binding; but it said that Mr. Wannamaker was a thief—that it was only by stealing what had cost the publishers on the other side of the Atlantic many thousands of pounds in British gold, that this colossal piece of advertising was possible. We are not discussing the American book-pirating business at this time; but readers will recall a recent article in these pages wherein we showed that certain parties, both in Canada and the United States, were manufacturing a spurious edition of Webster's Unabridged Dictionary, the original of which was nearly a half-century old, and which was now obsolete and of but very little value, palming it off on the unsuspecting public as the genuine article. Among those who were engaged in this disreputable business was the Toronto *Empire* itself, which offered it as a premium for new subscriptions, the price at which it was offered, above the regular subscription price of the paper, being largely in excess of what the worthless book could be bought for elsewhere. The object of the *Empire's* editorial was to denounce the pirating of an English book by an American publisher; but it didn't seem to think that any wrong existed when a Canadian newspaper availed itself of a Canadian piracy of an American book to boost its circulation. Mr. Wannamaker's book is an exact reproduction of a British work, but the *Empire's* dictionary is a spurious and radically incorrect reproduction of probably the best work of the sort published on the American continent.

## SPECIAL ADVERTISEMENTS.

Advertisements will be accepted for this location at the rate of two cents a word for the first insertion, and one cent for each subsequent insertion.

**TISDALE'S BRANTFORD IRON STABLE FITTINGS.**—We lose no job we can figure upon. Catalogue sent free. The B. G. Tisdale Co., Brantford, Canada.

**A DYER**—Blue vats and fancy colors in wool and piece. Fast carriage green cloths, tricots, flannels, etc., etc. Am at present engaged in the States, but desirous of coming to Canada. Address, GUBELINUS, this paper.

**FOR SALE.**—In town east of Toronto, Two Set Woolen Mill, fully equipped and in good running order; never-failing water-power, main building stone, 50x150 feet, three stories; picker house, brick, 24x30, two stories; railway and water convenient for shipping, will sell with or without machinery. For further particulars, address this office.

**FACTORY TO LET.**—Ten years lease; containing about 11,000 feet of floor space, fitted up complete with engine, boilers, shafting, steam heating, gas light and water service fixtures throughout; adjoining building can be had if desired; five floors, each 30x110, with hoist. Apply to Samuel May & Co., 111 Adelaide Street west, Toronto.

**FOR SALE** in Kent County, Michigan, the Buchanan Mill property consisting of a first class lumbering mill the extensive water power in connection with it including the entire power furnished by the river with real estate on both sides of sixteen acres, situate one mile from Main Street of Lowell, a rich farming country surrounding an excellent location for paper mill, furniture factory, woolen mill and the many uses that require power. Also a splendid home and farm of 87½ acres with buildings fruit, evergreens etc. For further information all at the premises of JAS. R. BUCHANAN, Lowell, Michigan.

**TO MANUFACTURERS**—The Town of Thorold, Welland County, Ontario, is a splendid site for manufactures of all kinds, and reasonable encouragement will always be given for the settlement of bona fide industries. It is situated on the boundary between the Counties of Lincoln and Welland; population, 3,000; lighted by electricity (public and private circuits); electric street railway connection with the City of St. Catharines, four miles distant; nine miles from Niagara Falls; the New and Old Welland Canals, also the Welland (G.T.R.) and Niagara Central Railways, all run through the town; water power from the canal; bonded debt small; situation, on the brow of the mountain, overlooking Lake Ontario, most picturesque; public health not excelled; five churches; first-class High school, also two Public and one Separate school. Any information desired will be cheerfully given by application to JAMES LAWSON, Mayor.

A CO-OPERATIVE company has been formed by the late employees of the New Glasgow, N.S., glass factory for the manufacture of pressed glassware.

THOSE of our readers who want a thoroughly good fortnightly magazine, devoted to the interests of the home, should send a dime to Clark W. Bryan & Co., Springfield, Mass., for a sample copy of *Good Housekeeping*. There are a dozen articles in every number that will be found worth more than the entire cost.

We are in receipt of the 1890 Annual Report of the Board of Trade of Goderich, Ont. It contains a list of the officers, council, committees and members thereof; report of the council, showing the business of the town to be in an exceedingly flourishing condition, etc. The report of committee on manufactures enumerates the different industries established there and the advantages of Goderich as a manufacturing centre.

"THE Electric Light, and The Storing of Electrical Energy."—By Gerald Molloy, D.D., D.Sc.—Numerous illustrations.—Price, 15 cents.—The Humboldt Publishing Co., 28 Lafayette Place, New York. This number of "The Humboldt Library of Science" contains much information on a subject of supreme importance to the present generation. Dull, indeed, must be the reader who would fail to be instructed by the abundance of facts and wealth of illustrations here presented.

We recently alluded to the advent into Canadian newspaper life of the Walkerville, Ont., *Mercury*, speaking of the proprietor, Mr. S. Stephenson, as being late of the Chatham, Ont., *Planet*. This conveyed a wrong impression, as Mr. Stephenson still retains his interest in the *Planet*, actively managing both papers. And, while the *Mercury* is one of the brightest and handsomest papers that reaches us, the *Planet* maintains its usual dignity and importance, the proprietor giving, in the different branches of his Chatham establishment, employment the year round to about fifty hands.

THE June 7th issue of *The Dominion Illustrated* is rich both in portraits and local scenes. The fine view of the *Abyssinian*, as it arrived at Victoria, B.C., is seasonable and sure to be appreciated. The portraits of the Newfoundland delegates mark an event which is of historical importance, as the present crisis in the island colony, with which their visit was associated, is certain to be memorable in colonial annals. In the views of the exterior and interior of King's College, Windsor, N.S., we are reminded of the dawn of higher education in what is now the Dominion—King's being the oldest of our Universities. The Collingwood scenes are timely and admirable, and the cricket match between Lennoxville and McGill will be prized by younger readers. The June 14th issue is largely devoted to the Royal visit, there being fine views of the arrival of the *Abyssinian* at Vancouver, B.C., of Stanley Park in that city and its striking bridge that leads to it, of the decorated engine that drew the royal party over the mountains, of the inspection of the cadets and the lacrosse match at Montreal, and other illustrations. The view of Stanley Park, which the Duke of Connaught so much admired, is very effective, and the other pictures are correspondingly good. Presbyterians will appreciate the portrait of the Rev. Dr. Laing, Moderator of the General Assembly. The next issue of *The Dominion Illustrated* will be a special Victoria number, and will be unusually interesting. Address: *The Dominion Illustrated*, 73 St. James Street, Montreal.

THE Dodge Wood Split Pulley Company, Toronto, have issued a new revised catalogue having reference to the wood split pulleys manufactured by them. The book contains a large number of illustrations, and reading matter descriptive of the method by which these pulleys are manufactured, sizes, styles and manner of securing to shafts; also details of some of the applications of rope transmission by means of these pulleys; and it is explained that this system is the only one where power is transmitted long distances and in places where the use of belts is not practicable, such as in going around corners and at any angles, etc. A table is given intended to show that wood pulleys are better in all respects than iron pulleys, and the relative value of leather belts on these different kinds; and the assertion is made, based on high scientific authority, that it costs one horse power to keep in motion one ton of metal or weight—that for every unnecessary 2,000 pounds weight on line shaft there is an unnecessary cost of one horse power. An important feature of the book is a descriptive price list which shows the price of wood pulleys in all dimensions, from nine inches diameter and three inches face, up to and including pulleys of twenty feet diameter and as broad as may be desired. The company also manufacture to order cone step pulleys, conical drums, flange pulleys, paper friction pulleys, bevel pulleys, dynamo pulleys, iron centre grooved pulleys, and special pulleys of any desired styles. A very long list is given of Canadian parties who have these pulleys in use and who endorse them most highly, and to whom the company refer. The book will be sent free by mail on application to the company.

SIR JOSEPH WHITWORTH & Co. have in contemplation the erection of additional works in the neighborhood of the Manchester Ship Canal, where they propose introducing an important departure from the present practice in the erection of marine and other boilers. It will be remembered, at the recent Manchester Exhibition, the above firm exhibited a weldless boiler ring, twelve feet diameter by six feet long, which, at the time, attracted very considerable attention; and at their new works it is their intention to lay down plant for the construction of boilers built up of weldless rings, for which it is claimed that whilst they reduce the weight of the boiler by thirty per cent., it is at the same time kept up to its full strength. So far, no marine boilers have been constructed on this principle, but that there is no difficulty in the manufacture of these weldless boiler shells for the above purpose has been evinced by what Sir Joseph Whitworth & Co. have already accomplished. In some instances these shells would go up to fourteen feet diameter, and the practically insurmountable difficulty of conveying such large pieces of work, either by rail or road, renders it, of course, necessary that works for their manufacture should be placed at the water side.

