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AND INDUSTRIAL WORLD

DEVOTED TO THE MANUFACTURING INTEREST OF THE DOMINION

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COMPLIMENTS OF THE SEASON.

To its many readers, to its patrons and its friends the CANADIAN MANUFACTURER tenders the compliments of the Season. Twelve years ago—in January 1880—the initial number of this journal was issued, since which event it has never failed in making its regular and promised appearance. In the beginning it was created in the interests of Canadian manufacturing enterprises, and it has never failed in advocating and maintaining these interests. It knows that the more a country produces the richer it becomes, therefore it favors that system of government which encourages the enterprises of home producers. It knows that the nation that manufactures for itself prospers, therefore its desire to see this fair and beautiful Canada of ours rich and prosperous leads it to advocate such encouragement to its industrial pursuits as will elevate them, and Canada through them, to a lofty pinnacle of material greatness.

An important feature in the development of our manufacturing industries is the information our manufacturers obtain regarding what other manufacturers are doing, and the sources from which they can, to the best advantage, obtain their tools, machinery, materials and supplies: and we offer our pages as a desirable medium for this purpose. Our circulation is chiefly among manufacturers, and those who have not already availed themselves of our services, and who desire to do business with these manufacturers, would conserve their interests

by placing their business cards in our pages. Wide-awake men do not light a candle and place it under a bushel, but advertise their business in journals like this where it will be seen of other wide-awake men. The better to assist these live men in bringing their business to the attention of the interested public, the services of Mr. John C. Gardner have been secured, as the business representative of the CANADIAN MANUFACTURER. Mr. Gardner is a gentleman of large experience in this department of the publishing business, and we feel assured our friends will extend to him a hearty reception.

It will be observed that a new Department has been made a feature of this journal, devoted specially to the interests of inventors and patentees of inventions. Canada is well to the front in the number of patents which are issued yearly by our Government, and in the intrinsic value of them: and in addition to the patents granted to Canadian inventors large numbers of them are being taken out from the United States, Great Britain, France, Germany and other countries. It is this fact, coupled with the further fact that the foreign article upon which a patent is taken out in Canada must be manufactured in this country and made available to the public within a limited time, that makes this patent business of especial interest to Canadian manufacturers. The patented article must be manufactured in Canada. We possess most excellent facilities for obtaining all possible information and that at the earliest possible moment, regarding the transactions had at the Canadian Patent Office; and this information shall hereafter be given most promptly in these pages. And this will include not only patents, but copyrights and trademarks. All enquiries regarding any branch of this business will be promptly and intelligently answered, and correspondence is invited.

Therefore in tendering the compliments of the season we feel quite sure we are doing our friends a substantial service in pointing out to them ways by which their prosperity and happiness may be increased.

ENFORCING THE CUSTOMS' LAWS.

THE *Toronto Globe*, through its Montreal correspondent and in its editorial pages, continues its warfare upon the Customs' Department of the Government, the assaults being made in favor of those importers who persistently insist upon entering their merchandise at less than its intrinsic value. The complaints are that the Department maintain special agents who can make seizures over the heads of the local authorities, and heavy prices imposed for "unimportant irregularities." These "irregularities" usually consist in undervaluing merchandise, thereby defrauding the customs, or in smuggling or attempting to smuggle in goods without the payment of any duty whatever.

There is this to be said in this matter—there are laws which govern the Government officials in all these matters, and which should be a guide to the importer as well. No merchant should engage in the importing business until he is familiar with the laws, and no honest importer would engage in it unless he fully intended to abide by them. If a merchant does not wish to abide by these laws he ought not to engage in the business, and if he engages in it, and violates the law, he should not complain if he is made to pay for the violation. Honest men do not complain because the law is enforced—it is only the

dishonest ones who squeal, those who complain that the "God-made flow of trade" is interfered with. Of course there are many honest importers, and these are numbered among the greatest sufferers from the acts of dishonest importers. It cannot be otherwise, for if the dishonest man evades the payment of the full duty imposed by the law, and the honest man pays it, the latter is at a disadvantage with his dishonest competitor. The honest importer has every reason to desire that the laws be fully enforced upon all alike. So, too, with the manufacturer. Under existing laws the manufacturer is protected in his business against the unfair competition of foreign manufacturers, and, having invested his capital in his business under the contract made with him by the Government by these laws, he has a right to expect and demand a faithful enforcement of them. If the laws are faithfully enforced the manufacturer and the honest importer both know just how their affairs are affected; but if they are not faithfully enforced—if dishonest merchants import merchandise upon which fraudulent values are placed, the manufacturer and the honest importer are at a fearful disadvantage which will inevitably result in ruin unless the evil is abated. If our tariff system is wrong, and if our method of raising revenue by import duties upon foreign merchandise is not the better way, then let those who favor a change go to work to effect it by fair, honest and legitimate means, not by fraud upon the Government and to the woful disadvantage of honest men. But as long as our present laws stand, the Government is to be commended for enforcing them, and it should be unhesitatingly condemned if it did not do just this thing. The methods and machinery for faithfully performing its duty in this direction are details which experience has suggested as being necessary, and they are such that they may be changed, modified, altered or dispensed with as experience may suggest.

One of the most cowardly features of these unceasing attacks upon the Government, because of the enforcement of the Customs' laws, is that they are almost always vague and indefinite, and made in ways to which it is practically impossible for the Government to make refuting reply. If efforts were made to do so the officials would find but very little time to attend to their proper duties. If these charges have any foundation in fact, there are ways by which those who may consider themselves wronged may obtain redress. One way to do this is through the established courts, and another is by making direct charges against the Government upon the floor of the House of Commons while Parliament is in session. The people of Canada, represented by their Parliament, will never permit any department of their Government, or any of their civil servants, to systematically cheat, wrong or defraud any man; and the life of that Government would be exceedingly brief, ending in ignominy, if such could be shown to be the case. Why, then, do the *Globe* and other papers give currency to outrageous lies? They might discover them to be lies if they desired to do so; and if their stories are true they know that a production of the proof would speedily rectify the wrong.

In a recent issue of this journal we gave a *resumé* of the facts developed in the Smith and Patterson case, in Montreal, where a lot of watch cases had been seized by the Customs officials for undervaluation. This was as clear a case of fraud as was ever brought to light, and yet, because of a technicality,

the importers virtually gained their case. As the law stands, it is required that the market value of merchandise in the country where manufactured shall be the standard of value for the payment of duty; yet because it was shown that these watch cases were not being offered for sale in the country of production, although they were listed at a certain price below which it would have been impossible to have sold them there, it was decided by the court that they had no specific market value there, and, therefore, their import value would be just whatever the importers might be pleased to make it. Perhaps this is good law, and if it is the Government must abide by it; but it is certainly at variance with the spirit and intention of those who made the law; for it prevents the possibility of preventing the flooding of Canada with the surplus products of other countries. This judgment is to the effect that when foreign manufacturers form combinations, and declare that certain articles shall not be sold in their country except at certain high prices, such actions place the articles in the position of having no market value there for home consumption, and therefore they may be entered at Canadian ports at any prices which the importers may think proper. Of course the effect of such a judgment by a competent Canadian court, if generally acted upon, will necessitate proper changes in the Customs' laws.

AS TO NICKEL.

THE United States Navy Department has already purchased from this country 4,536 tons of nickel matte, containing about one-fifth that amount of nickel. With nickel-steel armor definitely resolved upon for ship armor in the States, and the nickel alloy likely to enter into other manufactures of steel for Government purposes, a continuous increase in the demand for the metal may be expected. Gun shields and the guns themselves, projectiles, engines, the hulls of vessels, and, in fact, almost all the steel used, may possibly hereafter receive a percentage of this metal. In the merchant marine and the various applications of steel in the mechanic arts the same introduction of this alloy may go on, especially should the supply prove practically inexhaustible, thus bringing down the price, particularly should the processes of treating the ore also be cheapened. As the *New York Times* points out, Canada has already eclipsed New Caledonia in the production of nickel, and the reports of its discovery here and there in Provinces as widely separated as Nova Scotia and Ontario indicate what may be expected.—*London Advertiser*.

A recent editorial in the *Empire* alluded to what had already been recorded in these pages concerning the sale of the Bizard nickel mine at Sudbury for \$2,000,000, and the value of our nickel deposits was very favorably commented upon. We were told that Secretary Tracy, of the Navy Department reported in favor of nickel steel for American ships at a time when the British, German and Italian Governments were all proposing to obtain this valuable metal; that the fact that the only other nickel territory is New Caledonia, which is under French control, and that it is all important to England to keep a controlling influence in our great reserves. We have time and again urged the great importance and value to Canada of these nickel deposits. Admitting that British capitalists have obtained possession of the Bizard mine, it should be remembered that this mine is but one of several, the largest and most important of which belongs to American capitalists, and that they are working it very extensively in procuring nickel

for the American navy and the American market. Geographical conditions make it more easy and convenient to manipulate the ores and matte from these mines in the United States than in England, and the same conditions, and the fact alluded to by the *Empire* that the only other large nickel territory is in New Caledonia, give Canada an opportunity to enrich herself which it would be a grievous mistake to neglect. The American tariff was framed purposely to force the establishment of works in the United States for the refining of this Canadian nickel. The vast importance of nickel in the manufacture of armor plates became apparent just at the time the McKinley tariff bill was being passed by Congress, and this discovery had a very decided influence in shaping that legislation. Up to that time, under the tariff of 1883, the American duty was fifteen cents per pound on the nickel contained in ore, matte or other crude form not ready for consumption in the arts; and upon nickel, nickel oxide and alloy of any kind in which nickel is the element of chief value; and upon manufactures composed wholly or in part of nickel, and whether partly or wholly manufactured, forty-five per cent. *ad valorem*. At that time the production of nickel in the United States did not average a hundred tons per annum, and it was to protect this industry that this heavy duty was imposed. The importation of nickel was quite inconsiderable, the domestic supply being quite sufficient to meet the demand for the manufacture of small coin, and of the arts. Under the then popular demand for low duties or no duties upon raw materials, as voiced by the Mills Bill, nickel was about to be placed on the free list, and probably it would have been so placed had it not been for the newly discovered importance of the metal above alluded to.

But with this discovery came Mr. McKinley's opportunity to establish a new and wonderfully important industry in the United States—the manufacture of nickel steel. A commission had been sent by the Government to investigate the extent and value of the Sudbury deposits, and the report of the commissioners was that the supplies of the metal which could be obtained in Canada were practically inexhaustible. The geographical position of these deposits was such that the manipulation of them could be done with as little expense in American cities as in Canada—that if the duties were removed from the ore and matte, and a high duty continued upon the refined metal, vast works would be required for refining the crude materials, giving employment to American capital on American territory, and occupation to American workmen. The result has justified the anticipations; and within a year after the passage of the McKinley Bill we observe most extensive plants in the United States employed in the manufacture of nickel steel, and the whole American navy being armored with plates which derive their great and peculiar value because of the Canadian nickel entering into their manufacture.

The American Government were acting within their rights when they did what they did to build up the nickel steel industry in their own country.

Has Canada taken any steps to profit by this large demand for nickel? Will any such steps be taken?

As soon as the great value of our Sudbury deposits was made known, and as soon as it was known that the American Government had placed nickel ore and matte on the free list, but

retaining a duty of \$200 per ton upon refined nickel, THE CANADIAN MANUFACTURER demanded that a corresponding duty be laid upon the nickel contained in exports of ore and matte; and this was the first paper to make this demand. Since then several other journals have advocated doing this; but it is remarkable that such a journal as the *Empire*, which professes to be a moulder of political thought, should with the utmost studiousness abstain from giving any expression whatever upon the subject. It tells about the value of our mines, about the capital being invested in the development of them, about the benefits Canada would derive if we had extensive refining works and plants for the manufacture of nickel steel, and of the great importance it is to Britain to have a controlling influence in our great nickel reserves, but it fails to grasp or discuss the fact that Canada can never realize the maximum of benefit from this wealth until something is done which will result in something more than mining the ore; something which will give us refineries and steel works and large employment for Canadian labor. And what we say regarding the *Empire* may also be said as to about all of the so-called administration papers in the country. They may be waiting for suggestions or intimations from Ottawa, but they are certainly not exerting themselves in sounding public sentiment or testing the views of the people upon the subject.

Of course it is to be expected that the opposition papers should oppose any suggestion to make our American friends pay us something for an indispensable article, and this opposition is exemplified in the *Mail* which makes what it supposes to be a strong argument against the export duty question by denouncing the advocates of it as "sapient." It tells us that there is plenty of nickel in the world besides that in Canada; that rich deposits, estimated at hundreds of thousands of tons, have been discovered in Germany, and that under the most favorable circumstances the best we can hope to do is to compete in the American market with the metal from this source. It tells us, too, about the active work now going on in the nickel mining districts of New Caledonia, and that the prospects are that that far off island in the South Pacific Ocean will become the premier nickel district of the world. The area of this island, the *Mail* tells us, is 772,276 square miles, of which 210,000 are nickel producing, about 20,000 square miles having been either applied for or granted to various companies, and that more than 7,000 square miles are being actually worked. The value of this information can be measured by the fact that the entire area of the island of New Caledonia is only 7,722 square miles, only a hundredth part of what the *Mail* states it to be; and if there are 210,000 square miles of nickel producing lands there they must be covered at a great depth by the Pacific Ocean. The exports of nickel ore from New Caledonia in 1890 were only 5,000 tons, and if the metal contained in it amounted to as much as ten per cent., a production of 500 tons of refined nickel per year from that source would not come very formidably in competition with Canadian nickel, when our supplies to the American Government alone last year amounted to nearly a thousand tons of refined.

The question for Canada to consider is whether in this advancing age of the world's progress, and with our practically illimitable stores of nickel wealth, we shall have nickel manufacturing industries. There may be equally large deposits in other

parts of the world, but they are not available in supplying the general demand. Without an export duty, all the nickel ore or matte produced in Canada will inevitably go to the United States to be refined, even that which may at no far distant day be required in the construction of armor for the British navy. With ores carrying only from two to five per cent. of metal, the charges for transportation across the ocean prevent its export in that form; and the same objection obtains as regards matte, though not to so great a degree. The processes of roasting the ores and the reduction of them to matte are inexpensive, but the cost of transportation of matte to refining works will control the location of such works. Heretofore much of the Sudbury matte was sent to England to be refined, but this was because there were no refining works closer at hand. But now such works are being established in the United States, and because of their proximity to the mines very much of the refining will be done in them. Is Britain to depend upon American works for refined nickel for her navy? We know that under its system of tariff protection the United States can now produce pig iron, steel rails and many other forms of steel quite as cheaply as Britain or any other country, and this being the fact, and considering the cost of transporting the crude materials, it is most probable that the United States will become the chief manufacturer of nickel steel armour plates for many foreign nations. Shall Canada share in this bonanza? She has it in her power to do so if she will.

