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THE CANADIAN MANUFACTURER

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Vol. 21.

TORONTO, JULY 17, 1891.

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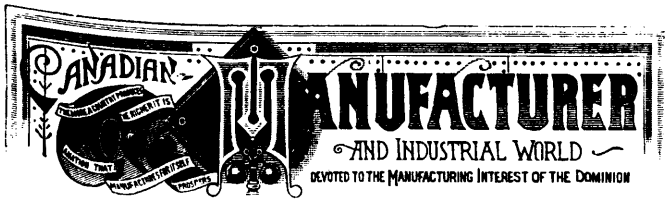
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LOUISIANA SUGAR.

ABOUT six hundred sugar planters in Louisiana have complied with the law regarding applications for the bounty promised by the McKinley tariff for the manufacture of sugar in the United States. These applications show that a big crop is expected to be made there this year, there being an estimated production of 450,000,000 pounds of sugar, which, if realized, will call for the payment of \$9,000,000 from the federal Treasury. Reports regarding the condition of the growing crop are that the expectations regarding it will be quite fully realized. The 600 planters, who have filed their applications for bounty, expect to realize from it an average of about \$15 000 each. Of course many will not receive so much, but one large concern calculate that they will receive as much as \$240,000. It is said that the impetus given to the sugar industry in Louisiana is stimulating the foundrymen and manufacturers of machinery, who are rushed with orders for work in their lines, and that the importation of sugar making machinery into the port of New Orleans, coming mainly from Germany and France, are exceedingly large, amounting in value to millions of dollars.

What is said of the production of sugar in Louisiana applies with greater or less force to many other portions of the United States, particularly to California where there are several large

concerns engaged in sugar beet farming and in the manufacture of the beets into sugar, and also to Nebraska where there is one of the largest sugar factories in the world.

Referring to the figures given above regarding the production of sugar in Louisiana this year, it will be seen that the planters in that State alone expect to produce twice as much sugar as the entire consumption of sugar in Canada. This is cane sugar, but the California and Nebraska industries are beet sugar, and this emphasizes the fact that sugar beets can be grown in Canada to quite as good advantage as in the States named, and that there is no good reason why Canada should not be quite as active in the production of beet sugar as the United States. Under the McKinley tariff a bounty of two cents per pound is guaranteed to the producers of sugar in the United States for a period of fifteen years; and no matter what changes may occur in political parties in the meantime it will be impossible for the Government to withdraw the bounty. It is the opinion of those capable of judging that before the expiration of the fifteen years the sugar making industry in the United States will be so well established that the supply from that source will about supply the domestic demand.

There is no reason why a similar condition should not prevail in Canada. If Canada produced her own sugar, and a bounty of two cents per pound was paid for it, with a production of 250,000,000 pounds per year \$5,000,000 would be distributed among the farmers who grew the beets and those employed in their manufacture into sugar. Why not have the industry? As it is those who have already invested in the industry in Quebec in building factories and equipping them with expensive machinery, with the expectation that they would receive some sort of protection as guaranteed to them by the National Policy, are told by the Government that they have but the present year to live—that their industry is to be killed and their investments sacrificed. It is not yet too late, however, for the Government to retrace their steps in this matter.

TARIFF FOR PROTECTION VS. TARIFF FOR REVENUE.

THE Toronto *Globe* labors under a misapprehension of facts as regards the repeal of the sugar duties in the United States. It says that that repeal was a confession on the part of American protectionists that protection to sugar had failed, and explains by saying that when taxing sugar was begun (in 1816) it was predicted that with a little protection for a little while it could be raised as far north as the Ohio river. Whatever views may have prevailed in the United States seventy-five years ago regarding the possibility of raising sugar as far north as the Ohio river, the *Globe* knows, or should know, that no such views prevail at this time, or have prevailed there since the United States adopted the policy of protection. Louisiana is the only State of the Union in which cane sugar is the chief crop and industry, although the cane is cultivated to greater or less extent in all the regions bordering on the Gulf of Mexico. But the cultivation of the sugar cane was never a success as a commercial crop north of those regions, and it has always been well understood that no measure of tariff protection could ever develop the industry even as far north as the

