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Vol. 18. TORONTO, MARCH 7, 1890. No. 5.

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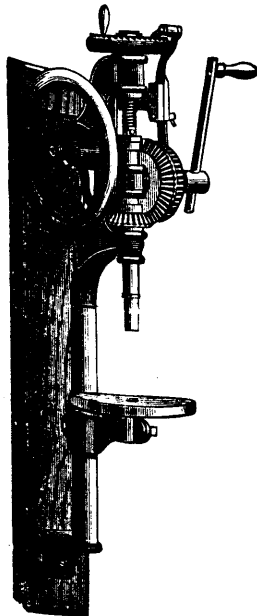
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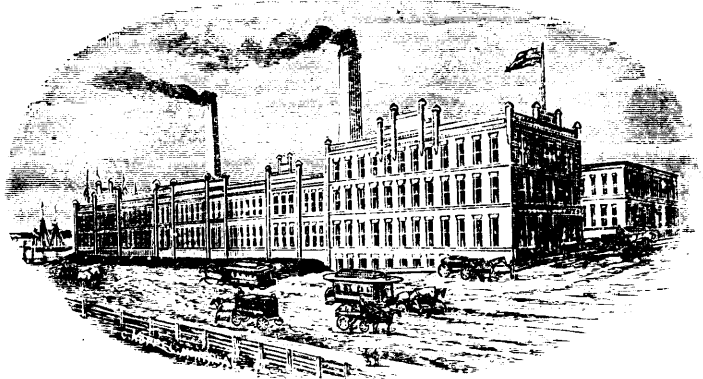
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### CANADIAN SHIPBUILDING.

At a meeting of the Marine Section of the Toronto Board of Trade held last week, the question of admission duty free into Canada of materials used in shipbuilding was discussed at considerable length, and the outcome of the deliberations was the adoption of the following resolution:—

"Whereas,—Vessels wholly constructed in Great Britain are admitted to the coasting trade of Canada without Canadian registration and without the payment of any Customs duties: and, whereas, iron and steel plates and angle bars and knees for use in shipbuilding are now admitted free of duty, but duty is charged upon all other iron or steel which enters into the construction of their boilers, engines or marine equipments; Resolved,—That it is the opinion of this Section that all metal or steel material entering into the construction or equipment of ships constructed in Canada shall be admitted free—these to include boiler plates, boiler tubes and corrugated furnaces, and also special equipments for steam steering, steam windlasses or steam winches, provided the latter are not manufactured in Canada."

It was decided that the resolution be presented to the Council of the Board of Trade for their consideration and action, and it was so presented and considered; and an approving resolution was passed by the Council, and a committee appointed to present the matter to the Dominion Government and to urge action in the direction indicated.

In our opinion this action is not in the right direction to encourage shipbuilding in Canada. If it is desirable at all to encourage the industry—and there can be no question on that point—it can only be accomplished by and through a close observance of our National Policy—an observance of it in its entirety and not to the prejudice or disadvantage of any other Canadian industry. It is certain that without Protection no establishments can or will be erected in Canada for the production of all the materials entering into the construction or

equipment of ships; and the removal of tariff duties from such materials as are now imported for such purposes can but act as an effectual bar to the creation of such industries. The resolution advances the fact that vessels wholly constructed in Great Britain are admitted to our coasting trade without Canadian registration and without the payment of any Customs dues; and this fact is urged as a reason why the Dominion Government should grant the prayer of the petitioners.

In regard to its merchant marine Canada is even in a worse plight than the United States. Of course the trade between Canada and all other countries is to be encouraged regardless of the nationality of the vessels engaged in it; and it is that this fact applies to the United States is the reason why eighty per cent. or more of the foreign trade of that country is carried in foreign ships. This could be remedied to some extent by some of the methods adopted by some countries, such as in remitting a part of the duties levied upon merchandise imported in vessels sailing under their flags; in paying a bonus for every thousand miles traversed by their vessels employed in foreign trade; by discriminating in favor of their vessels as regards port charges and tonnage dues, etc. Such discriminating favors would go a long way in encouraging the building of ships in Canada to be employed in Canadian foreign commerce; and against such discriminations neither Great Britain nor any foreign nation could have any good cause of complaint. Such discriminations are now practiced by many nations, including Great Britain, and have been for many years.

Another encouragement to the shipbuilding industry in Canada would be to restrict or, better still, to prevent the employment of any than Canadian vessels in the inter-Provincial trade of Canada, as is the case in the United States, where none but vessels sailing under the American flag are permitted to carry either freight or passengers between ports in that country. The effect of this there has been to build up a fleet of vessels that far exceeds in tonnage that of the American fleet employed in foreign trade; and the strength, speed, safety, beauty and elegance of many of these American floating palaces place them far ahead of any similar vessels belonging to any other nation. No foreign vessel whatever can ever carry a passenger or a pound of freight between any two ports in the United States; for such trade is reserved exclusively for American vessels. No British vessel can do any trading between New York and Boston; no Canadian vessel can do any trading between Buffalo and Detroit; no foreign flag is ever seen floating over any merchant vessel on the Mississippi River above New Orleans, or on any Western river. The United States excludes from that trade all but American vessels; and, as a consequence, immense shipbuilding yards have been established at all the principal lake and river ports, in which many millions of dollars have been invested; in which thousands of American workmen find constant and remunerative employment, and from which are sent forth to engage in this exclusively American commerce some of the finest specimens of naval architecture that ever floated on water.

Why not encourage and build up such an industry in Canada? It can be done and it ought to be done. Canadian tariff discrimination against the erection of Canadian works for the manufacture of such materials as enter into the construction

and equipment of vessels is not the way to encourage the shipbuilding industry of Canada; and if the Dominion Government listen to the prayer of the Marine Section of the Toronto Board of Trade, and of the Council of that Board, and make the tariff to conform thereto, the shipbuilding industry in Canada can never hope to be in any better condition than it is now. It will not cost as much to build and equip vessels on the Clyde and deliver them in Canadian waters as it will to import the different parts entering into the construction of such vessels from the Clyde and put them together at Toronto or Owen Sound. We have evidences of this before our eyes continually. On any summer day a visit to Toronto wharves will disclose the fact that British-built and equipped steamers monopolize our excursion business, and it is impossible for a person coming to Toronto by water to arrive here from any American port except on a British-built steamer. There is no good reason why all our excursion and traffic steamers should not be of Canadian build; but this can never be until the Dominion Government legislate some discrimination in favor of Canadian-built vessels as against the vessels built any where else in the world.

CANADA'S MARITIME INTERESTS.

We commend to the Marine Section of the Toronto Board of Trade; to the Council of the Toronto Board of Trade; to the Canadian Marine Association, and to all who are interested in the prosperity of the Canadian Shipbuilding industry, a few facts regarding the shipbuilding industry of the United States.

The following table shows the tonnage of the sailing and steam vessels of the merchant marine of the United States employed in the foreign and in the coast-wise trade of that country not including those employed in the fisheries, for each decade of the past hundred years; also the total tonnage of all such vessels built in that country in the years named:—

Date.	Foreign Trade.	Coastwise Trade.	Total Tonnage.
	Tons.	Tons.	Tons.
1789	123,893	68,607	201,562
1799	657,142	246,640	939,408
1809	906,855	405,163	1,350,282
1819	581,230	571,058	1,260,752
1829	592,859	508,858	1,260,798
1839	702,400	1,153,552	2,096,479
1849	1,258,756	1,770,376	3,334,016
1859	2,321,674	2,488,929	5,145,038
1869	1,496,220	2,515,515	4,144,641
1879	1,451,505	2,598,183	4,169,601
1888	919,302	3,172,120	4,191,916

A hundred years ago the total tonnage of American vessels was not five per cent. of what it now is; and those vessels engaged in the coastwise trade numbered barely one-third of the entire tonnage. In the two decades ending with 1809 the tonnage engaged in foreign trade increased from 123,893 tons to 906,855 tons, and that in the coastwise trade increased in almost the same proportion. But during the next decade, owing probably to the war with Great Britain, there was a large falling off in the foreign trade tonnage—from 906,855 tons to 581,230 tons—while there was a very substantial increase—165,895 tons—in that employed in the coastwise trade. The ocean-going vessels were liable to capture, and many of them

were captured by the enemy, while the interior traffic was comparatively safe. Between 1819 and 1839 the increase of the foreign trade tonnage was small—but 121,170 tons—while the increase in the coastwise trade was more than doubled, the increase being from 571,058 tons in 1819 to 1,153,552 in 1839, the tonnage employed in this trade being nearly three fifths of all the tonnage of the country. In 1849 the United States was approaching its zenith as regards its merchant marine, its total tonnage aggregating 3,334,016 tons, the coastwise portion of it holding its previous proportion; and the acme was reached in 1859 when its foreign trade was done in 2,321,674 tons of shipping and its coastwise in 2,488,929 tons, the tonnage of its entire fleets amounting to 5,145,038 tons. This was just previous to the breaking out of the war of the Rebellion; and the close of the next decade—in 1869—showed a falling off of more than a million tons of shipping, nearly all of which was from that employed in foreign trade, while that employed in coastwise trade actually increased. Ten years later—in 1879—the tonnage employed in foreign trade showed a further slight decrease, while that in the coastwise trade showed a slight increase. Since 1879 a most remarkable decrease has developed in the tonnage of American vessels engaged in foreign trade, in 1888, the last year of which we have statistics, the tonnage engaged in that trade being only 919,302 tons. The entire tonnage of the country in this latter year was 4,191,916 tons—substantially the same as in 1869 shortly after the close of the war; but the tonnage engaged in the coastwise trade increased in that time from 2,515,515 tons to 3,172,120 tons.

It is not difficult to comprehend the lesson taught in these facts. The shipping of all nations participates in the foreign trade of the United States; but no foreign vessels participate in its coastwise trade. At the breaking out of the Rebellion American ships carried probably seventy-five per cent. of the foreign trade of that country, and these ships were unexcelled, perhaps unequalled—by the ships of any other nation. The fortunes of war destroyed this magnificent commerce, and when the United States had recuperated from its exhaustion caused by the war, it was found that the class and style of vessels that had previously shed so much lustre on American skill had become obsolete and useless, newer and more desirable forms having obtained. British and other Continental nations had obtained possession of the American foreign carrying trade; and now not twenty per cent. of that trade is done in American ships.

On the other hand all foreign nations were shut out from participation in the coastwise trade of the United States. If a foreign ship took a cargo of merchandise to an American port, and not being able to obtain a return cargo from that port, desired to go to another American port where such cargo could be had, she had to go there in ballast, as it was unlawful for her to take either cargo or passengers from one American port to another. This business was and is reserved exclusively for American vessels; and it was because of this discrimination that the tonnage of American vessels increased and is increasing so rapidly. Does any one suppose that if foreign vessels were admitted to this coastwise trade there would now be nearly four million tons of American vessels engaged in it; while under the free influences of that country's foreign

trade its shipping engaged in that trade has actually decreased nearly a million and a half tons in less than thirty years?

As long as Canada permits it, just so long will Great Britain continue to build all her iron and steel vessels for her; and the admission duty free of British vessels, or of the separate parts required in the construction and equipment of such vessels, although they may be put together in Canada, cannot but operate to the disadvantage of would-be Canadian ship-builders.

Discriminating duties should be laid in favor of Canadian ships engaged in foreign trade; foreign built ships should be entirely excluded from Canadian coastwise trade; all Canadian-built ships should be bonused or subsidized, and no materials entering into the construction of ships in Canada should be admitted without the payment of duty. Let us have Canada for Canadians.

### IMPERIAL FEDERATION.

THE Imperial Federation League in Canada does not get much encouragement from some of the British trade journals. They look suspiciously at us and tell us that metaphorically "Canada is a coy maiden not without a spice of Yankee smartness about her. She is apparently determined to get all she can for her favor whether in the shape of smiles or business." The *Textile Mercury*, of Manchester, speaking of the resolutions recently passed by the League at Ottawa, affirming that Great Britain should not enter into any commercial treaties containing any provisions precluding preferential trade relations between the different parts of the Empire says:—

"This is a very good idea looked at from a Canadian point of view; but if we understand it, it means that Canada may, after having put heavy taxes upon our goods and stimulated competition within her own territory against British manufactures, come some fine morning and ask us, as the price of remitting her own duties, to place a tax upon imports from other countries; and she may intimate at the same time that if we decline to do so she will carry her favors for sale over her southern border. It is hardly likely that this suggestion will be acceptable. Canada, when she adopted a Protectionist policy ten or eleven years ago, never consulted Great Britain in the matter, and did not much care how we were affected by its adoption. She has continued in her own way hitherto, unmolested by us and free from any dictation, and we must ask to be left alone to follow our conceptions of what will be best for our industries and commerce. We are strongly in favor of the general objects of the Imperial Federation League, but if either the branches or the central body entertain any idea that the Mother Country must be called upon to make sacrifices for her colonial children we protest against it as a mistake. \* \* \* Considering the magnitude of our industries and the vastness of the interests depending upon them, it would be a suicidal policy to restrict our business with any solvent community, even for the favor of an exclusive business with Canada. We must sell our products to whoever will buy at such prices as we can accept, even though we have to accept corn, timber, live or dead cattle and tinned salmon in payment."

There are several things regarding Canada about which our esteemed contemporary seems to be in dense ignorance. It should know that Canada is no sycophant nor time server to any. A very large element in Canada, probably a very large majority of the people are in favor of Imperial Federation more through the tender feelings they entertain for the

Mother Country, an admiration for her grandeur and glory, and a desire to see her maintain through coming ages her distinct nationality, than because of any guardianship she might be willing to extend to Canada. Canada requires no guardianship whatever; and the ties that bind her to the Mother Country are ties of sentimental love. Neither does Canada wish for or expect any discriminating favors in tariff matters from Britain without giving a *quid pro quo*. It is true that Canada placed heavy duties upon British and all foreign merchandise; and it is also true that our National Policy has stimulated the establishment of hundreds of industrial establishments, which place her in an exceedingly independent position as regards the rest of the world; but it is a slander upon Canada to intimate that she is willing to enter upon any political arrangement with the United States, such as our Imperial Federationists suggest establishing with Great Britain. Canada may be a "coy maiden," but her honor and integrity would not permit her to "carry her favors for sale over her southern border line," or even to Britain. Her favors are not a merchantable commodity.

Of course, our contemporary is "strongly in favor of the general objects of the Imperial Federation League;" for Britain would not refuse the assistance of Canada if she should unhappily become embroiled in war with any foreign nation; and, of course, it would be great folly for Canada to "entertain any idea that the Mother Country would make any sacrifices for her colonial children." The trade policy of Britain is too selfish for that, for Britain's Free Trade Policy is surely the most selfish that could be framed. It may not always be thus, for we know that a desire for Fair Trade and Protection is being rapidly developed there; and should such a party ever accede to power the dreams of the Imperial Federationists may be realized, but not before. One thing is certain, however, the geographical boundary of the United States will never be extended northward to include any territory now embraced in the Dominion of Canada.