THE Annual Statistical Report of the American Iron and Steel Association, compiled by Mr. James M. Swank, the general manager of the Association, No. 264 South Fourth Street, Philadelphia, Penna., is being distributed. This report, a copy of which has been received, gives complete statistics of the production and prices of all the principal iron and steel products of the United States in 1889 and previous years; also statistics of the production of iron ore and coal in the United States in 1889 and previous years; also statistics of the construction of railroads, and iron and steel ships in the United States in 1889 and previous years; also complete statistics for 1889 and previous years of United States imports and exports of iron and steel, and imports of iron ore; also statistics for recent years of the iron and steel and coal-mining industries of Great Britain, France, Germany, Belgium, Spain, Italy, Austria, Sweden, Russia and other foreign countries. The report also gives a careful review of the present condition of the iron and steel industries of the United States and other countries. It is in all respects the most complete annual report ever issued by the American Iron and Steel Association, and is a standing monument to the ability and accuracy of General Manager Swank. All the statistics gathered by the Association since its organization, many years ago, have been condensed into tabulated statements for this report, some of which go back to the beginning of the present century. The book contains 112 pages, and is well printed on good paper. It will be sent by mail in a strong flat envelope to all who may order it, thus assuring its receipt in perfect condition. Price, \$3.00, or 12s. 6d., per copy.

MR. A. BLUE, the Secretary, has sent us the "Report of the Royal Commission appointed by the Government of Ontario to enquire into the Mineral Resources of the Province, and Measures for their Development." The commission consisted of Messrs. John Charlton, M.P., chairman; Robert Bell M.D., LL.D., assistant director of the Canadian Geological Survey; William Coe, explorer and miner; W. H. Merritt, F.G.S. Associate Royal School of Mines, and Archibald Blue, Deputy Minister of Agriculture, and Secretary of the Bureau of Industries for Ontario secretary. These commissioners at their first meeting agreed upon the following scheme of enquiry: the geology of the Province with special reference to its economic minerals, assigned to Dr. Bell. Detailed description and maps of mines and important undeveloped mineral occurrences, with matters appertaining to mining engineering, to Mr. Merritt. Trade in mineral products, showing exports, shipping facilities, etc., to Mr. Charlton. Information and suggestions on the subject of mining laws, etc., to Mr. Blue. Enquiring into the best means of promoting metallurgical industry with special reference to the smelting of iron and other ores, to Mr. Blue. The duties assigned to these gentlemen were well and faithfully carried out, as shown in the report; and while many of their conclusions and suggestions are eminently practical and feasible, many others of them indicate that if followed out, Canada would receive less of the benefits of her rich mineral resources than the United States. The information contained in the Report is invaluable.

GALT, ONT.

THE Galt Summer Carnival came off on Thursday and Friday of last week, as advertised, and an unbounded and howling success it was, and as everyone expected. About every intelligent business man in the town was from its inception, contributory to the success of the enterprise, which was in the hands of committees of gentlemen



whose names were guarantees of its success. The weather was auspicious and the crowds of visitors immense. There was a general grand decoration of the town and of public and private buildings and grounds, parks, etc., and the programmes of amusements and entertainments were elaborate and well carried out. These included general inspection of all places of interest, particularly the factories, foundries, workshops and other industrial establishments; processions of wheelmen and musical bands; concerts by competing bands; competition by instrumental soloists; processions of visiting and home firemen with their apparatus; canoe and swimming races for valuable prizes; base-ball games and general illumination at night. The occasion induced the visits of thousands of people, which resulted in renewing old and forming new acquaintances that cannot but result in both pleasure and profit to all concerned.

The writer can vouch for the facts stated in the Carnival programme regarding this beautiful city, which declare:

"Few places in the Dominion of Canada can boast of so favorable a location, and so much natural beauty as the town of Galt. Situated on the slopes of that lovely valley, through which winds the placid waters of the Grand River, it presents a most striking and picturesque picture to the tourist. Stately homes, shady lawns and magnificent parks and gardens adorn the hills, while below, the hum of machinery, the substantial factories, and the troops of sturdy workmen bear witness to the prosperity and enterprise of its citizens.

"As a manufacturing centre Galt has earned the title of the 'Manchester of Canada,' and an inspection of its numerous industries furnishes a wide field to the intelligent tourist, while a glance at the numerous diplomas, etc., held by our manufacturers, show that their superior skill has been honored as well abroad as at home.

"Milling is carried on very extensively, while manufacturers of safes, looms, wood-working machinery, saws, edge tools, toilet pins, carriage goods, files, furniture, knitted goods, tweeds, shirts, plush, pumps, furnaces and stoves export to every point in the country."

The following is a list of the principal mechanical industries of Galt:

Goldie & McCulloch	Foundry and Safe Works
MacGregor, Gourlay & Co.,	
Wood-Working Machinery, Looms and Pin Factory	
Cowan & Co.	Wood-Working Machinery and Engine Builders
James Warnock & Co.	Edge Tools and Carriage Gears
Cant Bros. & Co.	Wood-Working Machinery
R. McDougall & Co.	Pumps and Hot Water Heating Apparatus
Shurly & Dietrich	Saws
Peter Hay	Machine Knives
Stevens & Hamilton	Iron-Working Machinery
Scott & Fraser	Axle Works
F. Parkin & Co.	File Works
H. Dakin	Brass Foundry
Galt Knitting Company	Woolen Underwear
The C. Turnbull Company	Yarns and Woolen Underwear
M. S. McKay & Co.	Tweeds and Blankets
Messer & Ward	Shirt Factory
Oliver Cooper	Shoddy Mill
D. Spiers	Felt Works
D. Spiers	Oatmeal Mill
Newlands & Co.	Plush Works
Cunningham & McFeiggan	Underwear
R. Scott	Victoria Wheel Works
Todd Milling Company	Flour Mill
Cranston & Scrimger	Flour Mill
John Cherry	Flour Mill
Wm. Bigger & Son	Glove Factory
Stroud & Son	Tanners
W. F. & A. Scott	Planing Mill
Geo. Hespeler	Planing and Saw Mill
A. McAuslan	Planing Mill
R. Gilholm	Saw Mill
John Keyes	Carriage Works
Thos. Todd & Son	Maltsters
Cranston & Scrimger	Malsters
Howie & Fowler	Wire Fencing
John Clouston	Globe Carriage Works
Todd & Essig	File Works
John Fisher	Wire Fencing
Curan & Coulter	Pump Factory
A. & K. Martin	Pump Factory
Thomas Despond	Cardigan Jackets
W. G. Burnett	Tannery
Charles Turnbull	Woolen Underwear

## Manufacturing.

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

MR. WM. MCGUIRE will establish a foundry at Westport for the manufacture of stoves, plows, etc.

THE large tannery of Messrs. William Murray & Co., at Brooklyn, Ont., was struck by lightning and consumed by fire June 3rd; loss, about \$20,000.

A TELEGRAM from Kingston, Ont., informs us that a vein of iron ore has been discovered near that place, which contains ninety per cent. metallic iron. The discoverer probably struck upon a pile of old scraps that had long lain hid.

MESSRS. J. & J. TAYLOR, safe manufacturers, Toronto, are erecting a \$10,000 addition to their works, which will be equipped with special machinery for the manufacture of bank vaults and similar heavy work. They expect to have the addition ready for occupation in a few days.

THE new barge launched this week from the shipyards of the Montreal Transportation Company at Kingston, Ont., has capacity to carry 36,000 bushels of grain on a nine foot draught of water. She is claimed to be the largest barge that ever went down the St. Lawrence River to Montreal.

THE Sarnia Milling and Mazea Company have been organized at Sarnia, Ont., with a capital stock of \$25,000 for the manufacture of mazea. The process by which this manufacture is done is patented, the Company having acquired the right for Canada. As its name indicates, mazea is a food product made of corn.

LETTERS patent have been issued incorporating the Dominion Typograph Company, Limited, for the purpose of the manufacture of the machine known as the Rogers typograph, and the disposing and leasing of the same to publishers, printers and others in the Dominion. The capital is fixed at one million dollars.

D. F. ADAMS and the others, who with him applied to the city council for a bonus not long ago, have purchased a quantity of saw-mill machinery, with powerful boiler and engine, intending to establish a mill on Victoria Arm, above Point Ellice bridge. Building operations will be immediately instituted.—Victoria, B. C., *Colonist*.

THE McCormick Harvesting Machine Company, of Chicago, have purchased of the inventor a machine which, it is claimed, will turn out a good and serviceable binder twine manufactured of ordinary slough grass at a cost of about \$5 a ton. If this machine will do what is claimed for it the binding twine industry will become immediately revolutionized, and many cordage works will have to go out of the business.

