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THE CANADIAN MANUFACTURER

AND INDUSTRIAL WORLD

DEVOTED TO THE MANUFACTURING INTEREST OF THE DOMINION

Vol. 20.

TORONTO, FEBRUARY 6, 1891.

No. 3.

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MR. FREDERIC NICHOLLS is Secretary of
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63 Front Street West, Toronto.

AS TO NICKEL.

Last week a large delegation of the business men of Toronto accompanied Mr. S. J. Ritchie on a visit to Hon. Oliver Mowat, Premier of Ontario, to lay before the Provincial Government the desirability of its giving material aid to the establishment of extensive steel works in this Province, for the manufacture of nickel steel. Mr. Ritchie read an address in which was set forth the large amount of business that would originate with such an enterprise; the value of the mineral wealth that would be developed by it; and that if the industry was well established it would give Canada a much-to-be-desired pre-eminence as a manufacturer and exporter of a material the demand for which would be practically limitless.

It will be remembered that in our issue of November 21st last we published the text of a proposition Mr. Ritchie had just made to the Dominion Government asking a bonus of \$6,000 per mile to the Central Ontario Railway from Coe Hill to Sudbury, a distance of about 206 miles, and a bonus of \$3,200 per mile on the portion of that road already built between Trenton and Coe Hill, a distance of about seventy-two miles; and that the Government would guarantee the interest at the rate of three per cent. per annum on a capital stock of \$5,000,000 for a period of ten years, to enable him to erect and operate a plant for the manufacture of nickel steel. Mr. Ritchie stated to Mr. Mowat that when the Dominion Government came to consider this proposition it was pointed out that all the industries alluded to were or would be in Ontario; and that for this reason he had modified his request in that direction, asking help only for the building of the railroad; hence his appeal to the Ontario Government for aid to build the steel plant, this aid to be a guarantee of the interest at the rate of three per cent. per annum for ten years on the

proposed capital stock of \$5,000,000 of the steel company. The President of the Toronto Board of Trade, the Mayor of the city of Toronto and many other prominent and influential gentlemen also made appeals to Mr. Mowat for his favorable consideration of the proposition.

No one can doubt that the establishment of a large works in Ontario for the manufacture of nickel steel would be of vast benefit to Canada; and all that Mr. Ritchie and the other gentlemen claimed in that direction was, in our opinion, well within the bounds of probability. But as we have before said, we do not see why the Dominion Government should be expected to give \$1,500,000 for the construction of a railroad that would probably not benefit any interests in Canada except those of Mr. Ritchie; and we do not see why the Ontario Government should be expected to donate a like sum towards the establishment of Mr. Ritchie's nickel steel works. No doubt the city of Toronto would gladly appropriate all the land necessary to secure the location of such works here; and, being here, there would be found all necessary railroad facilities already existing. There would be no gaps to close to enable the nickel ores from Sudbury, the iron ores from any and all the opened iron mines of Ontario, and the fuel from the coke ovens of Pennsylvania being brought to the works without interruption or delay. At this time the establishment and success of the steel works does not require the extension of the Central Ontario railroad from Coe Hill to Sudbury.

There is this to be said against the Ontario Government guaranteeing the bonds of Mr. Ritchie's proposed steel works—it would be establishing a precedent which should not be followed. This journal desires earnestly to see steel works established in Ontario and the establishment of such should be encouraged, but not by guaranteeing the bonds of any and every company that might desire to embark in the business. If, however, the bonds of Mr. Ritchie's company are guaranteed, it would be unfair and unsatisfactory not to guarantee those of other applicants; and the precedent once established, where would the bonusing business end?

It would be a better arrangement, in our opinion, to bonus the production of steel instead of the company owning the plant. Granting that Mr. Ritchie's request for \$150,000 a year for ten years is reasonable, would it not be more desirable to pay that much per annum for the production of certain quantities of the product? Suppose a scale were established whereby during a term of years the output of any plant should be bonused to the extent of say \$100 per ton for the first thousand tons produced during the first year, and \$10 per ton for each succeeding year for ten years, the aggregate of all such bonuses not to exceed \$150,000 for any one year. Under such arrangement, if there were no competition, Mr. Ritchie, if he established his works, would receive just the same amount of money as he now asks for; but if there were competitors, and there probably would be, the bonus would be divided among them. This is only a suggestion, but we think some such arrangement would be better for the Ontario Government and for all concerned than that which would guarantee the bonds of only one company.

Subscribe for "The Canadian Manufacturer."

THE N. P. IS ALL RIGHT.

EFFORTS are being made by its enemies to show that because a revival of the old preferential tariff system between Britain and her colonies is advocated by some in favor of it, the N.P. is losing ground. It is said that some manufacturers like Mr. Armstrong are supporters of a movement for free trade with the United States, whilst others suggest reforms in the existing system.

No people except the Medes and Persians of old ever made laws with the inflexibility of cast-iron; and no people who are progressive in their character and disposition desire laws that cannot be made to conform to the highest requirements of society. Therefore, even in the construction of the N. P. its best friends never claimed that it was immaculate, or that it would never need to be amended. The proof of this lies in the fact that from time to time at each succeeding session of Parliament the N.P. has been amended and made to conform to the conditions that prevailed at the time. These amendments, it should be observed, have always been made by friends who were ready and willing to make them, so that the system might be perpetuated, and not by its enemies who seek to destroy it. And the manufacturers as a class understand that whenever weak points appear in the N.P. they may be strengthened; and the enemies of it understand that the manufacturers will never consent to its destruction.

It is said that over-production of manufactures is one of the evils of protection; by which is meant that the manufacturers are caged up in a home market too small to absorb all the stuff they produce; and as a consequence stocks accumulate, and they are obliged to work shorter hours and at times to close down. Some believe that a remedy for this congestion would be found in an export trade, and that it is impossible to benefit such a trade so long as the manufacturers have to "pay through the nose" for their raw material. We can show that over-production is not justly chargeable to protection. Admit for argument that protected manufacturers are caged up in a home market too small to absorb all they produce, and that without protection they would not have to "pay through the nose" for their raw materials—that if they had free trade with all the world they could obtain their raw materials at the lowest possible cost, and that they could sell all they could produce, having no fear of over-production. The answer is that Great Britain has free trade with all the term implies, and still her manufacturers suffer from over-production, many of them demanding protection as a remedy therefor. A great many British manufacturers are in this plight to day; and in their dilemma some of them are proposing to remove, nay, are removing their industries to protected countries. They are not able to save themselves in their own home market because it is free to the manufacturers of protected countries who can produce cheaper. They see their stocks accumulate, and they are obliged to work shorter hours, and at times to close down. Their export trade is no remedy for the congestion; and thousands of British workers are thrown out of employment, and are walking the streets of British manufacturing centres, swelling the army of the submerged tenth of the population so graphically described by General Booth of the Salvation Army. Of what benefit is free trade to these manufacturers and these workmen? It is their curse.

It is a fatal mistake for manufacturers to suppose that because they embark in the production of merchandise Government must guarantee the profitable sale of it. The wants of the people require certain quantities of merchandise, and in protected countries the manufacturers have reasonable expectation of producing it; but when they enjoy this protection, and hold the home market against foreign manufacturers, they should be satisfied. As between themselves competition may be depended upon to keep prices at a minimum; but they ought not to expect Government to hasten to their rescue when, after fully supplying the home market they continue to produce in excess of the consumption, and want special favors, the granting of which would operate against other manufacturers and against the very system by which they thrive and without which they could not live. Let the law of the survival of the fittest prevail; but the Government should not change a policy that builds up and maintains the industries of manufacturers of brains and experience on the demands of amateurs who do not possess those valuable qualities. Therefore we are opposed to Government allowing drawbacks to the amount of the duty paid upon imported raw material if such material is also produced at home; and we are opposed to the payment of export bounties. If a manufacturer in any particular line finds that over-production is occurring that cannot be remedied in any of the ways herein indicated, except by the interference of Government; and if he is not financially or otherwise inclined to try conclusions with the rest of the trade, abiding by the law of the survival of the fittest, let him embark his capital and energies in some other line of manufactures where the field does not seem to be so fully occupied. If he can find no such opening, and if he is convinced that he cannot succeed as a manufacturer without Governmental interference in his behalf, these facts should indicate to him that he had mistaken his calling, and that the cultivation of turnips and cabbages was a sphere in life that he might occupy with honor and profit to himself and to his country.

SUCCESSFUL MANUFACTURERS DO NOT WHINE

THE CANADIAN MANUFACTURER is angry with those manufacturers who have expressed a desire for unrestricted reciprocity in the columns of *The Globe*. It asks us to note that "successful manufacturers do not whine and beg for reciprocity," the implication being that Mr. Raymond (who is criticised by name), Mr. Waterous, Mr. Armstrong of Guelph, Mr. Folger of Kingston, Mr. Frost of Smith's Falls, Mr. Doherty of Sarnia, and the rest of the reciprocitarians are mere bunglers. Our contemporary is making too large a draft upon public credulity. The manufacturers who are afraid of meeting American competition in a common market may possibly be successful enough in the sense of making their industries pay through the instrumentality of a law which enables them to sweat the Canadian consumer, but by their own confession they are inferior in brains or in experience, or in both, to their American rivals, as well as to the men who are ready and willing to face those rivals. That much is clear enough. The truth is that the industries which shrink from a square competition are the least vigorous and the most sickly of the lot. To-day they are shaking in their boots lest the Old Man should make some trade arrangement

with the United States whereby their respective monopolies would be terminated. If the rumors of negotiations with Washington continue to grow, we shall see deputations going to Earncliffe to demand written pledges from him as security for the campaign contributions, past and to come. To call such flabby brethren as these "successful manufacturers" is to sacrifice truth to politeness.—*Toronto Globe*.

We do not desire to make any draft upon public credulity. The *Globe* attempts to make us say that such men as Mr. Armstrong and others are "bunglers" in their business. This is false. Those who have read this journal know that many and many a time some of these very men have been alluded to by us by name as being worthily numbered among the most eminent of Canada's captains of industry. What we have said and again say is that, as in the case of Mr. Armstrong, many of the "reciprocitarians" who desire closer relations with the United States, possess some peculiar features in their business much more valuable to them than any benefits they may derive from tariff protection. Mr. Armstrong cannot possibly be afraid of meeting American competition in a common market, not because of the tariff, but because of that which places him beyond the operations of the tariff—patents upon the articles he manufactures. No man can manufacture these goods in Canada because his Canadian patents protect him here, and no man can manufacture them in the United States because his American patents protect him there. From the standpoint of selfish interest Mr. Armstrong does not wish to maintain a factory in Canada and another in the United States for the manufacture of his patented goods, and only the tariff compels him to do so. With reciprocity this necessity would cease, and he could then supply both his Canadian and his American trade from one factory. Reciprocity would not bring him any competition whatever from either side—it could not, for his patents would prevent it. It would not be difficult to point out which of Mr. Armstrong's two factories would be closed if his wishes could bring reciprocity; Guelph, Ontario, would be the loser, and Flint, Michigan, would be the gainer.

It is an insult for the *Globe* to say that Canadian manufacturers who object to meeting American competition are successful only by being enabled to "sweat" the Canadian consumer; and that they are "inferior in brains or in experience, or in both, to their American rivals as well as to the Canadians who are ready and willing to face those rivals." The *Globe* mentions the name of Mr. Doherty, of Sarnia, and Mr. Thomas,* of Woodstock, as being of this latter class. Mr. Doherty is a manufacturer of stoves, and Mr. Thomas is a manufacturer of organs. Both these gentlemen are criticised by name in the *Globe* as being strongly favorable to reciprocity. We suggest the names of two other gentlemen of equal prominence at least as Canadian manufacturers, who object to reciprocity—Mr. Edward Gurney, of Toronto, and Mr. William Bell, of Guelph. Mr. Gurney is a manufacturer of stoves, and Mr. Bell is a manufacturer of organs. Both these gentlemen are "afraid of meeting American competition;" that is, they are opposed to reciprocity, and we challenge the *Globe* to say if their success as business men has been achieved only by their being enabled to "sweat" their Canadian con-

sumers through the operations of the N.P.; and if they are inferior in brains or experience, or in both—Mr. Gurney to Mr. Doherty as a manufacturer of stoves, and Mr. Bell to Mr. Thomas as a manufacturer of organs. Yet this is just what the *Globe* says. The *Globe* proclaims it as a truth that the stove and organ industries as represented by Mr. Gurney and Mr. Bell "shrink from a square competition" with the stove and organ industries as represented by Mr. Doherty and Mr. Thomas; and are the "most sickly of the lot!"

We are told by the *Globe* that Mr. Gurney and Mr. Bell are shaking in their boots lest some trade arrangement be made with the United States whereby their respective monopolies would be terminated; that these men are "flabby brethren," and to call them "successful manufacturers" is to sacrifice truth to politeness. Fortunately for the good sense of the people of Canada, public opinion of such men as our Gurneys and Bells, and the hosts of successful Canadian manufacturers and captains of Canadian industry who have done so much to make Canada what she is, is not formed from any expressions made by the *Toronto Globe*.

Attention is called to the fact that in the short paragraph from the *Globe* reproduced at the head of this article, such Canadian manufacturers as Mr. Gurney and Mr. Bell, who are not favorable to reciprocity, are denounced as "sweaters"; that they are "inferior in brains and experience"; that they "shrink from square competition" in business; that in their respective trades "they are the least vigorous and most sickly of the lot"; that they "shake in their boots"; that they are "flabby," and that to call them successful is to "sacrifice truth to politeness." These be powerful arguments in favor of reciprocity.

Again we beg the *Globe* to note that successful manufacturers do not whine and beg for reciprocity.

SUCCESS vs. FAILURE.

A STOVE manufacturer doing business in the western part of Ontario has had himself interviewed by a Grit newspaper, and he does not hesitate to declare his belief that unrestricted reciprocity with the United States will improve the condition of Canadian stove manufacturers. His reasons for his belief are: In the first place the N.P. induced a large amount of capital to go into the business by its bright promises, and, having drawn in four times as much money as the trade could profitably maintain, it increased the cost of production from forty to fifty per cent. Then there is a duty of \$4.48 per ton, and a duty also upon coal and coke. In the United States stove manufacturers not only make their stoves untaxed on their iron and fuel, but their market is in better shape—they get good prices and have a market more than twelve times as great as ours. Immediately across the river from where this Canadian stove manufacturer lives is the State of Michigan, with more people than there are in Ontario. There is a market there of over 2,000,000 people in a territory much smaller than Ontario. "Instead of going to Manitoba and the North-West, as I do at present with my stoves," says this manufacturer, "I need, under reciprocity, only cross the river." Further: says he, "If we"—meaning all Canadian manufacturers of stoves—"could get into the American market we

*Since this article was put in type the death of Mr. Thomas has been announced.—EDITOR.

should be relieved of a part of the high pressure of our competition here. I have figured it out, and there is plant enough in Canada to make stoves for 20,000,000. That plant cost money, and three quarters of it is unused." The N.P. created a false activity and an inflation that deceived men into investing their money in the stove business by shutting out the American supply; and this in turn led to years of fighting in the trade—twenty millions of manufacturing plant struggling in a five million market—the conclusion of which was reached by a trade combination. The tariff that protected these manufacturers from American competition was not enough—they required protection from themselves. The combine has not raised prices, but has been confined to the prevention of throat-cutting, and it is the offspring of protection. And so on *ad nauseam*.