southern lines of Tennessee and North Carolina. Further, in the earlier days of the United States, when a heavy import duty was imposed upon foreign sugar, it was not for protection to the Louisiana industry, but to raise revenue for Governmental purposes, even as the duty in Canada was imposed for like purpose. Under Democratic rule, Louisiana, being a strong Democratic State, and to conciliate the sugar planters there, the duty upon sugar was continued; and under Republican rule, protection being the policy of the party, Louisiana sugar making was included in the list of protected industries. The *Globe* tells us that the longer the American sugar industry was coddled (by protection) the more rickety it became; and at last it dawned on Mr. McKinley that it would be cheaper to give the Louisiana men a small bounty and let foreign sugar in free. In other words the *Globe's* idea is that the Americans are a pack of stupid who required the teachings of seventy-five years to convince them of the fact that sugar cane growing could not be made successful as far north as the Ohio river. This is not very complimentary to the intelligence of our American friends. As we have stated, the duty upon sugar was levied and maintained always, not for protection, but for revenue, the Louisiana interest in sugar being but a feature of the matter; even as the sugar duty in Canada was levied and always maintained for like purpose.

The *Globe* contends that the protectionists in both Canada and the United States in cheapening the price of sugar have "cut the ground from under their defence of high prices for other articles," and asks, how can they in bragging about cheap sugar justify dear iron and dear everything else. If it were a fact that every protected article was dearer because of the protection given it, even then protection might be justified; but such is not the fact, for there are many articles the production of which has been encouraged by protection that are quite as cheap as they could be produced in countries where tariffs for revenue only prevail. It is quite easy to comprehend that the general production of some article in a country—sugar cane for instance, in Canada and in much the larger part of the United States, could never be made a success, no matter how great the protection offered it might be, while on the other hand the production of some other article—iron, for instance—could be made exceedingly successful and profitable under proper protection. The protective policies of Canada and the United States are not responsible for the climatic influences that prevent the successful cultivation of sugar cane, but they are responsible for the success or non-success of the iron and many other industries. In the United States that responsibility has induced the bestowment upon the iron industry of a measure of protection that has ensured the development of the industry to a point where that country has become the leader among nations in the production of iron, even excelling Great Britain in that respect; while in Canada the measure of protection afforded the industry is, and always has been entirely inadequate for the purpose intended. The *Globe* mentions the fact that we produce at home less than 30,000 tons of pig iron per annum, out of a total consumption of over 400,000 tons, reducing everything to a pig standard, and argues that herein the Canadian price is equal to the foreign price plus the duty; that "the absurdity of expecting the iron duties to develop the industry is shown by the fact that we are not making any

more pig to day than we made before the duties were imposed in 1887." We are not at variance with the *Globe* in its argument that under our present duties the iron-making industry is not being developed: and it is clear that the industry will never become any more important than it now is until a duty is laid that will in fact protect it and induce its expansion. As it is our iron duty is for revenue only, in evidence of which assertion we point to the fact that the Government pays a bounty upon the production of pig iron, without which even the few blast furnaces we now have in operation would be compelled to blow out and cease operating. Therefore Canada can never hope for a successful iron making industry until it has the encouragement of protective duties that do really protect. Under such protection in the United States they have cheap iron there, while under an entirely revenue duty in Canada we do not have cheap iron. Says the *Globe*:

Worse than all, from a protectionist point of view, is the boast that sugar has been made cheap. If sugar, why not the raw materials used by other manufacturers, and why not the manufactured articles which enter into the economy of agriculture, lumbering and all the really great industries? If cheapness is beneficial dearthness cannot possibly be good for man or beast, nor can there be any virtue in the system which promotes it.

The reason why sugar should be made cheap is because we do not need the revenue heretofore raised upon it, and because it cannot be produced in Canada. The reason why the duty is not removed from other articles is that doing so would destroy the industries in which they are essential. Cheapness is beneficial as regards sugar, but such "cheapness" as the *Globe* desires would not be beneficial, but destructive, not only to the interests directly involved, but to the prosperity of the country. Canada does not wish for that sort of cheapness.

AMERICAN RECIPROCITY VS. BRITISH FEDERATION.