### BRITISH CONNECTION AND TRADE.

In a recent issue of this journal we stated that "The general tendency of the times is towards national Protection of home industries; and the belief is entertained quite extensively, both in Great Britain and in the Colonies also, that if British merchants and manufacturers regard with apathy the schemes of Imperial Federation now being discussed, and allow the coldness of their indifference to freeze out the efforts that are being made in this direction, it will warm up the desires of the Protectionists in the Colonies to a point where the example of Canada will be followed by the imposition of a tariff that will exclude their merchandise from Colonial consumption, even as it is being excluded from the consumption of foreign nations."

This the *Montreal Herald* declares is "threatening Great Britain"—"a threat to put up the Protectionist Tariff to a point which will exclude British manufactures,"—and that "the loyal combines"—whatever that may mean—"have the assurance to tell British manufacturers and the British people that unless they adopt a scheme of Imperial Federation which involves tariff discrimination against foreign nations and in favor of the

Colonies, they will shut British goods by a higher tariff out of the Canadian markets." We are also told that our statement that British merchandise is being excluded from the consumption of foreign nations, "is very satisfactorily disposed of by the fact that Great Britain's foreign trade last year was the largest in her history."

The facts and figures upon which we based the article to which the *Herald* takes exception were drawn from the *British Trade Journal*, to which we gave due credit: and we stated that from them, according to our British contemporary, "British manufacturers and merchants are looking more to British Colonial connection throughout the world, and to the establishment of new colonies for markets for their produce rather than to retaining or obtaining the markets of foreign nations." The *Herald* may think our statement, and that of the *British Trade Journal* "very absurd," but it will probably accept as authority a Blue Book issued "by command of Her Majesty," Queen Victoria—we allude to the "Statistical Abstract of the United Kingdom" for 1888. According to this Abstract the total value of imports into the Kingdom in 1888 was £387,635,743, which was in proportion of £10. 7s. 1d. per capita of population of the Kingdom; and that per capita was actually less in that year than in any year since 1874, except in the years 1885, '86 and '88, when it was slightly less. So, too, the value of the imports in 1888 were less than in the years 1877, '80, '81, '82 and '84. The value of British produce exported in 1888 amounted to £233,842,607, but this was exceeded in the years 1874, '81, '82 and '83; and equalled in 1884. The per capita valuation of these exports in 1888 were but £6. 4. 11d., and this was exceeded in 1874, '75, '80, '81, '82, '83 and '84. So, too, regarding the imports from foreign countries. In 1888 the value of these imports aggregated £300,720,005; but this was exceeded in 1877, '80, '81, '82 and '83. A similar story is told regarding the total values of exports to foreign countries. In 1888 it aggregated £206,460,378, but this was exceeded 1881, '82, '83 and '84. On the other hand the total imports from all British Possessions in 1888 were valued at £86,915,738, and this was exceeded in 1877, '80, '81, '82, '83 and '84; while the exports to these Possessions in 1888—£91,424 858—were not equalled or exceeded in any year since 1874 except in 1882. British exports to the North American Colonies do not increase. In 1888 they were valued at £8,692,046, but this amount was exceeded in 1874, '75, '81, '82, '83, '84, '86 and '87.

It is the veriest nonsense for the *Herald* to suggest that Canada could or would increase the tariff to a point that would exclude British manufactures, or that would discriminate against them to any greater extent than against the manufactures of any other nation. As we have shown, the trade between Great Britain and her Possessions is increasing, while her trade with the rest of the world is not increasing: and she is now looking more to the cultivation of her trade with her Possessions, than to opening up new or enlarged markets by breaking down foreign systems of Tariff Protection. If Canada's trade with the Mother Country is decreasing it is because under our National Policy we are now manufacturing for ourselves many lines of goods for which we have heretofore been dependent upon Great Britain; and the extent of the diminution of our import trade from Great Britain is an indication of our increasing ability to manufacture for ourselves. So, too, if our trade with

the United States is increasing, it is indicative of our demand for certain lines of merchandise that we require, and which that country can supply to us cheaper than Britain or any other country. There are many items on the Canadian free-list: Great Britain does not produce these articles, but the United States does, hence our larger trade with the latter country in such non-dutiable articles. When dutiable articles are considered the records show that our importations are much larger from Britain than from the United States. Last year the value of dutiable merchandise imported into Canada from Great Britain aggregated \$32,219,807, while from the United States it was but \$28,982,283; while of non-dutiable merchandise but \$10,097,582 came from Great Britain and \$21,555,157 from the United States. Regarding our dutiable imports it must be remembered that although such a large proportion of them came from the United States where a high Protective Tariff prevails, they were obtained from there because they were cheaper than similar merchandise manufactured in Britain where Free Trade prevails.

#### THE FARMERS AND THE TARIFF.

A FEW days ago, the Ontario Central Farmers' Institute, at a meeting held in this city, memorialized the Dominion Government to the effect that they considered the present tariff very injurious to the agricultural interests, making what they buy proportionately dearer than the products they sell; that the agricultural interests of the country are suffering under serious depression and unable to bear the strain occasioned by the tariff; and that as these interests represent the large majority of the population, they asked the Government to reduce the tariff on articles of prime necessity to the farmers, such as steel, coal, cottons, woolens, rubbers, sugar, corn and salt, to such an extent as to relieve the agriculturist of the unequal burden under which he labors. It is claimed that this "Institute" is representative of the farming interests much more truly than the Manufacturers' Association is representative of the manufacturing interests. In discussing the matter in the Institute meeting it was shown that certain enumerated merchandise had been imported into Canada in large quantities and that large amounts of money had been paid to the Government as duties thereon, and that these duties amounted to fully thirty-five per cent. of the whole output of Canadian farmers. As an argument in favor of the reduction or removal of the duties on the articles suggested by the Institute, it was shown that "Canada last year imported \$50,537,440 worth of goods from the States, paying thereon \$7,371,148 taxation, every cent of which would remain in the pockets of our consumers under Free Trade."

The idea seems never to have entered the heads of these people—"farmers" they call themselves—that the manufacturing industries of Canada are kept alive through the operations of the tariff; and that the employes in these industries, numbered by tens of thousands, and scattered all over the country, are the chief consumers of their agricultural and farm products, and that they only ship out of the country the surplus after supplying the home market. They also forget that whenever they have frail and perishable products for sale



they can always find quick and remunerative markets for them in the nearest town; and the larger the number of people in that town engaged in manufacturing industries, the greater the certainty of selling their produce, and at higher prices. They forget that in many lines of such products, for which ready cash is always obtainable under existing circumstances, were it not for the near-by home market there would be no sale at all. They forget that when their produce is sent out of the country for sale, on entering a foreign market it comes in direct competition with similar products from many other countries, and that it is subject there to the unvarying law of supply and demand. The claim that last year more than \$7,000,000 was paid in duties on imports from the United States, every cent of which would have remained in the pockets of consumers under Free Trade, is as remarkable as it is ridiculous. The average duty upon the dutiable merchandise imported from the United States is about thirty per cent.; but the average duty upon similar merchandise imported into the United States is about fifty per cent. Great Britain manufactures about all these articles, and, having Free Trade, that country should sell to us from thirty to fifty per cent. cheaper than the United States. Free Traders tell the farmers that the duty enhances the price to just the amount paid for duty; but this is false on the face or else these large purchases of dutiable goods would not have been made in the United States. These Free Traders do not tell the farmers that American pig iron, manufactured under a duty of \$7 a ton, can be, and is constantly sold in Canada for several dollars a ton less than equal quality of English iron can be sold here, manufactured under Free Trade; nor do they tell that although the American duty on steel rails is \$17 a ton, the price of steel rails to-day is the same in New York as in London.

If Canadian farmers are wise they will enquire what the condition of British farmers is after almost a half-century of Mr. Cobden's ideal Free Trade. If such enquiries are made it will be discovered that no class there has been as badly deceived and disappointed and ruined as British farmers; and the fact will be made plain that this class have been made to bear the bulk of the burden in the development of that *ignis fatuus* British Free Trade. In its inception the object sought was—not the prosperity of the British farmer—but that Britain should be the producer of all the manufactured products required by the rest of the world; and that the rest of the world should be employed exclusively in producing the raw materials to be manufactured in British factories. England is a nation of traders; and it was believed that she was strong enough to break down the competition in manufactures of any other country. If foreign manufacturing industries could be suppressed, nothing would be left but for the foreigners to engage solely in the production of raw materials; and, of course, there being but one buyer for them, they would be obtained by British manufacturers at their own prices. On the other hand, all foreign manufacturing enterprises being broken down, foreign nations would be forced to pay for British manufactures, just what British manufacturers demanded. And it was here that the British farmer found himself between the upper and the nether millstone. All food products must be cheapened to the lowest figure.

If England could have successfully forced her obnoxious theory upon all the nations of the world, or have coaxed them into accepting it, her scheme would have been a magnificent success—for England. Her manufacturers could well afford to do as they have done and are now doing—spend their money lavishly in defeating Protection in whatever country efforts might be made to establish it; but, thanks to such statesmanship as has been developed in Canada under Sir John Macdonald, in the United States, in France, in Germany and in nearly every other country, these Free Trade efforts always collapse and prove abortive. But the British farmer suffers. In 1850, 16,000,000 hundred-weights of wheat were imported into the United Kingdom. In 1870 the imports were 38,000,000 and in 1885 they were 61,500,000 hundred-weights, besides 14,500,000 hundred-weights of flour. These increasing importations of farm products, far out of proportion to the increase of population, indicate that the interests of the British farmer were suffering terribly; that he was losing his grip on his home market, and that his land was being retired from cultivation. Recently the *London Times* showed that in the twenty years from 1869 to 1889 over 4,500,000 acres of land in Great Britain had gone out of cultivation, being surrendered wholly to grass. In England, in 1869, more than 14.5 per cent. of farming land was planted to wheat; while in 1889 more than one-third of that wheat-land had been retired from cultivation. In 1869, one-half of all the land in the Kingdom was appropriated to pasture; and in 1889, the area of this pasture land was increased more than six per cent. The decline in farm animals is also noticeable, the number of farm horses having decreased about 40,000 in the twenty years; and the decrease of sheep was nearly 4,000,000.

Referring to this interest of the farmer in Protection, the *Textile Record* says:

The American Free Trader always neglects to refer to this mass of facts when he is discussing the effects of Protection or Free Trade upon the farmer. It suits him better to dwell upon the misfortunes of the man who has not enriched himself by trying to dig a living out of a Vermont farm, the soil of which is so poor that it will hardly permit one blade of grass to grow within a foot of another blade. The prime necessity of human life is food. First of all a nation ought to try to feed itself. It ought to make an effort to get out of the soil that is its own the material with which it may feed its people. By this means, and by this only, can it have reasonable security against any kind of interruption of the supply. But something more than food is required by man. He needs clothing and furniture and a vast multitude of articles made by human art and skill for human uses; and the soundest condition in which society can put itself is that one portion of the people of a nation shall grow food, whilst another portion makes the other articles required, so that there may be a diversity of industries and such exchange as shall permit all profits to be kept at home. The most profitable exchanges are those made with the least movement, because the cost of movement reduces the profits to producers. We consider the British notion that one nation should produce one kind of material for another nation which produces a wholly different kind, radically wrong. It is a notion born simply of the purpose of the stronger nation to rob the weaker one.

The Protective system gives to the American farmer a home market for all but about ten per cent. of his products, and it permits the rest of the people to engage in the task of supplying other wants than the want of food. This would appear

to be a good arrangement for the farmer, rather than a bad one. And if there are some facts which seem to show that American farmers are not so rich as they would like to be, facts equally convincing could be produced to show that the farmer is far from being peculiar in that respect. At any rate, before it can be asserted truthfully that the Protective policy is responsible for any decline of agricultural profits that has occurred here, some proof must be brought forward to show that Free Trade is not responsible for the decline of agricultural profits in Great Britain. It is simply ridiculous to regard our farmers as victims of Protection, whilst British farmers are suffering more acutely from the same complaint under conditions of Free Trade.

#### THE LABOR INTEREST vs. RECIPROCIDTY.

In a recent issue the Toronto *Globe* speaking of what would be the development of Canadian iron mines under Unrestricted Reciprocity, says:—"Each million tons exported (to the United States) would represent the employment of about 4,500 able-bodied miners in Ontario at high wages." We suppose the *Globe* means to convey the idea that these 4,500 miners would be employed one year in the production of each million tons. If that is what it means, it means that the production of each million tons of ore from Canadian iron mines would involve the labor of 4,500 men one year. If it requires 4,500 years work to mine one million tons of ore, one thousand tons of ore could be mined in four and a half years. Mr. T. D. Ledyard, who is largely interested in iron mines near Peterborough, Ont., says that his ore can be mined at a profit to the mine owners, at a cost of one dollar per ton. A thousand tons for a thousand dollars. A fair estimate of the royalty value to the owners of this ore would be say twenty five cents per ton, or \$250 for a thousand tons. This would leave \$750 to pay to the miner, who would spend four and a half years of his life in mining it; and for which he would receive from Mr. Ledyard the munificent remuneration of less than \$167 a year, about fifty cents a day. According to Mr. Carnegie, who is quoted by Mr. Ledyard as authority on such matters, the rich ores of Cuba are mined at a cost of from sixty to seventy cents a day for labor, and placed on shipboard at one dollar a ton; and now all that the *Globe* and Mr. Ledyard can offer to the "able-bodied miners in Ontario" is actually less than negro slave labor is being paid in Cuba for similar service. Will the "able-bodied miners in Ontario" note this fact? Under Reciprocity with the United States, the American owners of Canadian iron mines propose to pay Canadian miners less than what is being paid for slave labor in Cuba; and this is what they call "high wages." Food, clothing, house-rent and all other unavoidable expenses of a family averaging five members to be met out of an outside income of fourteen dollars a month. These Canadian ores are the equal in all respects of the best ores produced in the Lake Superior region—Mr. Ledyard says so: which, as we have heretofore shown, are worth \$7 a ton in Cleveland, Ohio. Mr. Ledyard says he can lay down his Canadian ore in Cleveland for \$3.90 a ton, duty paid. Under Annexation to the United States—Reciprocity the *Globe* and Mr. Ledyard call it—the cost of laying down in Cleveland, there being no duty, would be \$3.15; and the difference between one dollar at the mines and \$3.15 at Cleveland would be the "new

freight given to our railways" for transporting the ore. This would be exceedingly remunerative to the railways, and probably more than they could ever hope to obtain for the service.

A thousand tons of ore laid down at Cleveland would be \$7,000 to the shipper; and against this the charges that would appear would be the cost of mining—\$1,000, the cost of transportation—\$2,150, and the duty—\$750, a total of \$3,900, the net profit to the shipper being \$3,100, or on the million tons a year that the *Globe* speaks about, \$3,100,000. No wonder Mr. Ledyard and the *Globe* moan and wail for "Reciprocity" with the United States, when, if they had it, they would add \$750, 000 a year to their profits, making them \$3,850,000 a year.

The facts and figures here given are those stated by the *Globe* and Mr. Ledyard themselves, and a most remarkable feature of the matter is that these owners of rich Canadian iron mines do not go in for a certainty of over \$3,000,000 a year clear and clean profit, rather than wait for a Reciprocity that will probably never come, hoping to save the American duty on their ore.