There are several statements of "facts" given by this disgruntled gentleman that are not facts. For instance the duty upon iron is not and never has been \$4.48 per ton—it is \$4 per ton, and this misrepresentation to the extent of twelve per cent. is gratuitous and unnecessary. And then the cost of materials entering into the manufacture of stoves was not increased from forty to fifty per cent. by the tariff. We are told that "Detroit stove men buy iron for \$15 per ton;" this is considerably below the price of iron there, but accepting the price as correct at \$15, the duty added would be \$19, while forty per cent. added would make it \$21, and fifty per cent. \$22.50. It is well to be more accurate in such statements. So, too, a duty of seventy-five cents per ton on coal and coke cannot possibly advance the cost forty or fifty per cent. over the American price at any price such fuel has been sold at there for years. In the light in which this question is viewed—that of a national tariff—it is not true that American manufacturers make their stoves untaxed on their iron or fuel, for the American duty on iron is fifty per cent. higher than the Canadian duty, and there is a high duty there also on fuel.

It is exceedingly refreshing to listen to a not very extensive concern in Ontario clamor for access to a market more than a dozen times as large as that of all Canada, and fairly beseeching to get across the river into Michigan where there are over 2,000,000 people, and where, in the city of Detroit alone, there are several stove manufacturing concerns employing a thousand or more hands each. All that it wants to make it happy is to get into the swim with these big fellows. No doubt if it had free access across the river it could down the Detroit concerns, as big as they are, and capture to its own individual use the entire trade of 2,000,000 Michiganders.

There is a remarkable feature in the arguments advanced by these Canadian manufacturers who are so anxious to obtain access to the American market. Always pessimists of most pronounced character, they are but little known in Canada if judgment may be had by the extent to which they do not advertise their business in the papers. Successful men, and those who strive to be successful, always make themselves known in this way; while the whiners and discontented ones depend upon such gratuitous advertising as they may get by having themselves interviewed, and posing as the opponents of everything Canadian and everything calculated to enoble, enrich and elevate Canada. In these interviews they tell how

much better off they would be "if" so and so were the case. In the case of the stove manufacturer here alluded to we are told that he started in business in Canada eight years ago, at a time when another concern, now giving employment to a thousand hands, started in Detroit under no better auspices. Why didn't the Canada man locate in Detroit? He might have known then what he says now that the Americans have an ever growing market, and that their protection is protection in fact. In looking across the intervening river all that he sees is a land flowing with milk and honey. Everything there is lovely. Sweet fields beyond the swelling flood stand dressed in living green, while on this side there is nothing good, and all the fruits of protection are like the apples of Sodom that turn to ashes on the lips.

Why is this? This gentleman tells us, "I do not believe the stove manufacturers of Canada are opposed to reciprocity." Who, pray, authorizes him to thus speak for a large number of Canadian stove manufacturers, who to our certain knowledge do not desire reciprocity. This is but one man; but according to his own statement there is some \$20,000,000 invested in the industry in Canada, and he is the only one who has proclaimed himself in favor of the fad. Where are the others? It is only a short distance across the river from Ontario to Michigan—from a market of 5,000,000 to one of 60,000,000, and travelling is not expensive. All the other stove manufacturers in Canada seem satisfied with the N.P. Successful manufacturers do not whine and plead for the unattainable. The N. P. is all right.

WHAT ARE MANUFACTURES?

THE export trade of the produce of Canada for 1889 was valued at \$77,201,804, of which \$4,434,949 was classified by the Government statistician as "manufactures." According to this classification the exports of manufactures amounted to less than six per cent. of the total. Included in this classification were agricultural implements; books, pamphlets, maps, etc.; biscuit and bread; carriages, including carts, wagons, etc.; clothing and wearing apparel; cordage, ropes and twines; cottons and cotton waste; extract of hemlock bark; glass and glassware; grindstones; gypsum, or other plaster, ground; hats and caps; india rubber; iron and steel and manufactures thereof, including pig iron, machinery and scrap iron; junk and oakum; leather, including boots and shoes, harness, saddlery, etc.; lime and cement; spirituous and malt liquors, etc.; metals other than iron or steel; musical instruments; oil-cake; oil; rags; sails; ships sold to other countries; soap; starch; stone, wrought, and marble; sugar and syrups; tobacco, including cigars, cigarettes, etc.; vinegar; wood, including barrels, furniture, doors, sashes, blinds, mouldings, and other house-furnishings, pails, tubs and other hollow wooden ware, etc.; woolen, and other similar articles; dried fruits, etc.

No doubt all these articles were properly classified; but we will examine the returns to discover if some other articles credited in other classifications should not properly have appeared under that of manufactures. Classified as "produce of the mine," we find the exports for the year indicated

amounted to \$4,419,170. Included under this head are fine copper; ground mica; and salt, all valued at \$14,480. These are "manufactures" quite as much as pig iron.

The "produce of the fisheries" is credited with an export value of \$7,212,208; and included are canned mackerel; canned herring; smoked herring; preserved fish; canned oysters; canned lobsters; smoked salmon; canned salmon; cod oil; seal oil; whale and other oil; and furs and skins, the produce of fish and marine animals, valued at \$2,260,871. This does not include the processes of drying, salting and pickling cod fish; the preparation and packing of tongues and sounds; the pickling and packing of salmon, halibut and herring; and the packing, etc., of fresh oysters, clams, lobsters and fish, all of which operations are closely allied to "manufactures." The canning of fish, lobsters, oysters, etc., is quite as much a manufacturing industry as the preparation of grindstones, gypsum, leather, lime, wrought stone and marble, etc.; the preparation of cod oil for medicinal purposes, is a manufacturing process entirely separate and apart from catching the fish; and the curing of furs and skins of fish and marine animals should also be classed as a manufacturing industry.

The "produce of the forest" exported from Canada in 1889 was valued at \$23,043,007; and included in this were potash, pearlash, etc.; ship's knees and futtocks; pine, spruce and other deals; laths, paling and pickets; planks and boards; joists and scantlings and all other sawn lumber; shingles and box and other shooks valued at \$17,468,668. A very large proportion of the value of these items was given to them because of the processes of manufacture expended upon them. Potash and pearlash are obtained by the evaporation by different manufacturing processes of the leachings of wood ashes; and every process involved in the production of them after the log heaps have been fired, is as much a process of manufacture as the damping of ore, limestone and fuel into a smelting furnace, and the drawing off of the molten metal is a process for the manufacture of pig iron. Why then should potash and pearlash be classed as "produce of the forest?" Ship's knees and futtocks are timber of peculiar character and shape, which require much mechanical judgment and skill in their production, and they acquire their peculiar value because of these. All the other items enumerated acquire very much of their value because of the manufacturing processes expended upon them, and are the products of saw and shingle mills. These items being credited to "manufactures," there will then remain to the credit of "produce of the forest" but \$5,574,339, in which is included bark for tanning; basswood and other hard woods; firewood; hop, hoop, telegraph and other poles; lath-wood; cedar, hemlock, oak, pine, spruce and other logs; staves and heading; masts and spars; sleepers and railroad ties; stave bolts and square timber. These are forest products upon which the minimum amount of labor, none of it skilled, is expended.

"Animals and their produce," is credited with \$23,894,707. Manufactures in this line include butter; cheese; dressed furs; grease; lard; bacon; beef; hams; pork; canned and preserved meats; animal oils, and tallow valued at \$9,817,812. These articles are all clearly the products of manufacturing processes, butter and cheese alone being valued at \$9,247,642. The products of animals from which these are made would be

valueless without the manufacturing processes through which they pass.

The value of "agricultural products" exported in 1889 was \$13,414,111, and include dried apples; canned berries and vegetables; maple sugar; barley malt; and flour of wheat, corn, oats, etc.; valued at \$1,075,429. It is very true that the conversion of grain into flour is not an expensive process, but it is a manufacturing process nevertheless, in which many millions of capital and many thousands of skilled workmen are employed. The value of these products was \$913,439; and the value of all the other items enumerated was \$161,990; and this latter sum is what we propose to transfer to "manufactures."

Under the head "miscellaneous articles" goods the produce of Canada were exported in 1889 to the value of \$783,652; but as these are not specifically mentioned, none of them are transferred to "manufactures."

On this basis, then, we re-arrange the values as follows; from the value of the produce of the mine deduct and transfer to manufactures, \$14,480, leaving a corrected valuation of \$4,404,690. From that of the fisheries transfer \$2,260,871, leaving \$4,951,337, to that credit. The produce of the forest should transfer \$17,468,668, leaving to that account only \$5,574,339. Animals and their produce is credited with \$9,817,812 too much; the correct amount should be \$14,076,895. The amount that should be transferred from the credit of agricultural products is \$161,990, making the correct amount \$13,252,121.

A recapitulation of these revised amounts shows as follows:—

The Mine	\$ 4,404,690
The Fisheries.....	4,951,337
The Forest.....	5,574,339
Animals and their Produce.....	14,076,895
Agricultural Products.....	13,252,121
Miscellaneous.....	783,652
Total, not including Manufactures.....	\$43,043,034
Add Manufactures.....	34,158,770
Total value of exports.....	\$77,201,804

In making these transfers no changes are made where only the cheapest labor is performed in preparing the produce for market, as with ores, coal, fresh fish, logs and square timber, animals and most agricultural products; but the changes are made where the great value of the articles has been acquired through manufacturing processes. In many instances the classifications are absurdly wrong, as in crediting fine copper as the produce of the mine; canned fish and lobsters to the fisheries; potash and dressed lumber to the forest; butter and cheese, dressed furs, lard, bacon, tallow and canned and preserved meats to animals and their produce; and dried apples, canned fruits and vegetables, malt and maple sugar as agricultural products. Such anomalies are simply ridiculous.

RAILROADS AND IRON AND STEEL WORKS.

RECENTLY in discussing the advantages that would accrue to Canada by the establishment of nickel steel works here, Mr. S. J. Ritchie stated that the Carnegie iron and steel works in Pennsylvania alone originated a greater freight tonnage for

the railroads than all the freight transported in Canada by all the railroads in Canada, including the Grand Trunk, the Canadian Pacific and the Intercolonial systems. We have not verified this statement, but presume it to be approximately correct. If, then, the Carnegie works afford so much business to American railroads, what would similar works in Canada afford to Canadian roads? The consumption of iron and steel products in Canada outside of what is manufactured here is about 300,000 tons per annum. All, or nearly all, of this should be made here; and if Mr. Ritchie's scheme of manufacturing nickel steel in Canada materializes, and that product amounts to say 200,000 tons per annum, the impetus that would be given not only to the transportation but to many other branches of business would be wonderful. We will base a few remarks upon the possible production of 500,000 tons of iron and steel in Canada.

The chief aim of iron makers now is not to secure higher prices for their products but rather to reduce the cost of production. The closest possible attention is given to minute details of construction of works by which economy is attained; and location of works is made with careful regard to proximity to sources of supply of raw materials and facilities for shipment of products. In the establishment of works in Canada for the production of a half million tons of iron and steel all these economies would receive due and full consideration, of course. During the census year ended June 30, 1890, the State of Pennsylvania, in which the Carnegie works are situated, produced 4,712,511 tons of pig iron. To produce this, each ton of iron required an average of two tons of ore, one and a quarter tons of fuel and three fourths of a ton of limestone or other fluxing material, or a total of four tons of raw material to one ton of finished iron. Consequently the railroads of that State carried to the furnaces there about 19,000,000 tons of ore, fuel and flux, and carried away over 4,700,000 tons of pig iron; making a total of nearly 24,000,000 tons of freight hauled by them. An idea of this immense tonnage may be had by comparisons with some other familiar facts. The entire wheat crop of the United States in 1889 amounted to 490,560,000 bushels, or about 18,716,800 tons, a very large portion of which was never hauled in railroad cars. This crop, then, did not weigh as much as the raw materials hauled to the Pennsylvania iron furnaces. The corn crop of that year was 2,112,892,000 bushels, weighing 59,160,976 tons, or about three times the amount of freight furnished by the raw materials of the Pennsylvania iron industry. The entire cotton crop of 1890—about 7,300,000 bales—weighed but 1,825,000 tons—less than one-tenth of the raw material hauled to Pennsylvania furnaces in one year. It is a fact that there are several iron and steel establishments in that State, any one of which affords more freight to the railroads each year than the entire cotton crop of the United States.

In a report recently issued by Hon Carroll D. Wright, Commissioner of Labor Statistics, regarding the cost of manufacturing iron and steel in the United States, a table is given showing the cost of production in sixteen plants, selected because their production of over 30,000 tons each per annum represented a fair average of the capacity of the old and new furnaces in operation in that country. The table shows as follows:

Ore	tons	1,088,742
Limestone	"	370,895
Fuel	"	818,706
Total	"	2,278,343

The product of which was 698,165 tons of pig iron and 99,806 tons of mill cinder and scrap. Mr. Wright also gives another table showing the cost of materials and labor, and freight on materials, reference being to these same sixteen furnaces as follows:

Cost of materials	\$8,781,518
" " labor	949,036
" " freight	3,656,621
All costs	\$10,204,859

The freight is included in the cost of materials in this table, and the total of all costs includes, in addition to materials and labor, the items of executive expenses, supplies and repairs and taxes. These totals may be separated as follows:

Materials alone	\$5,124,897	50.2 per cent.
Labor	949,036	9.3 "
Freight on materials	3,657,621	35.8 "
Administration, etc.	474,305	4.7 "
Total costs	\$10,204,859	100 "

These figures show that these furnace plants paid an average of \$5.23 in freights upon raw materials for every ton of pig iron produced by them; and on that basis that the iron manufacturers of Pennsylvania paid to the railroads \$24,646,432 for assembling the raw materials used in the production of 4,712,511 tons of pig iron; and this does not include the freights paid upon the pig iron itself, the transportation of fuel and supplies used by the steel works, rolling mills and foundries consuming it, nor upon the finished products of these works. The freight which these furnaces pay in that State on their raw materials alone is equal to nearly sixty per cent. of the entire gross earnings of all railroads operated by the Pennsylvania Railroad Company east of Pittsburg and Erie, and more than one and one-half times as much as was received from the more than forty million passengers who traveled over these lines in 1889. There are six concerns in Pennsylvania engaged in the manufacture of iron and steel that pay to the railroads from \$1,000,000 to \$3,000,000 in freights every year.

These facts and figures afford foundation whereon to make suggestions as to what similar facts and figures would be as regards Canada were the manufacture of iron and steel gone into here to the extent of a production of a half-million tons per year. The railroad freights for hauling the raw materials would be \$2,615,000; and for distributing the finished products \$655,000, a total of not less than \$3,270,000. The cost of the raw materials entering into the manufacture of the finished product, the labor involved in the production of it and the cost of administration are not included in this immense sum—it is entirely for railroad freights. To manufacture this half-million tons of iron and steel would require a million tons of iron ore, worth at the mines probably \$2,000,000, and the fuel and fluxes another million tons worth probably \$3,000,000 more.

The manufacture of nickel steel should be an immense industry in Canada, and would be if it were properly fostered. Instead of the iron and steel production in Canada being only a half-million tons per year, there should be a production of nickel steel amounting to ten million tons, perhaps more. There is no good reason why we should not produce that

quantity. Aside from our nickel supply we have every requisite for the business possibly excepting fuel, and this is obtainable on as favorable terms as prevails at most of the steel works in the United States. Having a virtual monopoly of nickel, an imposition of an export duty upon nickel ore and matte would force and encourage the establishment of nickel steel works here; and this means that Canada would manufacture armor plates for the navies of the world, and supply the general trade of the world with nickel steel ingots, and other forms of the article from which to manufacture the thousand things for which it would be used.

Canada has never attempted to manufacture all the iron and steel she requires, nor will she ever do so unless the industry is protected by much higher duties than she has ever imposed. If the duties were sufficiently advanced the industry would speedily appear. She will also never become a manufacturer of nickel steel unless that industry is encouraged by the imposition of an export duty on the cruder forms of nickel. Impose the duty.

BOOTH AND BARNARDO.