WHETHER so designed or not, an effect of the reciprocity clause of the McKinley Tariff Act will be either to cripple and destroy the foreign and colonial trade of Great Britain or to accelerate British federation. The reciprocity clause is applicable to very many of Britain's possessions as it is to many other countries with which Britain has heretofore enjoyed a virtual monopoly of trade; and this applies to all countries producing molasses, sugar, hides and coffee. Of course we all know that the United States is the best market for all these articles, and we also know that that country now offers free admission for them only on condition that the producers reciprocate by showing special tariff discrimination in favor of American products. Brazil was the first to avail itself of this reciprocity with the United States, and we now see that country doing an immense trade with the United States that until very recently was done with Britain. Cuba heretofore found a ready market in the United States for its immense sugar crop, and, unwilling to lose that market, it forced Spain to consent to an arrangement whereby it might continue to sell its sugar to American consumers and take American flour, lard, bacon, etc., in exchange. It is said, too, that some of the British West Indies, unwilling to be left in the lurch, are contemplating making similar arrangement for themselves,

and it is not improbable that some of the Australasian colonies may sooner or later find it to their interest to seek reciprocal relations with the United States, particularly if the latter country enlarge the list of products on which they would be willing to negotiate so as to include some of the chief products of those antipodean possessions.

The following table shows the extent of the trade between Great Britain and some of her possessions in 1890 :—

	Exports to.	Imports from.
West African Settlements.....	\$1,814,500	\$1,494,500
Cape of Good Hope.....	31,454,800	24,852,500
Natal.....	14,186,000	5,625,000
British India.....	168,205,000	163,343,950
Ceylon.....	4,608,075	17,056,000
Hong Kong.....	12,641,000	6,125,320
South Australia.....	10,202,750	14,689,000
Victoria.....	35,506,500	29,843,000
New South Wales.....	36,673,000	43,956,000
Queensland.....	10,641,000	12,086,500
New Zealand.....	16,572,000	41,738,000
Canada.....	34,135,000	60,100,000
British W. India Islands.....	13,122,000	9,031,500

The following table is interesting as showing the comparative value of the Colonial markets to British manufacturers and producers :

1890	
Imports into Great Britain from Foreign Countries.....	\$1,621,283,000
“ “ “ British Possessions.....	479,660,000
Exports from Great Britain to Foreign Countries.....	1,166,223,500
“ “ “ British Possessions.....	470,033,500

What will be the attitude of Britain to any of these possessions if they should deem it to their interest to enter into reciprocal arrangements with the United States in some such war as Brazil and Cuba have done? Certainly Britain would not attempt to restrain them; and if such arrangements should be made it is certain Britain would lose much if not all her trade with them, for it would be transferred to her most powerful rival on this side the Atlantic. Such reciprocity is not impossible or even unlikely as regards some of these British possessions; and it will certainly occur whenever the occasion is ripe for it if Britain does not forestall the event and make it desirable for these possessions to look unfavorably upon such a scheme. Will Britain ever be willing to see her trade and products discriminated against in British colonial possessions? How could she prevent it? It is a strange fact that during the time the McKinley Bill was under discussion neither British statesmen, manufacturers, shipowners nor commercial journals discovered and discussed the probable effects the proposed law would have upon British interests. The fact that it would have most important bearing upon the welfare of the Empire seems never to have been considered, nor that it would work the destruction of the fond hopes entertained that Imperial Federation might sooner or later become a reality, unless Britain herself set about the accomplishment of that federation with the warmest zeal and determination. As it is, the only important fact that Britain seems to have awakened to in this connection is that as large and important a commercial market as Brazil is is now almost lost to her. She does not seem to see that the very influences that have deprived her of the Brazilian market are working actively to deprive her of other markets, and the probability that numbered among these will be some, perhaps many, over which floats the British flag. It is an old British commercial maxim that the flag follows the trade—will this hold good in the possibilities herein alluded to?

Lord Salisbury may be a remarkably astute statesman, but Mr. Blaine's political vision seems to be exceedingly clear. It is entirely improbable that Great Britain and the United States will ever again clash in hostile warfare, but in the great American Republic the Mother Country has a competitor for commercial supremacy worthy of her steel. Is it absurd to suppose that Mr. Blaine did not have this very matter in view when planning his reciprocity scheme to capture so large a share of the world's commerce, wresting it from Great Britain? He was aware that Imperial Federation was being discussed both in Britain and in all British possessions, and he could readily see that should it be brought about his plans for the capture of so much foreign trade for his country would prove abortive. He could see that Imperial Federation was not as yet very popular in Britain, and that in the colonies there was no unity of action tending to bring it about, and that that was a good time and a fitting occasion to defeat the project. With Imperial Federation Britain would be able to retain all her possessions to herself and still be in most excellent condition to contest with the United States for the trade of other countries that is now slipping away from her. With Imperial Federation, coupled with a tariff system which would give some slight discrimination in favor of the federated possessions, Britain would not lose the proud prestige she has been striving for hundreds of years to attain. If she would retain this prestige, however, she must of necessity abandon her ultra free trade policy. Then Imperial Federation would not be a dream as it now is. With Imperial Federation and a judicious form of tariff protection Britain would be at no disadvantage in competing with the United States for commercial supremacy.