THE Canadian Rubber Company, of Montreal, have secured the sole right for the Dominion to manufacture the celebrated Forayth patent seamless belting. This belting, which is now being introduced for the first time in Canada, is intended to obviate all the criticisms and present possible defects to which the hitherto established methods are subject. Mr. J. H. Walker is the manager of the Toronto branch of the Canadian Rubber Company.

THE new torpedo dry dock built in connection with the Naval Dock Yard at Halifax, N.S., is rapidly approaching completion. It is 200 feet long and sixty feet wide. It is to be covered with an iron roof. The tracks of iron rails extend the entire length of the dock; the rails resting on a concrete bottom. Cradles, 150 feet long, are made to fit the rails, by means of which torpedo boats will be taken from the water to the shed. Two torpedo boats of first class build and modern construction, leave England in a few days in tow of the troop-ship *Tyne*, and it is expected the iron shed and dock will be completed by the time they arrive.

SINCE the advent of the incandescent electric light into Toronto, Messrs. Keith & Fitzsimmons of this city, manufacturers of plumbers' supplies, etc., have engaged largely in the manufacture of electric and combination lighting fixtures for public buildings, churches, residences, etc. A beautiful specimen of work done by this firm are the chandeliers in the Bloor Street Presbyterian church, just dedicated last week. The central chandelier contains seventy

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electric jets and seventy-two gas jets, which, when lit up will form a perfect cascade of light which will illuminate every corner of the large edifice. The chandeliers are all made of the finest brass, and, besides the splendid appearance they present, will last as long or longer than the building which they serve to light. Messrs. Keith & Fitzsimmons have received an order from another new church for the same class of fixtures, and there is little doubt but that the Canadian manufacture will eventually supersede the American importation.

MESSRS. TALLMAN & SONS, Beamsville, Ont., have just had a Simpson pressed brick machine built for them in Toronto, which, it is claimed, is the first of the kind to be used in Canada. The press seems to be a successful means of producing a pressed brick of the most approved order from dry clay. The capacity is about 20,000 per day, and the mechanism is ingenious, though simple. The chief merit is in the quality of the bricks it produces, the pressure being so great, 100 tons on each brick, that a perfectly smooth and polished surface with regular granulation is the result. The weight of the press is about nine tons, and its build makes it easy of removal. The process of working is easily understood. The clay is quarried and pulverized to a fine powder. It is conveyed to the feeder by means of a wide tube and dropped from the box into a four-brick mould, where the pressure is exerted from above and below at the same time. The bricks are delivered from the mould to a small counter, where they are received by a laborer and removed.

THE Redwoods that stand on the borders of Marin, within sight of San Francisco, mark the scattered fringes of what the botanists call the most splendid and valuable coniferous forest known on the face of the earth. It reaches north to Puget Sound and far beyond, across British Columbia into Alaska. Redwoods rule in California, but then the Spruces, Firs and Pines carry on the great forest to the Arctic circle. Like the deep Androswald of England, in the days of Hengist and Horsa, like that German forest that turned back the Roman legions, this vast coniferous forest is the one great physical fact of an immense region. If the tracts that still belong to the Government are withdrawn from public sale and pre-emption, and if wise forestry laws are enacted and enforced, California will have ever-enduring forests. Otherwise, in twenty years the best portions of this gigantic forest will be destroyed beyond restoration. The forests of Sierra Nevada, covering a more limited area, but pro-

tecting the sources of a far greater number of streams, and comprising species of trees far more difficult to reproduce from seed, are in danger of far more rapid destruction — *Vick's Magazine*.

A FEW months ago the fact was published in these pages of the establishment of the Globe Furniture Company at Walkerville, Ont., for the manufacture of church and similar furniture, with a capital stock of \$50,000. The premises of the Company cover an area of four acres of ground, the main factory building being of brick, three stories high, 100x50 feet, with a two story annex 46x42 feet. The machinery is driven by a 125 horse-power Wheelock steam engine, built by Messrs. Goldie & McCulloch, of Galt, Ont., there being an auxiliary engine of ten horse-power used for forcing hot air through the lumber dry kilns. The machinery is all of the newest and most approved patterns, much of which is of Canadian construction. The establishment at this time gives employment to over fifty skilled workmen. The Company is an offshoot of an American concern bearing the same name which began business in the same line a few years ago at Northville, Michigan, which was soon extended to include a very large factory in Boston, Mass., and later, a similar one in Chattanooga, Tenn. No doubt the Northfield factory would have been able to supply all the Canadian demand met at the Walkerville works had it not been for the Canadian duty upon the goods; and this is another exemplification of the benefit Canada receives from her N.P.

THE Waterous Engine Works Company, Brantford, Ont., inform us that last week they had built and shipped to the Globe Printing Company, Toronto, a steel boiler, fourteen feet long and sixty-six inches diameter, to go into their new premises at the intersection of Yonge and Melinda Streets. The bottom of this boiler was made of one sheet of steel fourteen feet long by seven feet wide, the top consisting of two similar plates only; and it is claimed that this is probably the first large boiler ever built in Canada made with the bottom of but one sheet; and that it marks a new departure in the manufacture of return tubular boilers. This Company are now just finishing a battery of six boilers for the Northern Pacific Lumber Company each of which is made of but two sheets, the dimensions of the boilers being sixteen feet long and sixty inches diameter; also two similar boilers for the British American Starch Company, of Brantford. This Company are to be congratulated upon the advance they have made in this direction. Users of steam are find-

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ing out that it is a great advantage in boilers to have no seams and joints in contact with the fire. The boiler department of this Company's works is one of the best equipped in Canada, embracing all the latest improvements, and capacity for turning out the heaviest work.

MR. JAMES BOYD, managing director of the British Asbestos Company, who speaks with an experience of ten years in Italy, writes to the London papers respecting the new Asbestos Company which has been formed to develop certain French and Italian properties as follows: "I have recently heard that a Canadian asbestos property has been acquired by the company holding the greater part of the Italian properties, or by parties interested in it. They could raise hundreds of tons from their Italian properties; and if they do not do so there must be a reason for it, and I believe the reason may be sought for in the fact that, whilst Canadian asbestos fibre can easily be spun into thread fit for manufacturing into rope or cloth, Italian can only be so spun on a commercial scale by the admixture of cotton, or some other material, owing to the want of cohesion amongst its fibres. Owing to the increasing steam pressures used in connection with triple expansion engines, a great increase has taken place in the consumption of packings made of asbestos cloth; and I believe it is practically impossible to make this of pure Italian asbestos. The English Admiralty have, I believe, persistently refused to put Italian asbestos packing on their list, for the reasons above stated. \* \* The protective tariffs, so called, in France are not so high as to prevent both Italian and also English manufacturers of Canadian asbestos goods from selling their manufactures there; and, as a matter of fact, the prices in France are lower than in England."

MR. COLLINGWOOD SCHREIBER, chief engineer of Government Railways, returned from Sarnia, where he has been inspecting the St. Clair frontier tunnel, which is being built under the St. Clair River to connect the Grand Trunk and the Chicago and Grand Trunk Railway systems. Mr. Schreiber says that at the Port Huron side 2,300 feet of the tunnel proper have been completed, and on the Canadian side 1,600 feet. The excavating is done by means of a circular boring shield, which is driven into the soft material under the river bed by means of compressed air. The actual work of boring is most interesting and is done efficiently and expeditiously. The length of the actual tunnel will be 5,950 feet, of which 2,310 feet will be under the river. For the centre portion of this distance 1,708 feet will practically be on the level, the ascent from the centre on either side being 1 in 50. The approaches comprise an open cutting on the east side of 3,200 feet, and on the west side of 2,560 feet. The tunnel, cylindrical in form, will have a diameter of twenty feet in the clear, and is being lined with cast iron, the section being 42x18 inches wide and two inches thick. When completed about 28,000 tons of cast iron will have been put in, not to speak of the wrought iron bolts, etc. Behind the iron plates cement grouting is poured to fill up the space formerly occupied by the boring shield before it was forced forward. When the tunnel reaches the centre of the river there will be eighteen feet of mud and clay above it and forty feet of water.