Meantime we suggest that Canadian miners are not to be gulled by the invitation to compete with negro slave labor at fifty cents a day.

#### EDITORIAL NOTES.

CANADIAN ships should be built in Canada.

MARITIME trade between Canadian ports should be confined exclusively to vessels built in Canada.

No vessel built elsewhere than in Canada should be allowed to carry either freight or passengers between Canadian ports.

CANADA can never hope for a successful merchant marine until the maritime commerce of Canada is carried on in Canadian-built vessels.

CANADIAN ship builders can never hope to build up a Canadian ship-building industry by preventing the establishment in Canada of works for the manufacture of materials to be used in ship-building.

It would be better for the Dominion Government to subsidize or bonus every vessel built in Canada of Canadian-made materials, than to remove the duty on foreign parts entering into the construction of such vessels.

THE utilization of electricity in the manufacture of wood pulp is likely to revolutionize that business. Kelner, a German chemist, has perfected a process that is about being adopted in the United States where it has been patented.

DISCOURAGING removals of duty on materials imported from abroad entering into the construction and equipment of ships built in Canada is not the way to encourage the erection of works in Canada for the manufacture of such materials. Don't disturb the duty.

IF the maritime carrying trade done between Canadian ports is restricted to only Canadian-built vessels, Canada

would very soon be provided with magnificent fleets of steamers and sailing craft that would make her the commercial equal of the United States in the rapidly expanding business of the Great Lakes

THE *Mail* and the *Empire* vie with each other in chattering like jackdaws about "free raw materials"; and really the conclusion is irresistible that neither of them understand the meaning of the phrase. It is exceedingly ambiguous, and hence its indiscriminate use. No material can be "raw" upon which any human labor has been expended. The flexibility of the phrase makes it a desirable one to use when our contemporaries want to say something without meaning anything, as is often the case.

THE production of pig iron in Germany in 1880 was 2,729,038 tons against 4,337,131 tons in 1888 and 4,387,524 tons in 1889. The output last year was only very slightly in excess of that of the previous year, but there were some remarkable changes in the different varieties made. Thus in 1888 the production of Bessemer pig was 1,794,806 tons and in 1889 it was only 405,490 tons. In 1888 the production of pig for the manufacture of soft steel was 628,293 tons and in 1889 it was 1,402,444 tons; and in foundry iron the change was from 15,897 tons in 1888 to 538,893 tons in 1889.

ALTHOUGH the United States produces nearly as much pig iron as Great Britain, about all of which is consumed at home, the home demand for the article is so great as to require the importation of nearly 150,000 tons last year. The total value of American importations of iron and steel in 1889 aggregated 741,596 tons, valued at \$33,577,867, the importations of iron ore amounting to 853,573 tons, valued at \$1,852,392. The increase in the production of iron and steel in 1889 over 1888 is shown in the fact that in 1888 the imports of steel rails amounted to 63,016 tons, while in 1889 only 6,202 tons were imported.

If the manufacture of tin plates becomes an established industry in the United States, as it most probably will under the proposed increase of duty, it would be a severe blow to a flourishing British industry. The total exportations of tin plates from the Kingdom during 1889 aggregated 430,623 tons, valued at £6,030,496, and of this 336,692 tons, valued at £4,674,455,—about eighty per cent.—went to the United States. Our American friends could well afford to submit to an increase of duty that would result in the establishment of an industry that would produce probably \$25,000,000 worth of tin plates a year.

ADVOCATES and admirers of Canada's National Policy are anxious to have the Opposition papers keep up their fusillade against the grand system that is doing so much for the country. It is to be noticed, however, that since the recent election in Haldimand, in which Dr. Montague, the Protectionist, completely snowed under Mr. Colter, the Free Trader, the Grit papers have had little or nothing to say regarding the terrible sufferings of the farmer under our present tariff. Haldimand is a purely agricultural community, and probably

three fourths of the voters there belong to or are farmers, or identified with farming interests. Keep up the fusillade.

A DISGRACE on the American Government is embodied in the statement made in our American exchanges that Messrs. Frazer & Chalmers, of Chicago, who are probably the largest manufacturers of mining machinery in the world, are establishing branch works in England, to enable them to make shipments direct to Europe, Asia, Australia and Africa, no such facilities being available from American ports. The disgrace consists in the fact that the American Government studiously abstains from rendering any assistance whatever to its merchant marine in the way of such favors as Great Britain bestows on her shipping, and which has chiefly from this cause made her the greatest maritime power on the globe.

ONE of the most noticeable effects of the rapid advancement in the utilization of electricity for industrial and other purposes is the increased consumption of copper. The total production of copper in the United States in 1888 was 235,853,456 pounds, of which 5,000,000 pounds was made from imported ores, while in 1889 the production was increased to 241,830,000 pounds, of which 5,100,000 pounds was from imported ores. The consumption of copper in 1888 amounted to 112,853,456 pounds, against 178,830,000 pounds in 1889. More than 223,000,000 pounds of the total domestic production of 236,730,000 pounds were produced from Lake Superior, Arizona and Montana mines, that of the latter State amounting to over 104,000,000 pounds.

NOTICE of the following resolution has been given in the Dominion House of Commons:—

That in the opinion of this House the time has arrived when the Government of the Dominion should enter into correspondence and negotiations with the different governments of the West Indies and the governments of all the British possessions in America, with a view to establishing reciprocity in trade for natural products and manufactured lumber between Canada and places above referred to; and if agreeable to the said Governments of the West Indies and other British American possessions, or any of them, that such reciprocal trade be brought about; that the Government of the Dominion be requested to establish the same to the extent to which they can agree, and upon the consummation of any such agreement that they promote necessary legislation and make the agreement law.

It is claimed that a man in Iowa has invented a machine for making a perfectly practicable substitute for binding twine out of coarse marsh grass. A specimen of this twine shows that it is as flexible and as easily handled as the same size ( $\frac{1}{8}$  inch) hemp twine, and will bear 200 pounds of tension. The machine for making is described as being simple and within the means of every farmer, and a boy can produce 800 yards of this twine per hour. As compared with the present twines used for binding, it will cost only from five to seven cents per acre of grain cut and bound. It consists of the grasses referred to twisted tightly and firmly, held together with cotton thread. Bagging for shipping cotton has also been made of it, for which purpose it has proved an excellent substitute for jute bagging, being strong, serviceable and durable. It costs

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one-third less than jute. A company is in course of organization for the manufacture of this bagging and for making the twine machines.

On another page we publish a list of twenty-seven rolling mills and steel works in New England which are active and likely to remain active; also a list of thirteen blast furnaces, all of which are either active now or will soon be active. We have carefully excluded from both these lists all dead or dying enterprises. To properly appreciate, however, the extent of the iron and steel interests of New England, it is necessary to add to the lists we give the large number of foundries, machine shops, screw factories, axe factories, shovel factories, file factories, wire works, agricultural machinery works, textile machinery works, nut and bolt works, locomotive works, car works, etc., etc., which depend for their prosperity upon an abundant and cheap supply of iron and steel, whether made in New England or elsewhere. That all such establishments are now busily employed is the best evidence that could be adduced in support of the proposition that they are not handicapped in any way by an inadequate or costly supply of iron and steel. Protection has, therefore, been a boon of inestimable value to all the industries of New England which consume iron and steel.—*The Bulletin*.

A PETITION has been presented to the Dominion Parliament signed by 120 steamship and vessel owners, mariners, engineers and persons engaged or interested in vessel property. They submit what is undoubtedly a great grievance. It appears it is only necessary for Americans and other non-residents of Canada to pass examinations to become entitled to serve as master mariners, engineers, or in other positions of the inland marine of Canada, while Canadians cannot serve in any such position in the States without having to take the oath of allegiance and become naturalized American citizens. Not only this, but Canadians are prohibited from making a contract at home to serve in any capacity in the inland marine of the United States, and thus have to remain on their own side of the water, whilst Americans, not being prohibited from contracting to come to Canada, do come and occupy many of the choicest positions on our inland marine during the season of navigation, and return to their own country during the winter, much to the detriment of Canadians occupied in the same business. As a result, the petitioners ask that no person shall be allowed to hold certificates as master, mate or engineer in the inland marine of Canada who is not a subject of the Queen.

In 1867 the manufacture of steel rails in the United States had just been begun, the production in that year being but 2,270 tons, and the average price of the article was \$166 per ton. The duty then was 45 per cent. *ad-valorem*, and the price at British ports was equivalent to \$65.70 per ton. The production in 1869 under this duty was 8,616 tons and the average price \$132.25; but the duty was changed in 1871 to \$28 per ton, in which year the production was 34,152 tons. In 1873 the production amounted to 115,192 tons, and the price was \$120.50; in 1875 the production was 259,699 tons and the price \$68.75; in 1878 the production was 491,427 tons and the price \$42.25; in 1881 the production was 1,187,770 tons

and the price \$61.13, and in 1887, under a duty of \$17 per ton the production was 2,101,904 tons and the price \$37. In February of this year the price on both sides of the Atlantic was precisely the same—\$35. If the duty is added to the cost, as Free Traders contend, the cost of steel rails in the United States should be \$35, the cost of manufacture in Great Britain, plus the American duty of \$17 or a total cost in the United States of \$52 per ton. But the current price of rails there is the same as in Britain, which fact Free Traders are requested to explain.

SPEAKING of the war of the Rebellion in the United States, the *Empire* says: "The Unionists drew heavily for munitions of war upon the United Kingdom. \* \* \* British shipbuilders were not allowed to deal with the Confederates. It will not do for the people of the Northern States to say that the Confederates were 'rebels,' for the North very practically acknowledged the belligerent rights of the Southerners." Lee's "Army of Northern Virginia" was armed, equipped, fed and clothed with munitions of war imported into Wilmington and Charleston in British blockade runners. The rifles and small arms, field artillery and a large number of heavy siege guns, the gunpowder and lead, the fixed ammunition and the sulphur and saltpetre for making gunpowder, the shoes, clothing and blankets all came from British workshops and factories. The blockade runners were all built in British shipyards, and one can now see here in Toronto one of these fleet-footed messengers that was at one time engaged in carrying munitions of war into Southern ports, but now engaged in the more peaceable occupation of the excursion trade between this city and "the other side." If the North ever practically acknowledged the belligerent rights of the South it is more than the South did as to the North. The story of Andersonville contradicts the *Empire*.

THE annual meeting of the Canadian Canned Goods Packers' Association was held in this city last week, and Mr. Wellington Boulter, the president, in his report referred to the rapid progress of the canned goods industry in Canada under the National Policy. In the course of his remarks he said that at present we produce finer flavored fruits and vegetables than our neighbors to the south. Not only do we now supply our own market, but we are also exporting to the States, Europe, West Indies, China, Newfoundland and Japan. They had reduced the pack of 1889 so as to allow the heavy output of 1888 to be worked off. Since its organization the association had secured the removal of the duty on tin plates, an amendment to the Factory Act, lower prices for labels, and the box shooks and machinery for the factories are now made in Canada. A large can making establishment is now in operation in Hamilton. A protective tariff has been placed on canned goods coming into Canada. An efficient canned goods law has been adopted. He recommended the association to still further limit the pack to the requirements of the country. He had attended the meeting of the United States packers at Indianapolis, and referred to the depressed condition of the trade there, where goods were being sold at twenty to thirty cents per dozen less than the cost of production. From what he learned there he was strongly opposed to any closer business relations with the United States.

THE Bureau of Statistics of the United States Government has issued a statistical table and abstract regarding the foreign trade of that country during the calendar year 1889 with comparisons for five preceding years, some of the facts of which possess considerable interest to Canada. The total imports free of duty in 1889 aggregated \$261,177,740 as against \$248,590,235 in 1888; this large difference being caused by increased importations of coffee and raw silk, and notable decreases are shown in values of hides and skins, india rubber, gutta percha and tea. Among importations of dutiable articles there was a decrease in the value of iron other than tinplates; and of this article there was a very considerable increase—about two million dollars over the preceding year. The value of dutiable imports during 1889 aggregated \$509,357,107 against \$476,821,136 in 1888, but the value of all imports of merchandise, dutiable and free, was nearly \$25,000,000 less in 1889 than in 1888. There were some slight declines in values of leading exports, while, on the other hand, the increase in values of other articles is quite noticeable, as live animals, corn, raw cotton, iron and steel and manufactures thereof, leather and leather goods, and meat and dairy products; the total value of exports of domestic merchandise being \$814,287,961 in 1889 against \$679,597,477 in 1888.

If Emperor William is sincere in his desire to improve the condition of the German people he might profitably turn his attention to a study of the tariff. For the last ten years German finance has been steadily based upon a policy of strict Protection, and, in consequence, discontent has increased and Socialistic ideas have steadily gained ground. Protection in Canada and the States has also been fruitful in causing discontent. The system works in the same way the world over.—*Toronto Globe.*

THE discontent prevalent in Germany, and the prevalence of Socialistic ideas there, are not in consequence of the Protective tariff policy of the German Government, for it is well-known that that policy is sustained by the German people. It is in order, however, for the *Globe* to show that Protection has been fruitful in causing discontent either in Canada or the United States. Will the *Globe* say if "Protection" is the cause of the Socialistic disturbances constantly occurring in Russia? And will it also express its views regarding the frequent Socialistic disturbances occurring in London? Our impression is that Free Trade prevails in Great Britain, but great distress always prevails among the working classes there. It will be observed that in those countries where Protective policies prevail there is the least possible amount of suffering among the working classes.

THE French Government, or at least the Legislative Chamber of Deputies, is strongly and unflinchingly determined on Protection. The Chamber is divided into a number of bureaux, and the committees usually consist of eleven representatives chosen from these bureaux. The Budget Committee is an exception, and, heretofore, instead of eleven there have been thirty three members. The Protectionist members recently determined to enlarge the number of the Budget Committee, and now there are fifty five members. At the election of the members of this Committee, M. Léon Say delivered an able speech strongly deprecating duties on raw materials as prejudicial to exports, and pointed out that a

high duty on foreign maize, for example, would injure distillers and agriculturists who rear poultry, pigs and horses on it. He urged that an import duty on wool or silk would similarly injure Roubaix and Lyons, whereas Roubaix, with liberal legislation, might become the centre of the woolen trade. As to commercial treaties, he adhered to the view that a nation should be guided by its own interest alone in fixing tariffs, and not by a fancied reciprocity, though treaties had the advantage of preventing constant changes of duties at the caprice of Parliaments—an advantage in certain circumstances valuable, but it was not advantageous to be fixed on the old forms by treaties like those of 1860. M. Say was one of the five members elected on the Budget Committee, which consists of eight decided Free Traders, nine pliable Free Traders, ten moderate Protectionists, and twenty-eight decided Protectionists. This Protectionist triumph was to be foreseen, the alliance between the manufacturing and the agricultural Protectionists being firmly established.

## SPECIAL ADVERTISEMENTS.

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

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

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

SIXTY HORSE POWER BOILER FOR SALE.—Size, 60 x 144 inches, containing 76 3-inch tubes. Fitted with a No. 2 Curtis return trap, valves, condenser and steam gauge, water gauge and cocks, cast iron soot door, cast iron independent front-grates and bearers complete; all in perfect condition. Apply to SAMUEL MAY & Co., 111 Adelaide St. West, Toronto.