GENERAL BOOTH, of the Salvation Army, and Dr. Barnardo, who has accomplished much good in the establishment of rescue homes in London for orphan and destitute children, both have schemes by which they expect to alleviate much of the suffering and distress so prevalent in Great Britain, and in which Canada is deeply interested. General Booth recognizes the fact that one-tenth the population of Great Britain are paupers, the most of whom belong to the criminal classes. His scheme is for the amelioration of their condition, and an important part of this scheme consists in sending many of these forlorn wretches to Canada. Dr. Barnardo directs his energies to the reclamation of the human waifs gathered in the slums and purlieus of London, and the shipping of as many of them as possible to this country. In both cases Canada is the proposed dumping-ground of the offscouring of Britain's humanity. In his book "Darkest England," General Booth draws an exceedingly gloomy picture of English life. He says that England, like Africa, reeks with malaria—that the foul and fetid breath of London slums is as poisonous as that of the African swamp—that every year thousands of children there are starved and poisoned, and that, just as in darkest Africa these are only a part of the evils and misery that arise from the surroundings. The General seems to be impelled by philanthropic motives and a desire to alleviate the distress that is so prevalent there; and a part of his scheme, as we have said, is to organize farm colonies in England from which he proposes to draw recruits with which to people other colonies in other lands, Canada being, in his estimation, an exceedingly suitable country for that purpose.

Dr. Barnardo is actuated by similar worthy motives in colonizing in and near London the thousands of strays and waifs picked up in the streets of that great city, unloading the unfortunates upon Canada. Indeed, he has gone much further in this direction than General Booth, for he has already established several depots in Canada for the reception of these children and young people, from which they are distributed throughout the country to whoever can be induced to

take them. He has been engaged in this business ever since the spring of 1882; and in 1888 more than five hundred of these emigrants were sent to Canada by him. We are told that Dr. Barnardo is exceedingly careful as to the class of emigrants sent to this country, and that he takes great care that none of them shall ever become a burden upon the State if he can prevent it. He speaks of the fact that when he made his first visit to Canada in 1884 he was horrified to observe the havoc created and the irreparable mischief which had been done by a system which had obtained in the practice of some English societies of sending to Canada the worst instead of the best of their poor, dumping on our shores improvident and thriftless persons of drunken and mendicant habits, who would not work if they could, and who could not work if they would. He had found in every large Canadian city persons of this class who were penniless, homeless, without adequate clothing, utterly helpless and quite incapable of conforming to the conditions of Canadian climate and occupation. They filled the jails in winter; they were found at all the emigrant sheds, and by their presence succeeded in arousing an almost fierce sentiment of antipathy against such emigration. Dr. Barnardo offers the assurance that the emigrants he sends to Canada are not of this character; but we beg to assure him that whatever else he may do in his philanthropic efforts to purify the slums of London, and however good and reformed, morally, his waifs may be, they are not wanted in Canada. He had better dispose of them elsewhere.

There is no denying the fact that there are many people in England who look upon Canada as a convenient and desirable dumping ground for the social wreckage of that country. When Canada has done the best she can in taking care of her own human refuse she has done all that can be expected of her; and every Canadian who loves his country will do all he can to discourage the efforts of such philanthropists as General Booth and Dr. Barnardo to increase the burdens that we now have to bear.

PAUPERISM, POVERTY AND FREE TRADE.

ACCORDING to General Booth of the Salvation Army one-tenth the population of England are steeped in pauperism, poverty and crime; and the question that agitates his mind, and the minds of many English philanthropists is, What shall be done about it? The scheme that General Booth proposes by which the evil may be met does not, in our opinion, work in the right direction. He wants to raise a large amount of money with which to provide lodging houses and food for the homeless and hungry; teach trades to the ignorant and uneducated, and to supply them with tools with which to work; to buy land and establish colonies of working people where they can not only earn their own living but also contribute to sustain non workers, and to create a tide of emigration of these unfortunates towards foreign shores.

The question presents itself, "Why the situation?" Why should one-tenth the population of England be paupers? Free trade was established in Great Britain fifty years ago, and if all that is claimed for it be true, there should be no pauperism there. Everything necessary to sustain life should be cheaper in Great Britain than anywhere else; and still

we see millions of people there who are submerged in the most squalid and degraded poverty, and actually dying of want—starving for want of food, freezing for want of shelter. The cause of this distress is lack of employment. Wherever there may be a day's work to be done there are a score of men anxious to do it, while, alas for the others, but one can be benefited by it. How then can there be any permanent benefit to the submerged millions by putting them to work in unproductive industries, or in manufacturing articles for which there is no demand? General Booth wants to establish factories and workshops in which these poor people may be employed in the production of articles which he thinks may be sold on the public market, thus making the producers self-supporting, at least to some extent. But he seems to lose sight of the fact that whatever these industrial establishments may produce for sale, they must certainly displace the productions of similar establishments; and that in doing this he is creating an equal amount of suffering and distress which he will find himself called upon to relieve.

The glory and boast of England is her commerce; and Free Traders point with pride to the fact that the foreign trade of England is greater than that of any other nation. But while we read of these immense transactions, which we know include the importation of the cheaper products of other nations, and by which English workmen are deprived of work, we also read the appalling reports of starvation growing out of the inability to procure work; how that people live in houses which are being gradually stripped of their furniture and furnishings to be sold for the purpose of purchasing food; how men stand clinging for hours to the gateways of places where they think work is possible to be had, waiting in the bitter frost for a call that would enable them to earn a few shillings; how women and children die of starvation and suffering. What is England's commercial glory to these distressed ones? If it were in the power of General Booth to create new markets for whatever he might produce in his proposed factories, there would be hope for these hopeless ones. If he could only by some means obtain possession of the home market—if he could supply Englishmen with English products in the place of those they now get under free trade from other countries, this terrible distress would disappear. The cheap labor of other countries furnish breadstuffs and food products cheaper than English agriculturists can; English farms become unproductive and are abandoned, and the English farmer and farm laborer gravitate towards the manufacturing and commercial centres seeking work. The transition from conditions where the masses were once able to support themselves in comfort downwards to the conditions in which one-tenth the population now is is rapid and certain; and the only tangibly thing General Booth has to offer these wretched Englishmen is expatriation. If they would keep soul and body together they must abandon England and seek fairer fields and newer pastures under more favorable skies and in strange lands.

A measure of protection would soon change the situation. It would shut out to some extent the products of other nations, and thereby give employment to the producers at home. It would re-people English farms and in a measure depopulate the congested districts of London and the manu-

facturing centres. This would bring happiness and contentment to the unhappy and discontented millions, and life would possess some charms for them. But to do this might to some extent restrict England's foreign trade; and because protection might have such an effect, those who wield the destinies of England will hesitate long before they consent to change their existing policy.

Some day "the mad mob's million feet" will trample them down and do for themselves what they can get in no other way.

WHAT CANADA SHOULD HAVE.

THE *Globe* pays a glowing tribute to the value of protection. In discussing the mining industries it tells us that "Andrew Carnegie's works alone produced twice as much iron and steel last year as was consumed in the whole Dominion;" and in speaking of the manufacture of nickel steel it says:—"The Carnegies have an armor mill at their works at Braddock and have received an order there for 6,000 tons of nickel armor-plate for the American navy;" that "the whole requirements of the navy for all the ships now in course of construction or contemplated would not more than equal half the capacity of the Carnegie mills." A concern that has the capacity to manufacture 600,000 tons of iron and steel per year is certainly a "big thing." But the industry in America originated and grew to its present immense proportions under the influence of a high protective tariff; and without that tariff it is not at all probable that the United States would at this time be independent of Great Britain in the iron and steel industries. The *Globe* professes to wish that Canada might attain to similar industrial independence, and, queerly enough, suggests that the way to such attainment is by our having an arrangement with the United States whereby we could send all our iron and nickel ore over there to be manufactured for us. The American iron industry attained its present immense proportions without any dependence whatever upon Canada for iron ores, for there is abundance of them there. But a change in the constituents of the iron and steel to be made there is imminent now that it is discovered that one of those constituents must be nickel. While the United States has an untold wealth of iron ores it is not thus blessed as regards nickel; and it is quite certain that whatever of this latter metal it may require, its supplies must come from Canada. Without any vast outlay for new or modified machinery and apparatus, we find the Carnegie works adapted to the production of nickel steel; and it is more than probable that other American steel works will also engage in the production of nickel steel; and this, too, long before that article is produced in commercial quantities and for commercial purposes even in Great Britain. This result and condition is clearly attributable to protection, and is the legitimate fruit of protection.

If the manufacture of iron, steel and nickel-steel is desirable for the United States it would also be desirable for Canada; and Canada can have it in precisely the same manner as the United States obtained it—by protection. But not by reciprocity. Sending our iron ores to the United States will never secure blast furnaces and steel works in Canada; and allowing nickel ores to be taken out of the country without restriction

will never give us works for the manufacture of nickel steel. Already, as the *Globe* shows, there is one concern in Pennsylvania which has capacity to manufacture twice as much iron and steel as is consumed in Canada; and there are a great many other such works in the United States. Under unrestricted reciprocity what inducement would there be to erect any such works in Canada? None. With a sufficiently high duty, and with a guarantee of its permanence, such enterprises would speedily materialize; but under such protection as the N. P. now gives, which is no protection at all, but merely a duty for revenue only, we can never hope for the establishment of works that will supply the Canadian demand.

And so too as regards nickel. Without any great flourish of trumpets the Carnegies have begun the manufacture of nickel-steel, and others will doubtless soon follow. For the same and similar causes that have worked against the establishment of extensive steel works in Canada, we could never hope to have extensive works for the manufacture of nickel-steel. The United States Congress was only too glad to put nickel ore on the free list, a result of which we see in the Carnegie enterprise. An export duty of \$300 per ton would not check or retard that enterprise, but it would increase the cost of the American product; and it would also guarantee the erection of nickel steel works in Canada. Should such works be erected here, and the manufacture of nickel-steel begun on a large scale, the United States would be one of our best customers, and that country would be forced to place the Canadian article on its free list. Canada would then manufacture for the American market, and probably make armor plates for the American navy. Canada's salvation in that direction lies in placing an export duty upon nickel ore and matte. Impose the duty.

EDITORIAL NOTES.

CANADA FOREVER !

CANADA for Canadians.

CANADIANS for Canada.

SIR JOHN will not sacrifice the N.P.

CANADA will not sacrifice Sir John.

WASHINGTON cannot legislate for Canada.

ONCE more into the breach, dear friends.

No McKinley tariff for Canada. No, not now.

CANADA will not discriminate against Great Britain.

UNRESTRICTED Reciprocity and annexation mean one and the same thing. There may be a difference in the words but not in the meaning of them.

SIR CHARLES TUPPER will probably be one of the Canadian Commissioners to Washington to negotiate a treaty on a basis of an extension of trade between Canada and the United States. This means that the interests of Canada will be properly looked after.

The Captains of Canadian Industry will do for Sir John, during the fight that is now on, what the captains of Israel's host did for Joshua when he was fighting against the Phillistines—uphold his hands and give him every comfort and encouragement. Sir John may depend upon this support.

GOVERNOR-GENERAL STANLEY, on the advice of his Ministers, has dissolved the sixth Parliament of Canada and ordered the writs to issue for a new election. The writs bear date of February 4th, and are returnable on April 25th. They direct the nominations to be held on Thursday, February 26th, and the polling on March 5th.

THE noise of the mighty political hosts that will be contending for supremacy in Canada from now on until March 5th will be heard throughout the land. But on that day the quiet dropping of paper ballots into the voting boxes like the falling of snow flakes, will submerge and cover from sight those enemies of Canada who oppose her National Policy.

It is reported of Sir Richard Cartwright that at the recent Boston banquet when he was nominated as Senator for Ontario in the United States Congress on the unrestricted reciprocity annexation platform, in accepting the nomination, with his customary grace and suavity he declared that those Canadians who declined to accept his platform ought to be kicked to death by a jackass, and that he was just the one to do it.

DISCUSSING the question of wages the *London Times* says the policemen there get £74 a year, and after twenty one years' service a pension of £34; the soldier and sailor get £48 and a pension of £19 15s.; the highest unskilled and lowest skilled labor in London, £67 and no pension at all. This is much lower pay than is paid in Toronto for similar services while the expense of living there is quite as high or higher than it is here.

THE principal wheat exporting countries of the world are Russia, British India, Australia, Argentine Republic and the United States. In 1880 the exports from these countries aggregated 207,121,311 bushels, of which the United States supplied 69.13 per cent., while in 1888, the latest year for which there are full returns, the total exports were 231,162,384 bushels, but 19.90 per cent. being credited to our American neighbors. This indicates the competition the United States is meeting in the wheat markets of the world.

THE percentage of total imports into the United States, in 1860, was from Great Britain 39.17 per cent., and from Germany 5.24 per cent. In 1890 the imports from Great Britain had receded to 23.63 per cent., and from Germany it had increased to 12.52 per cent. Great Britain has free trade, Germany protection. On the other hand, the percentage of domestic exports from the United States to Great Britain in 1860 was 52.50 per cent. of the whole, and to Germany 4.01 per cent.: while in 1890 the exports to Britain were substantially the same—50.58 per cent.—while to Germany the increase was to 9.98 per cent.

IN 1890 the value of all foreign merchandise exported from the United States amounted to \$12,534,856, of which 27.42

per cent. went to Great Britain, and 23.61 per cent. to British North American Possessions, chiefly Canada. This indicates with considerable accuracy the volume of trade done between Canada and Great Britain, *via* the United States. Is it that the foreign trade done by Canada with Great Britain, both outward and inward, through the United States, is credited to that country and not where it properly belongs? The transportation of this in-transit trade of the United States, particularly as applied to Canada and Great Britain, is a very valuable branch of the American carrying trade.

THE Dominion Government recently made a definite proposal to the Washington authorities for a settlement of all existing differences between the two countries on a basis of an extension of the trade between the two countries. It involves partial reciprocity, and enumerated articles to include quite a number of natural products. But the proposition discards any idea of commercial union or unrestricted reciprocity. These propositions were invited and suggested by the Washington authorities. Commissioners from Canada and Great Britain will start for Washington early in March. The Result of the Canadian elections will be known on March 6th. In order that this commission will have no uncertain sound Sir John Macdonald has decided to appeal to the country and ask for judgment on his proposals to the Washington authorities. He does not want the endorsement of a parliament in its last session, but the freshly expressed opinion of the people of Canada, and for this reason he advised a dissolution and a new election.

THE total value of merchandise received into the United States from foreign countries for immediate shipment to other foreign countries during 1890 was \$55,699,426. The receipts from Great Britain were \$20,664,427, and the shipments to British North American Possessions, chiefly Canada, were \$27,335,678; while the receipts from British North American Possessions were \$16,002,384, and shipments to Great Britain \$10,656,465. This indicates, with some accuracy, the volume of trade done between Great Britain and Canada through seaports in the United States. Great Britain sent \$20,664,427 and Canada received \$27,345,678, the difference probably being the trade between Canada and France, Germany and other countries. So, too, Canada sent \$16,002,384 and Great Britain received \$10,656,465, the difference being accounted for by Canada's trade with other countries. The handling of this immense American in-transit trade, in which Canada is so greatly interested, is worth a great deal to American transportation companies: and it is greatly to be hoped that the time is not far distant when it will all be done directly into and through Canadian seaports.

THE United States Government has informed the collector of Customs at Detroit that "fish caught in nets or other devices belonging to American corporations or individuals only are entitled to the privilege of free entry. Fish caught in nets or other devices owned by a company chartered under the laws of Canada, and composed principally of foreign stockholders, are subject to duty, notwithstanding the apparatus

may be operated by an American citizen. The collector is also informed that the rights of American corporations in the fishing privileges are identical with those of American citizens." This means that American fishermen may catch fish in Canadian waters and sell them in the United States without the payment of any duty, and that Canadian fishermen shall not be allowed the same privilege. This is a specimen of meanness that is characteristic of the Yankee Government. Canada should either impose an export duty on all fish caught in Canadian waters by American fishermen equivalent to that imposed by the American tariff on fish caught by Canadian fishermen, or prohibit the taking of fish in Canadian waters by American fishermen.