BRITISH COLUMBIA'S resources in the way of forest products are year by year getting to be better known. And as the quality of her gigantic trees becomes appreciated, not their dimensions only, but their adaptability for building and decorative purposes is perceived, and their consumption increases. We observe, for instance, that the Brunette Sawmill Co., at New Westminster, is operating on a large scale among the large pines and cedars in the vicinity of that place. They have just procured from the Waterous Engine Works Co., at Brantford, some machinery which is especially suited for the extraordinary length and thickness of the timber on the Pacific coast. For instance, the sawmill carriage, which is one of the largest ever built in the Province, is described as consisting of "six girder steel log seats, extending seventy-six feet from centre of first to centre of last block. Each block was formed of two ten-inch steel girders, with a heavy steel plate riveted on top of each girder, surmounted by a very heavy knee piece, set forward by three inch screws made of steel. Under each log-seat were two three-inch steel axles with heavy steel V wheels on the front and flat wheels with a flange on the back. These ran on a heavy steel track. This immense carriage was built to take in logs seven feet in diameter, eighty feet long, weighing eighty to 100 tons each." The carriage itself without any woodwork weighed more than twelve tons. The setting and receding device on this carriage is a new departure. On the same car was shipped a "King Edger," made to take in sawn lumber thirty inches wide, using six saws. This edger with its appurtenances, we are told, weighed in the vicinity of five tons. Such heavy machinery as this for cutting lumber is unknown, we believe, to the Ontario trade, but is the only class that will

stand the immense timber of the Pacific coast. At the mining district of Nelson City, which is reached over the Northern Pacific to Kootenay, Idaho, and thence by team to Nelson, is to be a saw-mill, with edger, planer and shingle machine, the whole supplied by the Waterous Company. We understand the same firm has received an order from the Northern Pacific Lumber Co., for the engines, boilers and burner required in their new mill at Fort Moody, B.C.

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Tenders will not be considered unless made on the form supplied and signed with the actual signatures of tenderers.

An accepted bank cheque, payable to the order of the Minister of Public Works, equal to five per cent. of amount of tender, must accompany each tender. This cheque will be forfeited if the party decline the contract, or fail to complete the work contracted for, and will be returned in case of non-acceptance of tender.

The Department does not bind itself to accept the lowest or any tender.

By order,

A. GOBEIL,

Secretary.

Department of Public Works, }  
Ottawa, May 17, 1890. }

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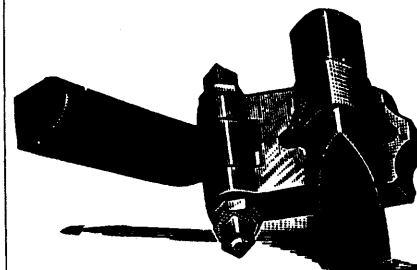
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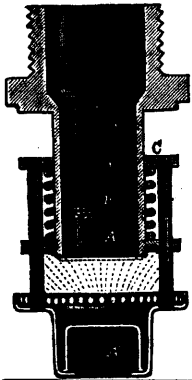
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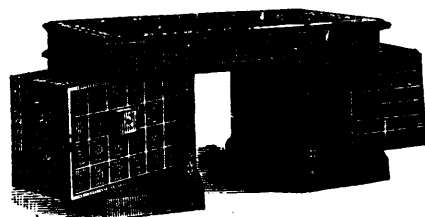
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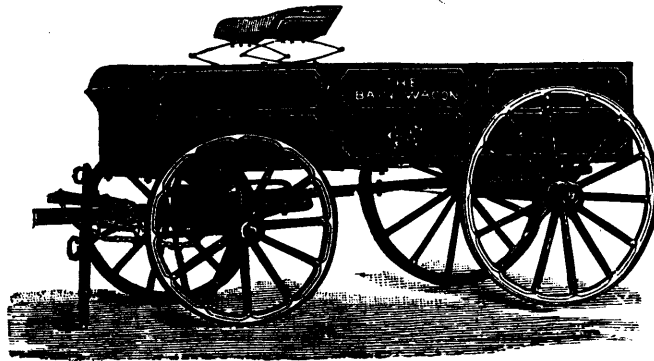
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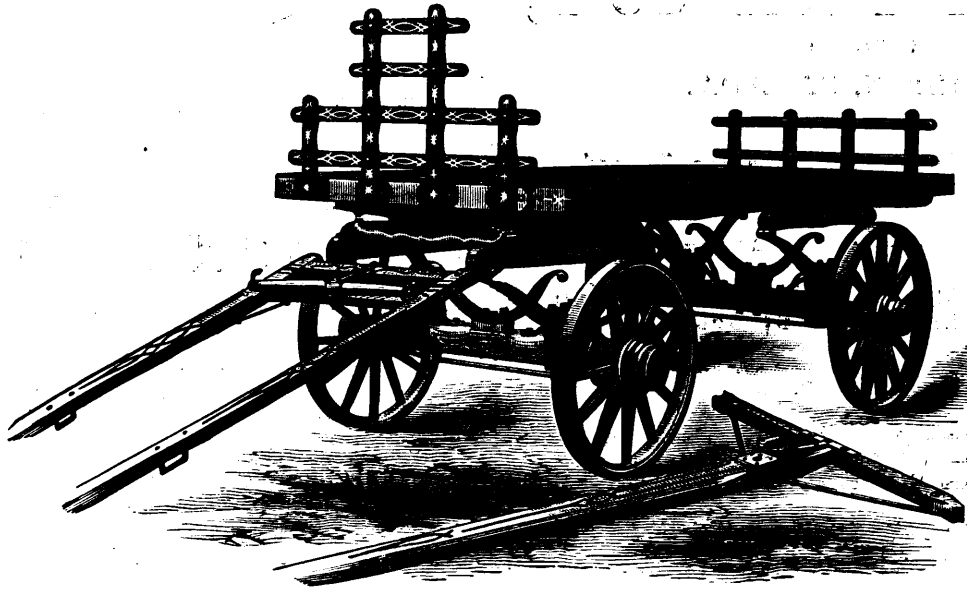
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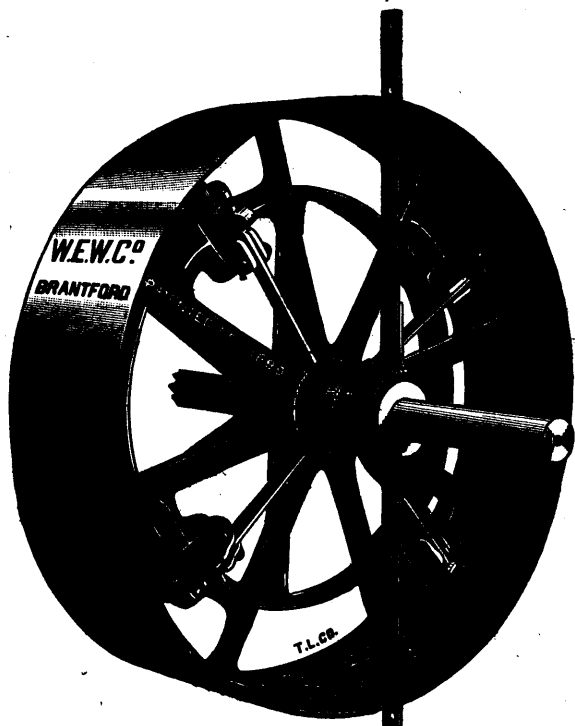
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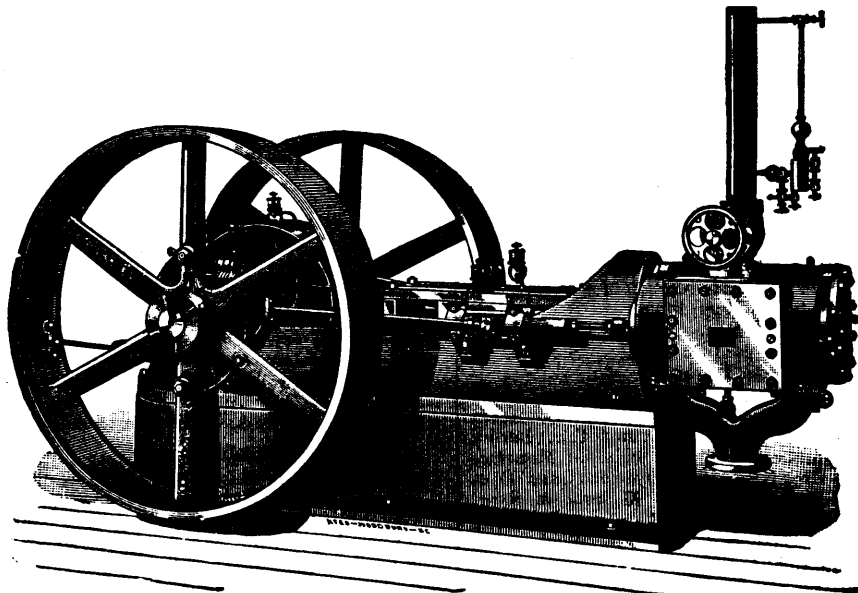
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Sole Licensees and Manufacturers for Canada of *Armington & Sims' High Speed Engines*, The "Cycle" Gas Engine, Atkinson's Patent, The "Hazelton" Boiler.

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ARMINGTON AND SIMS' HIGH SPEED ENGINE FOR ELECTRIC LIGHT PLANT, &c.