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

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.

*Our Little Ones*, published by the Russell Publishing Company, Boston, Mass., in its March number, contains a large and very interesting variety of reading matter and illustrative pictures, specially adapted for the delight of the children. In fact every article in it is illustrated; and no more desirable publication could be placed within reach of the juveniles for whom it is intended. The price, \$1.50 a year places it within the reach of all.

*Santa Claus*, the beautiful weekly magazine published every week by the Santa Claus Company, 1,113 Market Street, Philadelphia, in its March 1st number, contains stories for boys and girls; stories and verses for very little folks, and talks and facts about current and interesting things, all by the best writers of the day. The illustrations are all first-class. The publishers propose telling this spring and summer through the pages of *Santa Claus*, all about cotton; how it is grown and what is done with it; and they will send a package of cotton-seed free to whoever will ask for it, so that the young cotton planter may the better understand the articles in *Santa Claus* about it.

In the March number of *Good Housekeeping* is a paper on "The Etiquette of Dining and Dinner Giving, gathered from conversations with George W. Childs, Esq., whose elegant hospitality is well known and recognized, not only throughout our own country, but widely in the world at large." The paper covers, among other things, "The Etiquette of Invitations," "Dinner Dress, Escorts and Introductions," "Seating and Service at Dinners," "Dining Table Decorations, Dinner Carving and Course Serving," "Wine at Public Dinners," and "After-Dinner Occasion," with half a dozen bills of fare at notable dinners heretofore given by Mr. Childs. A portrait of Mr. Childs accompanies the article, and a full-page illustration shows the celebrated \$40,000 dining set of Mrs. Childs.

*The Dominion Illustrated*, of March 1st, is an exceptionally interesting number. The illustrations include portraits of Hon. Alex. Lacoste, Senator Dalton McCarthy, Q.C., M.P.; Cléophas Beausoleil, M.P.; D. M. Macpherson, President Dominion Dairymen's Association, and Jacob Erratt, Esq., Mayor of Ottawa. Half-page pictures are given of a prominent Canadian industry—exterior and interior views of a cheese-factory at Glengarry, Ont.; of the barracks of the North-West Mounted Police at Regina, and of the old Parliament Buildings, Toronto; and full-page illustrations are shown of the Lower Rideau Falls, at Ottawa, in summer, and the same in winter; and a full-page picture is also shown of the City Hall, Ottawa. *The Dominion Illustrated* is published weekly by the Dominion Illustrated Publishing Company, Montreal. Subscription, \$4 a year.

THE March number of *Outing* completes another volume, handsome and valuable. Its pages reveal the steady progress of this popular magazine in the beauty of its make-up and the importance of the articles published. Admirable discretion has been shown not only in the selection of the more serious articles, but in the fiction and poetry that appeared in each number. The labor of well-known artists and engravers has been lavished on the illustrations, and no other magazine can show superior examples to *Outing's* excellent reproductions from photographs. In this number Lieut. W. R. Hamilton continues his valuable series of papers on the National Guard. This time "The National Guard at Creedmoor" is under consideration, and excellent illustrations lend additional importance and value to the article. New York, 239 Fifth Ave. \$3.00 a year. 25c. a copy.

THE February 22nd issue of the *Western Electrician*, of Chicago, contained a stenographic report of the recent Kansas City Convention of the National Electric Light Association; and it reached its readers almost immediately after the close of the meeting. Forty pages were devoted to a report of the proceedings, which comprised double the amount of reading matter contained in an average issue of a metropolitan daily newspaper like the *New York Sun*, and twice that printed in a volume like "John Marshall," one of the popular "Statesman's Series." The enterprise shown by our contemporary was most commendable, and was fully appreciated by its many readers. The report itself is exceedingly interesting, and any person desiring further light on electrical subjects, will find in it the latest and brightest scintillations from the brains of the most advanced and energetic electricians on the American continent.

MESSRS. MIDDLETON & MEREDITH, Montreal, who are dealers in anilines, dyestuffs and chemicals, have sent us Professor J. J. Hummel's work on "The Dyeing of Textile Fabrics." The object of this manual is to provide the teacher and student of dyeing with a useful text-book, giving exact scientific and practical information. It is intended also to supply the dyer with explanations of the scientific principles involved in the operations of his art, in order that

he may take a more intelligent interest in his work, and be stimulated to criticise it, and to determine by means of well-devised experiments whether his methods are rational and capable of improvement, or the reverse. Appreciating the value of this book, and desiring that their customers shall have the advantage of the information contained therein, Messrs. Middleton & Meredith have sent a copy of it to each of them, and the compliment is duly appreciated, the book filling a want in that direction, judging from the letters the firm have received from the recipients of it. The book is neatly and substantially bound in stiff cloth covers, and is from the press of Messrs. Cassell & Company, the well-known London publishers.

MESSRS. JOHN GILLIES & Co., Carleton Place, Ont., have sent us their new illustrated catalogue, having reference to the steam launches, Shipman and Acme engines and boilers, etc., manufactured by them. These engines and boilers are specially adapted for using coal oil for fuel, and the manufacturers inform us that four years practical test of them demonstrate that the claims they put forth when first introducing them have been more than verified. They have sold hundreds of stationary and marine engines, the majority of purchasers being ignorant as to the practical operation of any steam engine, and in no solitary instance has any accident to life or limb occurred from their use. These engines are specially adapted for the use of all industries requiring light and inexpensive power, and for steam launches for pleasure purposes; and the Acme engine and boiler are connected and ready to set into the boat, and, when located and secured, is ready to be put in operation. Allusion is also made to their Peerless condensing steam engine, made in two sizes—two and four-horse power. It is fully illustrated and described. The catalogue also contains a large number of testimonials concerning the subjects discussed in it. Specimens of these engines and launches are to be seen at Permanent Exhibition of Manufactures, 63 Front Street, West, Toronto.

THE March *Wide Awake* opens with a charming biography in miniature, by Mrs. Frances A. Humphrey, of "The Beautiful Emily Marshall," a famous young belle of Old Boston. Among the illustrated articles are "Animals at School," by Eleanor Lewis, and "Among the Date Palms," by Frances H. Throop, with her own drawings made in Africa recently. "Poor Lady Ursula," by Lucia Beverley, is a true story of the fate of a young Englishwoman who came to Maine in the early days; the "early days" of another portion of our country, California, furnishes the material for another story, Mrs. General Frémont's "A Picnic Near the Equator." "The Coltie that Kicked Up" will delight little people, and young and old will read with interest Miss Poulsson's "Early America in Clay," which shows how successful and really necessary kindergarten work is in all schools for the blind. The article has some twenty illustrations of historical objects shaped in clay by the sightless children. Ingenious boys and girls will be apt to try Mr. Beard's "Musical Correspondence," a very ingenious system of cypher. "The Kaduskak Giant," by Miss McLeod, is a powerful story of Old Acadie, and shows what a rich mine of historical tradition lies unworked. Mrs. White's "Newspaper Workers" will be read with profit. Mr. Stoddard's serial "Gid Granger" is worth reading, and Mary Hartwell Catherwood begins a Western serial story entitled "Bony and Ban." *Wide Awake* is \$2.40 a year. D. Lothrop Company, Publishers, Boston, Mass.

ON another page will be found the business card of Messrs. Fetherstonhaugh & Co., who announce themselves as solicitors of patents and experts in patent causes. Until the formation of this firm a few days ago, Mr. Fetherstonhaugh was chief draughtsman in the office of Messrs. D. C. Ridout & Co., the well known patent solicitors of Toronto; and on the occasion of Mr. Fetherstonhaugh severing his connection with Messrs. Ridout & Co., he was the recipient of a most elegant and valuable souvenir from Mr. Ridout, a testimonial of the long, faithful and satisfactory service rendered to him. This souvenir was an inkstand of hammered and burnished brass. On the same occasion Mr. Fetherstonhaugh was also presented with a handsome clock, by his previous fellow-associates in Mr. Ridout's office. Mr. Fetherstonhaugh has had over nine years' experience in patent office work, and his knowledge of patent drawings and specifications, machinery, etc., peculiarly fits him to act as counsel and expert in patent causes. He is a member of the Ontario Bar, and in his law practice intends to devote himself, as a specialist, exclusively to patents, and will thereby be able to promote the best interests of those who may entrust their cases to him. The new firm have facilities to prosecute applications for patents in Canada, United States, Great Britain and all foreign countries.



# 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.

MESSRS. A. J. McALPINE & SON will build flax scutching mills at or near St. Catherines, Ont.

THE Guarantee Carriage Manufacturing Company of Montreal, has been incorporated with a capital stock of \$50,000.

At the recent annual meeting of the Londonderry Iron Company held in Montreal, a dividend of six per cent. was declared.

THE Sawyer-Massey Manufacturing Company, Hamilton, Ont., has purchased the Sarnia Agricultural Works at Sarnia, Ont.

THE Kingston Foundry and Machinery Company of Kingston, Ont., has become incorporated with a capital stock of \$60,000.

FIRE in the new factory of the A. Harris & Son Company, Brantford, Ont., on March 3rd, did damage to the extent of about \$2,000.

THE fine brick steam flour mill of the People's Milling Company, at Meaford, Ont., was destroyed by fire Feb. 20th, loss about \$25,000.

MR. R. J. BRADLEY, Petrolea, Ont., has recently sent a consignment of two car loads of machinery, drilling tools, etc., to Sydney, Australia.

THE Riordan Paper Mills, with headquarters at Merritton, Ont., has been incorporated with \$500,000 capital stock for the manufacture of paper.

THE British Columbia Brick, Tile and Pottery Company has been organized at New Westminster, B.C., for the manufacture of flower pots, tiles, etc.

THE Dominion Typograph Company of Windsor, Ont., has been incorporated with a capital stock of \$1,000,000 for the manufacture of the Roger's Typograph.

MESSRS. MOONEY & SON, St. John, N.B., will build an immense brewery. The main building will be 150x59 feet, five stories high, besides boiler and engine room.

FIRE in the factory of the Gendron Manufacturing Company, Toronto, Feb. 21st, destroyed about \$15,000 worth of baby carriages, children's velocipedes, wagons, etc.

THE Bixel Brewing and Malting Company of Strathroy, Ont., has been organized with a capital stock of \$150,000 for the purpose of engaging in the business suggested by the name.

It is said that the Dominion Organ and Piano Company, who have extensive works at Bowmanville, Ont., will remove their works to West Toronto Junction, a suburb of this city.

SHIP-OWNERS in the County of Hants, N.S., have registered in their name at Hantsport, 240 vessels, seven of which are steamers, the aggregate tonnage of which amounts to 170,751 tons.

MESSRS. GOLDIE & McCULLOCH, Galt, Ont., have recently put into the mills of the Cobourg Woolen Company, at Cobourg, Ont., one of their 200 horse power Wheelock compound steam engines.

MR. WILLIAM HOLMES, Amherst, N.S., is making extensive alterations and improvements in his carriage factory. The buildings include one 100x32 feet and another 90x90, both three stories high.

MESSRS. MURPHY & GATES, Owen Sound, Ont., are building a new sawmill near that place, which they expect to have in operation by June 1st, and in which they will give employment to about fifty hands.

THE Central Bridge Works, Peterboro, Ont., of which Mr. W. H. Law is proprietor, are manufacturing a 210-barrel iron tank and other machinery for the Brooks Manufacturing Company of that place.

MESSRS. JAMES HARRIS & Co., manufacturers of iron, etc., St.

John, N.B., have recently received a consignment of nearly 200 tons of old horse shoes from England, as scrap iron for use in their rolling mills.

THERE are now being built at Parrsboro', N.S., eighteen sailing vessels with an aggregate tonnage of 5,200 tons. Only three of these vessels are less than 125 tons burden, and one of them is a 1,700 ton ship.

THE Acadia Pottery Company, of St. John, N.B., will be incorporated with \$8,000 capital stock for the manufacture of all kinds of earthenware, crockery, terra cotta ware, stoneware, tiles, drain and sewer pipe, etc.

THE British Columbia Fruit Canning and Coffee Company of Vancouver, B.C., will be incorporated with \$20,000 capital stock, to engage in the manufacture of preserved and evaporated fruits, extracts, cordials, vinegar, pickles, etc.

IT is estimated that the lumber cut on the St. John and Aroostock rivers and their tributaries this year will be 150,000,000 feet, which together with the lumber hung up last year will give 200,000,000 feet. Of this latter quantity 125,000,000 is American cut.

THE Vancouver Manufacturing and Trading Company, Vancouver, B.C., will be incorporated with \$100,000 capital stock to acquire, extend and carry on the furniture factory in that place recently established by Mr. E. R. Heaps, late of Toronto and Oshawa, Ont.

MESSRS. GEORGE E. TUCKETT & SON, tobacco manufacturers, Hamilton, Ont., have commenced the construction of a new factory which is claimed will be the handsomest building of the kind in that city. It will be 200x75 feet, five stories high, and will cost \$75,000.

THE Ontario Farmers' Union is an association of farmers in Waterloo county, Ont., with headquarters at Berlin. They propose establishing at Berlin a large works for the manufacture of agricultural and farming implements for their own use. A large amount of the stock has been already subscribed.

THE Brooks Manufacturing Company of Peterboro, Ont., heretofore alluded to in these pages, has been incorporated with a capital stock of \$250,000 for the manufacture of carbons, electric light supplies, gasaliers, gas fixtures of all kinds, chandeliers, lamps, lanterns, clocks, tools and all description of hardware.

THE Manhattan Cotton Duck Company, of Cumberland, N.S., has recently been organized with a capital stock of \$500,000, and erect a factory in which will be placed 30,000 spindles, and their yearly output will be 2,000,000 yards of duck.

WORKMEN are busy putting the Turnbull, Forbes & Co. factory, on North Water Street, in readiness for the new machinery to be placed in it, as also the present machinery therein, which is to be retained. It is intended to have the factory in running order at the earliest possible time in the spring.—Galt Reporter.

MESSRS. CHARLES AND JOHN TURNBULL, of Galt; Robert Forbes, of Guelph, and James H. and John D. Forbes, of Hespeler, with \$50,000 capital, are seeking incorporation under the style of the "C. Turnbull Company, of Galt," to operate the Wardlaw premises in Galt for the manufacture of knitted and woven woolen goods and woolen yarns.

THE Provincial Natural Gas and Fuel Company of Ontario, with headquarters at Toronto and Welland, Ont., has been incorporated with a capital stock of \$500,000 for the purpose of boring for natural gas or other natural commodity in the counties of Lincoln and Welland, Ont., with power to pipe such products under the Niagara river to United States territory.

THE St. Lawrence Starch Company has been incorporated with a capital stock of \$50,000, with headquarters at Port Credit, Ont., near Toronto, for the manufacture of starch and its products, including grape sugar, glucose and dextrine. A description of the works of this company, as planned by the Toronto architect, Messrs. Knox, Elliott & Jarvis, was recently given in these pages.