DISINTERESTED FREE TRADE ADVICE.

At the recent quarterly convention of the United Silk Workers of North America, held in Allentown, Penn., after much discussion anent the depression said to be existing in that trade in that country, resolutions were adopted setting forth that, despite the high protective tariff prevailing there, wages were so low that the operatives were seeking other occupations, and an appeal was made to the friends of American labor not to purchase silk fabrics of foreign manufacture, "which are actually inferior to those made in the United States." It was also resolved that, in the opinion of the convention, neither protection nor free trade benefits the workingman, and that "the only protection workingmen will ever receive will be what they give themselves."

Our worthy contemporary, the *Textile Mercury*, of Manchester, Eng., doubts whether these operatives have got hold of the correct solution of the question that is troubling them. It says :—

If they would work to throw the present corrupt party out of power, and thus allow the nation to retain the £46,000,000 that it is extracting by means of a tariff from the pockets of the people for purposes of corruption, and would, in other words, lower the import duties, then such a trade would spring up as would place the great agricultural and pastoral industries of America in such a condition of prosperity that they would soon have abundant means to buy far more extensively than now the silks of both America and Europe. The silk manufacturers and work-people of New England, if they have the confidence

they profess in the quality of their goods, would have no need to fear, as the quality would preserve them a command of the market, while only the overplus would go abroad to the benefit of all.

The *Textile Mercury* seems to forget that the United States, like Great Britain and all other countries, require revenues with which to carry on the Government, and that the people of the United States have long since decided that they prefer the policy of protection to that of free trade, and that the talk about "extracting by means of the tariff from the pockets of the people for purpose of corruption," is silly nonsense—it is no argument. The American silk-workers, according to their own showing, which is undoubtedly correct, are suffering from depression in their trade, not because of over production, but because of the strong competition of foreign silks: and, as evidence of this, they appeal to all friends of American labor not to purchase silk fabrics of foreign manufacture.

The silk industry in the United States is comparatively new, having been built up in the last few years under the auspices of a protective tariff. It is an established fact that already the silks manufactured in the United States are of very excellent quality—probably the equal of any made anywhere else in the world—and, according to the testimony of these experts in the business, superior to any foreign silks imported there. Further, these American silks, to be of such excellent quality, must have been made by the best and most modern machinery, by thoroughly skilled operatives: and the only reason why it is possible for foreign manufacturers to flood the American market with cheap silks is because the pay to the foreign labor manufacturing these silks is very much cheaper than American labor in the same industry. And if these American silk-workers find that in maintaining their industry in that country against the competition of foreign silks they are compelled to accept low wages, it proves that the pay of the foreign workers must be very near starvation point.

But in advocating free trade, what panacea does the *Textile Mercury* offer these American silk-workers for the ills under which they appear to suffer? It does not tell them that free trade would give them better wages, or that the condition of workers in manufacturing industries generally would be benefited: but it does tell them that, if they would lower their import duties, then "such a trade would spring up as would place the great agricultural and pastoral industries of America in such a condition of prosperity that they would soon have abundant means to buy far more extensively than now the silks of both America and Europe." Precisely so. The American silk-workers now complain that, even under a protective tariff, their wages are so low that they are being driven to seek other occupations, and the *Textile Mercury* informs them that if this protection were removed, they would have abundant means to buy European silks. Think of it! People who now, under protection, are complaining of the insufficiency of their wages, would have, without protection, and as a consequence of free trade, abundant means to buy silk raiments.

This act of political legerdemain is not to be brought about, however, by the encouragement, or even the existence of domestic American industries. Not a bit of it. Philanthropic British free traders do not allow their philanthropy to gravitate in that direction. The suppression and extinguishment of American and of all other than British manufacturing indus-

tries is what they want: and they hold out lots of glittering generalities about "the great agricultural and pastoral industries" that all countries except Britain should indulge in, by which they would soon have abundant means to buy far more extensively than now the manufactures of Britain: and that is just what is meant. The disinterestedness of the suggestion is quite apparent.