**NOTICE.**

The Canadian Locomotive & Engine Co., Limited, of Kingston, Ontario, have the Exclusive License for building our Improved Patent High Speed Engine for the Dominion of Canada, and are furnished by us with Drawings of our Latest Improvements.

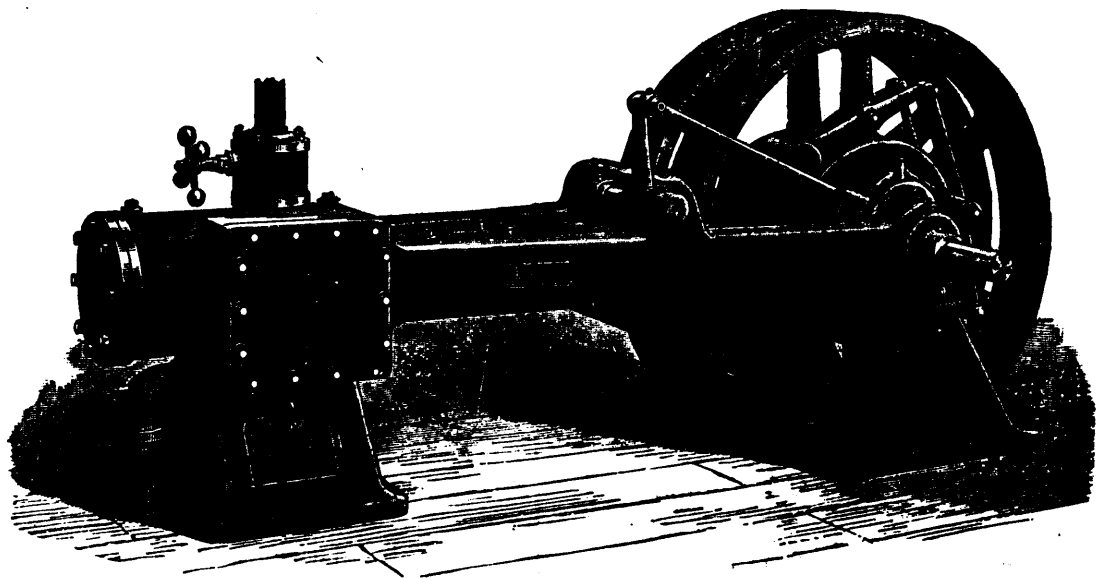
*(Signed),*

**ARMINGTON & SIMS.**

PROVIDENCE, R.I., Nov. 18, 1889.

**The Straight Line Engine**

Single and Double Valve, and Compound. Thirty to Two Hundred and Fifty H.P.



**Williams & Potter, Gen'l Agents,**

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**THEO. H. EATON & SON**, Windsor, Ont.; Detroit, U. S. A.—Importers of every Description **Pure Aniline Dyes** for Cotton and Woolen Manufacturers. **Dyed Samples** furnished on application. Address all correspondence to Head Office, Detroit, Mich

**DOMINION DYEWOOD & CHEMICAL CO.**, sole agents in Canada for Farbenfabriken, vormals Friedr. Bayer & Co., Elberfeld, Germany, and Read, Halliday & Sons, Huddersfield, England.—All shades for woolen, cotton, leather, and paper manufacturers. Latest information on dyeing as well as dyed samples on application.

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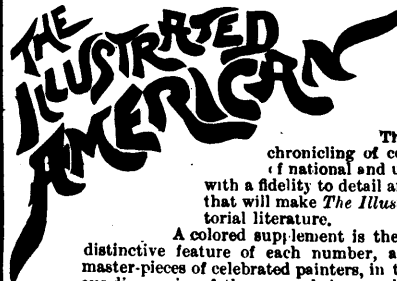
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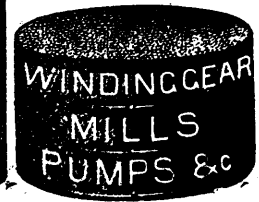
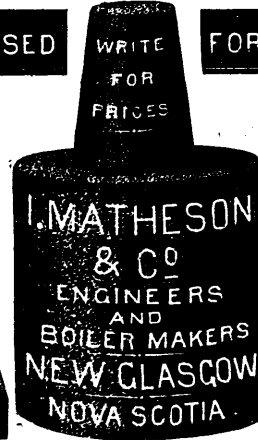
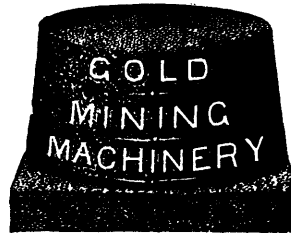
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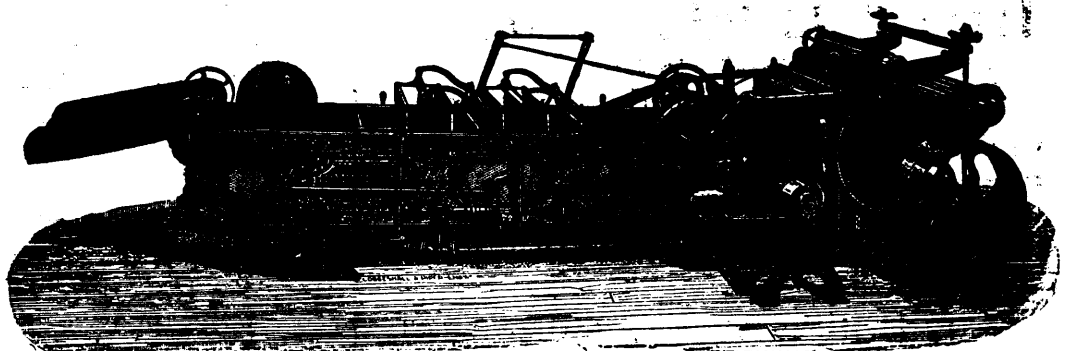
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**IMPROVED WOOL WASHER**

**BUILT BY**  
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*Builders of Wool Washers,*  
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Highest Quality of Work Guaranteed.

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Railway Cars of all descriptions. Chilled Car Wheels, "Washburn Peerless" Steel Car Wheels Car, Machine, Mill, Ship and all kinds of castings. Steam Engines, Mill and other Machinery. Nail Plate, Bar Iron, Street and Mine Rails, Ships' Iron Knees, Hammered Car Axles, Shafting and Shapes.

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See it in use in new Bank of Commerce Building, Toronto; new Royal Insurance Company Building, Montreal; Imperial Fire Insurance Company Building, Montreal; St. Lawrence Sugar Refinery, Montreal.

The finest thing for suburban cottages. Excludes heat and cold, is cheap and durable.

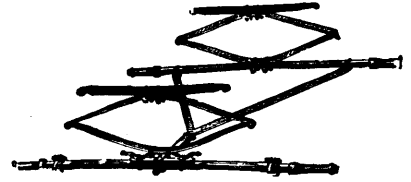
Try our improved Cedar Oil for cleaning boilers. We guarantee it to satisfy or no pay.

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### Single Plate Springs



As improved; perfect riders; free from jerk, jar, or undue motion. Unbreakable in fair use. Price reasonable. Should be on every single buggy and phaeton. Our two plate springs for heavy work are more than one-half lighter than leaf springs for same carrying capacity, and the only Spring made that will ride easy when light or full loaded.

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BLEACHED SHIRTINGS,  
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Established 1872.

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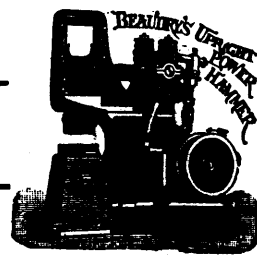
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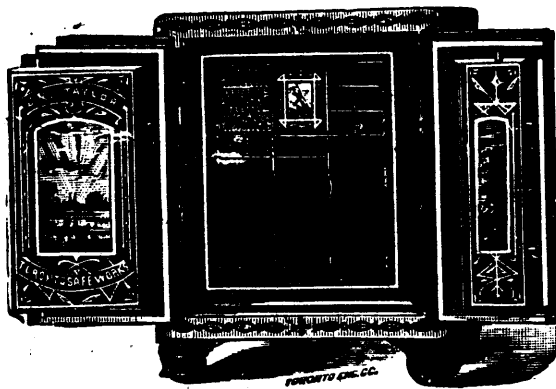


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## BEAUDRY UPRIGHT CUSHIONED POWER HAMMER

The most handy, compact, and above all, the most efficient tool ever invented for Manufacturers of all descriptions, Railroad Shops, Steel and Machine Forgers, File and Vice Makers, Knife and Cutlery Makers, Axle, Edge Tool and Agricultural Implement Manufacturers, Carriage Builders and, in fact, all others who need a first-class Hammer, and one of extraordinary capacity and adaptability. Correspondence solicited. Can be seen at Permanent Exhibition, Toronto.