PRESIDENT McELROY and ex-Ald. Farley, of the Toronto Rubber Company, are expected to arrive in the city in a few days with the object of establishing a branch factory here. If they cannot make arrangements for establishing a factory they will open a branch office. Mr. C. F. Gallagher of the same firm is in the city at present, and will remain until Messrs. McElroy and Farley arrive.—Victoria, B.C., Colonist.

A GREAT discovery of zinc ore has been made near Field, in Manitoba. A Canadian Pacific Railway tunnel is driven right

through the lode, which is simply one solid body of ore. The ore has always been mistaken for red granite, but it turns out to be a very rich body of zinc. It is at least 100 feet wide. The ore assays sixty-five per cent. zinc, ten per cent. iron, \$250 in gold, and \$150 in silver to the ton.

The Acme Silver Company, of Toronto, have purchased the factory lately occupied by Messrs. R. S. Williams & Son as a piano manufactory in this city, and will move into its new quarters on July 1st. There will be \$15,000 worth of new machinery put in, making it probably the largest establishment of the kind in Canada. The company at present employ seventy men, and this force will be increased to 150 when the change is made.

The Cobban Manufacturing Company, Toronto, has been incorporated with a capital stock of \$150,000 for the purpose of carrying on the business of manufacturing, importing and dealing generally in mouldings, picture frames, mirrors, house furniture, cabinet ware, plate glass, sheet glass and all articles of a similar nature, and bevelling, silvering and executing other processes on glass, cabinet-making, gilding and similar works.

With the Windsor (N.S.) Foundry Company mining machinery is a specialty. They are now building an Emerson Capstan-Windlass for Messrs Jacob Pickles & Sons, of Mahone Bay, also an iron windlass for Mr. C. R. Burgess, of Wolfville, and one for Mr. W. H. Mosher, of Avondale, besides two more for Mr. T. A. Mosher, of the same place, while they have many more orders on hand. Their work has attained a high reputation.—Halifax, N.S., Critic.

The progress of the coal industry in the Maritime Provinces is plainly shown by the fact that the output from the Cape Breton mines is three times as great for the past twelve months as it was ten years ago. How important is this interest may be judged from the calculation that over twenty-five thousand draw their means of living from it, in whole or in part. And this is without considering the coal mines in the other parts of the Maritime Provinces, in British Columbia and the Northwest Territory.

M. MANSON, Nanaimo, is in the city negotiating for the building of a fine freight and passenger steamer, to be put on the coast trade of the Province immediately upon its completion. The specifications call for a very substantial vessel, 105 feet in length, twenty-six feet beam and nine and a half feet in the hold. The freight capacity will be about 250 tons, with cabins for thirty passengers. The contract has been let to Wescott & Huntley, and the Albion Iron Works will put in the engines.—Westminster, B.C., Truth.

A CANTILEVER bridge is to be built at Montreal across the St. Lawrence river to Longueuil, that with its approaches, etc. will cost about \$3,000,000. The bridge, which will be built after the style of the great Frith of Firth bridge, will have a double highway and a double footpath. No locomotives will pass over the bridge but cars will be carried across it by means of a wire cable. The iron super-structure will be 8,000 feet in length, and the span over the channel of the river 1,300 feet. It is expected that the bridge will be completed in two years.

The Alliance Manufacturing Company of Toronto, whose organization was alluded to in our last issue, have secured a most desirable factory building on Bay street, near the Esplanade, this city, which they are equipping with a large quantity of dies, presses and other machinery, which they will put in operation within a week. Their lines will include sheet metal drawing and stamping, and the manufacture of Rodden's electric security tubular lantern; Climax can top and can; Peerless mucilage bottle, etc. Mr. C. W. Conner is the mechanical superintendent.

The fact that the Victoria Lumbering and Trading Company are commencing to manufacture at their mill at Chemainus the material for their new mill, should make the powers that be in Victoria in the matter of inducing the company to locate near this city. The mill will have a capacity of sixty million feet annually, all of which is intended for the export trade. The industry named would employ 200 men, and would bring at least sixty ships per year to port. The trade that would directly and indirectly be created by the location of this industry on Esquimalt harbor would be very large and the benefit to Victoria incalculable.—Victoria, B.C., Colonist.

MESSRS. GEO. F. HAWORTH & CO., manufacturers of leather belting, Toronto, supplied all the belting in use on the engines driving the dynamos of the Toronto Incandescent Electric Light Company in their station on Teraulay street, this city. These belts are all double thickness and are endless; and were constructed specially

for the work they are now performing. There is no more exacting service required of a belt than that of dynamo driving; and these belts are of such perfect construction that, although they travel at an exceedingly high rate of speed, their motion is so steady that they do not appear to be in motion at all. They are claimed to be the equal of best electric light belts ever made.

The moulding shops in connection with the Hamilton, Ont., stove foundries are not opening up as early as usual this year. The beginning of February, as a rule, see the moulders all employed, but this year comparatively few men are at work yet. The Gurney Company is moulding about three tons a day instead of fourteen tons; Copp Bros. are also running with a reduced force; the Laidlaw Manufacturing Company will commence moulding next week, and none of the others, so far as known, have commenced work yet. The stove manufacturers had a meeting a short time ago and raised the price of different classes of stoves from five to ten per cent. on account of the advance in the cost of pig iron.

The Reliance Electric Manufacturing Company of Waterford, Ont., who have been so wonderfully successful during the past two years in installing their system of electric light in many of the towns of Ontario, are now devoting their efforts to factory lighting for the coming season. They have just installed a forty light arc plant, 2,000 candle power, in the Wm. Johnson Company's works in Montreal. They have recently lighted the works of Messrs. John Bertram & Sons, Dundas, with a twenty-five light arc plant, and have shipped to the Wm. Hamilton Manufacturing Company, Peterboro, a forty light plant, 1,500 candle power, for installation. Electric light seems to be the favorite for factory lighting.

MESSRS. F. E. DIXON & Co., leather belt manufacturers of this city, have lately completed a large driving belt for the Toronto Electric Light Co. It is thirty-six inches wide, double thickness, and 126 feet long. This is the third large belt of the same size which this firm have made for this company, making in all 320 feet of thirty-six inch double belting now running in their works, besides 100 feet of twenty-five inch double and innumerable smaller belts, all of which are giving first-rate satisfaction. Messrs. Dixon & Co. have recently sent away a twenty inch double belt, sixty-seven feet long, for the new electric light works at Picton, Ont., and two large driving belts for the electric light works at Winnipeg, Man. They have also just completed a contract for a quantity of twisted belting, one and a half inch diameter, to be used instead of rope for the rolls in a large flour mill. The belting made by this firm seems to be famous for its durability.

The Waterous Engine Works Company, of Brantford, Ont., have just completed for Duncan McCormack, of Montreal, at Casselman, Ont., one of the most complete sawmills in eastern Ontario. It consists of a seventy-horse power engine, two large boilers, circular saw irons, with improved carriage, consisting of five-log seats with rope feed, heavy three-saw double edger, double trimmers, swing saw, friction bull wheel, shingle machine, combined planer and matcher, sawdust carrier, live rolls, etc. Their men are now at work constructing a similar mill at Lachute, Que., for Messrs. McGibbon & Co., which will be started in a few days. In both of these mills can be seen at work their new friction grip pulley, which is sufficiently strong to stop and start with ease the heaviest circular or gang mill without stopping the power. This pulley will be a great acquisition to mill men, and from its strength and effectiveness is sure to have a large sale. Any one troubled with the old style of friction clutch pulley, or who desires to stop and start heavy machinery without interfering with the power, should write them for information. Their friction grip can be attached to old pulleys as well as new.

HITHERTO the nickel produced by the few mines of this mineral in the world has been so limited that it was too scarce and dear for general purposes. Thirty years ago nickel was worth \$1.20 a pound, now it is down to half this price, and when our mines here are fully developed large profits can be made at twenty-five cents a pound for it. Nickel is a most useful mineral. Late experiments have shown that it is specially adapted for toughening steel and iron, and all the nations of Europe will therefore need vast quantities of it for making gun metal. It will also be used now in shipbuilding, the manufacture of railway car springs, bridge iron, electric machines, kitchen utensils and a thousand other things. Mr. James Riley, of Glasgow, who is one of the leading metallurgists of Great Britain, has been experimenting for some time on the alloys of nickel and steel, with the most astonishing results. He has discovered that about five per cent. of nickel increases the breaking strain of steel over thirty per cent., and almost doubles its elastic quality. Wire can be made of this nickel-steel so fine as to be

suitable even for sewing thread. Then this new metal is practically non-corrodible, and does not tarnish or rust like ordinary steel. It also takes a finer polish, has a brighter look and lasts a great deal longer. A company has already been started in France with the patentee, M. Marbeau, at its head, for the manufacture of ferro-nickel, and the importance of the discovery can hardly be over-estimated. Several English firms have now orders for thousands of tons of ferro-nickel for plating steamships and the like, but are unable to obtain sufficient supplies of nickel for its manufacture. Two things are quite evident from all this: first, that we cannot have too much nickel any more than we can have too much silver or gold, and secondly, that the Sudbury district is going to be one of the greatest mining centres of the world before long.—Sudbury, Ont., *Mining Journal*.

NEXT to stoves hot air furnaces are most extensively used for heating houses. In theory they are excellent devices, and when of sufficient size and properly set and piped they are effective and economical. They take the place of several stoves, and confine the labor and dirt to one apparatus in the basement, and when properly managed warm the whole house evenly. A good feature of their use is that ventilation becomes a necessity to their effective operation. Fresh cold air being warmed by contact with the heated surfaces of the furnace is conducted to rooms above. But as these rooms are already full of air provision must be made to remove a portion of it before the hot air can gain adequate access. This removal of air through flues, fire-places or open windows ventilates the rooms. Now if the furnace is so large that it does not have to be overheated to warm sufficient air to render the rooms comfortable, we have an excellent system. Large volumes of moderately-heated air should be provided by the furnace system of heating, instead of a small amount of highly-heated or "burned" air, as is too often the case. In the use of stoves and furnaces, particularly the latter, it is well to provide for the evaporation of water to supply the proper degree of humidity to the air. Air at a low degree of temperature will hold only a certain amount of moisture. As it becomes heated it takes up more moisture, and if supplied in no other way it will be abstracted from the bodies of persons in the room, from the furniture, etc. This produces headache and discomfort to persons and injury to furniture. A better course than to rely entirely upon the usual water holder placed in the furnace, is to place vessels of water in the registers. Furnaces should be frequently examined in order to know that the draught is right, that all pipes are clean, that castings and fire-pots are sound, and that it neither leaks gas nor takes air from the cellar instead of taking it from out-doors.—*Good Housekeeping*.

MESSES. S. R. WARREN & SON, Toronto, have just completed and delivered a magnificent organ for St. James Cathedral, this city; and because of the peculiar and ingenious construction of it, and the novel use of electricity in operating it, we give the following facts regarding it:—The old organ which had done good service for so many years, and which was built by the late Mr. Samuel R. Warren in 1853, was removed, but the large and handsome case was retained, in order to cover up what would otherwise be a blank wall. The space obtained in the vestries was, however, of peculiar shape, necessitating the nicest calculation and arrangement of the different parts; and as the two vestries are sixty feet apart, and, moreover, as the scheme for the new organ provided for a combined solo and echo organ to be placed inside the case of the old organ in the gallery 150 feet away, Mr. Warren soon found that no ordinary action would serve the purpose. Electricity had been employed in difficult positions for a number of years by builders of note both on this continent and in Europe, but as all these systems made use of primary batteries, and some form or other of the objectionable horseshoe magnet, Mr. Warren did not have much faith in electric action. It was by accident he learned of the Wacker magnet, and on investigation found this to be the ideal system, and decided to adopt it. Each note of the three key-boards is provided with an electro magnet and a pneumatic collapsing bellows attached to the ordinary pallet. From each of these magnets a fine insulated wire runs to a metallic point attached to the key action in such a way that on the depression of a key the metallic point is dipped into a cell of mercury. A second wire runs from the magnet to the mercury cell and to the battery, so that on a key being touched an electric current is formed and the valve opened admitting the wind to the pipe. The pedal organ has from its peculiar position three sets of magnets, making in all 273 electro magnets for manual and pedal actions. The wires are woven into cables, each wire being doubly insulated and then covered with a double woven covering soaked in paraffine. One of the most interesting features of the electric action is the draw stop action, which is operated by two magnets, one "on" and the other "off," the electric current being shifted automatically to the opposite pole by a double-acting power bellows,

thus saving loss of electricity. The amount and strength of the current is very small, as will be seen by the following comparisons: The arc light requires a current of from 2,000 to 2,500 volts, and the incandescent light a current of 100 volts, while the electric organ action can be worked by three volts, although in the present case six are employed. Considering the feeling of dread with which people generally regard electricity, it is reassuring to know that there can be no possible danger from so light a current. The current will be supplied by the Incandescent Light Company when their central station is in operation. At present a Robert's electric accumulator of three cells furnishes the necessary electricity, and has given excellent satisfaction. The storage battery will always contain a sufficient supply to last two months, so that no failure can occur by accident to the electric light plant. Two switches worked automatically from the bellows of the organ cut off the supply of electricity from the street and from the battery, so that no waste occurs when the organ is not in use, but immediately on the bellows being inflated chemical action commences in the storage batteries. The wind supply is ample. One large bellows with square feeders is placed in the tower and operated by a "Berry" hydraulic engine. Another bellows is placed in the east vestry and operated by a "Guest" motor situated in the cellar. The former supplies the pedal organ and the stop action pneumatics, and will, when the solo organ is completed, furnish wind for that portion of the instrument. The wind is carried down from the tower in a fifteen-inch galvanized iron pipe underneath the floor of the church to the chancel, a distance of 150 feet. At that point it divides and passes underneath the east and west vestries, being there distributed by various intermediate bellows to its proper work. The east vestry bellows is reserved solely for the manual wind chests, although by an ingenious arrangement of automatic valves in the main wind trunk the tower engine can be dispensed with for choir practice or light playing, the wind from the east vestry bellows being available for the pneumatic stop action and a portion of the pedal organ. When the tower engine is set in motion these valves close, and the wind is again diverted into its legitimate channels.

#### NOVA SCOTIA STEEL AND FORGE COMPANY.

A FEW days ago a Halifax, N.S., paper contained the following regarding what is probably the largest and most important metallurgical industrial works in Canada:

In point of dimensions amount and value of annual product and capital represented, the Nova Scotia Steel and Forge Company, of New Glasgow, ranks among the largest and most important industrial interests of the Dominion. The plant covers fifteen acres along the East river, about a mile distant from New Glasgow. They were established in 1882 with a then paid up capital of \$160,000, now amounting to \$400,000 paid up. On January 1, 1889, the Nova Scotia Steel Works absorbed the Nova Scotia Forge Company, with its franchises, lands, buildings and equipment, when the "nom de commerce" of the enlarged and new arrangement became the Nova Scotia Steel and Forge Company. Since July, 1888, they have expended \$50,000 in extensions and new equipment. The works employ 420 men, paid last year \$137,000 in wages, consumed 30,000 tons of coal, and produced about 12,000 tons of iron and steel, valued at over \$600,000, for the transportation of which \$68,000 was last year paid to the railways. The present production comprises merchant and agricultural steel, railway car axles, mill and scrap steel. The development of this industry will be more readily appreciated from the following statement of increases in the annual production:

1885	Increase over	1884	41	per cent.
1886	"	"	94	"
1887	"	"	158	"
1888	"	"	251	"
1889	"	"	314	"

"How much higher prices do the consumers of your produce pay as the result of the tariff which created this increase in your production?" I asked Mr. Fraser, manager of the company.