The resolution of the silk-workers, expressing the opinion that neither protection nor free trade benefits the workingman, is contradictory of the preceding resolution, in which they call upon the friends of American labor to refrain from purchasing silk fabrics of foreign manufacture. In one breath they tell us that, even under protection, their wages are insufficient, and that they dread the competition of foreign labor, and in another breath they tell us that protection does not benefit them, and that they would not be injuriously affected by the competition of free trade. This is ridiculous. But they strike a key note when they affirm that the best protection workingmen receive is what they themselves work for. The very fact of the existence of the silk-workers organization, and of the aims they have in view for bettering their condition, is an evidence that they are protectionists, for the protection they seek to throw around themselves as a guild is of the same character that all workingmen seek to throw around themselves and their industries by the operations of a National Policy of protection.

MOVEMENT OF POPULATION.

It is interesting to notice the movement of population in representative countries during the past ten years, as disclosed by the census returns. Following is a table showing the population in certain manufacturing centres in the United States in 1890 and the increase thereof since 1880. In this table New York is made to include Brooklyn, Jersey City and other suburban cities; Pittsburg takes in Allegheny City; Boston the big suburban towns of Cambridge, Somerville, Charlestown, etc.; Cincinnati, Covington and Newport; Louisville, New Albany and Jeffersonville; Philadelphia, Camden, and so on throughout the list, the cities of Minneapolis and St. Paul being regarded as one. The list is follows:

	Population in 1890.	Per cent. gain in ten years.
New York	3,621,000	33
Philadelphia	1,422,000	27
Boston	1,334,000	28
Chicago	1,324,000	35
Pittsburg	677,000	54
St. Louis	629,000	24
Cincinnati	590,000	15
Baltimore	586,000	20
Providence	532,000	25
Cleveland	426,000	44
Buffalo	385,000	40
The "Twin Cities"	381,000	143
San Francisco	335,000	22
Detroit	330,000	38
Milwaukee	320,000	50
New Orleans	307,000	12
Kansas City	306,000	67
Albany	289,000	7
Louisville	277,000	21

The United States is a representative country as regards the policy of protection. The increase of population in manufacturing centres in England in the past decade is about as equally marked, illustrating which we give the following

table. It will be noticed that in Liverpool only is there a decrease since 1881 :

	Population in 1891.	Per cent. gain in ten years.
Lond n.....	4,211,056	10
Liverpool.....	518,000	*6
Manchester.....	505,300	9
Birmingham.....	429,200	7
Leeds.....	367,500	18
Sheffield.....	324,200	14
Bristol.....	221,700	7
Bradford.....	216,300	11
Nottingham.....	212,000	13
Salford.....	198,800	12
Newcastle.....	186,300	28
Hull.....	183,800	10
Portsmouth.....	159,200	24
Leicester.....	242,100	16
Oldham.....	131,500	18
Sunderland.....	130,000	12
Cardiff.....	128,900	55
Blackburn.....	120,100	15
Brighton.....	115,400	7
Bolton.....	115,000	9
Preston.....	107,600	11
Norwich.....	100,900	14
Birkenhead.....	99,200	18
Huddersfield.....	95,400	10
Derby.....	94,100	16
Plymouth.....	84,200	14
Halifax.....	82,900	12
Wolverhampton.....	82,600	9

*Decrease.

England is a representative country as regards the free trade policy. The facts as regard Ireland are painful. It has always been the policy of Great Britain to discourage manufacturing enterprises in Ireland, and to force her to devote her industrial energies to agricultural pursuits; and Ireland may therefore be taken as a representative country as regards a strictly agricultural community under free trade. According to the recent census the decrease in population in several counties of Ireland since 1881 was as follows :

Leinster.....	83,271 or 6 per cent.
Munster.....	162,121 or 12 " "
Ulster.....	125,198 or 7 " "
Connaught.....	98,084 or 12 " "

From 1871 to 1881 the decrease of population in all Ireland was 4.4 per cent., while from 1881 to 1891 it was 9.1 per cent.