WE direct attention to a communication in another page from our Hamilton correspondent *re* "The Sewing Machine Industry." It may be well to emphasize a fact which relates not only to sewing machines but to many other articles manufactured in Canada. The patent laws afford better protection to the owner of a patented article than that afforded by the N. P. or any other law. Under ordinary circumstances where an industry may be engaged in by any who may chose to do so, and where a great many may do so, the N. P. protects against the admission to the country of similar articles manufactured abroad, but the competition between the manufacturers will keep down the prices. The owner of a patent, however, has the exclusive privilege of manufacturing, and no other person can engage in that business without his consent. Thus, if the patent is for a really meritorious article, there being no competition in the manufacture of it, the patentee may charge what he pleases for his product, whether the construction of it be good or bad; while at the same time, having this protection, he is independent as regards the N. P. If, however, he desires to sell his products in other countries he is confronted with whatever protective tariff may exist there; and for this reason he desires all tariff walls thrown down.

A PATHETIC romance developed recently at a trial at the Old Bailey in London, England. A respectable laboring man named Stork was indicted for trying to murder his sweetheart. He and she had loved each other for seven years. Poverty, however, kept them from marrying. Out of his earnings of \$1 a week Stork had kept the girl, her aged and infirm father and brother, and his own mother from the workhouse. She, fearful of becoming a further burden, left to stay with a brother. The lovers, however, met one day—the man pressing the woman to marry; she, still dreading their poverty, refusing. With despair, Stork tried to cut the girl's throat and his own. The judge and jury both agreed in sentencing him to a more formal punishment, and the devoted couple met the reward of their long self-denial by getting a gift of £10 from the sheriff's fund to enable them to marry and set up house together. Five dollars a week would be considered very small remuneration in this country for a respectable laboring man, and entirely inadequate to support such a family as this man Stork took upon his hands. Very few people in Canada have any correct idea of the exceedingly low pay the laboring classes in Free Trade England receive for their services. It is much better under Protection here.

We observe with deep interest that a novel and decidedly original experiment was recently instituted by a Saratoga County (N. Y.) farmer, possibly with a view to increasing our supply of domestic wool. According to reliable advices, our rural friend discovered, evidently by accident that an ordinary pig, when treated liberally with external applications of soap and warm water during the earlier stages of its development, can grow a fleece resembling the wool on the sheep. Although the treatment referred to is believed to have stopped the growth of the pig to some degree, as it was reported to have never reached a weight above thirty pounds, Farmer Walter French, who lives near Saratoga Lake, may make more money by cultivating thirty pound woolly pigs under the existing tariff than in raising them for hams and country sausages. Should the pig become a rival of the sheep, it would seem that the McKinley bill has unwittingly fostered a new and hitherto unknown industry, which, if developed intelligently and systematically, may in time not only prove one of enormous value to our domestic textile interests, but vastly increase the number of those patriots who have all along believed that the much-abused American hog would in the end achieve greatness—if he were only given the chance.—*New York Manufacturers' Review.*

Farmer Walter French is respectfully and urgently invited to come to Canada and try his experiment on some pigs here that can be pointed out. They are not, however, of the porcine variety, but are two-legged animals that masquerade in human shape, and are endowed with the human voice. The application of soap and water would be a decidedly new sensation to them; but if it should result in producing a growth upon them of a fleece resembling the wool on a sheep, they would possess an intrinsic and commercial value they could never otherwise obtain.

In 1882 a tariff commission in the United States reported that high duties on imported goods "encourage the investment of capital in manufacturing enterprises by rash and unskilled speculators, to be followed by disaster to the adventurers and their employees, and by a plethora of commodities which deranges the operations of skilled and prudent manufacturers." And because a tariff commission in the United States made this astounding discovery in economics, the enemies of our N.P. contend that we should abandon protection and espouse free trade. While the conclusion this commission arrived at may be in a measure correct, it does not prove that protection is a failure—it only proves that the world has not yet outgrown the era of unwise men. In some diseases arsenic is a good and valuable article, but too much of it is not good; and the judicious use of the drug should not be abandoned because unwise men take overdoses of it. So too with protection. Wise men make good use of it to advance their own and the general interest; but when unwise men attempt to use it, and are unsuccessful, the enemies of it denounce it and say it should be abandoned. Why should it be abandoned because "rash and unskilled speculators" invest their capital in protected manufacturing industries, to be followed by disaster—not because of protection, but because of rashness and unskilfulness? Of course these rash and unskilful investments, producing a plethora of commodities, derange the operations of prudent and skilled manufacturers; but are these latter to be utterly and irretrievably ruined by the destruction of protection therefor? A maniac sets fire to a

house and his own life and the lives of many innocent ones are destroyed; but this is no reason why the use of fire should be abandoned. When human intelligence becomes so perfect that rash and unskilful men will not invest in business for which they are not adapted, and in which they will certainly fail, there will be no overproduction to derange the operations of skilled and prudent manufacturers. But until that millennium comes we will have to bear the ills that will not be modified nor palliated by destroying protection.

THERE have been numerous reports in the papers that an immense nickel steel plant at a cost of millions of dollars is to be erected at Sudbury, Canada, where nickel mines have been discovered and extensively opened by an American syndicate. Judge Stevenson Burke, of Cleveland, who is one of the principal members of the syndicate, was here yesterday, and in answer to an inquiry about the report, said: "Nickel steel is a compound of which only from one to three per cent. is nickel. It will be used principally in England and France for years to come, or in steel manufacturing in Pennsylvania. There is no coal at or near Sudbury. If there was, and we should erect nickel steel works, the product would have to be sent to the United States or across the water for sale. We would be obliged at present to bring all the material for making ninety-seven to ninety-nine per cent. of the product from a long distance to get it to market. We can send the one to three per cent. of nickel material to where steel is now made without any great difficulty or expense. Do you think under those circumstances you could put millions into a nickel steel plant at Sudbury? Not much. Only a crazy man would."—*New York Press.*

We are not advised as to whether Judge Burke and Mr. S. J. Ritchie are associated together and are members of the American syndicate alluded to; and we have heard nothing of the erection of an immense nickel steel plant to be erected at Sudbury. We know, however, that Mr. Ritchie proposes to invest money in a steel plant in Canada, possibly in Toronto, if the Dominion and Ontario Governments will assist him in certain schemes he has laid before them, an account of which has been given in these pages. With such a plant at Toronto, coke could be laid down here cheaper than it is now supplied to the steel works at Chicago, and the iron ore or pig iron very much cheaper. Of course the products of such works, some of them, would have to be sent to the United States, but that country would be glad to receive them, and admit them duty free also. Under the benign influences of a Canadian export duty upon nickel ore and matte perhaps Judge Burke and Mr. Ritchie and their American syndicate would be but too glad to put millions into a nickel steel plant in Toronto. They would be crazy if they did not do it. Impose the duty.

MR. JOSEPH MICKLEBOROUGH is a member of the well-known firm of J. & W. Mickleborough, dry goods merchants, St. Thomas, Ont., who has been selected by the *Globe* as an authority on trade matters, presumably because he has lately become connected with manufacturing through being a stockholder and president of an iron pipe company lately established in that city. Mr. M. went to St. Thomas in its palmy days, when railroad construction and the advantages of being the headquarters of the Canada Southern R.R. gave the town a great impetus, and local trade was benefited by the large

expenditure of money which resulted. When the chief offices were removed from there and the flow of money from various channels was lessened, it was felt that something was needed to make up the deficiency, and Mr. Mickleborough and a few other public-spirited citizens formed a Board of Trade, who proceeded to devise schemes to attain that end. The difficulty of establishing new industries led them to offer bonuses to manufacturers in order to induce them to remove to St. Thomas, and sums ranging from \$20,000 downward were held out as baits to some of the more prosperous industries in other towns. For several years this policy was pursued, and it is well known that the spirit of unrest and dissatisfaction which prevailed for a long time in the western part of the Province was the result of the policy which St. Thomas was foremost in promoting and most prominent in carrying out. That they succeeded in bribing but few was not their fault, but the example which they set was followed by disastrous consequences in not a few cases. Apart from Mr. Mickleborough's views on manufacturing as a benefit to local trade, it is well known that he has never given encouragement as a merchant to Canadian manufacturers, and in proof of this it would be difficult to find a yard of Canadian-made carpet in his large show-room. He is of the class who think everything in his line should be imported, and that "nothing good can come out of Nazareth," that is, Canada, if it is a manufactured product. The *Globe* has chosen Mr. Mickleborough as one of the chief apostles of unrestricted reciprocity and an exponent of the true principles of political economy after the Grit pattern, but it will be difficult to convince the people that so prominent an advocate as he is of the pernicious system of bribing by bonuses is a very safe guide to follow.

A MAN exceedingly callow in political economy, but who is said to be a practical farmer, "goes back to first principles," as he puts it, in a letter in the *Napanee Express*, in order to show that Protection is morally wrong. He tells us that whatever a people want that they cannot produce they must go elsewhere for, and that this is the foundation fact and principle of international trade; and that this trade being thus necessary to man's highest welfare, whatever impedes or arrests it is prejudicial to man's interests, and is, therefore, not only unsound in political economy, but morally wrong. He enquires, "What gives Governments the right to prevent the citizen from selling the products of his labor to the best advantage in whatever market he chooses to go to? And what gives Government the right to prevent the citizen from buying what he needs to the best advantage in whatsoever market he chooses to go to?" He asserts that "it is no use to say the people themselves give this right, for they do not." This gentleman is named Allen Pringle, and he is described as being a "formidable opponent" of the protectionists in his neck of woods. Mr. Pringle's theory is beautiful—on paper—and no doubt the evolution of it out of the deep recesses of his brain cost him many hours of the deepest research and study. He forgets, however, that we are not now inhabitants of the Garden of Eden, and that the circumstances that now surround us are different from what they might have been if the apple and serpent episode had not occurred. In fact the greater the progress the world makes in knowledge and refinement the farther it is receded from the good old days of Adam and Eve when

the fulfilment of Mr. Pringle's dream might have been possible, but not since, unless it be among such people as Mr. Stanley lectures about and describes as the inhabitants of Darkest Africa. Mr. Pringle is quite wrong when he says the people do not give the Government the authority to formulate a fiscal policy. There may be some like Mr. Pringle who think they know it all and who think that their weak negative voices should have more weight than the thunders of the multitude who demand protection; but sooner or later this conceit becomes knocked out of them, and they come to know better. As long as organized Governments exist—as long as civilization exists, as Mr. Pringle will discover if he studies history, just so long will the interests of the minority be made to give way for the greater interests of the majority. Every member of society must sacrifice something of his individuality or of his individual and lesser interests to the general and greater good of the whole community. This is not the case everywhere in the world, we admit; and the place where this is not the case is the place where Mr. Pringle and theorists like him should live. Mr. Stanley describes such a place in the interior of Africa where there is no Government to prevent the citizen from buying and selling to the best advantage in whatever market he may choose to go to. Absolute Free Trade prevails there, but it does not prevail in civilized communities.

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. Subscription \$1.

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 call at the premises of JAS. R. BUCHANAN, Lowell, Michigan.

WEST TORONTO JUNCTION'S ENTERPRISES—The ten large factories which have located at West Toronto Junction during the past three years are all doing large trades. The "Barnum Iron and Wire Works," the "Toronto Rolling Mills and Forging Company," and others about to locate will swell the paying industries of the town and augment its population. A large number of fine residences and business blocks have added to its appearance and to its facilities for supplying the people's wants. A perfect fire alarm system, (the "Gaynor") and an efficient system of water-works, both now in operation, with sewers, electric lights, and improved streets now contemplated, will add to the protection and the comfort of the people and their houses. Free sites, free water, and exemption from taxes are inducements offered to first-class manufacturers, and it is now acknowledged by all that Toronto's western suburb, with its great continental railway connections, is destined to be among the most prosperous cities of Canada. Dr. Carleton is Chairman of the Factory Committee.

MR. J. W. POWELL, the Director, has sent us his ninth annual report of the United States Geological Survey. The most interesting feature of this report is the lengthy and detailed account of what is known as "the Charleston earthquake," which occurred August 31, 1886, compiled by Captain C. E. Dutton, of the U. S. Ordnance Corps. This report is divided into a preface and eight chapters, with many photographic and other illustrations, discussing and explaining one of the most remarkable phenomena of the century.

The Youth's Companion is an illustrated weekly paper, published in Boston, Mass., which, when placed in the hands of young people, becomes a delightful guide to knowledge. It is morally clean and wholesome, and of such an established reputation for being just what it claims to be, that parents need not hesitate to place it within the reach of their children. The price of it—\$1.75 per year—brings it within the means of all, and even the young people themselves, boys and girls, have the ability to earn the money by their own industry and intelligence with which to pay for it.

MR. WALTER R. NURSEY, the author, has sent us a descriptive history of Escanaba, Mich., "The Iron Port of the World," in which is set forth an account of the growth of that remarkable town, and a description of its industries, resources, commercial position, climate and topography. It is replete with information for the capitalist, manufacturer, artisan, agriculturist, tourist and sportsman. The book contains maps and illustrations. The facts and figures it gives regarding the iron ore trade of Escanaba are remarkable, indicating, as they do, the extent and value of that great industry.

"A MIDSUMMER NIGHT'S DREAM" is the title of an attractively gotten up circular recently issued by Merchant & Co., the well-known Philadelphia importers and dealers in metals, and the proprietors of the famous brand of Merchant's Guaranteed Roofing Plates. The circular is styled a "Somnambulist's Ramble with Merchant & Co. and their Friends the Brownies," and it well bears out its title. It is furnished with a score or more of cleverly executed illustrations, representing the "Brownies" up to all sorts of tricks and capers, and from an artistic point of view is an excellent bit of work in the advertising line.

The Illustrated American is without doubt one of the very handsomest products of the American press. Now in the second year of its publication it has, because of its excellence, become fully and permanently established in the good graces not only of Americans but of Canadians also. It is a weekly epitome of the history of nations, and of passing events of general interest and importance; and the pleasant manner in which these are discussed force their consideration upon the minds of all readers. The pictorial illustrations are all of the most meritorious character, and are produced in the highest style of the art.

No lover of a fine plant or garden can afford to be without a copy of *Vick's Floral Guide* for 1891. It is an elegant book of over 100 pages, 8½x10½ inches, with beautiful colored illustrations of Sunrise, Amaranthus, Hydrangea and Potatoes. Instructions for planting, cultivating, etc. Full list of everything that can be desired in the way of vegetable and flower seeds, plants, bulbs, etc. Also full particulars regarding the cash prizes of \$1,000 and \$200. The novelties have been tested and found worthy of cultivation. It costs nothing, because the ten cents you send for it can be deducted from the first order forwarded. We advise our friends to secure a copy of James Vick, Seedman, Rochester, N. Y.

The Dominion Illustrated, in its enlarged and improved form, should be a weekly visitor in all Canadian homes. The enterprising publishers, who seek to greatly increase the circulation of their journal, and also to induce their subscribers to cultivate the habit of careful reading, have hit upon a scheme that will be of mutual benefit. They will, during the next six months, distribute over \$3,000 in prizes for answers to questions, the material for which will be found in current numbers of the journal itself. The first prize is \$750 in gold. There are 100 prizes in all. On receipt of twelve cents in stamps, the publishers (The Sabiston Litho. & Pub. Co., Montreal), will send a sample copy and all particulars. The reputation of *The Dominion Illustrated* is an ample guarantee that faith will be kept with subscribers.