His reply was: "The consumer has paid no more for our line of goods during the ten years of the National Policy than was paid during the ten years previously under semi-free trade, or a revenue tariff, and in the matter of car axles the price under the N. P. has been actually cheaper, notwithstanding an import duty of \$30 a ton, while work has been given to a small army of people and millions of dollars kept in the country which formerly was sent to foreign countries for the sole benefit of foreign manufacturers and foreign benefit."

VICTORIA, B.C., INDUSTRIES.

THE Victoria, B.C., *Colonist* gives a long list of the mechanical industries of that city, among which are the following :

The Albion Iron Works is the most important industry in this city, and has during the past year made large additions to their machinery and buildings. Upwards of 250 men are constantly employed in the various departments, their monthly pay amounting to about \$16,000. The company manufacture marine engines and boilers, stationary and hoisting engines and boilers, bridge work, water pipes, car wheels, stoves, etc. They at present have the contract of repairing H.M.S. *Amphion* at a cost of \$150,000. During the past year they built triple expansion engines for the tug *Lorne*, the strongest and swiftest on the coast, besides building several small tugs and steamers.

Ames Holden & Company, boot and shoe manufacturers, employ sixty-five men, mostly Chinese, and pay in wages \$25,000 per year. This company purchased and amalgamated W. Heathorn's shoe factory and the Belmont Co

Victoria has four ship-yards which all do a good business, employing about 100 men ; they are R. Colvin, Rock Bay, Star ship-yard, Cook's yard and Lang's James' Bay yard.

W. P. Sayward, Rock Bay sawmill, employs at logging camps and mill sixty men, with a monthly pay roll of \$3,000. The output for the year amounted to about 3,500,000 feet.

B. C. Soap Works, W. J. Pendray & Co., employ seven men ; monthly wages \$600, and turn out 15,000 lbs. of soap per week, valued at \$750. They also manufacture washing soda and boxes.

Pennock & Clayton, manufacturing jewelers, give employment to twelve men, and the annual pay roll is about \$10,400.

John Weiler, furniture manufacturer, employs fifty hands, and pays \$3,600 in wages per month.

R. T. Williams, B.C. Directory and Book-binding Company, employs nineteen hands ; yearly pay sheet, \$4,500. Amount of work for the year, \$15,000.

Rock Bay Tannery, W. Heathorn, proprietor, employs nine to twelve men, the monthly pay roll averages \$700 ; output for 1889, 12,000 sides of leather.

Elford & Smith employ twenty-two men in their brickyard, including Chinese. Monthly wages, \$700 ; output for 1889, about 2,000 000 brick.

McKillican & Anderson employ 20 men ; weekly pay roll amounts to \$400. Amount of business done during the year \$80,000.

Smith & McIntosh employ thirty-five men ; monthly wages \$3,500. Amount of business for the year \$130,000.

Jacob Sehl, furniture factory, gives employment to seventy-five hands ; \$4,500 is paid in wages per month, and the annual output amounts to \$600,000.

McLennan & McFeeley, galvanized iron works, employ twelve men ; monthly pay roll, \$700 ; turnout for 1889, \$22,000.

J. Piercy & Co., shirt factory, employ from thirty-five to sixty hands, and pay about \$450 a week for wages.

Victoria Rice Mills employ seventeen men ; monthly pay roll, \$1,500. Amount of business done for the year, \$150,000.

Muirhead & Mann, sash and door factory, employ sixty-six men ; monthly pay roll, \$2,800 ; work done for 1889, \$150,000.

Spratt & Gray, foundry, employ thirty men ; monthly pay roll, \$12,000.

Vancouver Foundry, Pembroke Street, gives employment to fifteen hands ; monthly pay sheet, \$800 ; annual output about \$50,000.

**PATENTS**

Obtained in Canada, United States, Great Britain and all Foreign Countries.

Trade Marks, Designs and Copyrights Registered.

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Canadian Bank of Commerce Building (2nd floor),  
TORONTO.

**Valuable Properties  
AT AUCTION.**

The undersigned has received instructions from  
J. C. Hart, Trustee of the Estate of

*Jos. Walker & Co., Woolen Manufacturers, Alliston, Ont.*

TO OFFER FOR

**SALE BY PUBLIC AUCTION**

ON THE PREMISES IN

*Alliston aforesaid, at 1 p.m. of Tuesday, March 11, 1890*

THE FOLLOWING VALUABLE PROPERTIES,  
REAL AND PERSONAL :

**Parcel I.**—Lot 14, North Nelson Street, consisting of one and twenty-two one hundredths acres of land. On this property are erected what are known as the **Alliston Woolen Mills**. These mills have a high reputation for producing first-class goods, and their annual sales are limited by manufacturing capacity only. They are a full 2-set factory, containing modern machinery, all in good order, operated by 45 h.p. boiler and a 30 h.p. engine, and heated by exhaust steam Wood easily and cheaply obtainable. Connected with the mills is a new fire proof Picking Room, Store-house and Office. Also on this lot is a framed Stable and Driving-house. This is a going business, the good-will of which is a very valuable asset.

**Parcel II.**—Nos. 12 and 13 North Nelson Street, Alliston, containing half an acre. On this property there is a fine **Brick Dwelling**, two stories, 25x30 feet, with Stone Cellar, full size. Brick clad Dining-room and Kitchen attached, 20x26 feet ; Frame Woodshed, 14x30 feet ; good Fruit Trees in bearing condition ; Hard and Soft Water.

**Parcel III.**—Nos. 10 and 11 North Queen Street, Alliston, containing half an acre. On this is erected a **Frame Dwelling House**, 20x26 feet, one and a half stories, with Kitchen and Woodshed attached. All well finished and painted. Choice bearing Fruit Trees ; also Well and Cistern.

All the foregoing property is in first class order.

**Parcel IV.**—Tweeds, Cloths and Yarns, amounting per inventory, to about \$850.

**Parcel V.**—About 100 Cords of Soft Wood, four feet long.

Terms for the Real Estate, ten per cent. at time of sale, balance within thirty days thereafter, but special and suitable arrangements may be made with the mortgagees. Terms for Lots IV. and V., cash.

Each of Parcels I., II. and III. will be sold subject to a Reserved Bid and to certain Mortgages.

The Stock and Stock List representing Parcel IV. may be seen on application to the Assignee at Alliston.

The Wood will be sold by the cord.

The purchaser of the Woolen Mills will have the option of buying Parcel II. at the Reserved Bid.

**W. S. WALLACE,**  
Auctioneer.

# WEST TORONTO JUNCTION FACTORY SITES

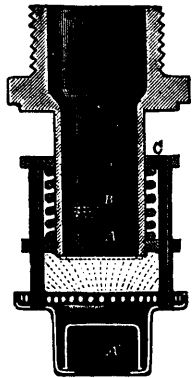
Can now be obtained under most desirable terms, at mere nominal prices, while other advantages can be obtained as to water and taxes.

The land is situated close to the Grand Trunk and the Canadian Pacific, within three minutes of the Grand Trunk Station, Carlton and five to the C.P.R. These sites form part of one of the most beautiful estates yet offered for sale.

Call and see plan of same without delay at my Office, 28½ Victoria Street, Toronto.

**WILLIAM MEDLAND,**  
*Pioneer Agent.*

# FIRE PROTECTION.



BUILDINGS EQUIPPED

WITH

**AUTOMATIC  
SPRINKLERS**

BY

**ROBERT MITCHELL & CO.**

MONTREAL BRASS WORKS,

Write for estimates MONTREAL

**THE WELLINGTON MILL  
LONDON, ENGLAND,**

# GENUINE EMERY

**OAKEY'S Flexible Twilled Emery Cloth.**

**OAKEY'S Flint Paper and Glass Paper.**

**OAKEY'S Emery Paper, Black Lead, etc.**

Prize Medal and Highest Award, Philadelphia, 1876, for Superiority of Quality, Skillful Manufacture, Sharpness, Durability, and Uniformity of Grain.

Manufacturers: **JOHN OAKEY & SONS, Wellington Mills, Westminster Bridge Road, London, Eng.**

Enquiries should be addressed to

**JOHN FORMAN, 467 St. Paul St., MONTREAL.**

# The Standard Drain Pipe Co.

OF ST. JOHNS, P.Q. (Ltd.)

MANUFACTURERS OF SALT GLAZED, VITRIFIED,

# FIRE CLAY SEWER PIPES AND CONNECTIONS.

*Culvert Pipes (double strength), Smoke Jacks for Locomotive Round-Houses, Inverts for Brick Sewers, Garden Vases, Chimney Tops, and all kinds of Fire Clay Goods. Send for Price Lists and Circulars.*

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# NAPANEE CEMENT COY

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# HYDRAULIC CEMENT

*Warranted equal, if not superior, to any native cement, and as good, for most uses, as Portland.*

Full particulars of strength, tests, etc., furnished on application. Endorsed by leading Cities, Engineers, Railways and others.

**ROACH LIME.** Particularly adapted for paper manufacturers gas purifying, etc.

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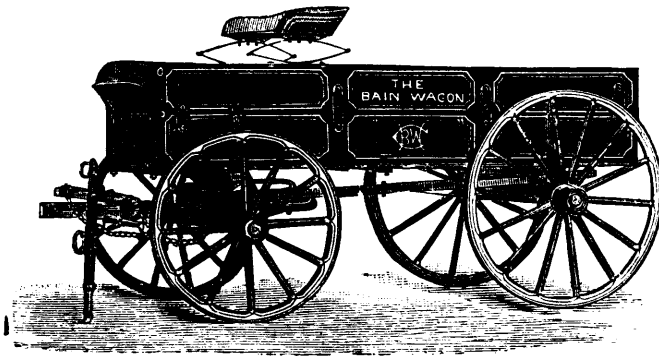
DANVILLE, - QUE.

As Saw Mill work is the hardest that Belting has to do, we refer  
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Messrs. Gilmour & Co., Trenton, Ont.; The Rathbun Co., Deseronto, Ont.; Messrs. Boyd Caldwell & Son, Carleton Place, Ont.; The E. B. Eddy Manfg. Co., Hull, Que.; Messrs. Beck & Co., Penetanguishene, Ont.; Messrs. Flatt & Bradley, Casselman, Ont.; Messrs. Hall, Neilson & Co., Three Rivers, Que.; Cookshire Mills Co., Sawyerville, Que.; The Bennett Saw Mill Co., New Westminster, B.C.; The Waterous Engine Works Co., Brantford, Ont.; The Wm. Hamilton Manfg. Co., Peterborough, Ont.

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LIGHT RUNNING  
**FARM, SPRING AND FREIGHT WAGONS**

Also Heavy Sleighs and Steel Skein Log Trucks.

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HIGH CLASS ONLY.

Pure, Sweet Tone,

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In Constant Use in the Toronto Conservatory of Music and Toronto College of Music. The Professors in each of these Institutions Highly Recommend them.

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Warerooms at Toronto, Hamilton, and St. Thomas, Ontario.

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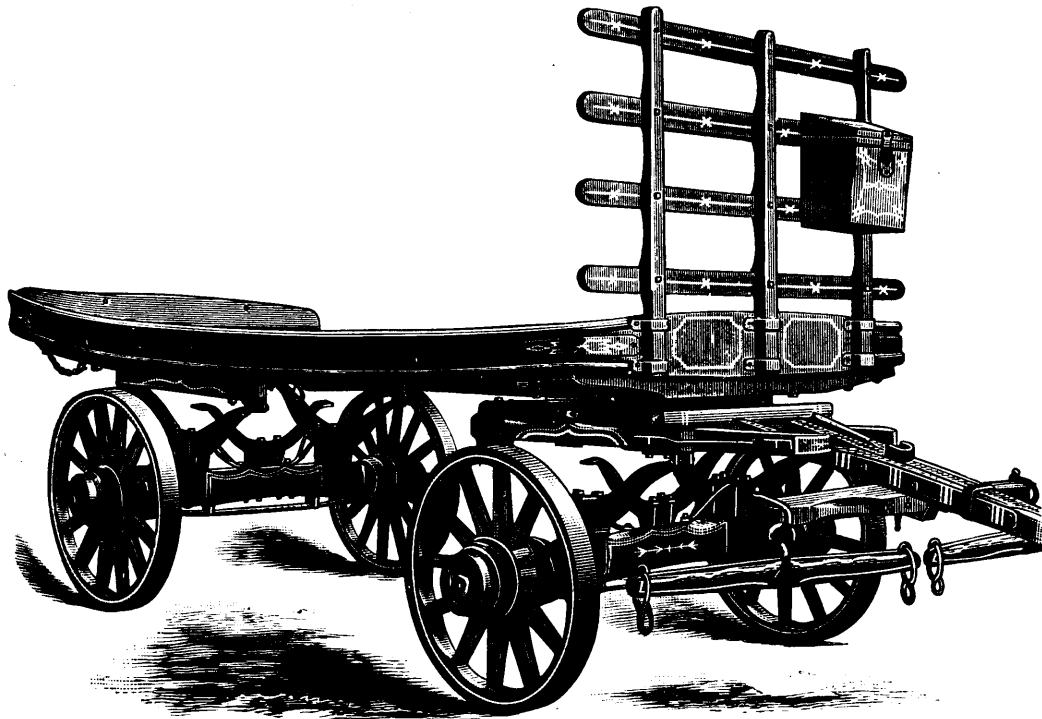
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One and Two-Horse

# LORRIES

With and Without Springs.

SHIP PLANK AND HARDWOOD LUMBER.



Of a two horse, the above is a faithful cut. Found to be as durable, and the greatest carrier and easiest running Lorry made in Canada. At greatly reduced prices.

Correspondence solicited.

THE CHATHAM TWO-HORSE SPRING LORRY. 4 in. arms, 4 x 1/2 inch tire; capacity, 4 tons. The best and easiest running Lorry made in Canada.

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STOCK AND MUTUAL.

### OBJECTS.

1. To prevent by all possible means the occurrence of avoidable fires.
2. To obviate heavy losses from the fires that are unavoidable by the nature of the work done in mills and factories.
3. To reduce the cost of insurance to the lowest point consistent with the safe conduct of the business.

### METHODS.

All risks will be inspected by a competent officer of the company, who will make such suggestions as to improvements required for safety against fires, as may be for the mutual interests of all concerned.

Much dependence will be placed upon the obligation of members to keep up such a system of discipline, order, and cleanliness in the premises insured as will conduce to safety.

As no agents are employed and the company deals only with the principals of the establishments insured by it, conditions and exceptions which are so apt to mislead the insured and promote controversy and litigation in the settlement of losses will thus be avoided.