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J. & J. TAYLOR'S

Double Tongue  
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FIRE-PROOF

**SAFES**

(Patented  
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Established 33 years.

All our new style Fire-proof Safes are fitted with **TWO COMPLETE TONGUES AND TWO GROOVES** on both the door and door frames, which effectually prevent the heat from passing between the door and frame into the interior of the safe.

They are also fitted with **CHILLED CHROME STEEL PLATES** under the Lock and Bolt Spindles to prevent drilling; and have **DRY AIR-CHAMBER** inside to prevent dampness to papers.

See Catalogues and Prices on application.

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Passengers for Great Britain or the Continent, leaving Montreal on Friday morning, will join outward Mail Steamer at Halifax on Saturday.

The attention of shippers is directed to the superior facilities offered by this route for the transport of flour and general merchandise intended for the Eastern Provinces and Newfoundland; also for shipments of grain and produce intended for the European market.

**TICKETS** may be obtained, and all information about the Route; also **FREIGHT** and **PASSENGER RATES**, on application to

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"Their Work Speaks Their Worth."

Their Telephone No. is 50  
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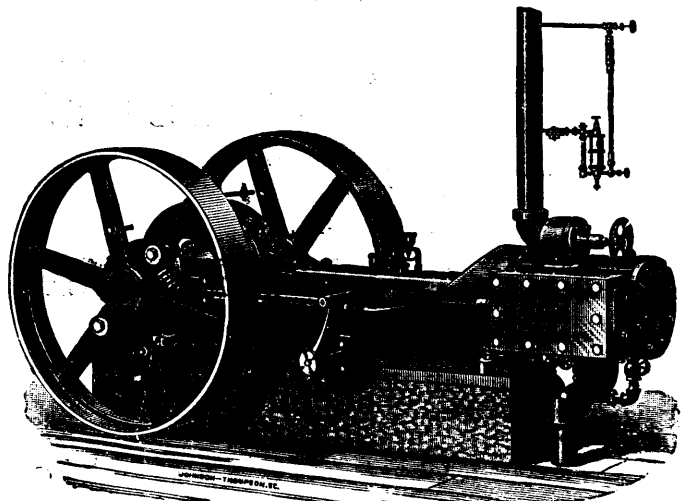
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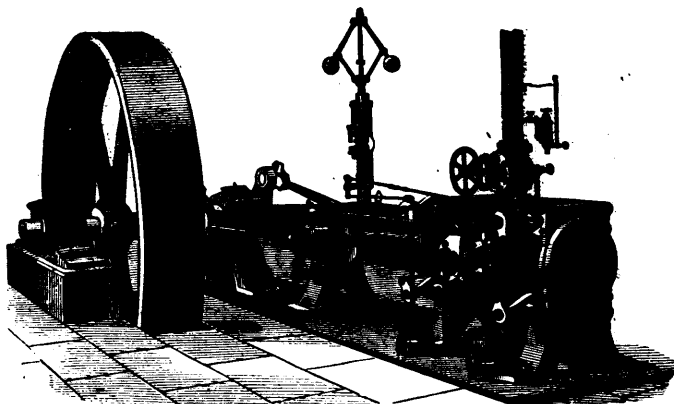
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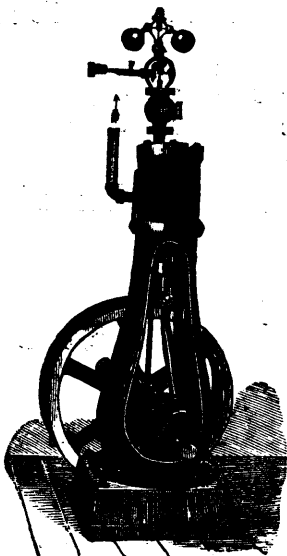
Toronto



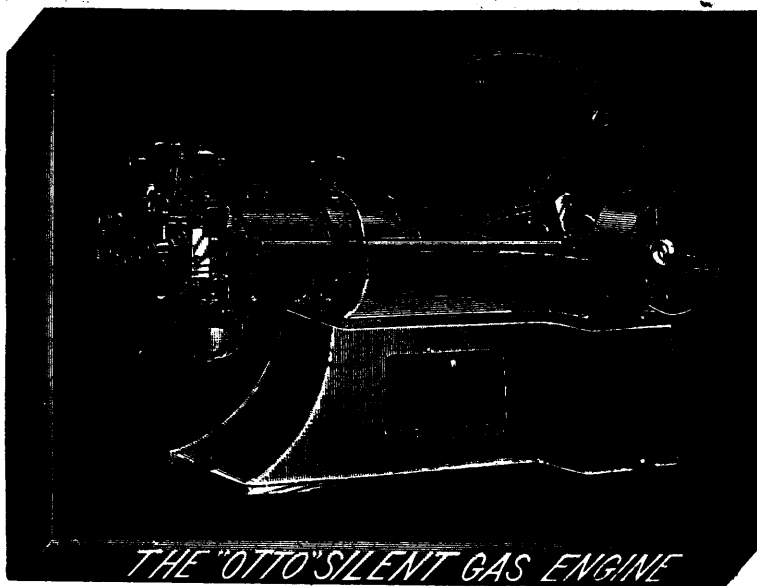
Armington & Sims Electric Light Engines.



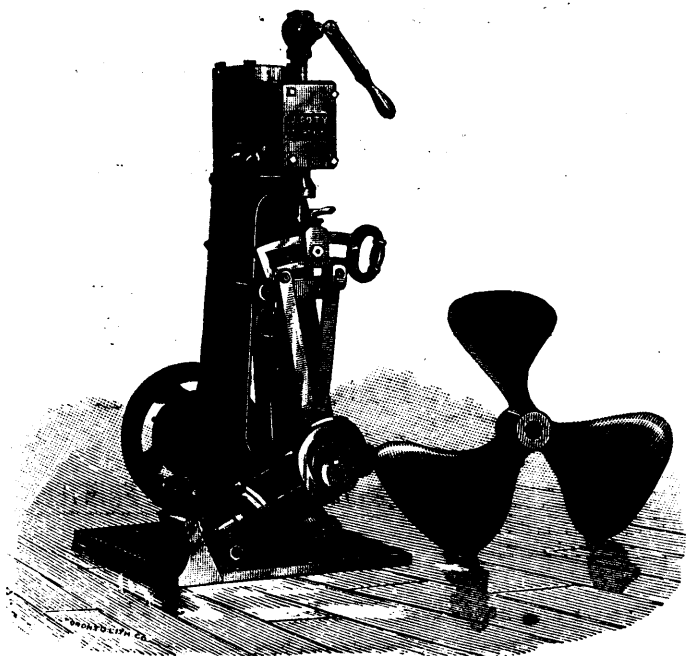
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Vertical Engines.



THE "OTTO" SILENT GAS ENGINE



Yacht Engines.

**John Doty Engine Co.**

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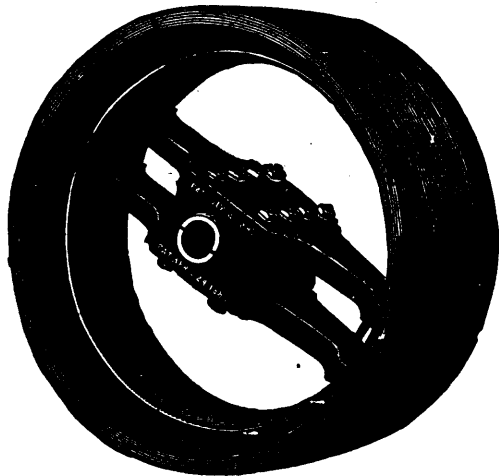
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OF EVERY DESCRIPTION.

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**WITH PATENT BUSHING SYSTEM**

*Best Belt Surface, Lightest, Strongest, Best Balanced, and Most Convenient Pulley in the World.*

**EVERY PULLEY A SPLIT PULLEY.**

*The hole in every pulley can be readily bushed to fit any sized shaft. Bushings furnished with each pulley. Guaranteed to give from*

**80 TO 60 PER CENT MORE POWER THAN ANY IRON PULLEY.**

*Strong enough for any power required. Made in any size and width, from twelve inches to sixteen feet diameter.*

**EVERY PULLEY WARRANTED.**



*We will furnish a Pulley for any service for 90 days free of charge, if it does not meet the warranty. Prices as low as any other good Pulley. Send for Catalogue, Price List & Guarantee*

## 70 PER CENT. LIGHTER THAN CAST IRON

*And 50 per cent. Lighter than Wrought Iron or Steel Pulleys.*

### READ THE FOLLOWING.

NORTHWESTERN MANUFACTURING & CAR COMPANY, }  
SHATTO & DENNIS, MINNEAPOLIS, MINN. STILLWATER, MINN., August 15, 1884. }  
*Gentlemen:* You ask why we use the Dodge Patent Pulley. I answer because }  
we consider them the cheapest, most convenient and satisfactory in all particulars. }  
Yours truly, }  
S. R. STIMSON, General Manager.