Irish towns and cities also show decreases of population since 1881. The following table gives the population in 1891 and the decrease since 1881 :

	Population in 1891.	Decrease since 1881.
Cork.....	75,070	5,054
Limerick.....	37,082	1,490
Derry.....	32,893	*3,731
Waterford.....	21,695	764
Galway.....	13,746	1,725
Newry.....	13,211	1,597
Kilkenny.....	11,024	1,275
Drogheda.....	11,812	485
Wexford.....	11,541	622
Dundalk.....	13,027	*1,294
Sligo.....	10,110	698
Lurgan.....	11,447	692
Lisburn.....	9,517	618
Armagh.....	8,303	1,716

* Increase.

The two cities of Dublin and Belfast also show an increase. The population of Dublin is returned at 278,896, an increase of 5,614, equal to 2.1 per cent., while that of Belfast is 273,055, or an increase of 64,933, or equal to 31.3 per cent.

Ireland is dependent upon little else than the cultivation of the land for a livelihood, and that land is in the possession

of foreigners who live elsewhere. There are no diversified industries to give employment to the people; they cannot all be graziers and farmers, and hence the exodus. Free trade does it.

THE EDUCATION OF CONVICTS.

IN the July report of the Legislative Committee of the Toronto Trades and Labor Council, strong exception was taken to the method prevailing in the penitentiaries and prisons of Canada of bringing the labor of the convicts into competition with free labor, and of causing prison made merchandise to be brought into disastrous competition with the merchandise manufactured by free men. The report made special mention of the fact that in the Dorchester penitentiary, where many lines of wooden ware are made, arrangements were in force by which the Eddy Manufacturing Company purchased all of certain of these lines, selling them in the Canadian market to the detriment of the business of Canadian manufacturers who employ free labor, and to the detriment of these employees also. The Eddy Company are probably the largest manufacturers of wooden-ware in Canada, and it looks as though, in purchasing the wooden-ware product of the Dorchester penitentiary, they desire to play a game of freeze out upon the other manufacturers.

With these sentiments of the Trades and Labor Council we are in entire accord. On many occasions we have denounced the practice of injuring both Canadian manufacturerers and their employees by forcing them to contend with the competition of Canadian prisons. It is an outrage which should not be allowed to exist, and which should be abated without delay.

But an esteemed contemporary, *The Week*, undertakes to impress upon the minds of the laboring classes that prison competition is an evil which must be endured, simply because it cannot be cured, and that, therefore, it must be perpetuated. It tells us that "making all due allowance for the case of those who may find their own occupations interfered with by the products of prison labor, we yet must think that the policy, one of whose logical results could not fail to be the moral deterioration of every convicted criminal while in jail, instead of his moral improvement, is a short-sighted and mistaken one, even for the artisans, to say nothing of society in general." It grants that the work and training of convicts should be so directed that the products of their labor may interfere as little as possible with those of honest industry, still it is impossible to give prisoners any employment whatever that will at all serve "the great moral ends in view" without bringing them more or less into competition with honest industry. It appeals to the intelligence of the leaders of the labor element to say that convicts shall not be kept in perpetual idleness, supported by the taxes to which every honest laborer is a contributor. It admits the plausibility of the argument that the criminal should not be taught a trade at the expense of the State, while the honest laborer is compelled to pay for his own instruction and for that of his children, which it offsets by saying that it would be a still greater hardship to have the criminal supported at the public expense in idleness, while the honest man is obliged to toil or starve. The conclusion *The Week* arrives at is that convicts must be compelled to work for their own support.

The trouble in this instance with *The Week* and with

humanitarians generally is that they ignore the rights of the free man in endeavoring to make prisons self-supporting, and that criminals may be taught trades to enable them to earn their living honestly when they are discharged. Under the most favorable circumstances the free man finds the struggle of life unending and exceedingly toilsome, and he is more interested in abolishing a system that tends to defeat him in this struggle than he is in any theory or policy looking to the moral restoration and improvement of convicted felons. It is visionary to talk of working convicts so that the products of their labor will not interfere with those of honest industry; and we challenge the assertion that "it is impossible to give prisoners any employment whatever that will at all serve the great moral ends in view without bringing them more or less into competition with honest industry," if by that is meant that they should be taught mechanical trades and that, working at such trades, the products of their labor should be brought into competition with the products of free labor. It would be cruel to unnecessarily subject prisoners to the inclemencies of the weather, to privation and want for food or clothing, or to so manage them that their minds would be in a condition of vacuity which would sooner or later lead to the dethronement of reason. Their physical wants should be looked after, and in doing this no possible injustice would be done to any outside the prison; but the prevailing mistake is in considering that the only useful recreation—mental and physical—for a prisoner to enjoy is to teach him a mechanical trade and to compel him to manufacture merchandise for the general market.