Canada has it in her power to do more than this. Many of the provisions of the McKinley tariff were aimed to injure Canada, else why a duty of five cents per dozen upon eggs and thirty cents per bushel upon barley. The American duty upon refined nickel prevents the export of the article to that country. A Canadian export duty upon ore and matte would establish the refining industry here, and most probably our American friends would be quite glad to remove their duties which now discriminate so severely against us as an inducement for us to modify our export duty upon nickel. Such a duty should never be entirely removed, for our Government might safely depend upon it as a source of large revenue; but it might be modified in favor of nations whose tariff are not particularly hostile to us, and maintained at its extreme height against nations which impose a duty of five cents per dozen upon Canadian eggs and thirty cents per bushel upon Canadian barley.

THE EMPIRE TEACHING COBDENISM.

As an illustration of the manner in which the McKinley tariff, which the Opposition wishes to adopt for Canada by placing it around our sea coast in order to obtain what they term free trade, affects American commerce, it may be mentioned that during the ten months of the present year certain imports stood as follows, compared with the same period last year:

	1891.	1890.
Cotton goods.....	\$12,920,989	\$28,125,226
Woollen goods..	29,480,705	49,568,954
Wines.....	6,558,430	8,256,674
Tobacco.....	6,548,797	17,557,802
Provisions.....	1,331,475	1,889,819
Firearms.....	601,897	1,364,832
Cutlery.....	831,038	2,218,271
Raisins.....	443,539	1,464,007

Where would our imports from the Mother Country be under

a sixty per cent. tariff and free importing from the States? If imports were stopped how could our farmers send their products to England? Is the Mother Country going to pay gold for our produce when she can buy it from other countries by the sale of merchandise?—*The Empire*.

The writer of this editorial must either be in the employ of the free traders and the Cobden Club, or an ignoramus who knows nothing about the theory of tariff protection. It is not the destiny of Canada to have her fate linked with that of the United States either by annexation or by any reciprocity which would extend the McKinley tariff around our sea coast. But if the McKinley tariff does what the *Empire* says it does in restricting imports of articles which can be produced at home; then our sincere prayer is that we have some of this McKinley leaven mixed with our Canadian tariff. Surely the *Empire* does not desire to intimate that there is any decreased consumption of its enumerated articles in the United States because of the great falling off in the importation of them. Our American friends are not apt to deprive themselves of these things merely because the importation of them is decreased; and if this is so, where do they obtain their supplies except from their own resources? And if from thence, is this not just precisely what was intended by the McKinley tariff, and in full accord with the ethics and teachings of protection? And if this is according to the ethics of protection is it not precisely what the *Empire* professes to teach? If it is not, then the *Empire* is not a protectionist journal.

The enquiry is made, "Where would our imports from the Mother Country be under a sixty per cent. tariff and free importing from the States?" Our answer is, if Canada had such a tariff, whether we had free trade with the United States or not, our imports from Great Britain would show a falling off similar to what exists in the United States. Certainly the *Empire* does not contend that our present tariff does not tend to restrict importations of British goods. If it did not, what protection would there be for our manufacturers? Richard Cobden, in his most enthusiastic moods, never offered what he considered a more unanswerable argument in favor of free trade than that which the *Empire* advances when it asks, "If imports were stopped how could our farmers send their produce to England? Is the Mother Country going to pay gold for our produce when she can buy it from other countries by the sale of merchandise?" There are some articles of merchandise produced in Britain, the importation of which we do not wish to stop, and these include things which cannot be produced to advantage in this country, and the prohibition of trade in them by a very high tariff would result in no good to us. On the other hand, there are many things which we now import from the Mother Country which ought to be made in Canada, and would be if our tariff was sufficiently high. We are not influenced by any sentimental considerations for the Mother Country in framing our tariff schedules, for we put no British product on the free list, or admit it at any lower rate of duty than the similar product of any other country. Britain shows Canada nor any other of her possessions any favors whatever in commercial matters. If she levied duties upon imports, discriminating in favor of her possessions, then Canada would probably reciprocate by making tariff discrimination in her favor, but not until then. The *Empire* should understand

that if our tariff restricts trade in British products, and impairs our ability to sell our agricultural products in that country, by the same token similar products are produced in Canada, and the agricultural products which we cannot sell there are consumed at home by the manufacturers and their employees. Exporting agricultural products to England is not the great desideratum for Canadian farmers. Their greatest prosperity lies in the maximum of consumption at home, exporting only the surplus. In the United States only about five per cent. of the value of all the farm products of the country is exported, ninety-five per cent. being consumed at home. Is this the case in Canada? We hope it is, but if it is not it is because we allow foreign merchandise to flood the market to the detriment of the home production. We should think more of the prosperity of Canada than of our trade with the Mother Country or any other country.

The *Empire's* last enquiry as to whether the Mother Country will pay gold for produce when it can be had elsewhere in barter raises the debateable question as to whether a balance of trade between nations, to be settled in gold, is a benefit or otherwise, our contemporary taking the ground that England would not assent to that sort of trade. If the *Empire's* writer studied the fiscal histories of Canada and Great Britain he would discover that the latter country had been doing just this sort of business for a great many years and that she will continue to do it. The imports into the United Kingdom have for many years largely exceeded the exports, and yet that country is steadily augmenting its wealth. Is this also true of Canada? For nearly a quarter of a century—ever since Confederation—the value of Canadian exports only once exceeded the value of our imports, the average annual excess of imports being \$20,762,942. The foreign trade of the United States is only exceeded by three countries in the world, and is many times larger than that of Canada, though in proportion to population our trade is considerably larger than that of our neighbours. In 1890 the comparison per capita was as follows:

	Imports.	Exports.	Total Trade
Canada	\$23.50	\$18.66	\$42.16
United States.....	12.63	13.73	26.36
Excess per capita in favor of Canada..	\$10.87	\$4.93	\$15.80

But while these figures show that the foreign trade of Canada is larger per capita of population than that of the United States, they do not necessarily indicate that this country is in a better commercial position. They do indicate, however, that the necessities of the American people are more largely met from home-made supplies than is the case with us, and that they do not have to purchase so largely abroad.

As we have shown, the Mother Country does pay gold for produce which she cannot pay for by barter, and so does Canada. The balance of trade between Canada and the United States is more than \$20,000,000 per annum, and this we have to pay in gold. This could be remedied by imposing higher duties upon American manufactures, supplying the shortage by increased production at home. The same may be said of our trade with Britain, and yet the *Empire* thinks that it would not be well for us to change the conditions for sentimental considerations for the Mother Country. Britain buys our cheese, cattle and grain because she wants them, not

because they are produced in Canada, nor does she pay us a dollar more for them, coming from Canada whom she loves, than she pays for similar things produced in the United States, whom she perhaps does not love as much. It is a mistake to suppose that sentiment and trade are so closely related. The United States, on the other hand, buys our pine logs and some other articles, not because she loves or does not love Canada, but because she needs them and cannot obtain them as cheaply anywhere else, and we buy more than \$20,000,000 more there than we sell, not because we cannot produce the merchandise at home, but because our tariff is not high enough to keep out the foreign goods and to encourage the production of such goods at home.

The *Empire* does not teach good protection doctrine.

THE BROTHERHOOD OF MAN.

In a recent issue allusion was made to the fact that a correspondent of a Toronto newspaper had spoken of free trade as a divine institution, and that protection was an interference with the "God-made" flow of trade. This is an old dodge of free traders to endeavor to impress the belief that protection is a violation of God's law, such papers as the *Toronto Globe*, *London Advertiser* and *Montreal Herald* denouncing it as corrupt, immoral and anti-Christian. They teach that the government of a nation should be no more solicitous for the welfare of the people of the country than for all the rest of the inhabitants of the globe, and the promulgation of this sentiment they call promoting the brotherhood of man.

After more than forty years of free trade Great Britain finds herself entirely alone among the nations of the world as an advocate of the Cobden theory. Other nations have tried it and abandoned it, and there is not even a self governing British colony to day but has gone unreservedly into protection. As long as Britain could by any means induce or force other nations into accepting free trade, she did not hesitate to use her influence or power in that direction, and no British colony was exempt from this rule; and if Canada and the Australian and other colonies have not been forced by the mother country to accept her free trade dogma, it is because the day for such coercion has passed.

The resources of Great Britain are not sufficient to supply her own wants, that is, for food products, hence she is necessarily an importer of such products. Not being an agricultural community, the people find employment in manufacturing industries, and in trade and commerce with the rest of the world; and the great interest of the Government has been, and is, to find markets for the surplus of manufactures, and employment for its mercantile and shipping interests. The precise circumstances of Great Britain are not paralleled in any other country. The inclination of all countries, naturally enough, is to endeavor to supply as many of their wants as possible from their own resources, that is, this is the theory of protectionists, and not to encourage the importation of articles that can be made at home to advantage. Britain has for a hundred years contended against this theory and the practice of it, and she has frequently enforced her views upon weaker nations at the mouths of her cannon. Her attempt in this direction in 1776 led to the revolution out of which was born the United States.

Britain has certainly made great strides in material wealth and prosperity of late years. This was under her policy of free trade, it is true, but it may be doubted that it was because of free trade. Other countries have in the same time prospered quite as much, or more, under protection. In 1878 Britain produced 45 per cent. of all the pig iron made in the world, the United States 16 per cent, and Germany 15 per cent. Ten years later, in 1888, the production of Britain was only 34 per cent, while that of the United States had increased to 28 per cent, and Germany to over 18 per cent. The increase of production of Britain was from 6,381,051 tons in 1878 to 7,898,634 tons in 1888, but the increase of the United States in the same decade was from 2,301,215 tons to 6,489,738 tons, and of Germany from 2,147,641 tons to 4,258,471 tons. If Britain advanced under free trade the other countries advanced in much greater proportion under protection. The statistics relating to the manufacture of steel show substantially the same facts. The production of Britain in 1878 was 1,100,000 tons and in 1888 it was 3,405,536 tons, an increase of about 200 per cent. The production of the United States in the same decade increased from 731,976 tons to 2,889,440 tons, an increase of 300 per cent.; the increase of Germany being in the same time from 570,328 tons to 1,785,354 tons, or 200 per cent. This evidence shows that Britain did not maintain her relative position; that Germany held her position as well, or better than did Britain, and that the United States made most wonderful progress as a steel producing nation.

Such illustrations might be multiplied indefinitely. No sane man questions the desirability of such articles of prime necessity being made in a country instead of that country being dependent upon some other country for them. Britain having a well established iron and steel industry while yet the United States and Germany were devoid of such an enterprise, the theory of the free trader is that the brotherhood of man and the God-made flow of trade required that the first named country should forever continue to supply the others with iron and steel. Of course, they say, it would have been all right and proper for these other countries, too, to have established the industry if it could have been done without the shelter and cover of protection, but that it would have been better had it not been established if it was to be accomplished by violating the brotherhood of man business, or flying in the face of the Almighty by setting at defiance the God-made flow of trade. The production of pig iron in the United States last year amounted to about 10,000,000 tons—much more than was produced in Britain. If this American iron had not been made, and if the dependence for it had been upon Britain, the army of British iron workers would have been more than doubled, and the army of American iron workers would have been forced to find employment in agriculture or other pursuits. The circumstances would have benefitted the iron masters of Britain, but it would have greatly injured the agricultural classes of the United States. There would have been less consumers and more producers there, and the surplus agricultural products of the country, instead of being consumed at home, would have been forced in the British market.

This is where the brotherhood of man business is a delusion and a snare. As applied to Canada the theory of the free trader is that in the production of these things which we can-

trade is. They are in open competition with all the world, and not produce, otherwise than under tariff protection, the enterprise is wrong and sinful, and that instead of making our own iron and steel we should depend upon Britain for it. But the fact is, we can never hope nor expect to manufacture these articles unless we do as the United States and Germany have done—give the industry ample protection. We have extended some measure of protection to pig iron and to some forms of steel, but because that protection was entirely insufficient our production of pig iron is entirely insufficient to supply our wants, and because there has never been any protection whatever to the steel rail industry there has never been a steel rail made in Canada. Those who desire the industrial independence of the country pay but little attention to the misleading cry about the brotherhood of man and God-made flow of trade, preferring to see abundant and remunerative employment given to Canadians rather than to strangers.

THE BRITISH FARMER.

THE British Board of Agriculture has made a new departure in issuing a complete abstract of the crop areas and number of live stock of all classes in the United Kingdom in 1891. The figures give the crop areas for 1890 and 1891; included in the grain crops being wheat, barley, oats, rye, beans and peas. Planted to these crops in 1890 were 9,574,249 acres, and in 1891, 9,443,500 acres, a decrease of 130,740 acres. Green crops included potatoes, turnips, mangolds, cabbage, etc., and of these in 1890 there were 4,534,145 acres, against 4,510,653 acres in 1891, a decrease of 23,492 acres. In clovers and temporary grasses there was a decrease of 83,525 acres; of flax, 22,849 acres, and of bare fallow 72,909 acres; while the increase of permanent pasture amounted to 452,238 acres.

There was a decrease of acreage of every grain crop and of every crop of every other kind, except hops and small fruits, in which the increase amounted to 14,995 acres, and this applies even to hay. Of the totals for clovers and temporary grasses, 2,938,680 acres were for hay in 1890, and 2,737,850 acres in 1891, showing a decrease of 200,830 acres; out of the total for permanent pasture 6,248,352 acres were for hay in 1890 and 5,973,757 acres in 1891, showing a decrease of 274,595 acres. The net decrease in arable land, which includes the area under clovers and temporary grasses (grown in rotation with grain and other crops), is 318,520 acres, and this is all swallowed up in permanent pasture, together with the apparent increase of 133,718 acres in the total area under crops, fallow and grass.