The Canadian Dry Goods Review is one of the most recent applicants for popular favor that has bowed from its Toronto rostrum to a Canadian audience. It came into being with the new year, and it promises to make visits to its friends as regularly as the months roll by. Being the organ of the Canadian dry goods, hats, caps and furs, millinery and clothing trades, as we are told, we will be

disappointed if in the future the air is not redolent of the music that should emanate from such an instrument, telling all that there is to be told regarding the trades in question. But there can be no suspicion of doubt regarding the tone and quality of this organ, nor of the sweetness of its music, when it is remembered that Johnny McLean, as president of the company, turns the crank, or blows the bellows, and Charlie Morrison, as editor, presides at the finger board and produces the fluent notes. The trade should be proud of the *Review*.

Good Housekeeping has a much more substantial value in the home than the sensational publications which appeal for the same support, and rely on a style of puffery that would put a patent medicine man to blush; and it has the honest and substantial flavor that belongs to the best things of New England. Merit in its contributors out-weighs the magic of a name, and this good old standard serves to give the best results. That it should prefer the practical knowledge of expert New England housekeepers to the superficial observations of professional writers, who have not acquired information at first sources, ought not to be wondered at by intelligent people—but the other fashion is so prevalent that it is well to lay emphasis on the care with which the editor of *Good Housekeeping* fulfills his office. It is also fair to call attention to the taste in typography and the mechanical niceties which distinguish this magazine, as well as the other publications of Clark W. Bryan & Co.—the *Paper World*, *Progressive Springfield* and the *Library Bulletin*. This house is doing its full share to make the stamp of this city a guarantee of good quality.—*Springfield Republican*.

THE February *Wide Awake* opens with a ballad of heroism. When the brave Crusader ancestor of the present British Minister at Washington, Sir Julian Pauncefote, was captured by the Saracens, they demanded his wife's right hand in ransom, and the brave lady so saved her lord. Sir Julian Pauncefote supplied the author, Mary Bradley, with authentic facts. Mr. E. H. Garrett's pictures for the ballad are finely dramatic. Other poems are by Elizabeth W. Bellamy and Mary E. Wilkins. The interesting illustrated articles of the number include Lieut. Fremont's timely account of "Life at Frontier Forts," and as a sort of military pendant a curious account of "A Fish Army." The short stories are unusually clever, from the ingenious plot of "Aunt Dolly's Two Robbers," to the laughter and tears of "A Hungry Boy." Mrs. Burton Harrison's story, "Diamonds and Toads," is concluded. Kirk Munroe's railroading serial develops a startling situation, and the doings of Margaret Sidney's "Peppers" are delightful as ever. Mr. Bridgman's funny pictorial skit, "Through the Dark Continent," drops the curtain to the laughter of the audience. *Wide Awake* is \$2.40 a year. D. Lothrop Company, Boston, Mass.

MUSIC-LOVING girls, and those with vocal aspirations, will find a rich treat in *The Ladies' Home Journal* for February, in which Emma C. Thursby, Campanini, Madame Albani, Clara Louise Kellogg, Maud Powell and Albert Parsons, have crisp and practical articles on voice-training, piano-playing and music and vocalics generally. There is many a help and hint in the words of these great artists, who make room further on in the number for Sister Rose Gertrude's first printed article on "My Work Among the Lepers," in which the young heroine of the leper settlement of Molokai tells the true reasons why she renounced her work among the stricken lepers. Edward Bellamy follows his original nationalistic ideas in an article on "Woman in the Year 2000," which will certainly be entertaining to thousands of women, since the picture is a bright and sparkling one. George W. Cable, the Creole novelist, begins a series of papers on "How to Teach the Bible"; Mrs. A. D. T. Whitney's new novel, "A Golden Gossip," progresses delightfully; Mrs. P. T. Barnum, with portrait, is sketched by a skilful hand; "Josiah Allen's Wife" and Rose Terry Cooke each has a story. Dr. Talmage is especially good in his department, as are also Mrs. Margaret Bottome in her "King's Daughters" page, and Mrs. Mallon in her graceful fashion pages. The number is, in short, a splendid one from a helpful as well as an entertaining standpoint. There is, withal, no better magazine published for women. Published at ten cents per copy, or one dollar a year, at 433-435 Arch Street, Philadelphia, Pa.

THE vigorous, intellectual and practical character of *The Popular Science Monthly* is well shown in the contents of the February issue. In the opening article, entitled "From Babel to Comparative Philology," Dr. Andrew D. White tells how science has compelled the gradual abandonment of the belief that Hebrew was the first language of man. Mr. William F. Durfee's "Iron-smelting by Modern Methods" follows. This is the third of the great illustrated series of industrial papers now running in the *Monthly*, and

shows a striking contrast between the procedure of 1840 and that of to-day. "Greeting by Gesture" is the subject of an interesting article by Colonel Garrick Mallery, describing modes of salutation practiced in all parts of the world. Prof. Huxley's paper on "The Aryan Question and Prehistoric Man," giving the testimony of geology and archæology as to the origin of the Caucasian race, is concluded in this number. There is a translation of an article by M. Georges Demeny on "Precision in Physical Training," telling how the best results can be obtained from muscular exercise. An illustrated account of recent "Progress in Agricultural Science" is contributed by Dr. Manly Miles. It describes experiments throwing light upon the nutrition of plants. The important part that snow plays in the economy of nature is set forth under the title, "The Storage of Cold," by Mr. Charles Morris. Education is represented by an account of "Co-education in Swiss Universities," by Flora Bridges. What "Shetland Ponies" are and what they are not can be learned from a breezy description here given. Mr. Warren G. Benton tells the nature of a religion—"Chinese Buddhism"—which numbers many millions of adherents more than Christianity has. The subject of the portrait and biographical sketch is Jean-Charles Houzeau, a Belgian geologist, who was living in Texas and took part in the lively times at the outbreak of our civil war. The editor discusses "Religious Teaching in the Public Schools, and makes a strong plea for "International Copyright," on the ground of common honesty. In the departments of Miscellany and Notes many scientific topics of interest are briefly touched upon. New York: D. Appleton & Company. Fifty cents a number: \$5 a year.

Our *Monthly* is a journal devoted to the interests of life and accident insurance, and is published by the Manufacturers' Life and Accident Insurance Companies, Toronto. Mr. George Moffat is the editor. Mr. Moffat is a poet as well as editor, or at least one might well imagine his fine eye in wild frenzy rolling as he drives his gleesome pencil over his virgin manuscript pages when he wrote the following introductory in his "Vol. 1, No. 1," for January:—"This journal will be devoted to the interests of life and accident insurance, and to the plans of life and accident insurance operated by the Manufacturers' Life and Accident Insurance Companies of Toronto. Life and accident insurance has benefited and is benefiting the human race in a measure second only to the Plan of Redemption itself. Poets have sung and Clio's page has glowed with burning words descriptive of what man has done for men. The Macedonian Sandys, Attilas and Napoleon Bonapartes of history have by all honest men been consigned to the proper circle of Inferno, together with the exploits achieved by them; while the bays which deck the brows of the Elizabeth Frys, John Howards and Shaftesburys of philanthropy are fadeless and immortal. But these in turn sink into insignificance when compared with what life and accident assurance has done and is capable of doing for men and women. Its field of operations is bounded only by the limit of human requirements; and when want and sorrow and the cry of the human shall cease, and peace and happiness shall prevail on earth, life and accident assurance will be no longer necessary. In the meantime the sapling has become an oak and a talking oak withal, which like Tennyson's tells its listener something to his advantage. It tells to helpless women and little children that it can protect them when their natural protectors are taken from them by the hand of death. It tells them that death to them may bring sorrow but not poverty—it may bring tears but it cannot bring temptation, the woes of want, and the walk that costs a meal; it tells them that they will be relieved from swallowing the plums (or picking the bones, which is it?) of sweet charity, whose warmest temperature is one hundred degrees below zero and whose scrapings have poisoned dogs. The giant beneath whose shadow God's troubled bairns can cuddle doon—can fly to for shelter in the hour of need—the widow's stay and the orphan's shield—the regis of the family, is the Manufacturers' Life and Accident Insurance Companies of Toronto."

THE SEWING MACHINE INDUSTRY.

Editor the CANADIAN MANUFACTURER:

SIR,—If the interview published in the *Toronto Globe* really expresses the opinions now held by Mr. Charles Raymond of Guelph, he certainly must feel that he has made a grand mistake in casting in his lot in such a country as Canada. It was some thirty years ago or more when Mr. Raymond came to Canada a poor watchmaker and commenced to earn his living, and he must then have thought Canada a much more desirable place to live in than the United States.

His opinions of Canadian workmen seem now to be very poor; but even in those days they were able to assist him in making fair copies of American machines and to place them on the market labeled "Raymond." Doubtless Mr. Raymond will be willing to acknowledge that he and they had much to contend with, that there were mistakes and miscalculations and defeats which were annoying to the manufacturer and the purchaser, but nevertheless, poor as the people of Canada were, they recognized the merit of sewing machines as labor-savers, and paid high prices for what would now be considered a very poor article. Mr. Raymond and other Americans who started in this line of business in Canada without any previous experience, were protected by the high royalties paid to the inventors across the lines, and very calmly appropriated to themselves the ideas and devices which appeared from time to time. They made money very rapidly, and built large factories and fine residences and waxed exceedingly rich. They found also that the people of other lands wanted this labor-saving machine, and Canadian workmen furnished them for the uttermost parts of the earth. But now it seems that outside of the ordinary work done in the Raymond factory nothing comes up to his measure of excellence, and everything else of Canadian production is "poor stuff."

The trouble with Mr. Raymond and many others is that in some inscrutable way they consider themselves superior beings. Canadian workmen, Canadian machinery, Canadian tools, are always inferior, simply because they are Canadian, unless they have been got up under the superintendence of an imported foreigner. We have too much of that sort of talk for the good of this country. A new industry is no sooner started in Canada than these people begin to cry it down, and by inuendo and misrepresentation do all they can to discourage it. Doubtless Mr. Raymond can recall the time when Raymond machines met with this sort of discouragement, but he must acknowledge that the Canadian people bore with defects and accorded him a generous support. It sounds just a little unpatriotic at this late day for him to be decrying Canadian industries, while here there are so many Canadian workmen who have invested their little all in business and are striving to earn an honest living. They will not thank Mr. Raymond for this public denunciation of Canadian work.

I protest against Mr. Raymond's statements as illogical and misleading. He says, "Release my materials from paying duty and let me into the United States market, and I will be willing to take chances with them in Canada." The duties on his raw materials he claims amounts to about \$1 per machine. He has a protection of \$3 per machine and twenty per cent. ad valorem, or over \$7 on each machine imported into the country. He is, as he avers, the only manufacturer of sewing machines in the Province of Ontario. How does it come that in the face of a \$6 tariff in his favor over 2,000 sewing machines were imported in 1888 from the United States into the Province of Ontario, and about 3,000 more into the rest of the Dominion? The whole cost of manufacture of a sewing machine is not more than \$14 or thereabout, and a \$6 margin ought to be a good one. What are we to conclude from this? Is it that even Mr. Raymond is open to the charge of putting "poor stuff" on the market, and if he cannot compete here at home, with the heavy duty in his favor, what would be his chances in Chicago or elsewhere in the United States, to say nothing of the possible claims of rival companies for infringement of patents?

And why should Mr. Raymond wish to have unrestricted reciprocity with the United States alone? He may still hanker after some sort of connection with the land of his birth, but if free trade is good with our neighbors it ought not to be very bad with our relatives across the sea. Mr. Raymond ought to hanker after an opportunity to compete with the Glasgow Singer in the Scotch market as well. At all events, native-born Canadians are not likely to yield their home market to foreigners and leave their own relatives out in the cold.

It is noticeable that Mr. Raymond seeks to explain his position on this question, and protests against the construction put upon his remarks by the *Globe*. The gist of the whole business is that he shows unmistakably that he went in for the N. P. for the benefit of Mr. Raymond, and the interests of no other Canadian manufacturers are to be considered. The conditions of trade have changed in the sewing machine business through the lapsing of patents, and whether Mr. Raymond can keep up with the procession in the future will depend very much upon his own skill as an inventor. He need have little fear about the ability of Canadian workmen; but if our markets are to be thrown open, let it be to the whole world, and then we suppose things will come down to hard pan in the sewing machine business and everything else.

Yours, etc.,

A. HEMMER.

HAMILTON, 17th Jan., 1891.

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. Subscription \$1.

MR. J. H. McLEAN will establish a sash, door and blind factory at Revelstoke, B.C.

MR. W. P. SHAW, of Winnipeg, has gone into the manufacture of flax fibre at Plum Coulee, Man.

THE Novelty Manufacturing Company, of Newmarket, Ont., has been organized with a capital stock of \$12,000.

THE Walkerville Malleable Iron Company, Walkerville, Ont., have been making important additions to their works.

MR. J. WHITE, Montreal, has recently built and placed a new steam boiler in the tug *H. F. Bronson*, at Kingston, Ont.

MESSRS. GOLDIE & McCULLOCH, Galt, Ont., will merge their business into a limited joint stock Company with a capital stock of \$700,000.

THE Canadian Locomotive and Engine Company, Kingston, Ont., are building ten new locomotives for the Grand Trunk Railway Company.

MR. M. B. BURY, Quebec, Que., has what is said to be the only factory in Canada for spinning asbestos into threads for the manufacture of fabrics.

THE Milton Pressed Brick and Sewer Pipe Company has been organized at Milton, Ont., with a capital stock of \$50,000 for the manufacture of brick, sewer pipe, etc.

THE Vancouver Candy Company, Vancouver, B.C., will enlarge their factory, introduce additional machinery, and include the manufacture of nearly all kinds of candies.

THE Lilly Meadow Flour Mills, near London, Ont., were destroyed by fire on January 16th together with 15,000 bushels of grain and 500 barrels of flour. The mill cost \$17,000.

THE British Columbia Pottery and Terra Cotta Company, Victoria, B.C., has been awarded a \$45,000 contract for the sewer pipe to be used in the sewerage system of that city.

THE Collinsby Rafting and Towing Company are building a powerful steel steam tug at Kingston, Ont., the plates, machinery, etc., for which are being imported from England.

SHEPHERD'S Carpet Works, in Paris, Ont., are getting up a fine lot of patterns in carpets. They have first-class workmen and the whole is under the supervision of a superintendent who is an expert in that line of business.

MESSRS. COPP BROS. manufacturers of stoves, etc., Hamilton, Ont., have organized themselves into a joint stock company with a capital stock of \$100,000, and will continue their business under the name of The Copp Brothers' Company.

MR. W. CLARKE has begun the manufacture of pearl buttons in Berlin, Ont. Mr. Clarke has had a large experience in this particular line in Great Britain. The works are large and will be fitted up with the newest and most improved machinery.

THE Calvin Company, Kingston, Ont., are building a barge for the lake trade of the following dimensions: length, 200 feet; breadth of beam, 37 feet, depth of hold, 16 feet. She will have capacity to carry 1,600 tons of freight through the Welland Canal.

THE Adams Bros., from Paisley, Scotland, have commenced the manufacture of woven coverlets in Paris, Ont. They are now supplying the trade through some of the leading wholesale houses in Toronto, and experts say that the spreads are far in advance of anything hitherto manufactured in Canada, both in design and workmanship. The dyeing is done by a Hamilton works and is first-class.

THE British Columbia Sugar Refinery, Vancouver, B. C., turned out its first sugar on January 19th and has begun the manufacture of all grades of refined sugar with a daily output of 150 barrels. This concern is equipped with the most approved machinery with capacity to produce 250 barrels per day.

MR. IRA B. FOLGER, Kingston, Ont., has recently launched a fine new steamer for the St. Lawrence River excursion business. The engines and boilers of the steamers *Islander*, *Maryland* and *St. Lawrence* belonging to the Thousand Island Steamship Company, are receiving large repairs and alterations.

THE ship *Titan*, of Boston, recently cleared from Vancouver, B.C., loaded with 782,000 feet of rough lumber from the Hastings saw mill at that place bound for Wilmington, Del. The lumber is for the U.S. Navy. This shows the superior value of British Columbia lumber for use in ship building.