The most perfect method of insurance must, in the nature of things, be one in which the self-interest of the insured and the underwriters are identical, and this has been the object aimed at by the organizers of this company.

**W. H. HOWLAND,** Vice-President.  
**JAMES GOLDIE,** President.  
**HUGH SCOTT,** Managing Director.

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Issues Life Policies upon approved plans.

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### AUTHORIZED CAPITAL:

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Accident Company,	1,000,000.00

### OFFICERS:

SIR JOHN A. MACDONALD, P.C., G.C.B. - - PRESIDENT.

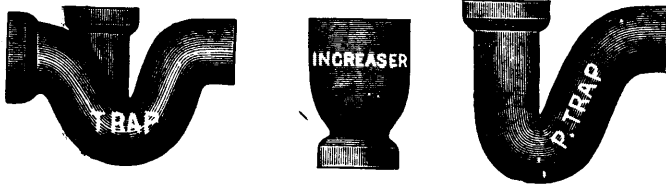
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GEORGE GOODERHAM, Esq., President Bank of Toronto.	WILLIAM BELL, Esq. Organ Mnfr, Guelph.
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**JNO. F. ELLIS,** - Managing Director.



A. E. CARPENTER, Pres. J. H. New, Vice-Pres. HENRY NEW, Sec.-Treas.



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SUCCESSORS TO

The Campbell Sewer Pipe Co. and  
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STEAM-PRESSED, SALT-GLAZED

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# SEWER PIPE,

FLUE PIPES, CHIMNEY TOPS and  
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Established 1860.



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## RUBBER SHOES & FELT BOOTS,

Patent Pressed Double Strip Rubber Belting

RUBBER  
ENGINE,  
HYDRANT,  
SUCTION,  
STEAM,  
BREWERS'  
and FIRE  
HOSE.  
HORSE  
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RUBBER  
VALVES  
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SPRINGS  
WRINGER  
ROLLS  
CARRIAGE  
CLOTH  
BLANKETS  
STOPPLERS  
etc., etc.

Mould Goods of Every Description.

LADIES' & GENTLEMEN'S TWEED and GOSSAMER CLOTHING

OUR RUBBER GARDEN HOSE IS THE  
BEST IN THE MARKET.

J. H. WALKER, - Manager.



Ewart Link Belting for Elevating and Conveying. Send for new Catalogue of Mill Furnishings and Best Discounts.  
Waterous Engine Works Co. (Limited), Brantford, Canada.

# Goldie & McCulloch, GALT, ONT.

Have the following SECOND-HAND MACHINERY, which they offer cheap and on reasonable terms.

- Iron Turning Lathe, 18 feet bed, 32 inch swing.
- 80 H. P. Automatic Cut-off Engine, can be seen at Hamilton Electric Light Co's Station, Hamilton, being replaced by Wheelock Engine.
- 80 H. P. Ingles & Hunter Engine, to be seen running at Wm. Cane & Sons, Newmarket, being replaced by Wheelock Engine.
- 80 H. P. Dickey, Neill & Co. Engine, splendid for Saw Mill, recently replaced by a Wheelock Engine.
- 50 H. P. Leonard-Ball Automatic Cut-off Engine, being replaced by a Wheelock Engine.
- 50 H. P. Slide Valve Engine, our own make.
- 35 H. P. Kelley & Co. Engine, recently replaced by a Wheelock Engine.
- 40 H. P. Corless Engine and 50 H. P. Boiler, only a short time in use, made by Cowan & Co., and replaced by a Wheelock Engine.
- 30 H. P. Slide Valve Engine, our own make.
- 25 H. P. Kelley & Co. Engine, recently replaced by a Wheelock Engine.
- 30 H. P. Brown Engine, to be seen at W. Doherty & Co's, Clinton, being replaced by a Wheelock Engine.
- 20 H. P. Beckett Engine, being replaced by a Wheelock Engine at Joseph Lowrie's, Sarnia.
- 25 H. P. Westinghouse, recently replaced by a Wheelock at Chas. Boeckh & Sons, Toronto.
- 15 H. P. Slide Valve Engine, at Messrs. Sawyer & Massey Co's, Hamilton, being replaced by a Wheelock Engine.
- 12 H. P. Slide Valve Engine, at Davidson & Leslie's, Mount Forest.
- 20 H. P. Slide Valve Engine, at D. Morton & Sons, Hamilton, being replaced by a Wheelock Engine.

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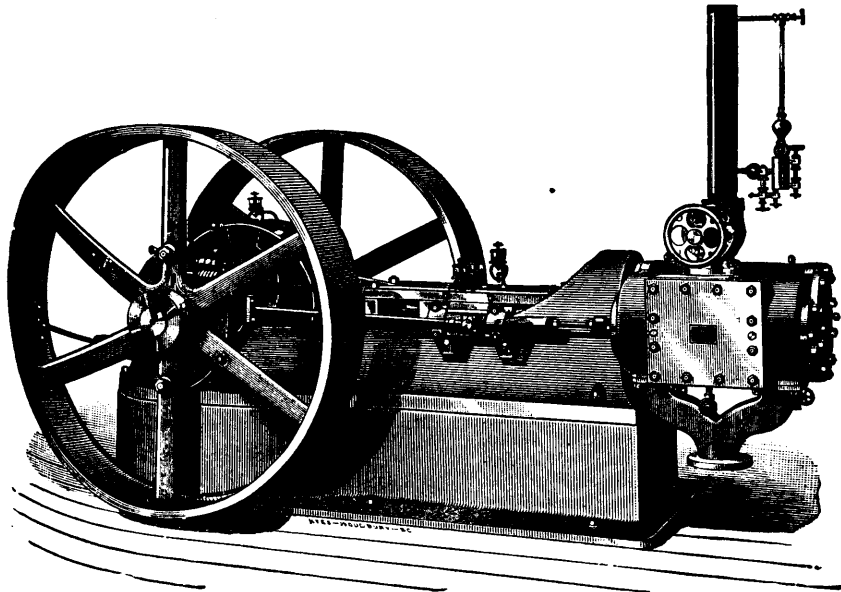
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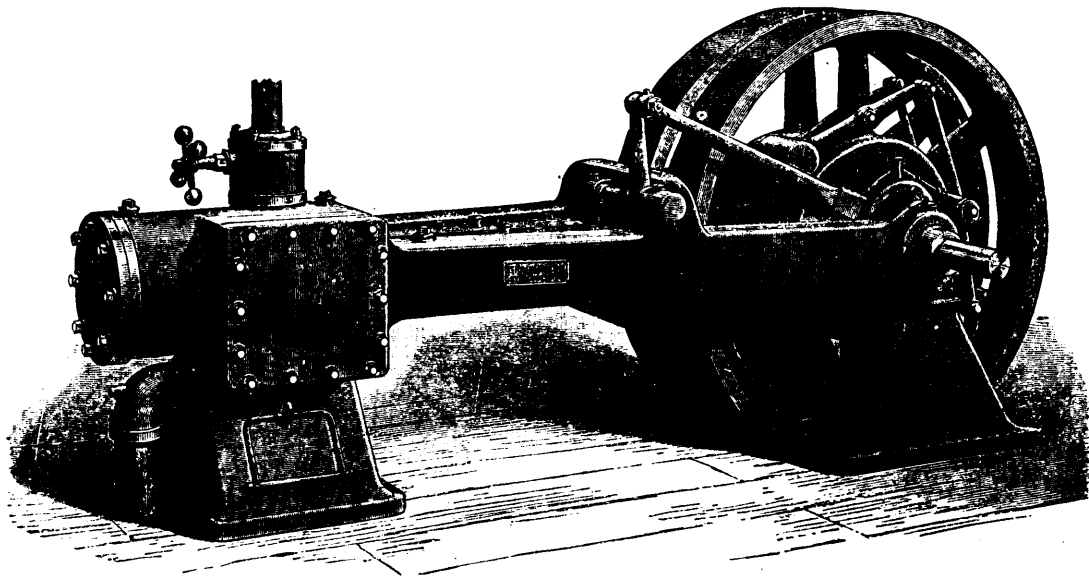
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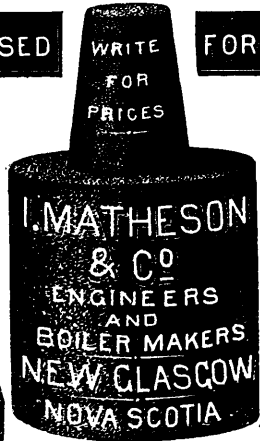
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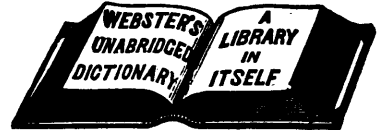


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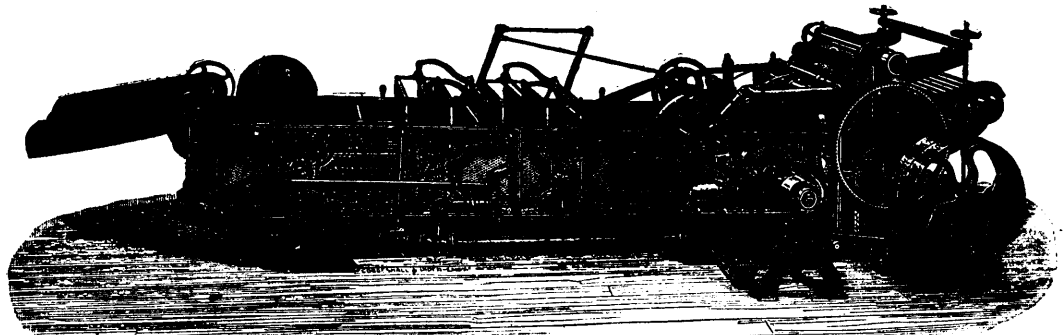
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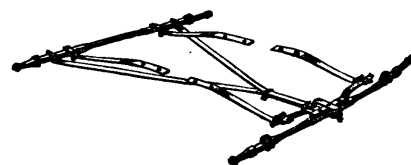
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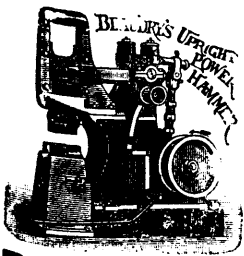
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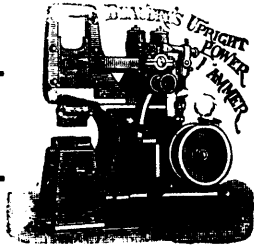
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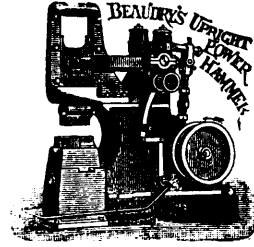
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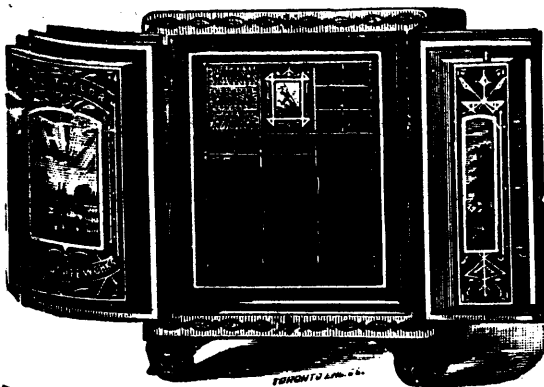