The average acreage of the grain crops in the five years from 1871 to 1875 was 11,543,577 acres, while in 1891 it was only 9,443,500 acres, the corresponding figures for green crops being a decrease from 5,073,843 acres to 4,510,643 acres, the two items showing a decrease of 2,663,268 acres. From 1871 to 1891 the area of permanent pasture in Great Britain increased by nearly 4,000,000 acres.

The increase in live stock in the period under consideration was marked. In farm horses it was 61,259; cattle, 553,828, and sheep 1,866,793, while there was a decrease in hogs 89,276, but this was only in Ireland and the small islands.

British farmers are learning by sad experience what free

the cheap labor of India, plus the freight and other expenses of transportation, regulate the price at which the produce of British farmers must be sold.

EDITORIAL NOTES.

A HAPPY New Year.

A CANADIAN Manufacturer.

WHAT'S the matter with the Red Parlor? The Red Parlor is all right.

THE Canadian Manufacturers' Association is a nursery for the production of statesmen.

WHAT'S the matter with the N.P.? The N.P. is all right. Ask the voters of North Lanark. Ask Bennett Rosamond, M.P., ex-President of the Canadian Manufacturers' Association.

To make advertising pay it should be done liberally, honestly and judiciously. If you would gain customers, advertise in this way; if you would keep customers advertise in this way. If you want to reach the consuming manufacturers of the Dominion, advertise in the CANADIAN MANUFACTURER.

THERE is no journal published in Canada which backs up the CANADIAN MANUFACTURER with as much vim and energy regarding the necessity of the Canadian Government imposing export duties upon nickel and saw logs as the *Sault Ste Marie Pioneer*. It grasps the situation fully, knows what to say concerning it, and says it.

AN appropriate appreciation of the blessings bestowed upon them by the glorious National Policy, and in remembrance of its beloved founder and father, Sir John A. Macdonald, the free and independent voters of the riding of North Lanark, on the closing day of the old year, elected Mr. Bennett Rosamond of Almonte, to be their representative in the Dominion House of Commons.

THE seventeenth regular annual meeting of the Canadian Manufacturer's Association will be held at the Association Offices, Canada Life Building, King Street West, Toronto, in the afternoon of January 15th inst. A meeting will then be appointed for the Tariff Committee, to take place at an early day, at which tariff matters will be discussed. This is the most important committee of the Association, and all members who may be interested in its deliberations should govern themselves according to this suggestion.

THE Nebraska Beet Sugar Association was formed at Lincoln, Neb., a few days ago as a result of the convention of those interested in growing sugar beets and the manufacture of them into sugar in that State. This convention was held in Lincoln December 17th and 18th, and was attended by about 400 delegates from all portions of the State. Resolutions were passed requesting the State Government to continue

a bounty of a half cent per pound upon the production of sugar, and one dollar per ton upon the production of beets sent to the factories.

THE sewing thread manufacturing concern of J. & P. Coats, Paisley, Scotland, is a money-making corporation whose wealth is acquired chiefly by the employment of very cheap labor. But they make money very rapidly. The directors of the company recently made their annual report, in which it was shown that the profits for the year amounted to \$2,770,000, of which \$1,825,000, would remain after payment of debentures and preference shares. A dividend was proposed for the half year at the rate of 8 per cent. per annum; and it was also proposed that \$900,000 be carried to the reserve fund and \$225,000 to the next year's account. Such a condition in a manufacturing enterprise could scarcely be possible in this country except in the sugar refining industry.

THE McKinley tariff did not seem to have much effect on the Canadian poultry trade for the American market. A few days before Christmas a train of twelve cars was loaded up from Smith's Falls, Perth, Brockville, Almonte and other places along the line of the Canada Atlantic Railroad for Boston, which contained over one hundred tons of poultry, valued at \$26 000. This was an average of thirteen cents per pound, this price being higher than a year ago, before the McKinley tariff came into effect. Owing to this tariff Canadian poulters had sought and obtained market for large quantities of their poultry in England, where satisfactory prices were had, and the demand from the United States was but partially supplied, the American importers paying the duty of course. A number of car loads of Ontario poultry was sent to British Columbia.

DR. TATHAM, medical health officer in the city of Manchester, England, gives the following as the death rate per 1000 children born in the following named cities of England: Manchester, 178; Oldham, 171; Preston, 220; Blackburn, 191; Salford, 183. The principal cause of this excessive death rate was the too early withdrawal of the care of the mothers, who, he thought, should not be allowed to resume work in the factories until at least six months after confinement. This so called "cheap" labor, this terrible sacrifice of human life, is that the world may have the product of British looms at the lowest possible price. No such death-rate prevails in Canada, and this because, under our National Policy, the hours of labor are not as long as in the old country. But what the free traders here want is that the women of Canada shall work as long and as hard and as many hours as the women of England do, or starve.

THE *Toronto Globe* says that the speech of Dr. Spohn in the House of Commons on the question of reciprocity, was an exceedingly able presentation of the effect of restriction upon the lumber trade, and upon the benefits which would accrue to that industry from free trade with the United States. No doubt Dr. Spohn thought he was making an able argument, and so he was—in favor of re-imposing an export duty upon pine logs. He showed in his speech that the removal of that duty,

which was going as far as Canada could go in that direction in favor of free trade with the United States had worked incalculable injury to the saw mill interest in the Georgian Bay district, closing up the mills and forcing the employees to seek work across the border, and that the only hope to restore the previous favorable conditions lay in reimposing the export duty. If this is an argument in favor of reciprocity, we would be pleased to learn that the Government had acted upon it.

THE *Omaha Bee* reports at some length the details of the first annual beet sugar convention in that state, which met in the capitol at Lincoln, December 17th. The underlying motive was diversified industries for Nebraska, and the opinion was expressed by the chairman of the meeting, Hon. R. H. Oakley, president of the Lincoln Board of Trade, "that the culture of sugar beets and the manufacture of beet sugar" is in a few years "bound to become an important factor in the state's prosperity." In his address of welcome, General Thayer, among other things, explained that the Nebraska legislature, after providing a bounty of one cent per pound and thereby encouraging the building of two establishments, one at Grand Island and one at Norfolk, "at a cost of nearly \$750,000 in each plant," thought proper last winter to repeal the legislation of the previous legislature. This he believed to be unwise, and he expressed the hope that the next legislature would re-establish the bounty, but divide it between the farmer and the manufacturer.

THE Trade and Navigation Returns for the first five months of the current fiscal year—July 1st to November 30th—show that, as compared with the corresponding period in the previous year, the increase in domestic exports amounted to \$5,946,494. The increases were, in the products of the mine, \$614,473; fisheries, \$1,051,492; animals and their produce, \$699,217; agricultural products, \$6,862,125, and manufactures, \$171,601, (what are manufactures?) There was a decrease in exports of the products of the forest of \$3,368,849. The imports entered for consumption during this period this year were valued at \$48,491,147 against \$49,157,255 during the corresponding period of the previous year, a decrease of \$663,000. The amount of duty collected this year was \$8,112,720 against \$10,229,720 last year, a decrease of \$2,117,000. This decrease was due chiefly to the remission of sugar duties. It will be observed that the value of goods exported during the five months this year exceeded the value of goods entered for consumption during the same period by \$14,591,150.

THE Central Ontario School of Art and Design, which is in affiliation with the Ontario Society of Artists, and whose headquarters are at 173 King street west, Toronto, is an institution which since its establishment has achieved a very deserved success. In the primary course are taught free-hand drawing, perspective, plane geometry, memory drawing, etc.; in advanced course, outline and shaded drawing, drawing from natural objects, etc.; in mechanical course, plane and solid geometry, architectural drawing, machine drawing, building construction, etc.; special instructions are given in painting in oil and water colors, drawing and painting from life, modeling

in clay, etc. Annual examinations are held under the direction of the Educational Department of the Ontario Government when gold, silver and bronze medals, and certificates are awarded, and holders of certificates are legally qualified to teach the subjects named therein in any Art School, High School or Mechanics' Institute. Mr. William Revell, A.R.C.A., the secretary of this institution, takes a most active interest in its success.

Tax exemptions in a new form find favor with the city council of Toronto. Machinery, plant and tools are the things which the resolution favors, and it is assumed that this can be done by passing a by-law to that effect. The point is not free from doubt. Freedom from taxation is a bonus in the negative form, but still a bonus, and to be legal must be authorized by a vote of the citizens. This is not likely to be taken. If some smaller places find it necessary to give freedom from taxation in order to attract manufacturers, the past progress of Toronto shows that it is not necessary in her case. Besides this principle is unsound and vicious. We have far more need to get rid of existing exemptions than to create new ones—*Monetary Times*.

It is our opinion that there are but very few, if any, respectable manufacturers in Toronto who really desire any tax exemption, or would do so if they were not already unreasonably and outrageously taxed. There is \$23,000,000 worth of real property in Toronto now exempt from all taxation, and the burden of this falls heavily upon those who pay taxes. If the city council really desire to encourage the manufacturing industries, let them abolish all tax exemptions.

Does protection benefit a country? Does a manufacturing industry, in which is invested hundreds of thousands of dollars, and which gives employment to hundreds of operatives, benefit a country? The McKinley tariff virtually shuts Nottingham lace curtains out of the United States market, and now we see one of the largest manufacturing concerns in that city transferring its capital and plant to the United States to enable it to hold its trade. This concern have obtained a desirable property at Tariffville, Connecticut, and organized there under the name of the Frank Wilkinson Manufacturing Company, with a capital stock of \$750,000, to manufacture Nottingham lace curtains. The Wilkinsons have an immense business in England, where they employ something like 2,500 persons in their mills at Beeston, near Nottingham, Chilwell, near Nottingham, and Borrowash, near Derby. They are said to be the largest makers of curtains in the world, and also of hosiery and shawls. The *Boston Journal of Commerce* says they have the largest American trade in curtains of all concerns in the world, and when the new tariff was put on, which added 20 per cent. to the duty, they recognized the economy of producing their goods on this side of the water. Protection did it.

MR. ANDREW CARNEGIE is nothing if not epigrammatic. To an enterprising citizen of Hamilton, Ontario, who wrote him in reference to the establishment of iron industries in Canada by American capital, Mr. Carnegie replied: "When the foreign colony of Canada recognizes its destiny and becomes part of the American Union it will be time enough to consider the investment of capital there by Americans. This natural union of the English-speaking people of the continent would double the value of everything in Canada, including the

men of Canada, in the opinion of yours truly, Andrew Carnegie." We doubt whether public opinion on this side of the border recognizes it as the manifest destiny of Canada to become a part of the American Union, nor do we believe such uniting of interests would prove a benefit to the United States. Canada is getting along pretty well, and only needs a little more encouragement by way of friendly tariffs to establish iron works of its own. To join that country to ours, even if it were feasible, would do us no particular good, and might do us great harm. Let Canada work out her own destiny. She has demonstrated her ability to do this by her magnificent achievements in railroad and canal building. We wish her God-speed, but as to joining her fortunes with ours that is out of the question.—*Cleveland Iron Trade Review*.

A FEW days ago the Hamilton papers related the fact that a gentleman of that city had written to Mr. Andrew Carnegie, a prominent manufacturer of iron and steel in the United States, in reference to the establishment of similar industries in Canada, and that Mr. Carnegie's reply contained the following: "When the foreign colony of Canada recognizes its destiny and becomes part of the American Union it will be time enough to consider the investment of capital there by Americans. This natural union of the English speaking people of this continent would double the value of everything in Canada, including the men of Canada." If Mr. Carnegie has been correctly reported he is guilty of the grossest insolence. He is an expatriated Britisher who a few years ago became a patriotic American for revenue only, and who has, by the help of the Standard Oil Company and other means, acquired very large wealth. Perhaps he imagines that his wealth entitles him to brains and common sense, but his letter displays him as possessing neither. To whom is Canada a foreign colony? Who authorizes Mr. Carnegie to say that the destiny of Canada is to become a part of the American Union? What is there about American citizenship to lead this expatriated Scotchman to say that the value of the men of Canada would be doubled by annexation? Does his anxiety for Canada arise from fear that the Canadian Government will impose an export duty upon nickel?

MR. BENNETT ROSAMOND was yesterday elected to represent the riding of North Lanark, Ont., in the Dominion House of Commons. Mr. Rosamond is president and managing director of the Rosamond Woolen Company of Almonte, managing director of the Almonte Knitting Company, and a director of the Cobourg Woolen Company, of Cobourg, Ont. A few weeks ago Mr. Jamieson, who was the then sitting member in the Commons for North Lanark, was elevated to the Bench, and is now a judge in his county, and Mr. Rosamond has been elected to fill the vacancy caused by the resignation of Judge Jamieson. He was born in Carleton Place, Lanark county, in 1833, his father, Mr. James Rosamond, having been born in Ireland. In 1857 Mr. James Rosamond removed from Carleton Place to Almonte and became proprietor of what had been the Ranney Woolen Cloth Manufacturing Company's mills; which, since then, have become the extensive plant of which Mr. Bennett Rosamond is now so largely interested. In 1862 Mr. Rosamond and his brother William (now so largely interested in the Cobourg mills), leased the Almonte property from their father, doing business under the firm name

of B. & W. Rosamond. In 1866 Sir George Stephen (now Lord Mount Stephen), became a member of the firm, the name of which was then changed to B. & W. Rosamond & Co. In 1870 the firm became a joint stock company with Mr. Bennett Rosamond as president and managing director, which responsible position he has held continuously ever since. He has always been a staunch supporter of Canada's National Policy of protection to her manufacturing industries, and, during 1890, was president of the Canadian Manufacturers' Association.

THAT it is a reproach to Canada to be importing her pig iron at the present day, when such quantities of the material for the industry exist in Ontario and Quebec, is perceived by others than ourselves. A writer in the *Glasgow Herald* said in a recent issue: "The Canadian Government appears to be determined that this reproach shall be got rid of. They have recently increased the duty on pig iron, and have offered a bounty to capitalists who are prepared to engage in the manufacture of that metal within the Dominion. Not only so, but local authorities have offered special inducements to undertake this industry in the form of exemption from taxes for a term of years, and the railway authorities have offered excellent terms of transport. It would be rather remarkable if under these circumstances capital were not attracted to so promising a field of operations. Canada has apparently made up its mind that it will in future supply its own iron and steel to a large extent."