MR. JOHN B. ALDEN, 393 Pearl Street, New York, who is issuing new books from his press every week, has prepared a ninety-six page catalogue which he is sending free to those interested. We are informed that the books published by Mr. Alden are not sold by dealers, because the prices of them are too low.

THE Maritime Chemical Pulp Company's mill will have its capacity doubled when it resumes in a few weeks. Two new digesters, in which the pulp is boiled in a chemical solution, are going in, and the old ones are being relined with cement, lead lining having been discarded after a fair trial.—Chatham, N. B., *World*.

BORING for oil was recently commenced on Lalonde's farm at Comber, near Windsor, Ont., and on January 15th a strong flow of natural gas was struck at a depth of only 140 feet. The flow is said to be nearly equal to that of the great gusher at Kingsville, Ont. The well belongs to Messrs. Samuel Rogers & Sons, Toronto.

WE learn that the recently organized Kerr Vegetable Evaporating Company have received an order from the British admiralty office for the supply of nearly 10,000 lbs. of evaporated vegetables for the British navy. The company are at present receiving large orders from the United States and Upper Canada.—Kentville N. S. *Star*.

THE Kerr Engine Company have received instructions to make very extensive alterations in the machinery of the steamer *Empire*, of the North West Transportation Company, of Sarnia. The *Empire* is the sister ship of the *Monarch* of that line, whose engines were built by Kerr Brothers, in Walkerville, last year.—Walkerville, Ont., *Mercury*.

THE Edison General Electric Company, in Canada, of which Mr. M. D. Barr is manager, have taken a large four story brick building on Bay Street, between King and Wellington streets, Toronto, where they will have their general offices. An enlargement of the company's business will include the carrying of a large stock in their new quarters of all kinds of electric goods and appliances—dynamos, motors, wires, fixtures, etc.

Our *Little Ones*, that delightful monthly magazine, published specially to please the babies, has its February number brimful of just such literature as children enjoy. Every story is illustrated, and every page has a picture; and what more could be desired in the nursery? It is only \$1.50 per year. Send for it to the Russell Publishing Company, Boston, Mass.

THE Royal Bridge and Iron Company, Montreal, are applying for incorporation for the purpose of carrying on the business of constructing and designing and manufacturing iron, steel and other bridges, and of all structural iron and steel, and to deal in all kinds of structural iron, steel and other metals. Capital stock \$30,000. The applicants are F. F. Miller, R. Fitzgibbon, W. M. Reid, A. W. Smith and J. R. Gardiner, all of Montreal.

THE old boilers are being removed from the steamer *Corsican* owned by the Richelieu Navigation Company, to be replaced by new boilers now being built at Toronto, by the John Doty Engine Company. The Kingston Foundry Company have the contract for furnishing these boilers and compounding the engines of the steamers *Corsican* and *Spartan*. Both these boats are large sidewheel steamers and \$25,000 will be spent on them this winter.

THE Brooks Manufacturing Company, manufacturers of electric light carbons, Peterborough, Ont., have contracted to supply the Royal Electric Company, of Montreal, with their entire requirement for carbons. The contract will average \$1,000 worth a month. Already one car load of 200,000 carbons has been shipped. These carbons are the equal in every respect of the best American goods. The output of the Brooks Company is over 10,000 carbons per day.

THE mill of the Columbia Flouring Mill Company, at Enderby, B. C., is 100 x 40 feet square and five stories high. It contains a full

roller process of the most modern equipment, and was erected three years ago by the well-known firm of Goldie & McCullough, Galt, Ont., who also supplied the fine 75 h. p. Wheelock engine, by which the machinery is run. The boiler and engine are located a little distance from the mill in a brick building. The storage capacity inside the mill is 600 tons, and that of the warehouse adjacent 900 tons.

THE Jenckes Machine Company, Sherbrooke, Que., who had applied to the corporation of that town for a loan of \$50,000 and exemption from taxes, have withdrawn their request. The city council offered a bonus of \$10,000 and exemption for twenty years to the company, which was refused as too small, but the committee named for that purpose on visiting the works, and becoming acquainted with the scale of the contemplated improvements, expressed a determination to recommend to the council the passing of a by-law granting the aid previously asked.

THE Barnum Wire and Iron Company have completed and set up the magnificent iron store front of the Nasmith stores in King Street West, Toronto, and is said to be the handsomest store front in the city of Toronto. They have also completed the splendid iron grille elevator enclosure for the Board of Trade, Toronto. They have also received an order for another elevator enclosure and an elevator iron grille car for Rice, Lewis & Company, of Toronto. Also an order for a fine iron grille elevator car for the Dominion Bank of Toronto. These iron cars are now taking the place of the old wooden ones, and are much stronger and have a better appearance.—Walkerville, Ont., *Mercury*.

MESSERS. COWAN & Co., of Galt, Ont., furnished the engine, boilers, shafting, etc., for the grain elevator recently erected at Mount Forest, Ont., by Messrs. Martin Bros. This is said to be one of the largest and best equipped inland elevators in Ontario. The capacity of it is about 100,000 bushels. It was built under the supervision of Mr. Isidore E. Eby, of Galt, a workman who knows his business from foundation to capstone. The engine and boiler-house is of brick, entirely detached from the elevator. This elevator business of Messrs. Martin & Bro. is supplementary to that of their oatmeal mill which they have operated most successfully for years. The elevator was put in operation only in December, but we learn that the business done with it has required it to be already filled and emptied twice.

THE British Columbia Iron Works Company, Vancouver, B. C., are applying for incorporation for the purpose of manufacturing all kinds of saw mill, mining and marine machinery, agricultural implements, pumps, hoisting machinery, derricks, cranes, dredges, excavators, boilers, machine tools, safes and vaults, and generally to carry on a blacksmithing foundry, boiler-making and machine business in all its branches; to act as agents for the sale of machinery and machine supplies of all kinds; to build and repair ships and steamers and vessels of all kinds; to purchase, sell or lease any lands or premises, wharves or docks for the carrying out of the above purposes. The capital stock of the company is to be \$50,000. John G. W. Macfarlane, J. W. Campion, J. Whetham and Wm. Hickey are the incorporators.

THE large wooden building at the Chaudiere, Hull, Que., known as the Barnes box and shook factory, was destroyed by fire January 29th; loss about \$20,000. The building was erected by Mr. John O'Connor in 1872, for a car factory. Mr. John Rochester purchased it in 1874, and for about eight years ran it as a saw mill. Then he leased it to Mr. Barnes, who used it as a box factory up to about a year and a half ago, when he removed the bulk of his plant to Rouse's Point. There remained in the building, however, a first-class engine and boiler and some few pieces of machinery. Not long ago it was fitted up with automatic fire extinguishers the same as they have now in the principal Chaudiere mills; but, of course, when winter set in the water had been shut off. The main building was 140 feet long by 40 feet wide, and besides the engine-room had two annexes each 40x20 feet.

THE National Electric Tramway and Lighting Company, of Victoria, B. C., who now operate a considerable mileage of electric tramways in that city extending as far as Esquimalt, are making important additions to their plant, increasing the number of their cars and running them at less frequent intervals, and will also engage in municipal, commercial and domestic lighting. Most of the cars have been manufactured by Messrs. Patterson & Corbin, St. Catharines, Ont. The additional power to be used by this company will be furnished by a 300 horse power Corliss engine now being built by the Albion Iron Works Company, Victoria. The Thompson-Houston system is being used, and hereafter the arma-

tures and other portions of the electric apparatus will be manufactured in Victoria.

THE Penberthy Injector Company, Detroit, Mich., has achieved a world-wide reputation, as the manufacturers of the Penberthy automatic injector. This injector was not known prior to 1887, and although but four years have elapsed, they report sales to date between 39,000 and 40,000. It is used on the great lakes almost exclusively, also on traction and portable engines, and in all places where there is much jar or motion, its automatic qualities being such that the feed cannot be broken so but that it will start automatically. This feature, together with its simplicity of construction, the parts being removable without disconnecting the injector, and its entire reliability as a boiler feeder has achieved for it an enviable reputation. This firm also manufactures a jet pump that is, for its particular use, equal to their injector; also a very decided novelty in the shape of a spring covered oil cup. A detailed description of articles manufactured by them is condensed in one of the handsomest of pamphlets ever shown to the steam using trade, and will be sent to any one interested, on application.—*Safety Valve*.

It is considerable work to maintain a supply of fire pails, and more work to keep them filled with water and in place; it is still more trouble to keep their contents from freezing and evaporating. The evaporation question is easily handled by placing a coating of oil on top of the water; fifteen or twenty drops are sufficient for a coating of oil which will prevent evaporation. It is unnecessary to place half an inch of oil in each pail, as this would only be an additional cause of trouble in case of fire. For winter use the pails may be filled with brine or a solution of muriate of ammonium. Both muriate of ammonium and chloride of sodium (common salt) will prevent water from freezing when held in solution therein. Each will do, but a mixture of both is much better. The trouble occasioned by hoops breaking off can be obviated by procuring special pails made of galvanized iron, which, having no hoops to break off, are always in shape. When troubled by employees removing pails from their hooks for the purpose of washing up or carrying water, it is well to have the iron pails made with a conical bottom, so that they will not stand up except in a hole made in the shelf which is to support them, and consequently are useless when placed upon the floor or bench.

THE Chignecto ship railway works are now well advanced, the roadway proper being about finished, about ten per cent. of two large cuttings being all that remains undone. The track is laid from the southern dock for thirteen miles, or to within four miles of the northern dock. The track, as previously noted, is an ordinary double track, laid with 110 lb. rails, 18 ft between centres, with 9 ft. x 7 x 12 in. ties, laid 2 ft. centers, the two ties at each joint being 27 ft. long, to connect the two tracks, and thus preserve exact gauge for the cradle. The locomotives run on one track only of standard gauge, two locomotives being used for one cradle. There are no turn-outs, but traverse tables at each end; frogless switches riding the rails being used for switching the locomotives. Rock ballast in inches under the ties, is used throughout. Work on the lifting docks is in a very forward state, so as to make it fairly certain that the work will all be completed in 1891. The pumping machinery at the southern end is in place, and the building for it completed; at the other end the same work is about half completed, and is likely to be completed by July 1st. At least 1,500 men will be employed on the works next summer.—*Engineering News*.

MESSERS. GOLDIE & McCULLOCH, Galt, Ont., will apply to the Dominion Government to be incorporated for the purpose of carrying on of all, or any business of, manufacturers of steam engines, boilers, water wheels, heaters, pumps and all necessary parts and appliances for the working of the same; flouring, saw mill, shingle stave and barrel machinery, steel and iron shafting by turning, drawing or grinding, woolen and cotton mill machinery, wood-working machinery, wood and iron machinery of every sort and description; mill-wrighting in all its departments, patternmaking fire and burglar-proof safes and vault doors of all kinds; steel and iron chests of all kinds, and also any materials, machinery, apparatus, appliances, articles and things required for, or in connection with, or incidental to or which shall be capable of being used for the purposes of any of the said businesses or dealings; to carry on the business of founders, mechanical engineers, machinists and electroplaters, and whatever may be incidental or collateral to the same; to have the customary powers as regards real estate and other property; to have power to apply for purchase or otherwise acquire or dispose of any invention, letters patent, etc. The chief place of business of the company is to be at Galt, Ontario. The proposed amount of the capital stock is \$700,000. The names of the applicants are: John Goldie, Hugh McCulloch, sr., Hugh McCulloch, jr.,

Galt; Robert McCulloch, Toronto, Ont., and David Goldie, Ayr, Ont. The first or provisional directors of the company are to be John Goldie, Hugh McCulloch, sr., and Hugh McCulloch, jr.

The steel treasury vault that has just been completed by Messrs. J. & J. Taylor, of this city, for the Bank of Hamilton's new premises in the Canada Life Building, is a marvel of ingenuity, and is so thoroughly burglar-proof as to be quite capable of resisting the most expert burglars in the world, even if armed with Fletcher's patent blow-pipe. The masonry of this vault is made very strong and is interlaced with heavy iron bars put close together. This vault is fitted with an extra heavy lining of composite iron and steel plates which is both hammer-proof, drill-proof and blow-pipe-proof. Within this vault are two large burglar-proof safes, strong enough, judging from all appearances, to persuade a well-posted burglar to let them severely alone if they were outside instead of inside of a strong steel-lined vault. The entrance door to the vault is a marvel of beautifully finished mechanism of revolving lock-bolts, twenty-two in number, securing the massive door on all sides against drilling or sawing off or bursting by wedges or jimmies. It is further secured by two combination locks, requiring the services of two or more of the officials to open it. These locks are each capable of 41,000,000 changes of combination. All the spindles operating the locks and bolt work are of J. & J. Taylor's patent, enlarged centre and made of chilled steel, thus rendering them not only drill-proof, but secure against driving in or pulling out, as they are built into the doors. The interior treasury safes are also furnished with all the improvements that the craft of the safe maker and the genius of the banker can suggest. Canada should be proud of such a manufactory and our jewelers may rest satisfied that when such a firm guarantees a safe or vault burglar-proof, it is just as they represent it and they need have no fear whatever about burglars ever getting a chance to make away with their contents.—*The Trader*.

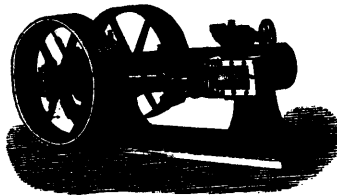
In a cotton or woolen mill there is no branch so important as card clothing. It is essential that this should be the best in the strictest sense of the term. Perfect card clothing can only be turned out by the employment of perfect raw material, the most modern machinery and skilled operatives to operate the same. This is the line of procedure that guides the J. C. McLaren Belting Company, when manufacturing these goods. The foundation, usually leather, should be of the best, this firm importing only the first quality of oak stock for this purpose. Then the wire must be even in quality and tempered. This they procure from one of the leading wire mills in England. The machine, since the introduction of the tempered steel wire, can only turn off a perfect set card with the highest order of intelligence behind them, and in this way has the firm won the confidence of manufacturers. The leather belting portion, as the name of the firm implies, is the most important, owing to the large field to operate in. Established in 1856, they are truly the fathers in this business. Prior to that date there existed a firm in this line operating in Montreal, but they were short lived. The J. C. McLaren Belting Company have experienced competition from over seven firms, that drew out after a short existence with less capital than they started with. Recognizing the well-known principle, that only from the best of raw material can the best of manufactured articles be produced, they have been importing English oak tanned leather for their belting, and are making a class of goods that are received with great favor. In order to come in touch with the consumers, some two years back they opened a branch establishment at Toronto, and are thus able to ship promptly all orders for the west and north of Ontario.—*Journal of Fabrics*.

The works of the Dominion Cartridge Company are situated at Brownsburg, Que., forty miles from Montreal, and comprise, besides the factory for making cartridges and shot shells, a large and complete machine shop, detonator factory and fulminate works. In addition to these are numerous magazines, storehouses, carpenter shops and houses for the hands, of which a large number are employed. Of special interest is the testing house, in which are electrical appliances, which show to a foot the velocity per second with which a bullet travels, targets for testing the accuracy of pistol cartridges, and an array of rifles and pistols that makes the place look like an arsenal. The factory is lit throughout by electric light, heated by steam and most thoroughly equipped in every way. The machinery employed in the manufacture of cartridges is intricate, but at the same time very powerful, and works with a surprising accuracy, picking up and feeding the shells as if possessing human intelligence. A cartridge is made thus: The brass or copper is rolled into sheets and then cut into strips, from which shallow cups are punched. These are drawn out by powerful presses to the proper size for the body of the shell, the larger sizes requiring many drawings and annealings. The tubes are gauged to

one-thousandth of an inch, that they may fit the chamber of the rifle correctly. The tubes are then taken to the headers, where ponderous machinery at one blow forces the solid end into the required shape. The heads and ends are then trimmed to the proper size, the cartridges, which are bottlenecked, being first reduced by presses somewhat similar to the drawing presses. They next pass through the priming machinery, where the centre-fire shells are punched and capped, and fulminate of mercury spun into the rim of the rim-fire, the fulminate being kept wet to diminish the danger of explosion. Meanwhile the bullets have been made, the lead being melted in immense kettles, and run into moulds, which cast rough slugs. These are swaged by machinery so accurate that bullets weighing 500 grains will not vary a single grain. The bullets are then cannellured and greased, and taken to the loading room, where they are seated into the shells charged with powder, which after crimping and tumbling are ready for packing. When the great variety of cartridges is considered and the exactness essential, the complexity and accuracy of the manufacture can be appreciated.