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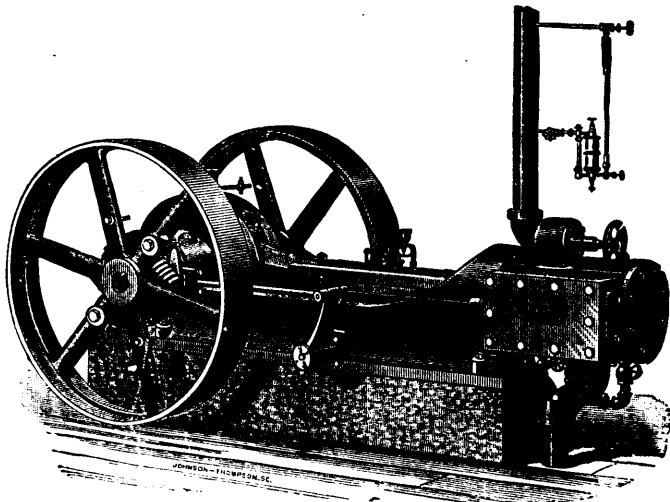
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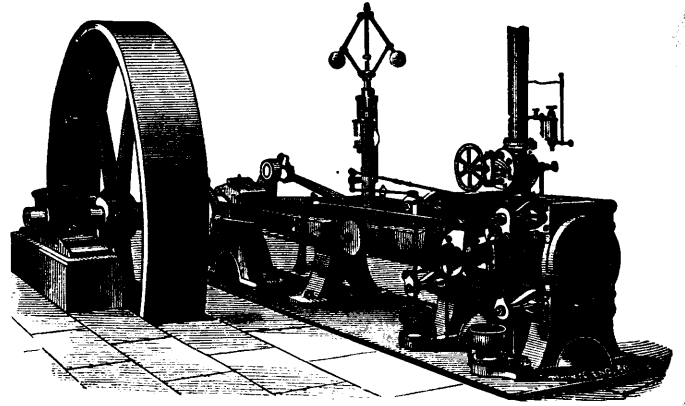
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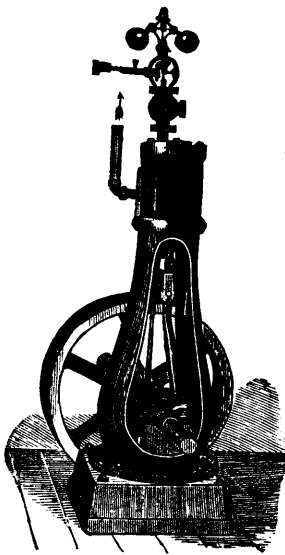
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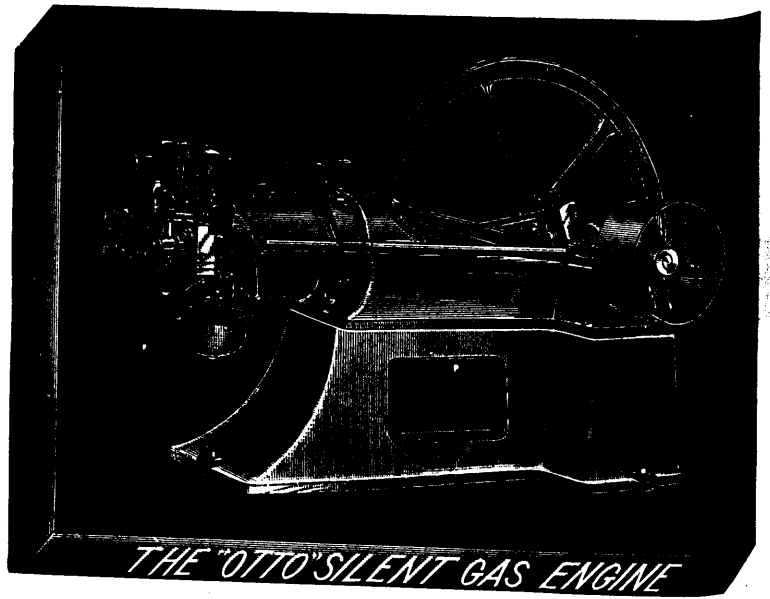
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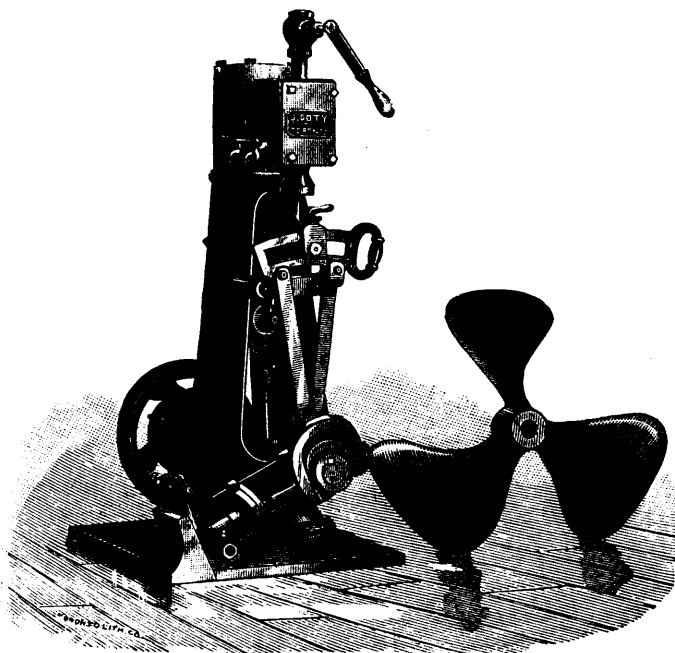
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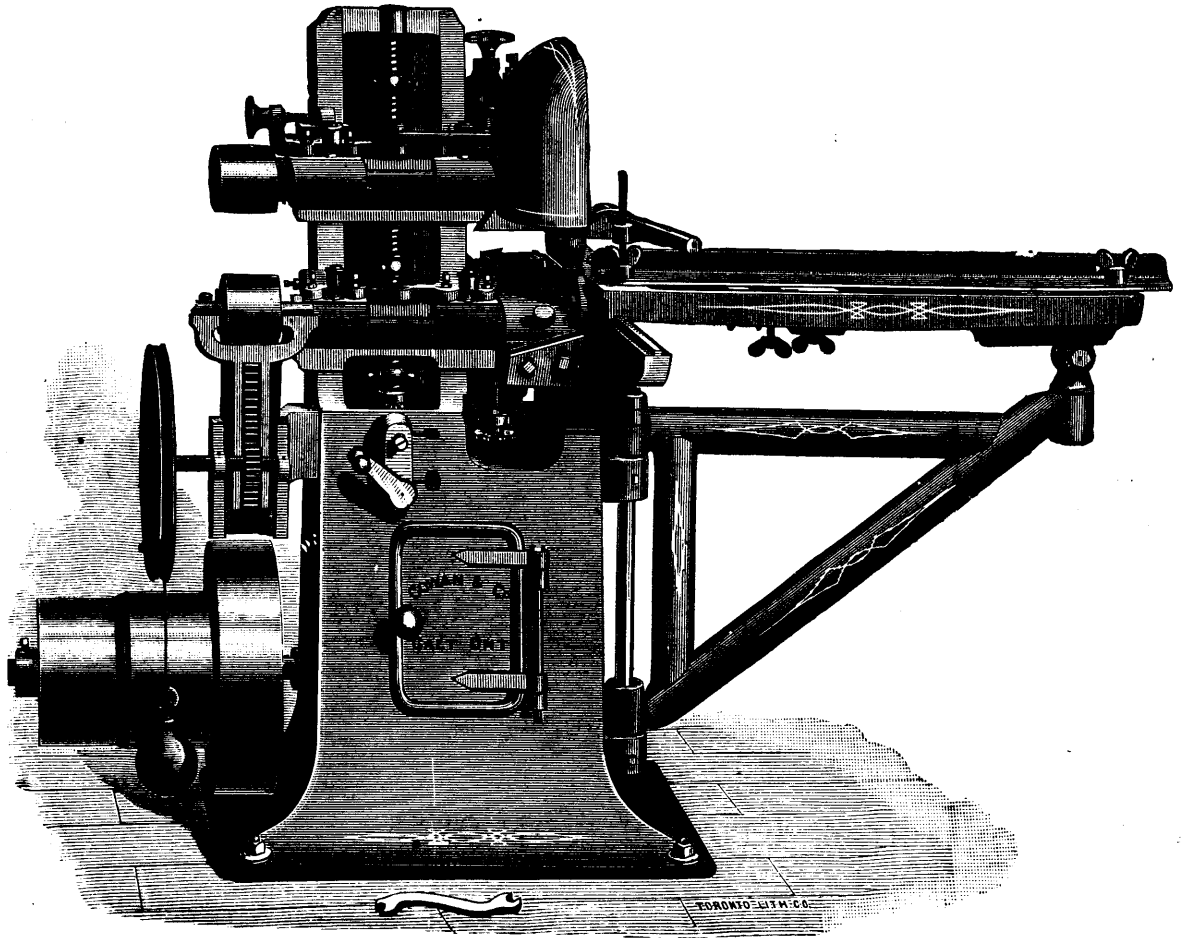
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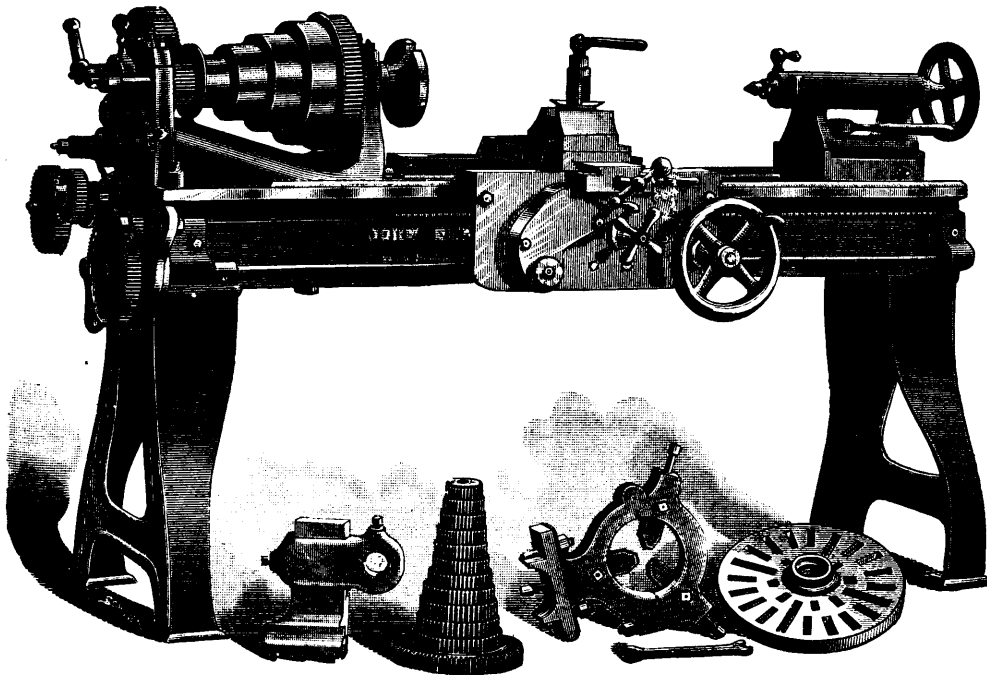
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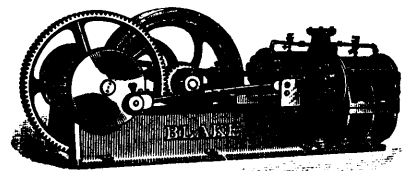
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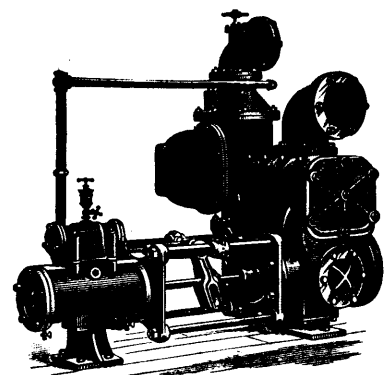
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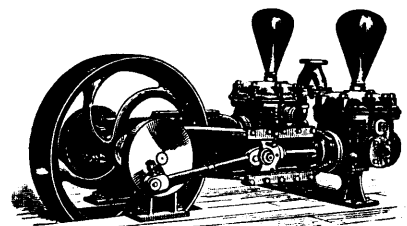
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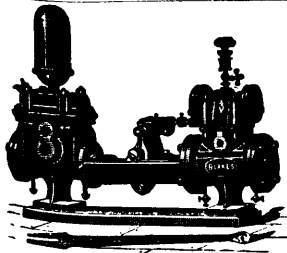
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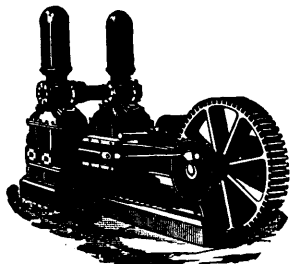
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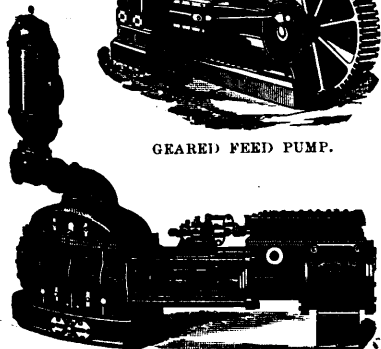
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# *Nova Scotia Steel Co., Limited,*

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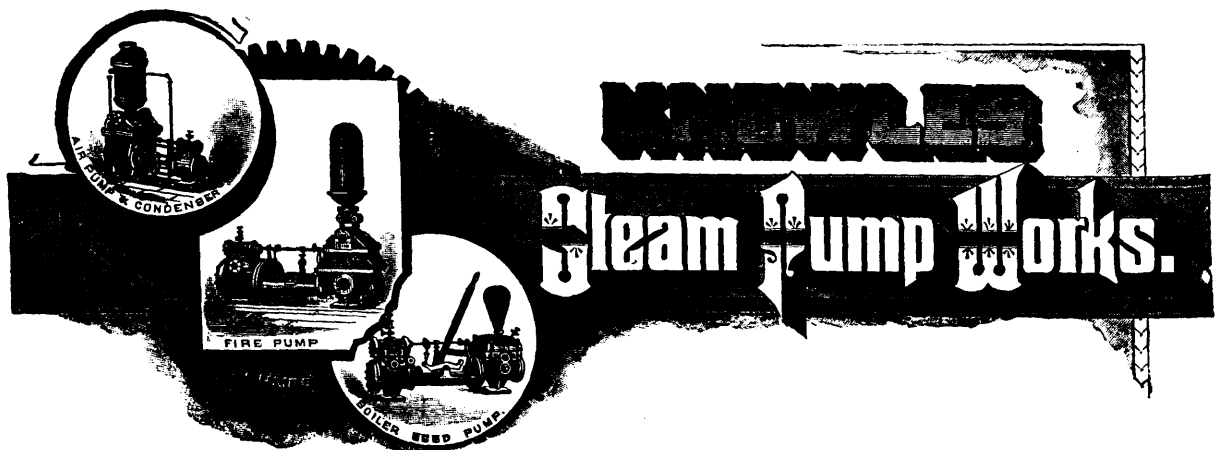
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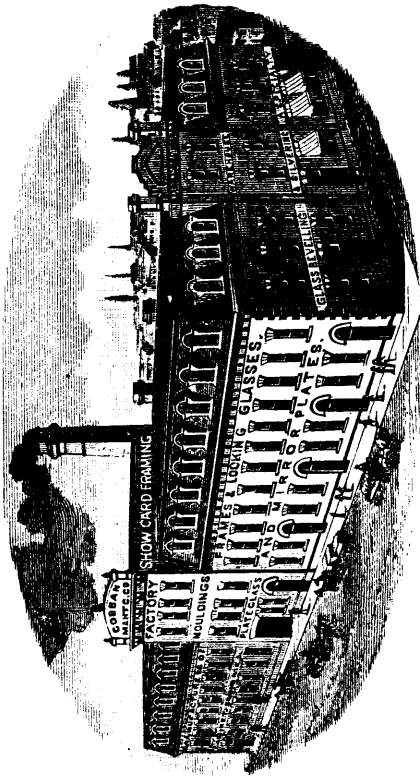
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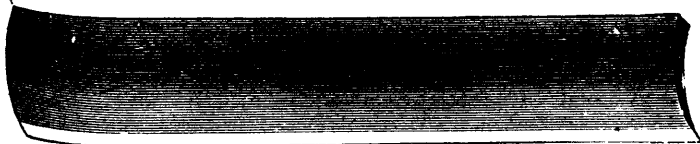
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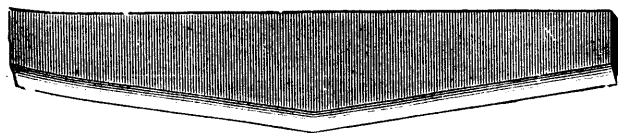
PLANING MACHINE  
 KNIVES.



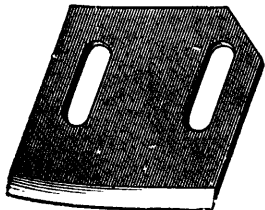
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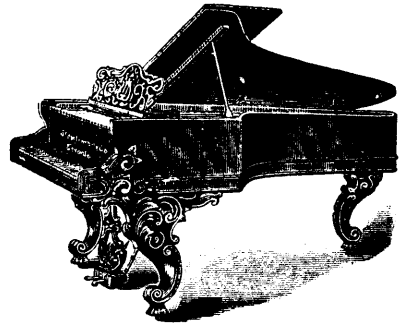
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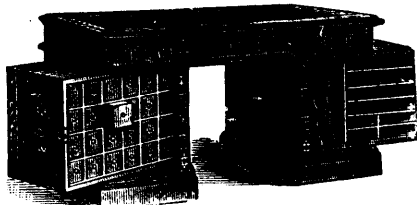
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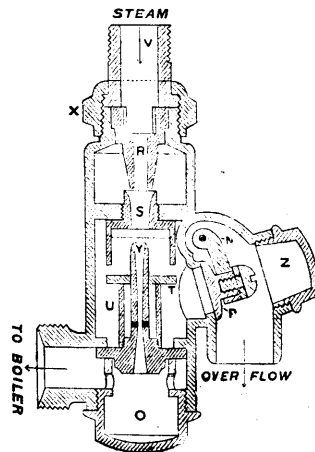
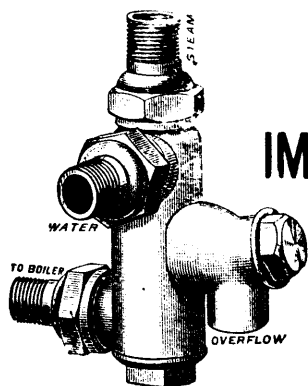
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