OFFICE OF NEWTON WAGON CO., }  
C. L. RICE, AGENT, CHICAGO, ILL. BATAVIA, ILL., Feb. 17, 1885. }  
*Dear Sir:* Replying to your favor, will say that after using the Dodge Wood }  
Split Pulley for a year or more we are satisfied they are a good thing, if not the best }  
Pulley made, and shall use them hereafter in preference to any other we know of. }  
Yours truly, }  
NEWTON WAGON CO.

We have sold these pulleys for one year, and they have been put to every kind of }  
service, and their popularity is wonderful. We refer to the following users for proof }  
of the above statements: Pillsbury & Hulbert Elevator Co., Minneapolis; R. M. }  
Pratt & Co., Elevators; Northern Pacific Elevator Co.; The Pacific Elevator Co.; }  
Minneapolis Harvester Works; Minneapolis School Furniture Co.; M. & St. L. R. R. }  
Co.; Willford & Northway; Washburn, Crosby & Co.; St. Paul Electric Light Co.; }  
St. Paul Roller Mill Co.; Minneapolis Brick Co.; N. W. Mfg. & Car Co., Stillwater, }  
Minn., and very many others. }  
SHATTO & DENNIS, MINNEAPOLIS, MINN.

THE WORLD'S INDUSTRIAL AND COTTON }  
CENTENNIAL EXPOSITION. }  
W. H. DODGE, PREST. NEW ORLEANS, March 19, 1885. }  
DODGE MFG. CO., MISHAWAKA, IND. }  
*Dear Sir:* I have a number of your Patent Wood Split Pulleys in use here at }  
the Worlds Fair and Cotton Centennial Exposition, driving Dynamos for Electric }  
Lighting. They are doing heavy work, and are held upon the shaft by the compression }  
of wood on iron. They hold firmly, and do not slip. I have watched with a }  
great deal of interest the many Pulleys of your make running at this Exposition; and }  
I think them the best Pulley I have ever seen. I believe them to possess the following }  
points of merit over any other Pulley: All Pulleys being split or in halves; best }  
belt surface; best shaft fastening; best method of utilizing Pulleys to shafts of different }  
sizes; best balance; lightest on the shaft; strong, and I believe durable. I }  
heartily recommend them. }  
Yours very truly, }  
S. H. GILMAN, }  
Chief Consulting Engineer.

### Waste of Power.

According to the best scientific authority it costs one horse power to keep in motion }  
one ton of metal or weight; thus for every unnecessary 2,000 pounds weight on }  
your line shaft, cost you one horse power. To maintain a horse power costs from \$25 }  
to \$125 per year. Any manufacturer who will take the pains to investigate the unnecessary }  
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enormous waste of power consumed in this manner. 60,000 Dodge Patent }  
Wood Split Pulleys now in use. Our capacity being now equal to 100 Pulleys per }  
day, we shall hereafter keep in stock for immediate shipment all sizes.

*Send for Illustrated Circular and Reference List.*

# THE DODGE WOOD SPLIT PULLEY CO.,

**TORONTO.**

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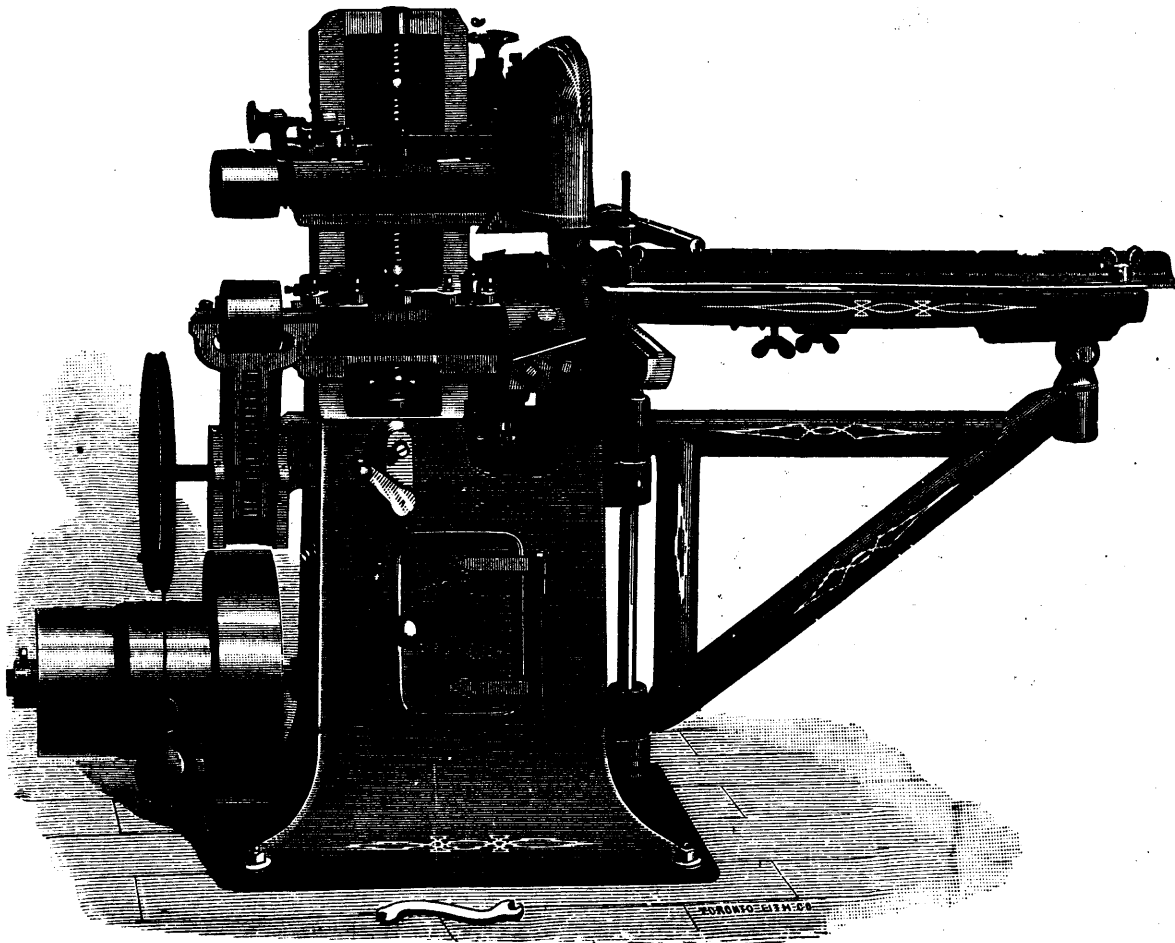
**TAKE NOTICE:--Our List of Prices for the DODGE PATENT WOOD SPLIT-PULLEYS is for ALL SPLIT-PULLEYS.**

**We beg you will note this fact when comparing our List with others which are for SOLID RIM, and NOT for Pulleys in HALVES.**

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# NEW AND IMPROVED *Pedestal Tenon Machine.*



This is an entirely new style of Tenon Machine. The frame is cast in one piece, and the working parts stand solidly on a pedestal, avoiding all vibration.

The Cutter and Cope Heads are connected and are moved all together, or separately, as required. The Upper Head and Boxes also adjust horizontally to suit shoulder of tenon, the Cope Knives moving with the Heads to prevent re-adjustment.

A special feature in this machine is the Bed, or Carriage, which is at once light and strong. The outer end works on rollers and is moved very easily.

In cutting the tenon the Bed and Carriage move entirely past the Heads and Cutters, the operator having full control of the work. It has also the advantage of leaving the Heads and Cope Knives clear, and of ready access by the operator.

The Carriage is so arranged that it cannot tip over the Slides nor be thrown into the Cutters, and is also supplied with extension bar for long stuff, as in all Tenoning Machines.

This Machine is supplied with single or double Copes, as ordered, and for furniture work it is without Copes, and with an adjustable cut-off Saw.