It must be admitted, however, that Canada has been a very long while making up its mind on this subject, and that the prediction long since so freely made about blast furnaces on Lake Ontario, and a prosperous iron industry at Kingston, Belleville or Toronto, have come to naught. The Londonderry Iron Co. and the Nova Scotia Steel and Forge Co. have done much, but their efforts do not supply the Dominion. The heart of Ontario is 800 miles distant from them by Intercolonial Railway, 650 miles away by C.P.R., and by water even farther away than by either. The Glasgow writer thinks favorably of Nova Scotia, and mentions her undeniable advantages in the nearness of the coal and iron to the manufacturing centre. He mentions, too, the harbor of Pictou, where shipments can be made at any time of the year.—*Monetary Times*.

The reason why Canada is not a large producer of pig iron is that the duty is not high enough to encourage the enterprise, and because the Reform party are constantly declaring that should they ever attain to power they would place the article on the free list. The United States did not become a large producer of pig iron until the duty was raised to \$9 per ton, and now that country produces more pig iron than even Great Britain. Our duty of \$4 per ton is not sufficient inducement, and the bonus of \$1 per ton for home-made iron is a delusion which deludes no furnace man.

AT the recent sugar beet convention in Lincoln, Neb., it was stated that the annual importation of beet sugar by the United States amounts to 3,480,442,325 pounds, worth in round numbers \$165,000,000. This sum, the speaker said, "represents the amount now paid to foreign countries, which might be kept at home if we manufactured our own beet sugar." Mr. H. G. Leavitt, a practical farmer who last season planted 500 acres to beets, and who next season will increase his acreage to 650 among other points made the following:—

"It will be seen that the entire average cost to the farmer of raising and delivering at the factory the product of one acre

of beets, if a yield of twelve tons be obtained, is \$25.75. Taking 14 per cent. as the average sugar content of the beet, which was the average per cent. obtained this year, the value of twelve tons would be at this year's scale of prices \$42. Deducting the total cost of the crop there is a net profit left of \$16.25 per acre. For a yield of fifteen tons per acre the net profit would be \$23.75 per acre. If the beets had contained this year, as they did last, 16 per cent. instead of 14 per cent. of sugar, the net profit in the first instance would have been \$22.25 per acre and the second instance \$34.25 per acre. * * * The total number of acres planted by * * * thirty-six farmers was ninety-nine; the total number of tons obtained was 1,348, for which the factory paid \$4,371 46, or an average price per acre of \$44.15. The average per cent. of sugar was 13½, the highest being 16½ and the lowest 10. The average number of tons obtained was thirteen and six-tenths, with twenty four tons for the highest and ten tons for the lowest yield per acre. The largest amount received was \$72.98 and the lowest \$33.50."

These men, it was explained, with hardly an exception, raised beets for the factory and profited by their previous year's experience, for they prepared their ground well, seeded it early, and cared for the beets as well as the excessively heavy rains and wet ground would allow. The conclusion drawn is that a large number of farmers who raised beets last season for the factory at Grand Island succeeded in realizing a profit therefrom which on the average was twice or three times as great as that of any other crop, and that this was accomplished in the face of a most unfavorable season for raising beets. Why not the same for Canada!

"THERE can be no reciprocity with Canada until an agreement is reached to maintain a joint tariff against Europe." "This," says the *Boston Journal*, "is a proposition that is substantially undisputed, and it means that Canada's tariff must be assimilated to that of the United States."—*St. John Sun*.

We do not imagine that when Canadian and American Commissioners meet to engage in reciprocity negotiations, they will feel themselves bound to accept a ready-made treaty dictated by the *T. on Journal* or any other paper. The first thing to be done will be to decide the lines on which a new treaty may be based. The details will be subject of negotiation, and reasonable compromises on both sides will be in order. Perhaps the Tories of Canada feel themselves bound to accept any kind of a treaty that may be dictated by the *Boston Journal*. The Liberals of Canada, however, do not feel themselves under any such obligation; they will not accept any treaty which may be inconsistent with our political or commercial independence.—*Montreal Herald*.

The *Boston Journal* is about right. Can any one imagine, as the *Montreal Herald* appears to do, that the United States would enter into any sort of reciprocity with Canada which would allow this country to control her own tariff? And can any one imagine that Canada, for the sake of reciprocity with the United States, would close her doors against imports from the rest of the world? For instance: Canada imposes no duty upon steel rails, the American duty is \$12 per ton; could Canada import British rails free, or would we be obliged to use American rails? Our duty upon floor oil-cloth is five cents per square yard and twenty per cent *ad valorem*. The American duty is fifteen cents per square yard and thirty per cent *ad valorem*. Which would we be permitted to use? Canadian duty upon combing wool three cents per pound; American duty twelve cents. Canadian duty upon pig iron \$4 per ton; American duty \$6—difference 50 per cent. American duty

upon tin plates two and two-tenths cents per pound; in Canada tin plates are free. The *Herald* says that the first thing to be done, should negotiations for reciprocity occur, would be to decide the lines on which a treaty might be based. The first stand Canada would take would be that she should not be required to discriminate against Britain—that whatever favors were shown to the United States should also be shown to the Mother Country. The first stand the United States would take would be that the McKinley tariff should be completely extended over Canada. Of course the details would be subject of compromises, but wherein would Canada compromise her position as regarded Britain, and the United States as regarded the McKinley tariff? These would be the salient points; and any concession on the part of Canada would most certainly be inconsistent with our political and commercial independence.

EVIDENCES are constantly presenting themselves that the people of Great Britain are being aroused to the necessity of some sort of protection to their home industries against the encroachments of foreigners. The British Silk Association is an organization formed to encourage the use of home made silk, as against the foreign article, for it is seen that while that country is overloaded with foreign silk, the home industry is in a deplorable situation. The mills there are closed, or running on short time, and the operatives find themselves almost at starvation point. Another organization there is the Bread Corporation which has a similar object in view: and in a recent issue of the *British Trade Journal* appeared a letter from the Secretary of that corporation in which the grievance of that trade was set forth as follows:

SIR,—I do not see why the Silk Association should stand alone in its attack on foreign silks. There are other interests even greater, and as representing one of these, I beg to be allowed space to call the attention of the Board of Trade to the petition now being drawn up by the Flour Association of Great Britain. I earnestly trust that the authorities of the Board may be able to see their way to accede to the request therein made, and to extend the principle of the Merchandise Marks Act to the sale of bread. The proposal of the Association is a very simple one; merely this, that on every loaf, bun or biscuit sold in this country, and made of foreign material, there should be stamped at intervals of not less than two inches the words, "Foreign Flour." This will enable every purchaser to distinguish such bread from that baked from British grown and British milled flour, and thus enable ladies who are members of the Association, and all who have at heart that most depressed and neglected of our industries, the great landed and arid farming interest, to support it by their patronage. At present, I am informed, it is most difficult to obtain at bakers' shops any trustworthy information as to the real origin of the loaves sold by them; and when these are delivered by illiterate boys the difficulty is greatly increased. It may be necessary to deal in the same way with silks; but I venture to submit that the case of the loaf is much more urgent, and should receive earlier attention. It has been suggested by the makers of yeast that their interests should be dealt with at the same time. I think there can be no objection to this, and certainly they should also come under the principle of the Act. An additional stamp or mark on the loaf would notify the purchaser that the yeast used was also foreign; and the result would be a stronger inducement to support the landed interests. When loaves are made of British flour and foreign yeast a clear indication of this should be stamped upon them. The Board of

Trade need only apply the principle of the Act upon these lines to revive the agricultural and every other industry now suffering from depression.

It is sad to observe that the painful social conditions in Great Britain, brought about by unrestricted free trade, bear so heavily upon the working classes. It would seem from this letter that not only is foreign flour depressing the British milling industry but the bread makers are complaining of the competition of foreign bakers. Britain is drifting towards protection much more rapidly than the free traders are willing to admit.

The announcement of the establishment of a Canadian illustrated monthly magazine is a source of gratification to the very large class of readers who have been waiting to welcome just such a periodical from a Canadian publishing house. The Sabiston Litho. and Pub. Co., of Montreal, have taken the decisive step, and the first issue of the *Dominion Illustrated Monthly* will make its bow to the public during January. It will be a sixty-four page magazine, handsomely illustrated, and Canadian and patriotic in tone. The most gifted of Canadian authors will contribute to its pages, making it a most desirable family magazine for all Canadians especially. The subscription price, \$1.50, places it within the reach of all.

The *Illustrated American*, which is now acknowledged to be the national illustrated paper of America, still continues to be most beautiful in illustrations and text. The number for the week ending January 2, 1892, is particularly handsome, instructive and interesting. It leads off with a brilliantly written article on the old and new routes to India, and is followed by a graphic account of the life of Cyrus W. Field. A talk with Mrs. Beasant on the subject of theosophy, and a sketch of the life of Madame Le Brun, a beauty of bygone days, are two most interesting articles. While yet lamenting the sudden death of Senator Plumb, a very timely story appears, telling of his recent resolution in Congress looking to the removal of General Grant's body from New York to Washington, and giving the late Senator's reasons why the removal should be made. All those who are interested in the new American navy will find much to interest them in the launching of the last two warships, the *Machias* and the *Montgomery*; lovers of music will find an article on Paderewski, and the church world will find an interesting story concerning the recent appointment and life-sketch of Vicar General Farley. The stage is represented by Miss Margaret Mather. The frontispiece is a photograph of the gunboat *Machias*, and the short story is entitled "Castle Carubath."

The *Popular Science Monthly*, edited by William Jay Youmans, is the one periodical that gives access to the scientific culture of the time, and it will in the future represent scientific thought and achievement even more fully than it has in the past. The valuable series of illustrated articles on "The Development of American Industries since Columbus," now running in the *Monthly*, will be continued into the new year. There have already been published three articles on "The Woolen Manufacture," by S. N. D. North; four articles on "The Making of Iron," and two on "The Making of Steel," by W. F. Durfee. The first of two articles on "American Pottery" appears in the December number. All of these are profusely illustrated; and similar papers on "The Cotton Manufacture," by Edward Atkinson and General W. F. Draper; "Piano-making," by Daniel Spillane; "Glass-making," by Prof. C. Hartford Henderson; and on "The Leather, Silk, Paper, Agricultural Machinery, and Shipbuilding Industries" will appear in course. Hon. Carroll D. Wright will continue his incisive "Lessons from the Census." Dr. Andrew D. White will contribute some concluding papers on "The Warfare of Science," and there will be occasional articles from Hon. David A. Wells and from David Starr Jordan, President of Stanford University. New York: D. Appleton & Company. Fifty cents a number, \$5 a year.

Over 700,000 women in this country alone now buy and read each month the *Ladies Home Journal*, and a study of the January number, just to hand, shows at once why the *Journal* is so popular. It is in complete touch with a woman's best needs, and covers everything in her life. No magazine covers its special field so thoroughly, and in such a fresh and capable manner. Mrs. Burton Harrison, for example, is selected to write of "Social Life in New York"—than which there could have been no better choice. "Wine on

Fashionable Tables, whether its use is increasing or decreasing, is discussed by such royal entertainers and diners-out as Chauncey M. Depew, ex-President Hayes, Madame Romero, Mrs. ex-Secretary Whitney, George W. Childs and others. In the series of "Unknown Wives of Well-Known Men" we have the first portrait of Mrs. John Wanamaker ever printed, and a sketch, while "Clever Daughters of Clever Men" presents Ethel Ingalls, the pretty daughter of ex-Senator Ingalls. Mrs. Henry Ward Beecher reaches the call of Plymouth Church to her husband and their removal to Brooklyn in her series of papers on "Mr. Beecher as I Knew Him," while the daughter of Charles Dickens completes her first story. A very pretty page of "Sofa Cushions" is illustrated and described; Palmer Cox's funny little "Brownies" are seen in a ludicrous sleigh-ride, while Robert J. Burdette begins his work as a *Journal* editor with his new department "From a New Inkstand." Dr. Talmage's page is excellent this month; Maria Parloa's department is full of good household ideas; Rider Haggard, Canon Farrar, the Countess of Aberdeen, Charles Dickens and a score of famous English celebrities send New Year's greetings to American women, and all through the number there is a sense of originality and brightness which copes with honest practical advice and helpfulness. The *Journal* is only \$1 per year, and is, needless to say, fully worth it. Published by the Curtis Publishing Company of Philadelphia.

The January number of our esteemed contemporary *The Trader* comes to us in holiday attire, and looking just as bright, handsome and attractive as a bevy of young maidens at a May-day festival. While preserving its usual shape, it contains 116 pages, every one of which is a fine specimen of the printer's art. The paper upon which it is printed is the best book paper to be had in Canada, and the printing shows what can be done by harmonious and beautifully blended colors. Of course it is liberally patronized by advertisers, who show good judgment in having their business cards in a souvenir which will no doubt be preserved very much longer than less attractive publications usually are. Many pages are devoted to the reproduction of some very meritorious works of the engraver's art, and there are suitable stories accompanying them. It would be difficult to give a panoply of the contents of this volume, but there are some features of it to which we would like to make some allusion. In the first editorial page is a fine likeness of Editor McNaught as he appeared at an early age, and before the time when furs and thick clothing were worn in the winter time. Another page shows him when a youth on a farm in Huron County, calling down from his perch a fine gobbler for the Christmas dinner. A most excellent likeness of him is shown on page thirteen, where, after having discovered what a howling success *The Trader* had been for the past year, at peace with himself and all the world, he is pledging his friends the compliments of the season, and that too in sparkling champagne. On page sixteen is shown a life-like likeness of the present president of the Canadian Manufacturers' Association as he appeared one day last summer meandering down the Lover's Walk on the Capitoline Hill at Ottawa. On the next page he is shown as he appeared the next morning at the Russell House. The next half dozen pictures have reference to episodes in the life of the secretary-treasurer of the American Watch Case Company, and the gentleman of Mephistophelean appearance on page thirty represents that officer at the time when he discovered the value of a Maltese cross as a trade mark. The picture on page thirty-four represents the editor of the *Toronto Globe* directing a telescope, through which Sir Richard Cartwright is gazing into the dim distance, searching for some indications of unrestricted reciprocity, which cannot be discovered. The picture on page forty-three represents the manager of the *Empire* playing "ghost" to Lou Kribs. The next represents Mayor Clarke introducing E. B. Osler to the city of Toronto. Page forty-seven shows W. F. McLean, of the *World*, viewing the first Sunday street car passing toward High Park along Queen Street. Page fifty-one shows Editor Farrer, of the *Globe*, dreaming of annexation; page fifty-seven shows him when about starting for the "other side" when he found that his fad didn't work, and page fifty-nine shows him shooting the rapids at Niagara. Page sixty-one illustrates the way Charlie Morrison and J. B. McLean play football. Pages seventy-one and seventy-three are "Before" and "After" a good thing. Page seventy-seven shows Blaine and McEwen on the proceedings, and page seventy-nine represents Colonel Davidson, in Highland apparel, leading his kilted regiment to an oyster supper. All these pictures, we are informed, are from photographs taken during life, and are truthful representations of the subjects.