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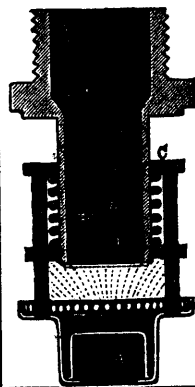
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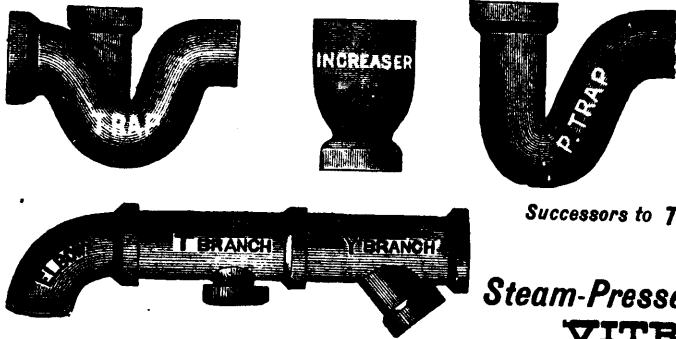
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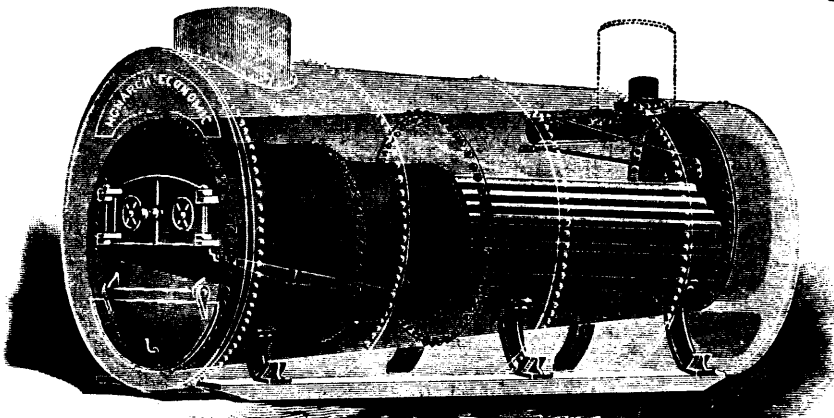
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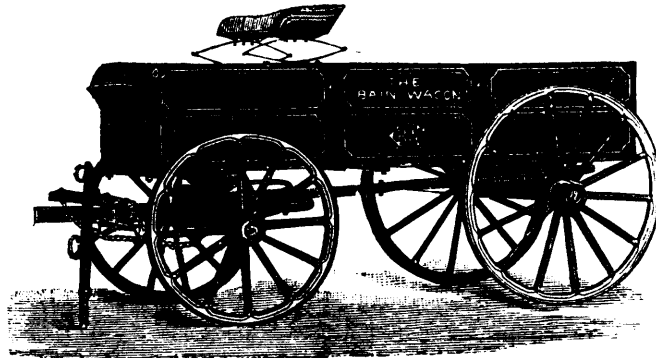
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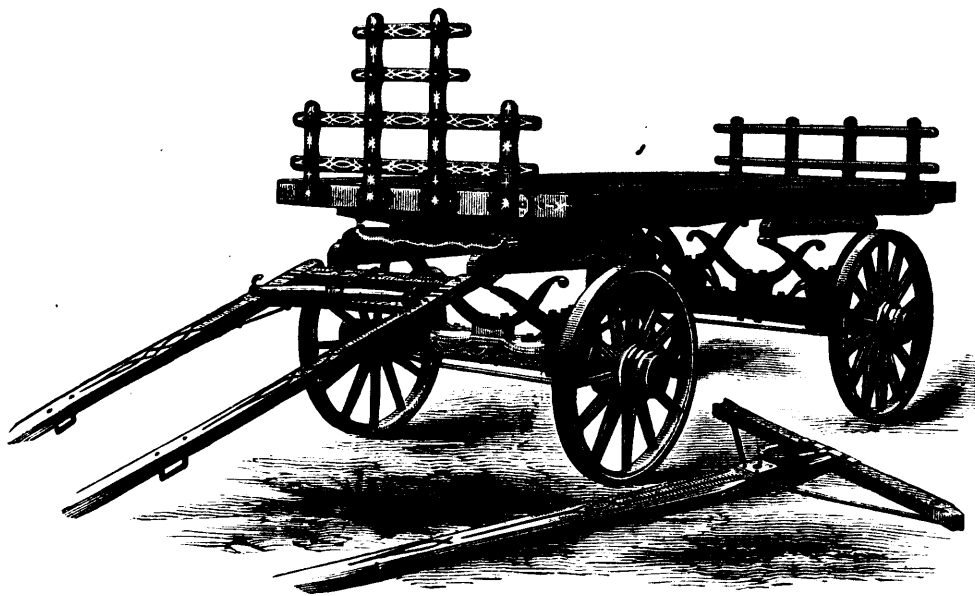
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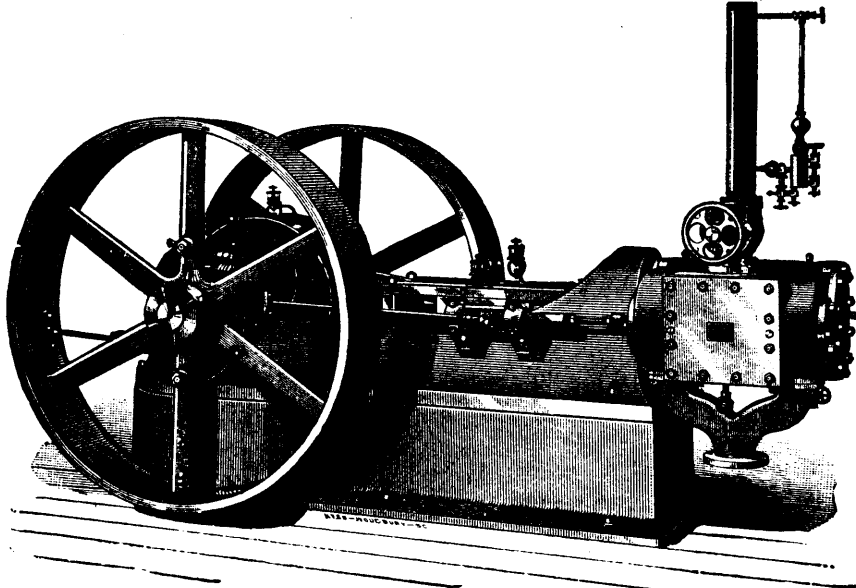
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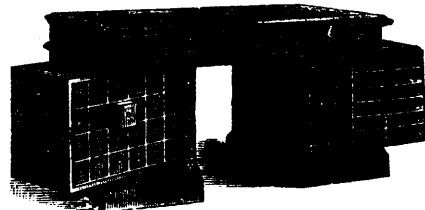
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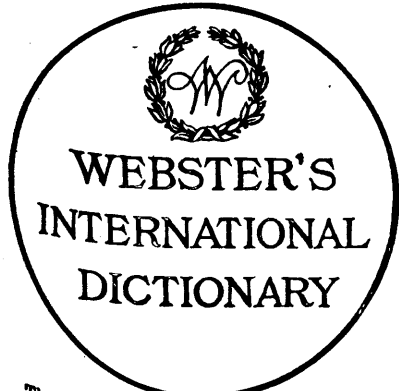
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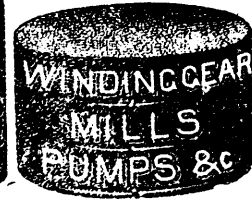
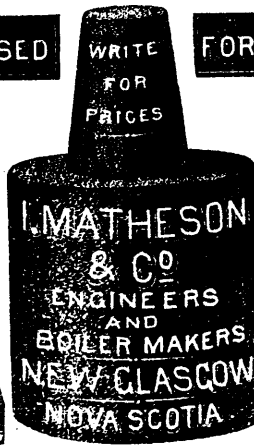
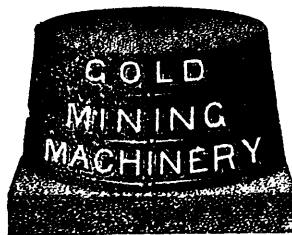
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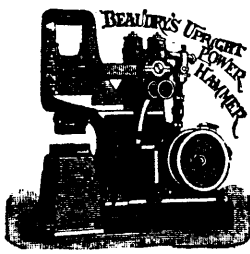
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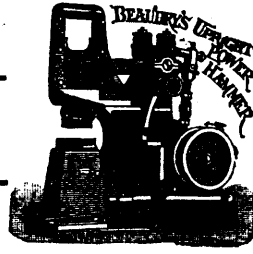
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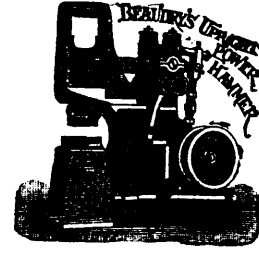
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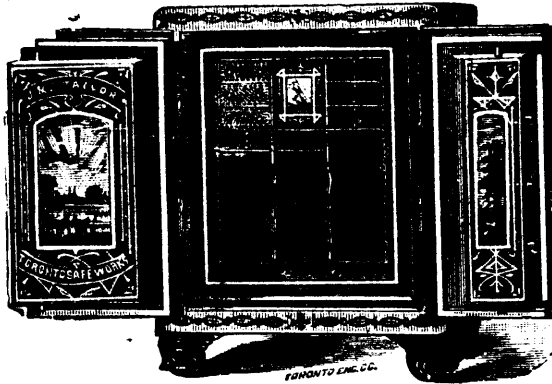


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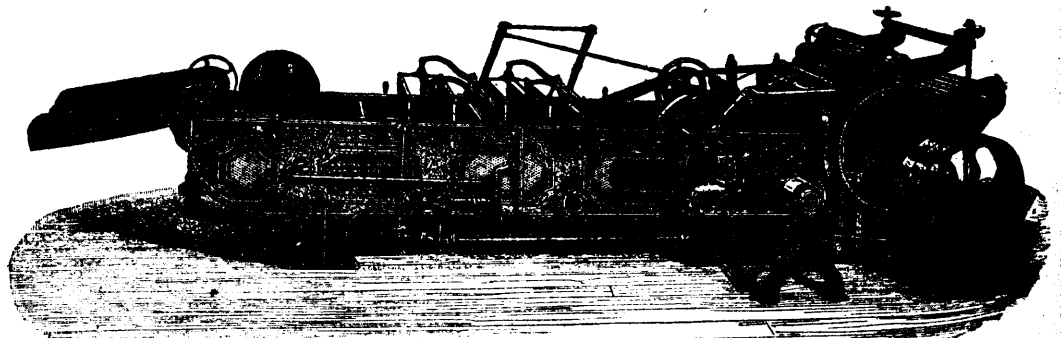
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Builders of Wool Washers,

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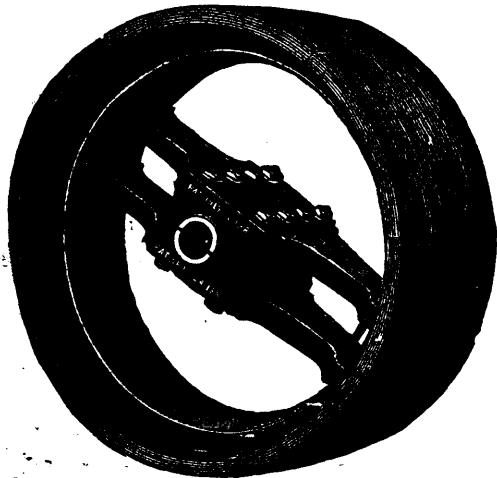
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The above represents our New Hydraulic Wool Washer, superior to Rake Machine. Send for Illustrated Catalogue.

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WITH PATENT BUSHING SYSTEM

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

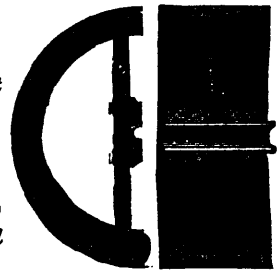
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The hole in every pulley can be readily bushed to fit any sized shaft. Bushings furnished with each pulley. Guaranteed to give from

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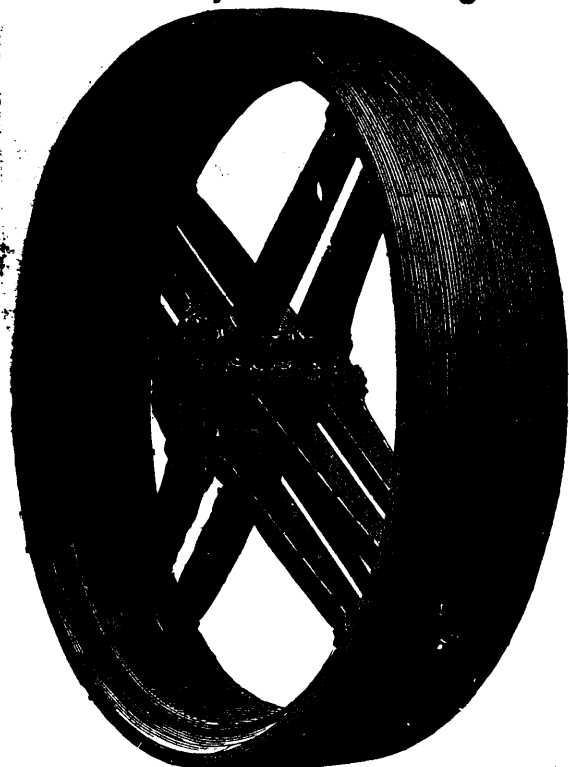
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We will furnish a Pulley for any service for 30 days free of charge, if it does not meet the warranty. Prices as low as any other good Pulley. Send for Catalogue, Price List & Guarantee

70 PER CENT. LIGHTER THAN CAST IRON

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



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Although skeptical at first, to the many advantages claimed for this pulley when introduced, we, after repeated tests, driving our elevators and seeing them at work in the various factories throughout the country, and in many unfavorable situations such as soap factories and tanneries, have come to the conclusion that, apart from their lightness and cheapness, their advantages over the old iron pulley are many. Its ease to take on or off shafting, its non-liability to injure the shaft by keys or set screws, while holding just as well, the cheapness by which it can be changed from one size to another, and in giving 30 to 60 per cent. more power with the same belt, with less tension. With all these advantages we have not only concluded to recommend it unsolicited, but intend to keep them in stock and supply them to our regular customers and the public in general.

TO THE DODGE WOOD SPLIT PULLEY CO., ADELAIDE STREET, City.

Toronto, Dec. 6th, 1886.

DEAR SIR,—In reply to your favor asking how we like your split pulley, we would say: We are very much pleased with them. We are using about seventy of them, from 25 in. face by 48 in. diam. down to 9 in. diam., every one of which is giving satisfaction. We don't have to take down our shafting to change a pulley or put on a new one. We are not troubled with set-screws breaking or slipping; for these and various other reasons we prefer your pulley to any other we know of.

Yours truly,

FIRSTBROOK BROS.