## COWAN & CO.

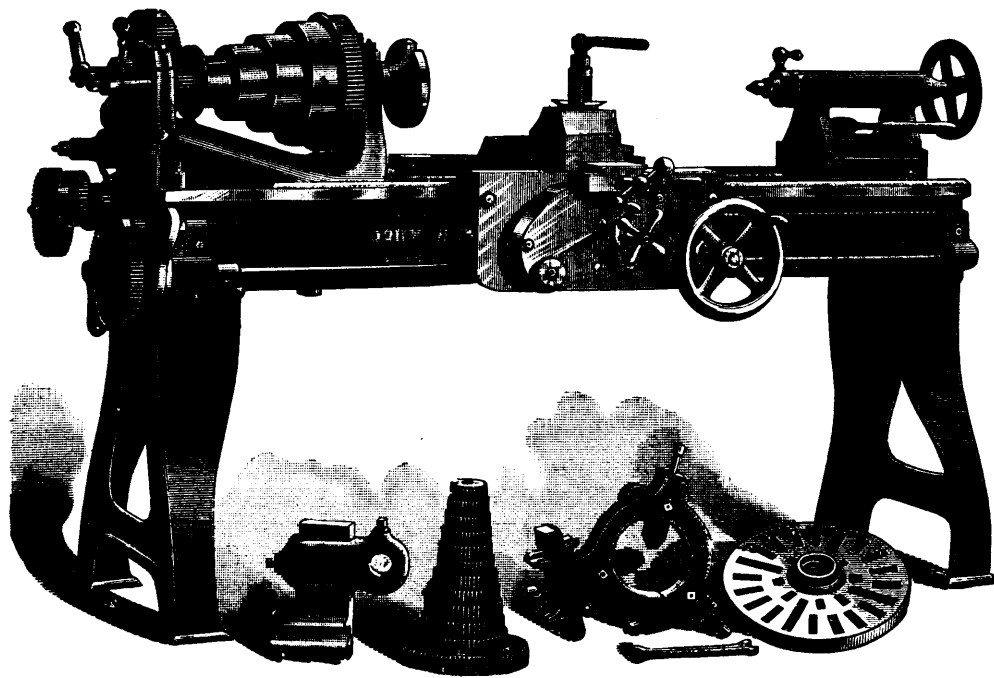
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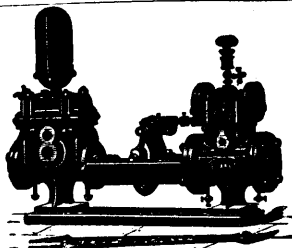


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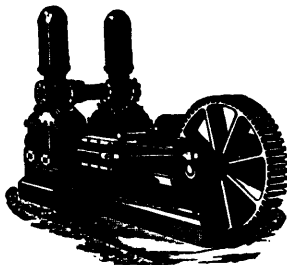
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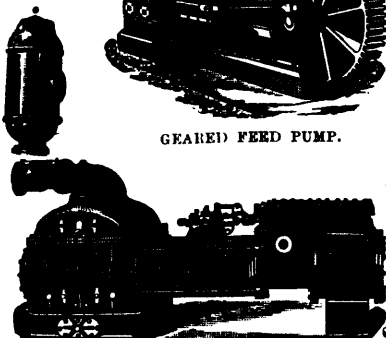
These goods may be seen at the Permanent  
Exhibition 63 to 69 Front Street West, Toronto.



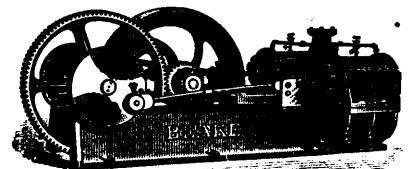
BOILER FEED PUMP.



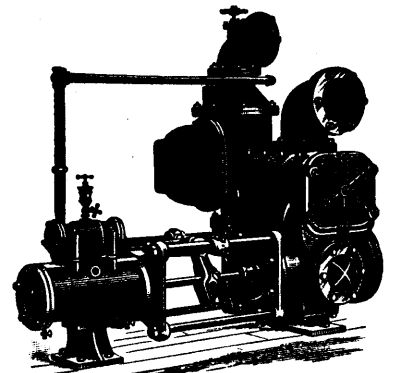
GEARED FEED PUMP.



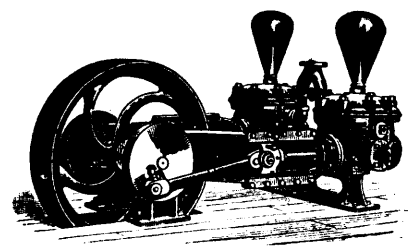
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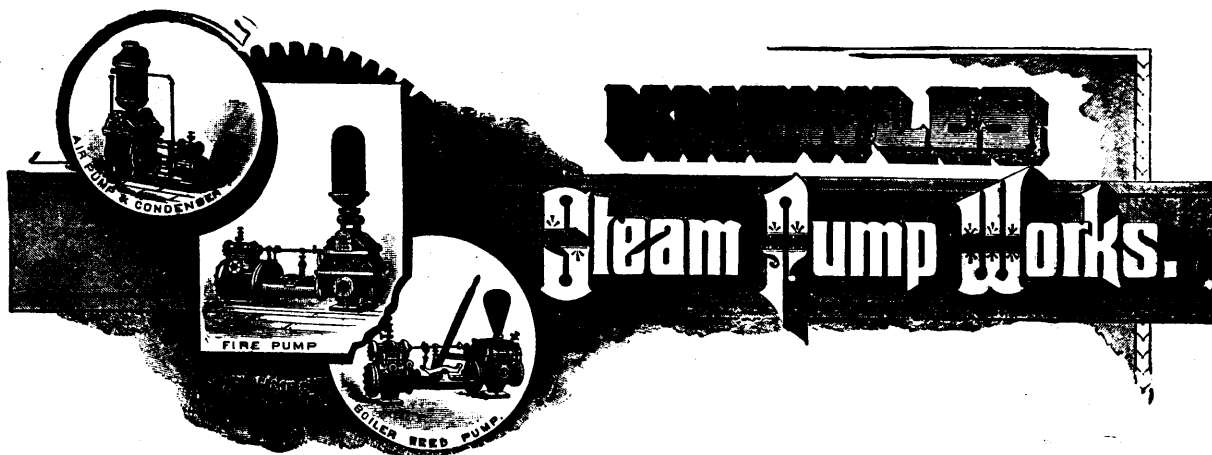
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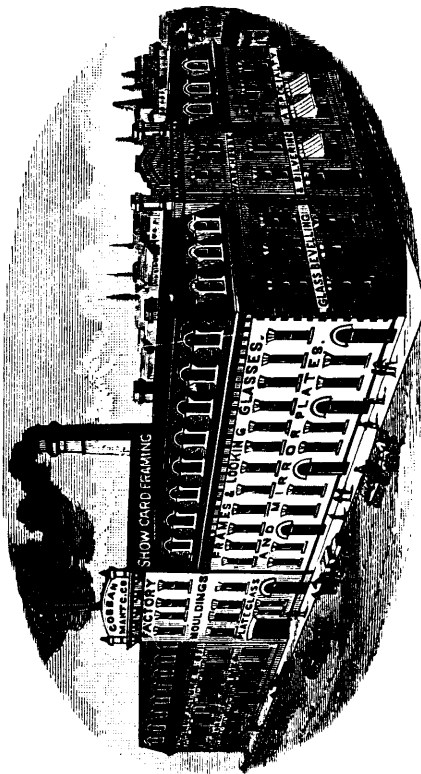
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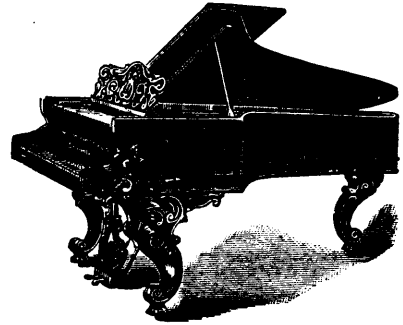


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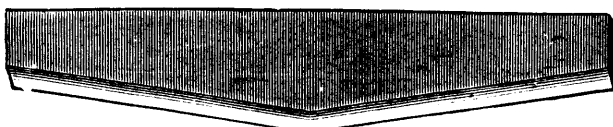
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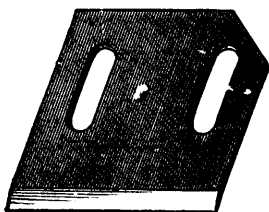


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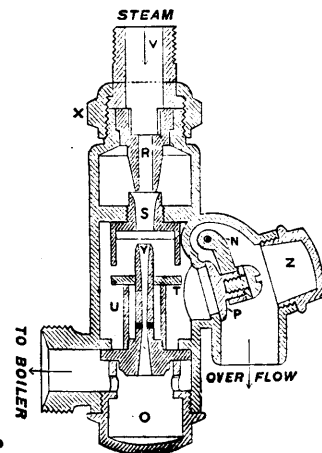
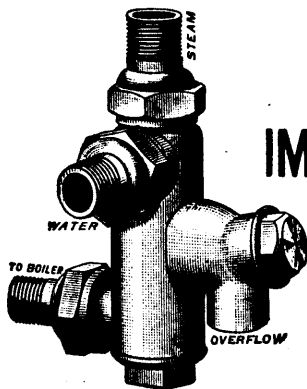


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