Captains of Industry.

This department of the "Canadian Manufacturer" is considered of special value to our readers because of the information contained therein. With a view to sustaining its interesting features, friends are invited to contribute any items of information coming to their knowledge regarding any Canadian manufacturing enterprises. Be concise and explicit. State facts clearly, giving correct name and address of person or firm alluded to, and nature of business. Subscription \$1.

MR. J. P. BURT has started a factory at Nanaimo, B.C., for the manufacture of fish oil.

HENNINGS' flour mill at Goderich, Ont., was destroyed by fire on Dec. 22nd. Loss about \$4,000.

MR. JAMES EDMONSON'S saw-mill at Whitford, Ont., was destroyed by fire Dec. 20th. Loss about \$3,500.

BARON SEILLIERES and MONS. de Mury, of France, have taken over and will operate the beet sugar factory at Berthier, Que.

THE Malto Peptonized Porter Company has been incorporated at Truro, N.S., to build a brewery and manufacture peptonized porter.

MR. JOSEPH KING, Goderich, Ont., is building a planing mill at that place. He will also put in machinery for chopping all kinds of grain.

THE Lake of the Woods Milling Company are erecting a new elevator at Portage la Prairie, Man., which will be one of the largest in the Dominion.

WHAT was known as Howby's grist mill, near Rockford, Ont., was destroyed by fire Dec. 18th. Loss about \$5,000. The mill was owned by Mr. Thomas Toms.

THE United Card & Paper Company has been incorporated at Montreal with a capital stock of \$90,000, to manufacture glazed, plated, and surface papers, etc.

THE Terrebonne Electric Light Company is being formed at Terrebonne, Que., with a capital stock of \$12,000, to erect works and light that city with electric light.

THE output of the Springhill, N.S., coal mines in 1891 was over 40,000 tons in excess of the output for the previous year, when 419,012 tons of coal were hoisted out.

THE Manitoba Binder Twine and Cordage Company has been formed at Winnipeg, Man., with a capital stock of \$150,000, to manufacture binder twine and other cordage.

THE Canada Brewing & Malting Company has been organized at Peterboro, Ont., with a capital stock of \$100,000, and will take over and operate the old and well-known Calcutt brewery in that place.

MESSRS. WM. BELL, of Guelph, Ont., and others have organized the Canada Paint Company, with a capital stock of \$25,000, and will erect a factory at Montreal for the manufacture of paints, oils, varnish, etc.

MR. H. W. PETRIE, machinery dealer, Toronto, has recently been sending car-loads of saw-mill machinery to British Columbia. He informs us that he is building up quite an extensive trade in that direction.

THE Upper Columbia Navigation Company, Golden, B.C., are preparing the materials with which to build a steamer for the Upper Columbia river trade, the intention being to have her in commission next season.

THE Vancouver Dynamite & Powder Company has been organized at Vancouver, B.C., with a capital stock of \$100,000, and are erecting works for the manufacture of dynamite, blasting powder, and other explosives.

THE Phoenix Brewing Company, Victoria, B.C., is being incorporated, with a capital stock of \$150,000, and will build a lager beer brewery there with a capacity of 100 barrels per day. The new building will be 74x54 feet, six stories high.

THE woolen mill of Messrs. Sykes and Ainley at Glen William, Ont., was destroyed by fire Dec. 29th. Considerable new machinery had recently been introduced into this mill, including an English-made carbonizer, said to be the only machine of the kind in Canada.

THE barque *Catherine Hilda*, built by Mr. W. P. Cameron, at South Maitland, N.S., was launched a few days ago, and immedi-

ately sailed for New York, where she will load for Brisbane, Australia. The is 520 tons register, and is the tenth Nova Scotia vessel built for Mr. Donald Ross for the Australian trade.

MESSRS. O'KELL & MORRIS, who recently started a factory in Victoria, B.C., for the manufacture of preserved fruit, etc., met with good success the past season, and will probably enlarge their works before the next season's crops of fruit begin to appear. They put up their goods in glass jars exclusively, and find a quick and ready market for all they produce.

MESSRS. FOWLER & CO., Galt, Ont., have started a new industry, being the manufacture of baskets, cradle and perambulator bodies. Their list includes office, counter, fruit, root, chaff, clothes, market baskets; window guards for flowers, lawn vases, etc. They have a patented process for manufacturing these goods, on the same principle as the wire and slat fences.

THE Boiler Inspection and Insurance Company of Canada, whose head office is in Toronto, ask several very pointed questions of steam users which Canadian manufacturers should consider. Those questions are: When were your boilers last inspected? Are they in safe working order? Are they giving the maximum of power at the minimum of cost? For trustworthy information regarding steam boilers consult this Company.

MESSRS. AIKENHEAD & CROMBIE, who for many years have been one of the leading and most successful hardware houses in Toronto, have disposed of their valuable leasehold and buildings occupied by them at the corner of King and Yonge Streets, and will retire from the general hardware business. Some of the members of the concern, it is reported, will engage in the manufacture of some special lines of hardware in this city.

THE Lloyd Manufacturing & Foundry Company is much rushed with work. It has two carloads of machinery for sawmills about ready to ship, with many orders ahead as yet untouched. It speaks well for this firm, in view of the dull times among sawmill men in general this year, that during the dullness experienced elsewhere all the work that could possibly be accomplished was done, and the workshops were running full blast.—Halifax, N.S., *Critic*.

ALL the breweries at present in operation in Victoria have been bonded until January, 1892, by a syndicate of English capitalists, represented by Lowen & Erb, of Victoria, and the Rand Bros., of Vancouver; and plans have been prepared and a site selected, in the event of the negotiations being successfully consummated, for the establishment of a large and thoroughly modern brewing and malting establishment in the city.—Victoria, B.C., *Commercial Journal*.

MESSRS. M. & L. SAMUEL, BENJAMIN & CO., Toronto, direct the attention of Canadian manufacturers to the fact that they are extensive dealers in all manner of hardware, metals, chemicals and manufacturers' supplies. This is one of the oldest and best known houses in Canada. They are connected with Messrs. Samuel, Sons & Benjamin, 1 Runcford Place, Liverpool, Eng., which connection gives them most excellent facilities for purchasing abroad. They solicit correspondence.

MESSRS. CONNOR & ANDERSON, manufacturers of presses, dies, drop hammers, and general sheet metal tools, whose present location is at 39 Adelaide street west, Toronto, are building a new factory on the same street. The building, which will be ready for occupancy in March, has a frontage of 32 feet on Adelaide street, by 58 feet deep. When the change of location is made, this firm will introduce considerably new machinery and more than double their capacity for production.

THE new brick and stone mill being erected by the Paton Manufacturing Company at Sherbrooke, Que., heretofore alluded to in these pages, is nearly completed, and will be ready for operation in a few days. The building is 208x57 feet, four stories high. This mill is to be run entirely on fancy worsteds, the other mills of the company to be employed in the production of tweeds, overcoatings, military cloth, shawls, plaid dress goods, etc. This company now employ about 625 operatives, and the new mill will afford work for 200 more.

THE Goldie & McCulloch Company, Galt, Ont., have recently shipped a 150 h.p. Wheelock compound steam engine to the electric light works at Port Arthur, with a fly wheel fifteen feet in diameter, weighing ten tons; a four ton burglar and fire proof safe to Messrs. Robertson & Co., New Westminster, B.C.; to Imperial Bank, Toronto, an iron vault weighing five tons; to Messrs. Archibald Bros., Beachville, Ont., a seventy-five h.p. engine and boiler, and to the Goldie Mills, Guelph, two seventy-five h.p. boilers, besides a number of smaller engines and safes to various parts of the Dominion.

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The railway car works and rolling mill of Messrs. J. Harris & Co., St. John, N.B., are claimed to be the largest of their kind in Canada. They give employment to some 300 men in the car works, and from eighty to 100 in the rolling mill. Railway cars of all kinds are constructed there, from a freight to a finely-finished first-class passenger coach. The firm have just completed a large contract for the C.P.R. Co., and have now on hand an order for the Intercolonial Railway, a lot of frost-proof cars, of a special and new style altogether, besides snow-ploughs and cars for the Temiscouata Railway Company.

MESSRS. HARVEY & VAN NORMAN (late Orr, Harvey & Co.), manufacturers of boots and shoes, Toronto, finding their present premises too small for their rapidly increasing business, have secured that large factory at the corner of Front and L-rno Streets, opposite the Queen's Hotel, into which they will remove about February 1st. The business of this firm has doubled itself within the past four years; and the prospects are that in their new factory it will expand more rapidly than ever. Messrs. Harvey & Van Norman are the sole agents in Canada for the Lycoming Rubber Company, of Williamsport, Penn.

CAPT. McGRAY, St. John, N.B., is making the experiment of sending live lobsters to England. His method is to pack the crustaceans one deep in iron frames secured to the deck of the ship. Near the frames is a reservoir of sea water, which flows in a constant stream through the frames, with which it is connected by rubber hose. The reservoir is replenished from the ocean by means of a pump. If the experiment proves a success, large lots will be taken across in this manner next spring. Capt. McGray will take out a patent for his method, which appears to be both simple and practicable. There is a big profit on lobsters in the London market.

MESSRS. SAMUEL MAY & Co., Toronto, billiard table manufacturers, whose factory is at West Toronto Junction, have recently manufactured a most beautiful billiard table which is exciting considerable admiration. It is of mahogany, of full English scale, (6x12), with eight legs and slate bed fitted with the latest improved cushions. It has also solid brass pocket bows with the best imported nets and burnished brass pocket shields. Hitherto tables of this kind have always had to be imported from England, but this company have now got into the manufacture of them on an extensive scale and are ready to fill all orders. They claim to be able to make a table fully equal, if not superior, to anything of the kind in the market.

The Toronto Construction and Electrical Supply Company announce that they are prepared to submit estimates for complete electric light and electric power equipments for mills and factories. The question of electric lighting for such buildings has long since been settled, and there are few progressive manufacturers who have not already or who will soon avail themselves of this economical and safe method of lighting. The company here alluded to are sole Canadian agents for the Thomson-Houston system of incandescent electric lighting, electric street railways, electric pumps and hoists, power generators and motors, incandescent and arc lamps, and all manner of electric lighting and power supplies. Correspondence is invited.

SOME of the executive officers of the Whitman & Barnes Manufacturing Company were in the city last week conferring with Mr. George Burch, manager of the St. Catharines factory, with reference to changes in their business, made necessary by combinations among their customers, the mower and reaper manufacturers. This company is contemplating additions to their business, which will, if carried out, be of great benefit to our city. St. Catharines would be a most convenient centre for the manufacture of mowers and binders, and it is to be sincerely hoped that the Whitman & Barnes Manufacturing Company, who are very enterprising and have ample capital, may decide to largely increase their investment here.—St. Catharines, Ont., Star.

The J. C. McLaren Belting Company, Montreal, have recently supplied the Dominion Cotton Mills Company, that city, as follows:—One 26-inch three-ply and three 30-inch two-ply leather belts, the aggregate length of which was over 500 feet, also 18-inch double leather belting 287 feet long. All of this belting was made of the very best imported oak-tanned leather, the quality of which belting is guaranteed by the fact that it was turned out of the factory of the McLaren Belting Company. We understand that at the recent International Electric Exhibition held in Montreal, the McLaren Company were the only Canadian manufacturers showing dynamo belting in actual use; and the excellence of it was testified to by many of the visitors. The belting manufactured by this concern is well known throughout Canada; and those who may

require a first-class article should address this company for information.

MR. D. HAZARD, of the Clark & Hazard Manufacturing Company, Marquette, Michigan, is the inventor of a new form of saw tooth which is applicable to any description of power saws now in use—band, circular or gang; also for an emery grinder for sharpening such teeth, and also for an automatic machine upon which the grinding is done. It is claimed for this tooth that not only a very large saving of lumber is effected in cutting because of the thinness of the kerf, but that the saw may be driven at much greater velocity and with less power than in mills where ordinary saws are used. Patents have been obtained on these inventions in Canada and the United States. Mr. Hazard, who is a native born Canadian, was in Toronto this week with a view to organizing a stock company to take over the Canadian rights and to manufacture the saws, and the machines and machinery for sharpening them.

ON Saturday last the SS. *Capitano*, the second of the new steel steamers built by the Union Steamship Company, was successfully launched from their shipyards on Coal Harbor. The *Capitano* is the second of the new steamers built by this company, and is an entirely new class of vessel in these waters. She is intended chiefly for freight carrying, and will have a capacity for carrying about 250 tons dead weight with a free board required by Lloyd's rules all over the world. She is built entirely of steel, and is classed 100 A1. at Lloyd's for twenty years. As speed is not her chief object, she is built with a view of carrying as much freight as possible with the smallest consumption of coal, and is guaranteed to make nine knots, loaded, and ten, light, on two and one-half tons of coal per day. Her dimensions are as follows: Length, 135 feet; beam, 22 feet; depth of hold 11½ feet. The SS. *Capitano* was built by Bow, McLachlan & Co., of Paisley, Scotland, and re-built here by Mr. Henry Darling, the superintendent engineer, and Capt. Webster, the manager of the Union Steamship Company.—Vancouver, B.C., Commerce.