Toronto Packing Case Factory and Planing Mill.

TO THE DODGE WOOD SPLIT PULLEY CO., 81 ADELAIDE STREET W., City.

Toronto, Dec. 6th, 1886.

GENTLE,—The Wood Split Pulleys we purchased from you have given perfect satisfaction. We have much pleasure in stating that we have found them to be everything you claim for them, and much superior to the old kind.

We remain, yours truly,

MCDONALD KEMP & CO.

TO DODGE WOOD SPLIT PULLEY CO., TORONTO.

Dec. 10th 1886.

GENTLEMEN,—We have given the Wood Split Pulley a thorough test in our works, and we are well pleased with their working, and can recommend them to our customers and others requiring pulleys.

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JOHN DOTY ENGINE CO.

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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 cost from \$25 to \$125 per year. Any manufacturer who will take the pains to investigate the unnecessary weight by Heavy Iron Pulleys, too tight belts, etc., will be surprised to find the 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.

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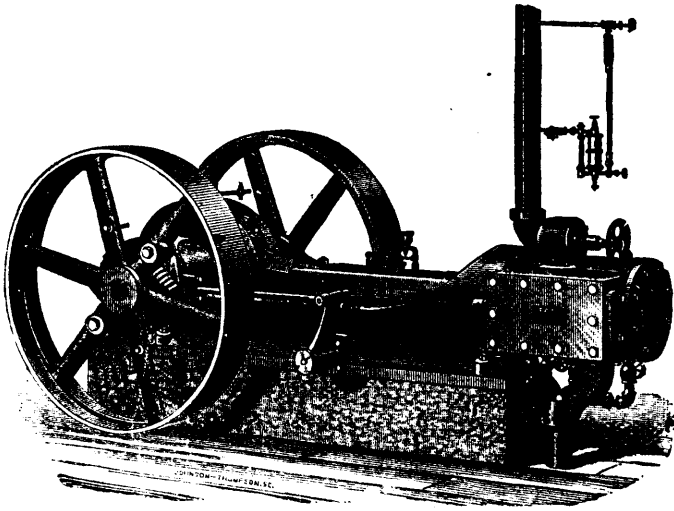
THE DODGE WOOD SPLIT PULLEY CO., TORONTO.

FACTORY.—
West Toronto Junction.

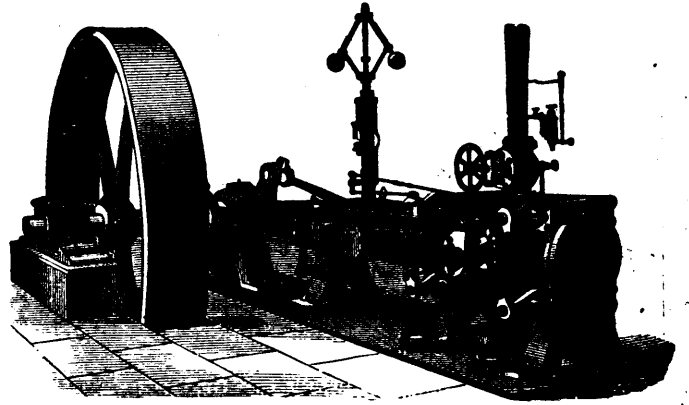
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83 King Street West, City.

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

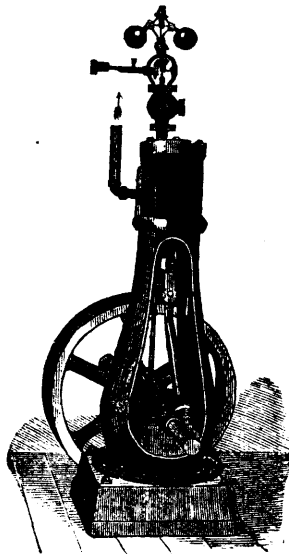
We beg you will note this fact when comparing our List with others which are for SOLID RIM, and NOT for Pulleys in HALVES.



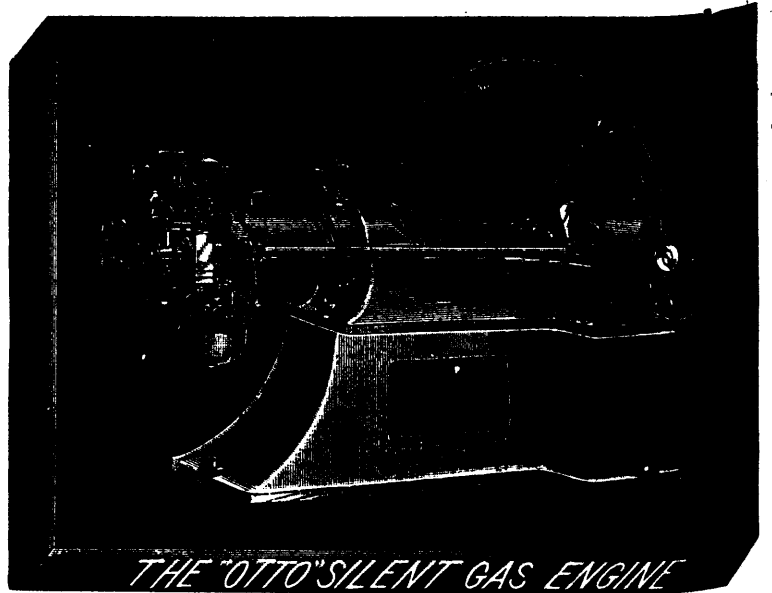
Armington & Sims Electric Light Engines.



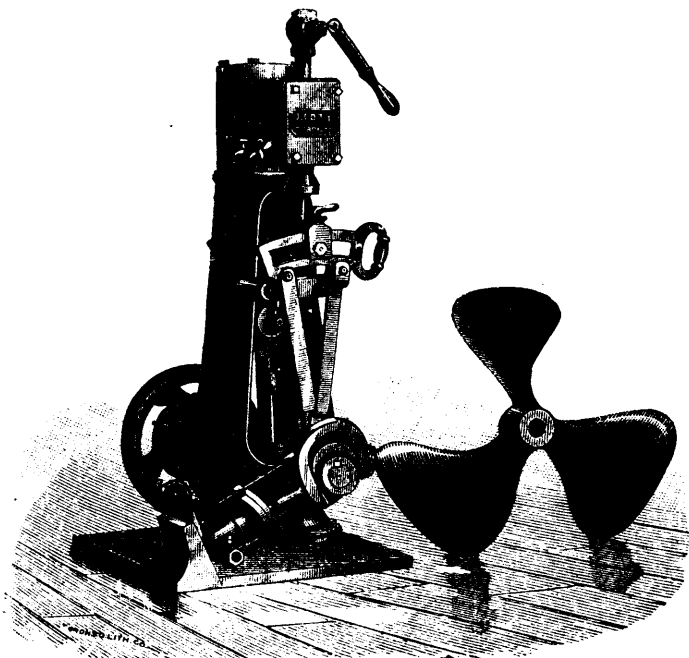
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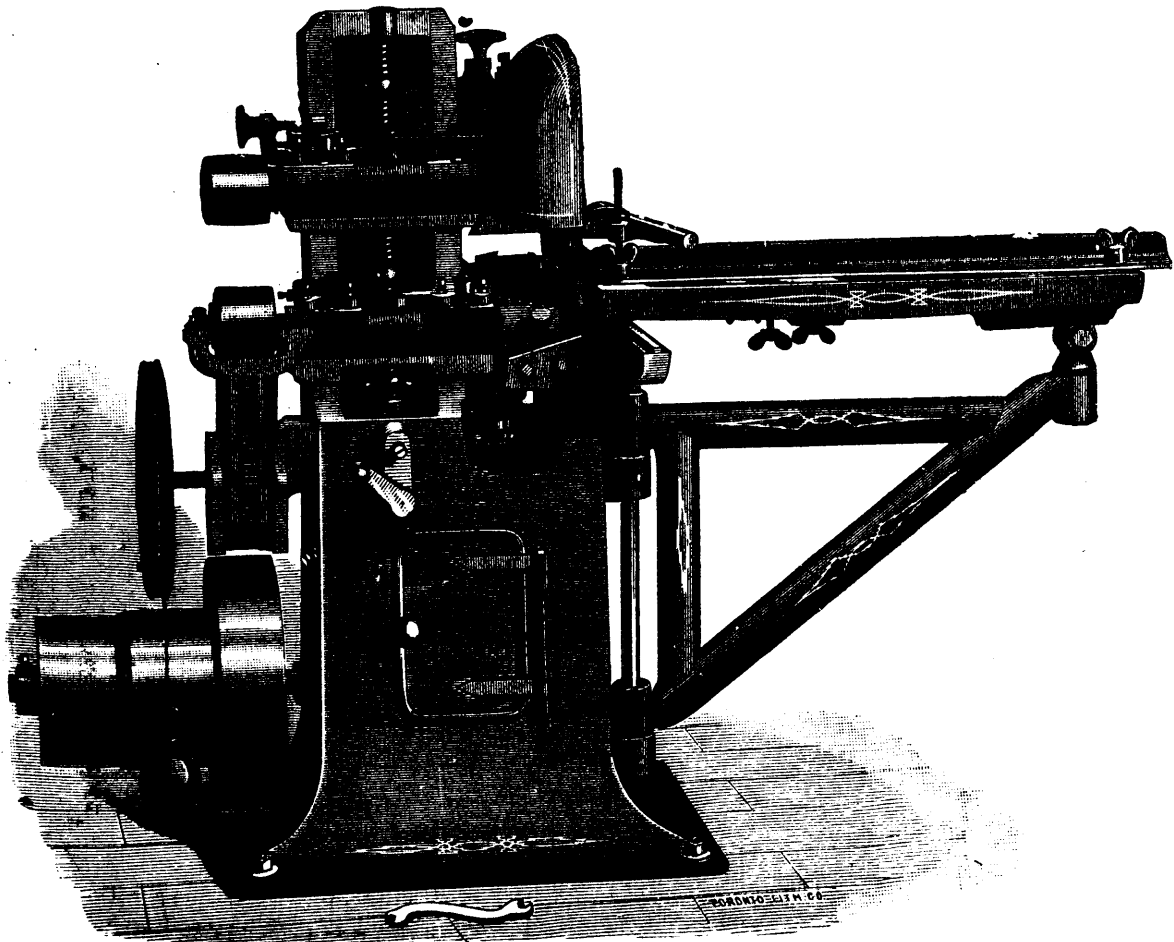
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This Machine is supplied with single or double Copes, as ordered, and for furniture work it is without Copes, and with an adjustable cut-off saw.

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Ceritas and Slide Valve Engines, Rollers, and Wood-Working Machinery, all kinds New Patterns, Highly Finished.

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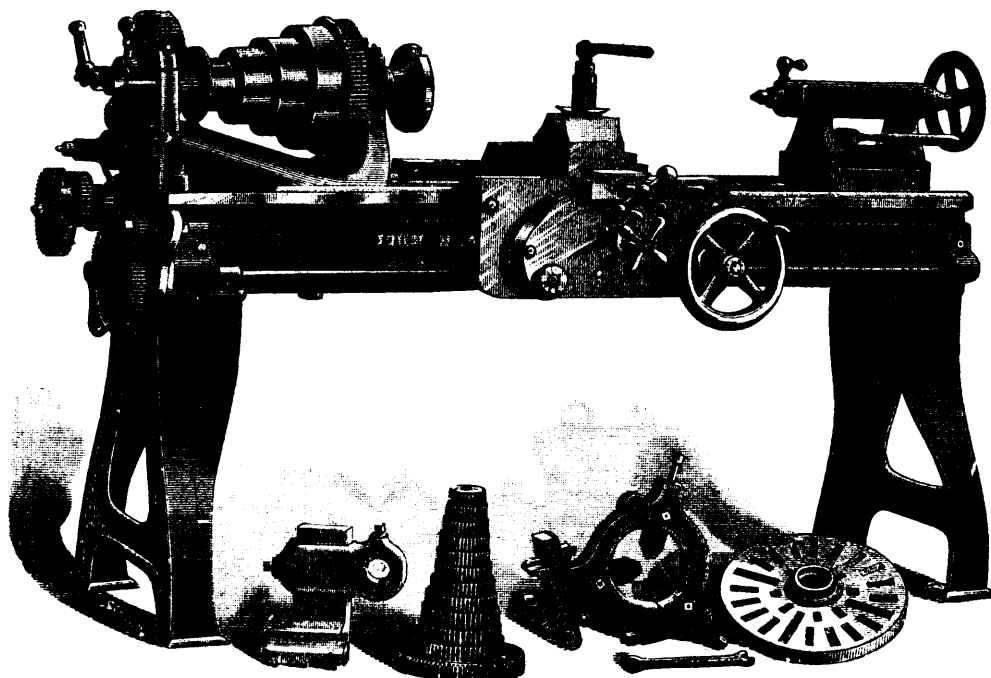
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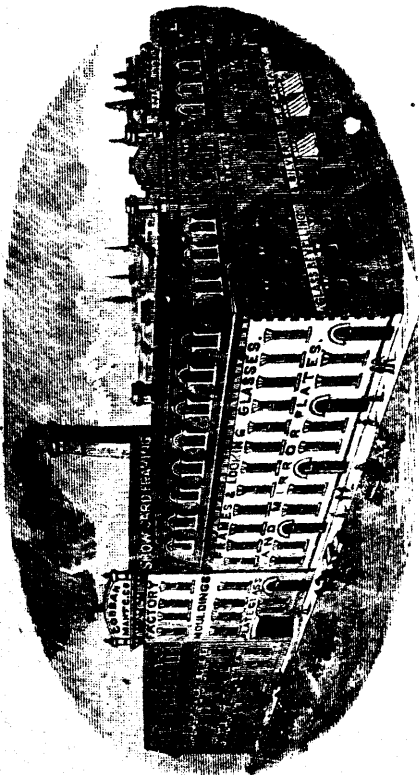
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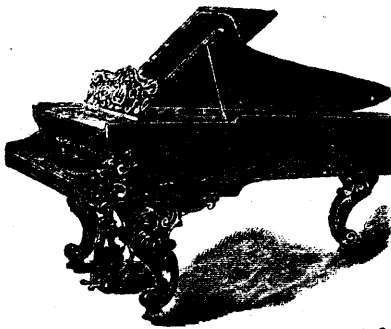


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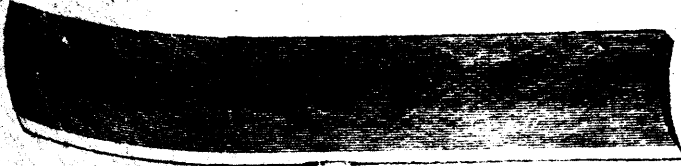
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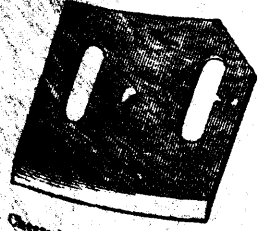
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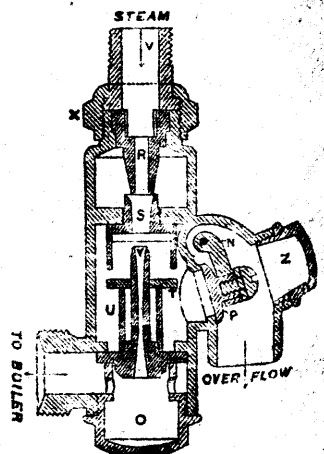
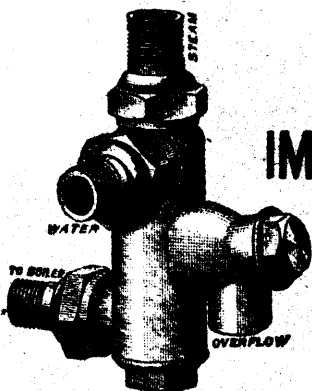
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