IN the last issue of this journal, allusions were made to the fact that the armed cruiser *Constance*, recently built by the Polson Iron Works Company, of Toronto, at their ship-building works at Owen Sound, had been transferred from the Department of Marine and Fisheries to the Customs Department, and that she would be used in the Lower St. Lawrence for the prevention of smuggling. The use of such a vessel for that service was imperatively necessary, because of the constant violations of the law; and the superior excellence of the *Constance* is a guarantee that she will fully answer the purpose to which she has been devoted. The Polson Company are now at work building another vessel, similar in nearly all respects, to be used in the fishery protection service in the Bay of Fundy. The dimensions of this steamer will be: Length 125 ft., beam 19 ft., 6 in., depth of hold 9 ft., 6 in. Compound engines with cylinders 18 in. and 36 in. diameter by 24 in. stroke; boiler, Clyde pattern, 10 ft. 6 in. by 11 ft., to carry 120 pounds of steam. The model will be the same as the *Constance*, with some slight modification for salt water service. The Department of Marine and Fisheries are preparing plans and specifications for still another cruiser for fishery protection in Georgian Bay.

THREE years ago Messrs. Newlands & Co., of Galt, Ont., started a new industry in the manufacture of imitation Buffalo robes. This was rendered necessary by the almost total extinction of the shaggy monarch of the prairie. While in Galt the other day we visited the establishment and were courteously shown through it by Mr. Warnock. The robes were seen in their various stages of manufacture, and no one could be otherwise than thoroughly convinced of their durability and imperviousness to wind or rain, so desirable in our North-West. One striking point in their favor is that the more they are exposed to storms the more they resemble the fur of the natural animal. This was borne out by one shown to us which had been in constant use by a medical man for two seasons. Owing to the mild weather of the past two winters there has not been the demand for the robes which colder weather would have stirred up, but the manufacturers say they have no reason to complain, and that they have every faith in the pronounced success of their industry. Since starting, the firm have branched into other lines, and are now manufacturing wolf-grey imitation robes, which they claim are more pliable than the real article, and imitation buffalo and dog-skin coats which are first-class goods and should become very popular wherever warmth and comfort are desired. They have made a great success in their Jersey cloths for children's wraps, etc., and in their glove linings. Their latest venture is the manufacture of imitation lamb-skin, and they have already brought it to such perfection that glove men say the problem, which has so long bothered them, has at last been solved.—*Dry Goods Review*.

INVENTIONS.

This department of THE CANADIAN MANUFACTURER is devoted to the interests of inventors, of patentees of inventions, and of manufacturers of patented articles. Patents are granted in Canada for fifteen years, the Government's fee for which may be paid by instalments. Arrangements have been made by which the issue of all patents by the Canadian Patent Office will be promptly noticed in this department, and a brief description thereof given; and this will include not only patents, but Copyrights and Trade Marks, and all renewals and extensions thereof. Enquiries on these subjects are invited and will receive prompt attention. No charge will be made for answers by mail when return postage is sent. Informal on given free regarding patent laws and the obtaining of patents in Canada, United States, Great Britain and all foreign countries. Claims for inventions, as embodied in Letters Patent, also the illustrations of them, will be inserted in this journal at moderate charges. The attention of manufacturers is specially directed to the opportunities for lucrative business which may be acquired by close observation of whatever may appear in this department.

THE new Italian rifle is a repeater and will penetrate planks 5 inches thick at a distance of 4,000 feet.

THE electric crane is being introduced on London docks. Heretofore these cranes have been operated by steam.

THE locomotive Charles Dickens, on the London and Northwestern Railway's special express between Manchester and London, has run 1,000,000 miles in nine years—a feat without parallel in English railway traveling. It has never had a breakdown.

THE German Government has been collecting some statistics relating to the effect of lightning on ships, and the Commission appointed to investigate the subject reports that no case has been recorded of a ship rigged with wire rigging sustaining damage from lightning except in a few instances where a continuous connection had not been made with the hull.

ALTHOUGH the United States produced in 1890-91 more than twice as much cotton as the combined crops of India, Egypt, Brazil, Peru, Turkey, and the West Indies, they nevertheless imported more Egyptian and Peruvian cotton than during any previous season. Egyptian cotton has a long, strong, silky fiber, adapted to special manufactures. The Peruvian cotton is of the tree variety, similar to that from Brazil, and is called vegetable wool.

THE statement was recently made by Captain Ambrose Snow in the New York Chamber of Commerce, that of seventy-one chartered ships in the harbor of San Francisco at that time, but five carried the American flag, and that the condition was still worse on the Atlantic. At the present time, he said, "there is not a single ship carrying the American flag loading for Europe at any port between Galveston and Maine, and there are 485 foreign vessels loading in these ports."

HENRY K. SWINSCOE, Clinton, Mass., has secured a patent on an improvement in the galvanizing process. The improvement, as described in the specification, is in the method of galvanizing or treating wire cloth or netting, which consists in immersing the article to be galvanized in a bath of molten metal and then drawing from the bath and through a wiper composed of coal dust floating on the surface of the molten metal, the claim being made that coal dust is more efficient than coke.

AN important modification which Patent Commissioner Simonds of the United States Patent office will urge upon Congress in the practice in regard to patent cases will be a provision for trying interferences in the courts. Important cases always reach the courts and the decision of the Commissioner of Patents is little more than an adjudication of the case upon its *prima facie* merits. Mr. Simonds believes that carrying the case to court at the outset would relieve the Patent Office of a deal of labor which is practically useless. He has prepared a bill for the modification of the patent laws, embodying a number of the reforms which he urged as a member of the last Congress. The provision regarding the decision of cases of interference by the courts is a new feature of the bill.

Electricity describes a "penny in the slot" electric light which is being introduced into the railroad carriages on English roads. The lamps are placed in a convenient position to throw a good light on the book or paper. To the side of the car is attached a box containing the accumulator and mechanism for switching the current on or off. By dropping a penny into the slot the light is set going for 15 minutes, at the end of which time the circuit is automatically opened and the light extinguished. While the privilege of paying eight cents an hour for a good light may be a boon to the English-traveling public, we have no use for such an invention in this country, where the modern railroad coaches are lighted equally as well, in the majority of cases, as the library at home or the reading room at the club.

THE transmission of power from Niagara Falls to Chicago by electricity has been proposed in connection with the World's Fair. The scheme is suggested by H. W. Leonard. The distance between Niagara Falls and Chicago is about 475 miles, or more than four times the distance between Lauffen and Frankfort-on-the-Main. Mr. Leonard proposes to use a potential of 80,000 volts at the generating end of the line. Assuming the difference of potential to be the working pressure adopted, and allowing 40 per cent. loss of power in the conductor, the cost of the generating and transformer plant at the Falls, according to Mr. Leonard, would be \$50 per horse-power, delivered in Chicago; the cost of the conductor would be \$120 per horse-power, delivered in Chicago, and the cost of the motors and converters at the receiving end would be about \$35 per horse-power, delivered in Chicago.

SOME men who have been in business for a very long time get into a certain groove and they never try or make an effort to get out of it. These are generally those of a class who believe that their business is not only satisfactory, but that it cannot be very much improved upon. There is, however, another class who are to some extent in the same condition, or rather frame of mind, but they belong to the no'er-do-weels. Both of the above would, under ordinary circumstances resent any advice given to them, and at the same time consider it a gross piece of interference with their own private affairs, but in doing so they unquestionably stand in their own light and must be conceded to be their own worst enemy. Egotism and impotence have many things in common, and our observation has led us to regard both as enemies to success. It is the bright man who is willing and able at all times to take advantage of any suggestion that may be made to him, who by far now-a-days stands the best chance of success.

BRITISH EXHIBITORS TO PAY FOR SPACE.

THE Chicago Exposition officials are greatly surprised to learn that the Royal Commission of England intends to charge British exhibitors for the space which they may occupy at the World's Fair. The surprise was caused largely on account of the fact that Great Britain was furnished free the space which it intends to sell. From the prospectus which has just been issued by the Royal Commission, it appears that the Commission will be able to realize on the space which cost it nothing, anywhere from \$200,000 to \$334,000.

The particular feature of this which excites comment is the fact that Director-General Davis and Chief Fearn of the Department of Foreign Affairs have been sending regulations concerning the fair to all parts of the world. In these official statements there is a paragraph assuring exhibitors that all space will be granted without cost to those intending to make displays. The question arises as to how intending English exhibitors will harmonize the statements of the exposition management with the charges which the Royal English Commission has announced it will make.

The reason for making the charges the prospectus sets forth as follows:

"As the funds granted by Her Majesty's Government will not suffice to defray all the expenses of the section it is necessary that the expenses should be supplemented by payments from the exhibitors. A charge, therefore, will be made to each exhibitor."

Then follows the scale of prices based on the amount occupied, ranging from 60 cents to \$1.20 per square foot.

The possibility of the money-making features of this scheme will be understood by the statement that Director-General Davis, during the recent visit of the English Commission to Chicago, granted outright 250,000 square feet in certain of the buildings. In addition to this he reserved 45,000 square feet in other buildings,

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making in all, granted and reserved, 295,000 square feet. Taking the lowest amount—60 cents per square foot—the total realized will be \$177,000. Taking the highest amount—\$1.20 per square foot—the amount will be \$354,000.

It is further provided in the prospectus that if an applicant for space declines or does not notify the Commission of the acceptance of space allotted to him, the deposit will be forfeited. Space not occupied seven days previously to the opening of the exposition will be otherwise allotted, and all payments made in respect thereof will be absolutely forfeited.

As all English exhibitors must apply for space to the British Commission, it remains with that body to deal with them as it may seem fit. The thing, however, about which the exposition management is thinking, is the fact that it has announced that space would cost the exhibitor nothing. It will not cost intending exhibitors in the United States anything, but if other Governments choose to follow the example set by England it may cost foreign exhibitors.

LETTERS PATENT FOR INVENTIONS.

THE origin of Letters Patent for Inventions dates as far back as the Statute of Monopolies in the reign of James I., by which statute exclusive rights were given to the first and true inventor of a new manufacture for a term of fourteen years, provided it was not contrary to law or mischievous to the State. A patent for a useful invention is not under our law, nor, indeed, under the law of England nor any foreign country at the present day, the grant of a monopoly in the sense of the old common law. It is the grant by the government to the originator, discoverer or inventor of a new and useful art, machine, manufacture or composition of matter, or any new and useful improvement thereon, of the exclusive right, for a term of years, of practising that invention. The consideration for which this grant is made by the Crown, is the benefit to society resulting from the invention, which benefit is conferred upon the public by the inventor: first, by the immediate practice of the inventor under the patent, and secondly, by the practice of the invention or the opportunity to practice it, which becomes public property on the expiration of the patent.

The history of patents in Canada begins in 1824, when the first patent was issued on the 8th of June to one Noah Cushing, of the city of Quebec, for a washing and fulling machine. From that date up to the year of the Confederation of the Provinces, there were only 1,866 patents issued, and these comprised the patents issued by each of the Provinces or Colonies, which before that period had a separate Patent Act of its own.

Since Confederation, however, a great increase has been made in the number of patents taken out in Canada, nearly 40,000 patents having been issued since then. Our valuable manufacturing, lumbering and mining industries, fostered and protected by the National Policy, have in a large measure stimulated the progress of invention in this country, and it may safely be said that the sons of this fair Dominion have produced inventions the importance of which is in no degree inferior to those of our neighbors south of us.

Such is the enterprise of Canadians that patents for important inventions are now being taken out by them not only in Canada, the United States and England, but in the various colonies of the Empire, and in many foreign countries.

Patents are granted in Canada for a term of fifteen years. The first Government fee is \$20, which fee protects the invention for

five years, two further fees of \$20 for each succeeding five years being requisite in order to protect the invention for the full term. It is therefore necessary to pay the first fee in order to obtain the patent, and the subsequent fees in order to keep it alive the full term. Two other requisites are necessary in order to keep the patent alive, namely, the article covered by the invention must be manufactured within two years from grant, and it must not be imported for more than a year. Specifications, drawings and models are required to be sent to the Canadian Patent Office before a patent will be granted, and such is the importance of having inventions thoroughly covered in order to protect the inventor from infringement, that special experts are employed by inventors, so that their applications may be prosecuted to a successful issue before the Patent Office. It is essential that men having a legal as well as a mechanical experience should be employed.

Many people are in the habit of not only thinking of, but speaking of inventors as cranks. But when one considers the advantages reaped from the indomitable energy and perseverance of such so-called cranks, it must be confessed that to that class of the community we are more indebted than to any other.

Lord Bacon corroborates this statement in the following:

"The introduction of great inventions appears one of the most distinguished of human actions, and the ancients so considered it; for they assigned divine honors to the authors of inventions, but only heroic honors to those who displayed civil merit, such as the founders of cities and empires, legislators, the deliverers of their country from lasting misfortunes, the quellers of tyrants and the like. And if any one rightly compare them, he will find the judgment of antiquity to be correct; for the benefits derived from inventions may extend to mankind in general, but civil benefits to particular lands alone. The latter, moreover, last but for a time, the former forever. Civil reformation is seldom carried on without violence and confusion, while inventions are a blessing and a benefit without injuring or afflicting any."

THE CANADIAN IRON INDUSTRY.

THE *Philadelphia Manufacturer* publishes a letter from Mr. D. O. Kollogg, of Vineland, New Jersey, a close student of political economy and a strong protectionist, in which he deals with the condition of the iron industry in Canada and the plans afoot for increasing its importance. The interest of this matter to Canadians is our reason for reproducing the letter:—

"Recently our neighbors on the north have been discussing quite exhaustively the means for bringing the iron industry of the Dominion into independence. The debate is interesting for the light it throws upon the principles of protection, as embodied in the McKinley law of Congress, such as the duty on raw material, the effect of bounties, and competitive prices under a protective and a pure revenue system. The facts here presented are taken in part from 'Keltie's Statesmen Year Book,' but chiefly from recent numbers of the CANADIAN MANUFACTURER.

"In a general way the magnitude of the trade between the two highly protected countries of Canada and the United States may be noted. In 1889 the Dominion sold to the United States \$43,522,000 worth of various merchandise. This was three-eighths of all her exports, and \$5,417,000 more than her sales to Great Britain. In the same year she bought \$50,537,000 from her southern neighbor, or 56 per cent. of her entire imports, which was \$8,220,000

more than she took from Great Britain. In 1891 there was a reduction in the trade of the two American countries of \$17,249,090. This is for the fiscal year ending June 30th. In the first year named the balance of trade with the Dominion was \$7,015,000 against the United States; in the last year it was 32,050,000 in their favor. Still imports from the United States formed one-third of the Canadian total. In 1889 they were 37.7 and in 1890 they were 34 per cent. of the whole.

"Of Canadian imports of iron, steel, and the manufactures thereof, 10.7 per cent. of the whole merchandise brought into the country was the ratio for the fiscal year of 1889; in 1891 it had grown to 12.8 per cent. Of this mass of iron products the United States supplied Canada chiefly with forgings, malleable castings, wire bolts and their adjuncts, agricultural tools, stoves and their furniture, locomotives and other engines, builders' hardware, sewing machines, boiler and other tubing, fire arms, edge tools, saw plate, and about \$2,500,000 worth of merchandise listed as other machinery, and other manufactures of iron and steel. In the carefully prepared tables of the CANADIAN MANUFACTURER, all these products are marked as supplied for the larger portion by the United States. The total value of these importations into the Dominion in 1890 were \$5,629,898, and they comprise about 40 per cent. of the entire importations of all products of iron or its manufactures. Now the noticeable features of these figures is this: the United States are not exporting to Canada the primary forms of iron and steel which enter into manufactures, except to a very small extent. These are chiefly brought from Great Britain. But what we do send is the products of our shops and foundries. Now Canadian duties are very light on scrap wrought iron, being \$2 per ton, and on cast scrap or pig, on which it is \$4 per ton. But the imports on the higher forms of manufactures are intended to be protective. Yet our highly wrought iron merchandise does go into Canada, and the lower forms of iron products, such as steel rails, cast iron and scraps, sheet iron, tin plates, and anchors are brought from England.

"On Cobden theories, the reverse should be the result of protective systems. Upon free trade assumptions, that a tariff is always a tax on the purchasers, our manufactures are first loaded with the protective duty at home, and then with the Canadian customs impost. And yet they not only compete with English goods of the same description, but virtually drive them out of the markets on the St. Lawrence and in Ontario.

"Of iron in its primary forms for the forge and the shop, Canada relies upon these sources of supply; wrought iron and steel scraps, steel ingots, slabs and blooms, derived almost wholly from Great Britain, of which she received 64,500 tons in 1890; pig iron, cast-scrap, and kentledge, of which she imported 87,613 tons, valued at \$1,148,078, and of this 23,170 tons, worth \$301,210 came from the United States. In addition the furnaces of the Dominion supplied 25,921 tons of pig-iron. It will be seen that, notwithstanding the McKinley law, the United States managed to furnish in 1890 Canadian manufactures with one-fifth of their entire supply of the primary forms of their cast iron, and one-fourth of all they import. Upon this phenomena the CANADIAN MANUFACTURER observes: 'A noticeable lesson taught . . . is that American iron manufactured under the operation of the McKinley tariff—\$6 per ton—can be sold in Canada at as low a rate as English iron, manufactured under free trade. Protection, and nothing but protection, made this possible.'

"There is another condition of the iron industry of our northern neighbor to be noted, but for which Canada probably would not only produce more pig-iron from her own rich and undeveloped mines, but buy more of the same commodity from us. The Canadian duty on pig-iron is \$4 per ton, but it is only \$2 on wrought scrap, and this is the reason that the Dominion took over 59,000 tons of the latter from Great Britain, valued at \$678,574, a year ago. The tariff advantage thus given to the English commodity is one of the reasons that the splendid deposits of iron ore in Ontario and even in Quebec, right in vast forests where charcoal can be produced in abundance, and with fine water communications, go so slightly touched. This inequality of Sir Charles Tupper's tariff, there has been some slight attempt to correct by a bounty system. By law the Dominion treasury pays a bonus of \$1 per ton on pig iron cast therein. Under this provision the smelting furnace has a protection of \$5 per ton, while its competition with imported wrought iron scrap is adversely weighted with only \$1 per ton. Yet the bonus system does not seem to work efficiently, and Canadian protectionists are doubting whether any scheme of reasonable bounties can be made to take the place of protective duties. They now argue for a revision of the tariff, not only to equalize the impositions on wrought and cast iron, but to make them sufficiently high and permanent to induce capitalists to invest in ore beds and fur-

naces. In other words, they are demanding protective duties on what are termed 'raw materials' of the iron industry. The Dominion has ores of the same quality as those of Michigan, in abundance, and inexhaustible supplies of fuel right by their beds. But for lack of adequate protection these great and easily accessible resources still go almost untouched.

"It may be that the Canadian iron industry is but a small one, yet that has but little to do with the economic principle it illustrates. It shows that the natural wealth of the Dominion lies in sterile ground until it shall be fructified with a good round tax on imported raw material; that bounties are a poor substitute for protective duties; and that a highly protected country, paying high rates of wages, can compete in the most finished forms of manufacture with a free-trade country paying much less for labor. Thus are reaffirmed the claims so often made for protective principles."

THE PRINCIPLE OF THE DYNAMO.

THERE is a good deal of wonder concerning the action of the dynamo, how it produces current. How can power come from a union of cast-iron, copper-wire, sheet-iron and paper. I asked the question of Mr. Briggs, regardless of the shock I might inflict upon his scientific system. This is about what he said in reply:

"All the iron we use is, as I told you at the beginning of your inquiry, slightly magnetic. If it is not, we magnetize it by means of a strong current. We are supplied with a small quantity of a residual magnetism in the iron frame of the magnets.

"This residual magnetism does the business. The engine is started, the rapid revolution of the armature which connects the two poles of the magnet generates it in a current from the reserve fund, this current passes to the field coils, which are connected through a sort of by-path to the winding of the armature, and charges them to their full strength.

"A powerful magnetic field is then created between the poles of the magnet, and as the armature is revolving in the very centre of this field, current is generated in the coils of the armature. Thus the two principal parts of the machine help each other. There is sufficient magnetism about the machine to cause the generation of current to begin directly the armature is revolved.

"A portion of this current goes to the coils of the field magnets and at once strengthens their magnetism, which naturally causes a corresponding increase of strength in the currents generated in the armature. In a very short time the magnetic field attains its full strength, and the dynamo is developing the full amount of energy for which it was designed. This, in a few words, is the beautiful principle of the self-exciting dynamo. Of the power supplied to the dynamo by the driving-engine, it delivers about nine-tenths in the form of electrical energy, available for lighting, for driving motors, for electro-plating, for the reduction of ores and for dozens of other useful purposes. A very small percentage of the power is used in the dynamo itself exercising the field magnets."

AN EFFECTIVE LAW.

LAST week, the United States Circuit Court of Appeals at St. Louis, rendered a decision which is of national interest as it relates to the contract labor law about which so much is being said. In this case a St. Louis employer operating a zinc works was charged with importing workmen from England, in violation of the contract labor law. It was shown that an English workman had written to the manager of the zinc works asking for employment for himself and a companion. The manager replied saying that he had arranged for their transportation and directing the men where to apply in England. The men came as far as Philadelphia, where they were intercepted by the Immigration Inspector and ordered back to England.

The case was first tried before Judge Thayer of the United States District court, who decided that the correspondence did not constitute a contract, within the meaning of the law, and that to prepay the transportation of an alien was not unlawful unless a regular contract was entered into under which the alien agreed to perform some kind of work, the terms of which both parties had agreed to. When an appeal was taken this decision was confirmed by the upper court.

The above case is the latest proof of the truth of what the American Manufacturer has often stated in regard to the contract labor law. Its operations so far have been ineffective, and have resulted only in injustice to one class of our citizens, while it has failed to benefit any other. Under this law the employer is prohibited from securing workmen from abroad, but the worker can bring over any

number of friends or relatives. Thousands of workmen have been brought to this country by their fellow workmen on contracts similar to that made by the employer in the case cited. The workers who demanded the passage of the contract labor law allow their own people to bring over foreign labor, but the employer who attempts to do the same is quickly brought before the courts. If the workmen can bring in foreign labor the employer should be allowed the same privilege, but while the law really prevents only one from so doing it can never be a complete success. The workers of this country must cease their violations of the spirit of the contract labor law before its letter can be efficiently enforced.—*American Manufacturer.*

AMERICAN-BUILT FROM STEEL TO STERN.

ONE of the pleasantest facts published in regard to the gigantic new cruiser, *New York* launched from Cramp's yards, last week, is this, that the requirements of the contract are that it "must be constructed of steel of domestic manufacture, and be provided and fitted with machinery, engines, and boilers, also of domestic manufacture, complete in all their parts," and that these conditions have been carried out to the letter. The *New York* is, therefore, a typical American vessel, hull, plates, engines, boilers, guns and all.

Another provision of the contract was that the vessel must not make less than an average speed of twenty knots, maintained for four consecutive hours successfully. Keeping in view the great power required to drive a vessel of her size at the high speed of twenty knots, the Bureau of Steam Engineering, in designing the propelling machinery, thought it advisable to divide up this power in four parts. For this reason two engines of about 4,000 horsepower each will be placed on each twin-screw shaft. These engines may, by means of an easily worked coupling, be readily disconnected from each other, which enables the ship, when cruising at low speed to be driven by the after set of engines only. Hence there will be no difficulty in economizing in fuel at times of ordinary cruising. There will be four propelling engines, of the vertical, inverted, direct-acting, triple-expansion type, the collective horsepower of which will be 16,000 when the main engines are making 129 revolutions a minute. For every quarter of a knot above the guaranteed speed of twenty knots which the vessel may make a premium of \$50,000 will be allowed to the builders, and for each quarter of a knot she shall fail of reaching the guaranteed speed a penalty of \$50,000 will be deducted from the contract of price of \$2,985,000. The Navy Department is confident that it has attained in the *New York* an unusual combination of great offensive and defensive power, with extraordinary coal endurance and a high rate of speed.—*Iron Trade Review.*

CHIGNECTO RAILWAY.

THAT a work on which three million and a half dollars had been expended out of a total of five million dollars, the sum required for its completion, should be suspended for the lack of the funds required to obtain so desirable an object is cause for sincere regret. When the enterprise was floated in the English market the bonds, which bear interest at the rate of five per cent. per annum, were taken up at a premium of eight pounds and the indications were that there would be no difficulty in raising the full amount required for the completion of the work. Operations were carried on with every promise or a completion at an early date, but difficulties were encountered at a time when they were least expected and the sale of the bonds was interfered with. These were due to, among other causes, the Barings' failure, whereby large sums of money were locked up, and to the effect upon the British money market produced by the publication last spring of the Tarte-McGreevy charges and the Public Works scandal, which had a deterrent effect upon British capitalists, making them unwilling to invest their money in Canadian undertakings. The result was that when the amount referred to was expended the company was unable to obtain further financial assistance and work had to be suspended. The railway, which consists of a double track, has been graded and is now very nearly completed. The docks, engine houses and lifting machinery at either end are partially constructed and built in a massive and most substantial manner, but the completion of these and the other requisites to put the road into complete running order will require the expenditure of a further million and a half. The English capitalists who have up to the present invested their three million and a half in the enterprise, confident of its success, are deserving of some sympathy, and the question which presents itself for consideration is, "What is best to do under the circumstances?" The

Dominion Government has, to a certain extent, committed itself to the undertaking by the promise of an annual subsidy of \$170,600 for twenty years, or so much thereof as may be necessary to bring up the earnings to 7 per cent. on the authorized share and bond capital of the company which is fixed at five millions and a half. This, however, is not payable until after the completion of the works, and therefore no benefit can be derived from it until the railway is in full operation. Several schemes have been suggested to enable the company to complete the work, all of which involve Government assistance. If, however, the difficulty arises from the company's inability to raise the amount required, it seems to us that a simple exchange of bonds under certain restrictions would be the best means of aiding the company to complete its undertaking. Engineers of skill and ability who have carefully examined the whole matter have decided that the objects aimed at by the railway are both possible and feasible, and those acquainted with the traffic between the St. Lawrence lower ports and outports and those of the Bay of Fundy and the United States believe that the saving of distance and the avoidance of the risks of navigation *via* the Atlantic will induce the owners of vessels to adopt this means of passage from the St. Lawrence to the Bay of Fundy, and *vice versa*, sufficiently to make it a profitable undertaking. This being the case, then, it would be injudicious to allow the undertaking to fall through in its present advanced state, so that we earnestly hope for the credit of Canada that the Government will see its way clear to come to the rescue. The company's bonds bear five per cent. interest while those of the Government are two per cent. lower, which would enable the Government to benefit to the extent of two per cent. Had the proposition to build a canal, which was at one time under consideration, been carried out, the whole cost would have been borne by the Government as well as that of its maintenance. Under all these circumstances we trust, for the credit of the country, that such steps will be adopted as will secure the completion of the work without further delay. To fail to do so would be a disgrace to Canada, and would defraud the country of the reputation of being the first to adopt what, on its completion, cannot be regarded as other than a triumph of engineering skill.—*The Shareholder.*

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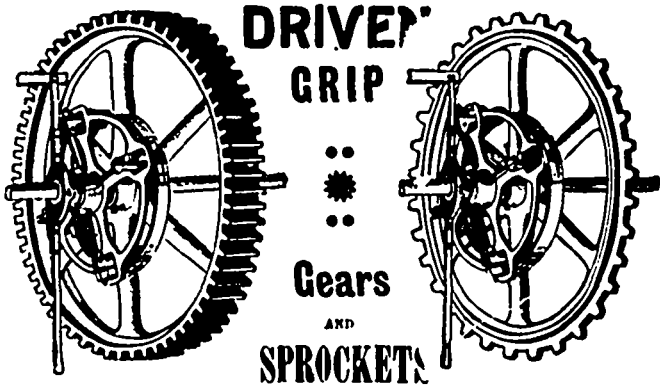
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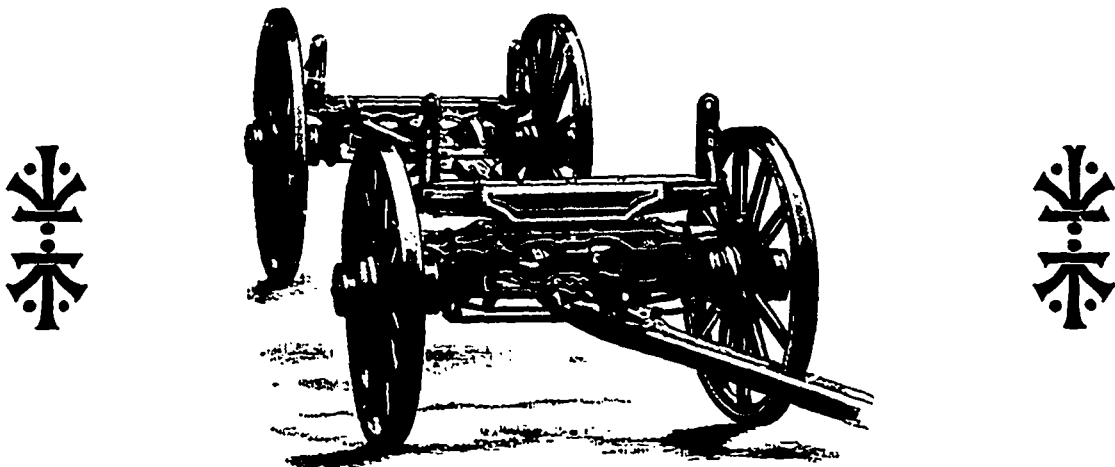
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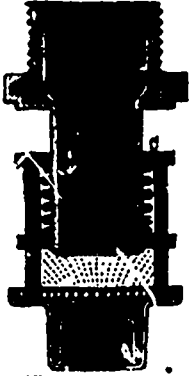
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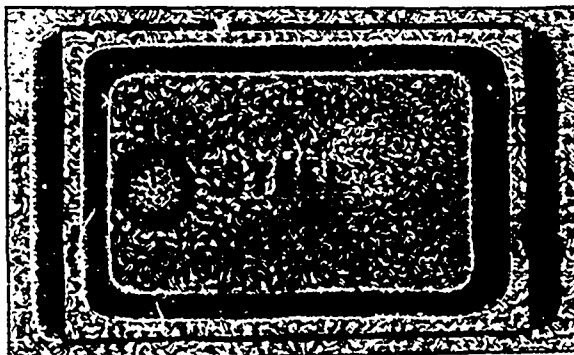
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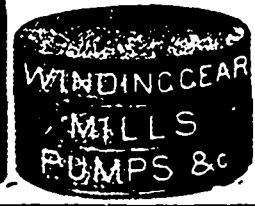
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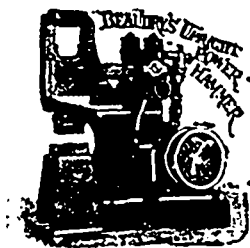
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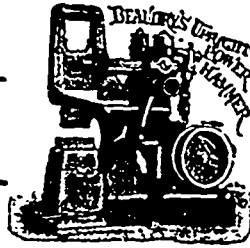
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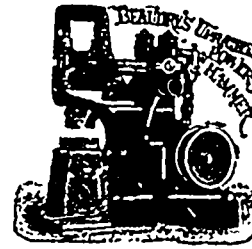
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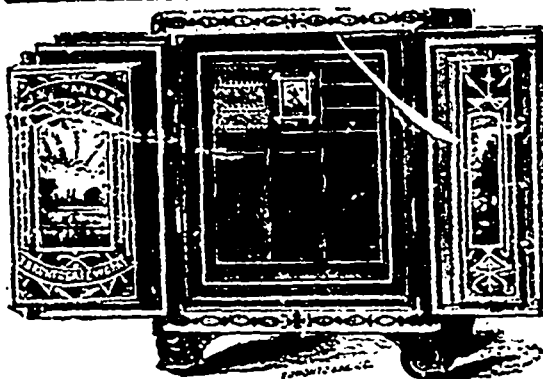


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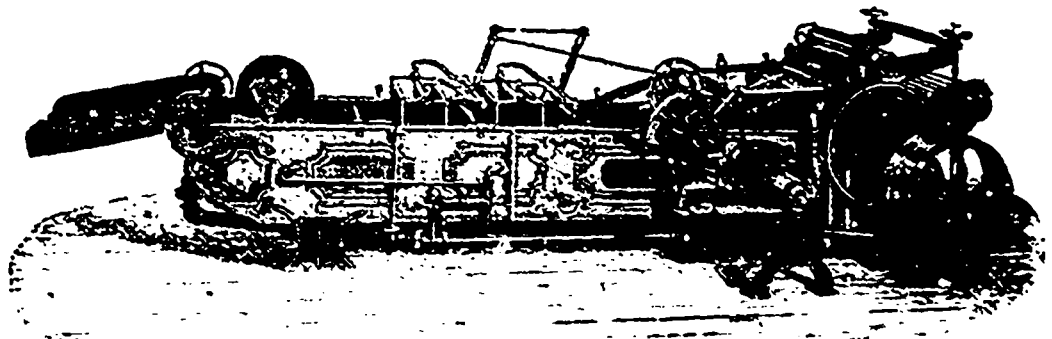
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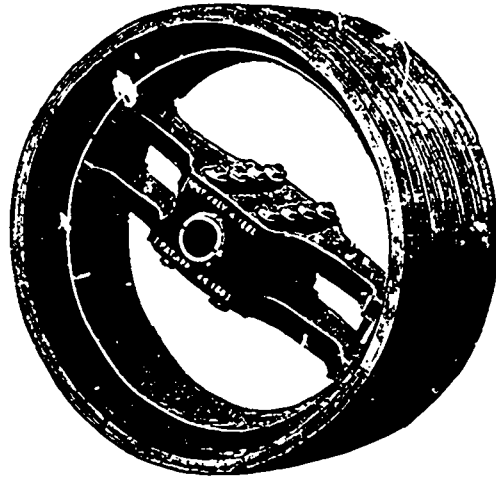
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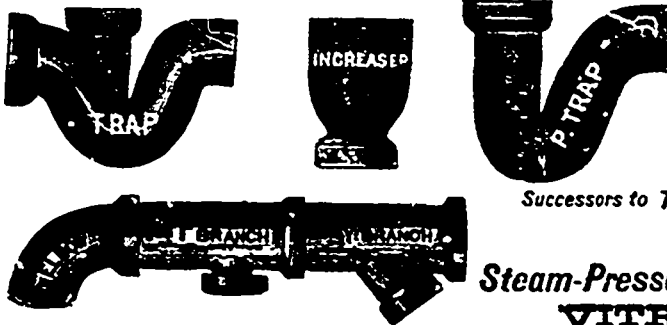
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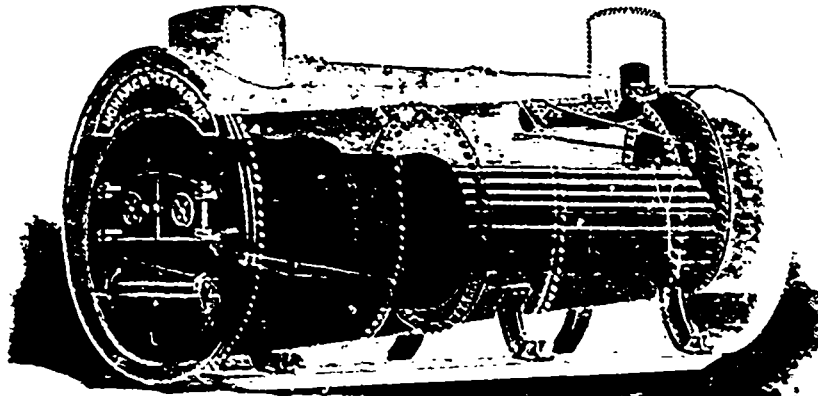
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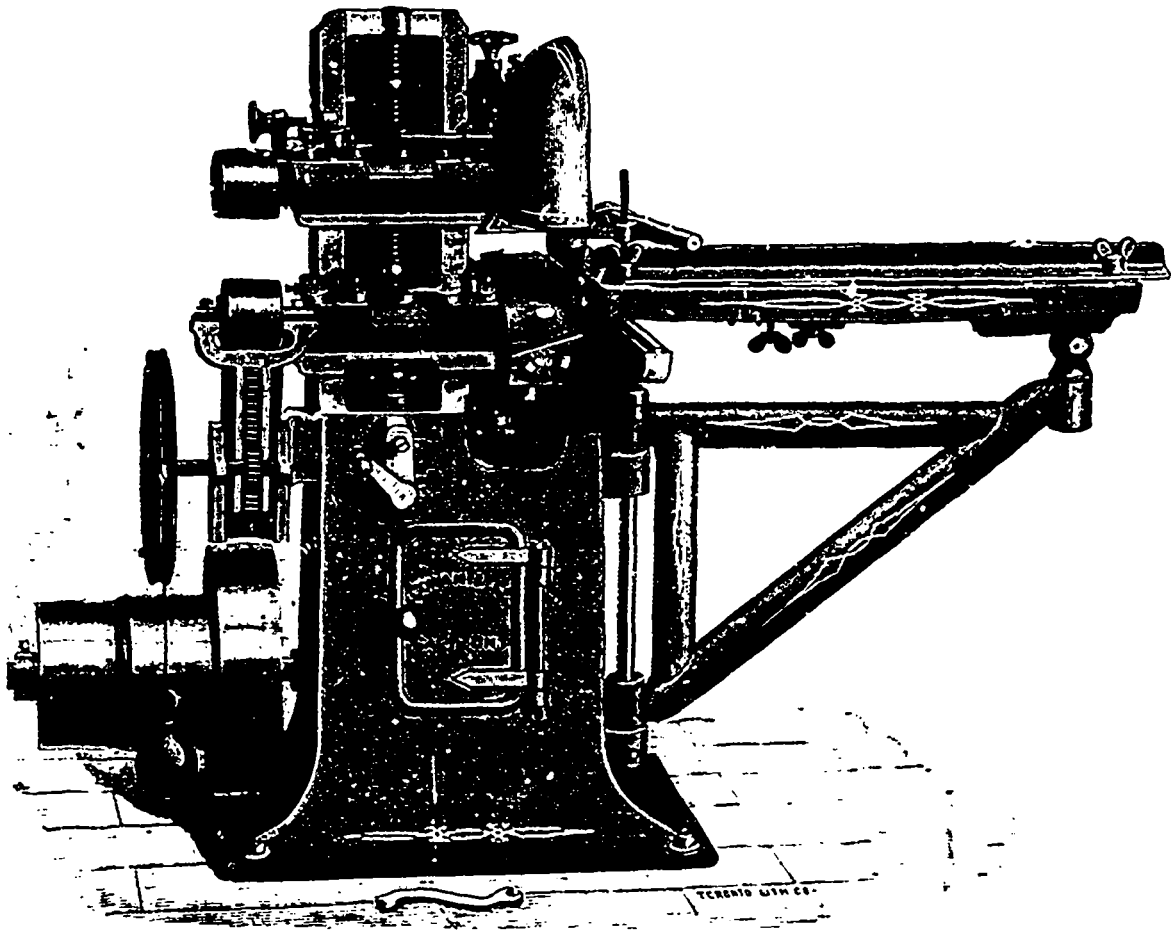
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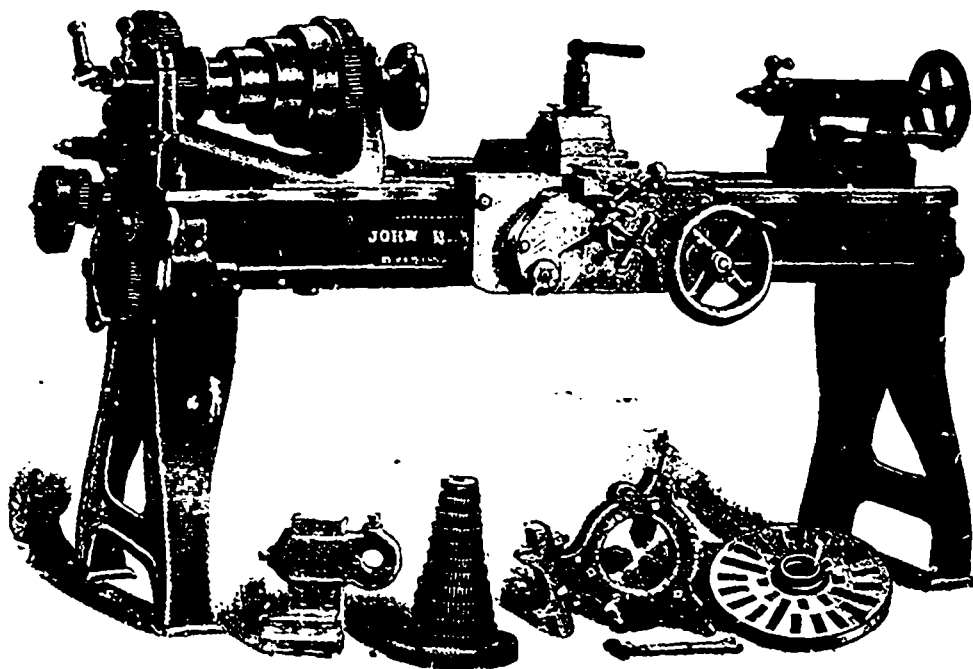
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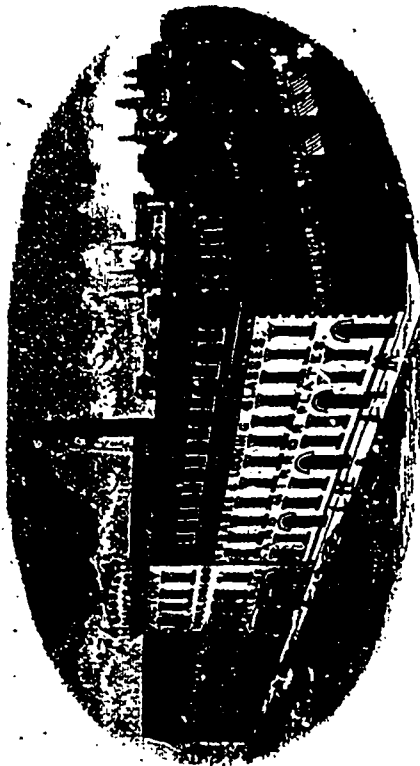
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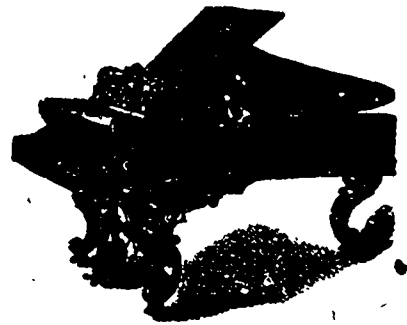


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