To judge from the stand taken by the humanitarians it would appear that there is no other method under heaven by which men may make their living than by working at mechanical trades. But we know there are other ways: and, such being the fact, why should not these other ways be applied to convicts in prison? The mechanical trades, as a general thing, are all well supplied with workers, although we see but few if any institutions in the land intend specially to instruct the ignorant and to educate them to be mechanics; but in about all the other walks of life we see efforts made and immense sums of money appropriated for the purpose of rearing up and producing academicians who are to become doctors of divinity, doctors of law, doctors of medicine, doctors of banking, doctors of commerce, doctors of military and civil engineering, doctors of seamanship and navigation, horse doctors, and doctors of everything else including those whose business it is, both by sea and land, to fight wars, subvert empires and destroy human life. *The Week*, by adjusting its spectacles and looking over Toronto, may discover a very large number of such institutions, all of which have been reared and are supported at immense expense, the support coming largely, and in some instances wholly, from the public treasury, contributed to by the laboring classes; and yet *The Week* and the humanitarians can find no other way of employing convicts than by working them at mechanical trades.

Why not make doctors of the convicts? It may be urged against doing this that whereas the public is now compelled to contribute largely to the support of convicts, the anxiety of the humanitarians being to make them self-supporting, the conversion of them into doctors would defeat this idea. The answer to this is that while the production of doctors from our colleges and universities goes on without ceasing, and while

the colleges and universities are so largely supported by the State, the support of the fledglings does not cease with their graduation, but is an abiding incubus upon the people. There may be—there are—a few honorable exceptions to the rule, but as a general thing the community would be infinitely better off if say ninety-nine per cent of these graduates could be forced to toil for their bread between the handles of the plow. They are expensive luxuries, but their presence does not affect the labor market, nor is it likely to; but it is important to laboring men that the tax upon them for producing and sustaining this luxury should be lightened. There can be no objection whatever to a young man who wants to become a doctor, or his friends, paying for his education, but there is an objection to its being acquired at the public expense. The luxury, however, will continue to be vouchsafed to us for some time to come, and the interest of the laboring classes to whom these institutions are of no particular value, could be greatly advanced by lessening the cost of them. This cost consists chiefly in the food, clothing and instruction of the students; and we feel safe in saying that the laboring classes, who contribute so largely to the support of both educational and penal institutions are not very choice or particular as to which class of institutions these inevitable doctors are to come.

Therefore we submit that it would be quite as well to suspend the production of manufactured merchandise in the penitentiaries, except such as may be necessary for use therein, and allow the Eddy Manufacturing Company to employ all free labor, thus removing one valid cause of complaint against the Government. Then let the management of the penal institutions of the country employ competent tutors to instruct the convicts how to become doctors; and let the country look to Dorchester, and Kingston, and Central Prison, and the other similar institutions for the regular supply of doctors. Perhaps the influences of these seats of learning would have such an effect that there would be fewer young men seeking to be made doctors in the other universities, and more hardworking honest young men between the plow handles. This being the case there would be less use for these other universities, and therefore a saving of the people's money, now being appropriated for their support. It would be found, perhaps, that a moiety of existing universities would be quite sufficient in which to educate the young men who are willing to pay for their education. Every workingman has to pay for his education in learning his chosen trade, and why not the young man pay for his education in learning to be a doctor? No doubt there are many men now behind the bars who would not be there if their early education, or the lack of it, had not been as it was. A young man without the opportunity to become a doctor and declining to become a blacksmith or carpenter, may have imagined in his struggle for existence that the way to prosper was to steal; so steal he does, and the penitentiary becomes his abode. He is no more likely to become infatuated with a mechanical trade while in fear of the lash for refusing to learn, as a prisoner, than he was as a free man, while if his early desires to become a doctor can be gratified while in prison, who can say but he might become an ornament to his chosen profession when again free? By all means, then, let the convicts be taught the professions, so that they may have a chance when they get out. The possibilities in the new life would be unbounded. The cost to the community would be much less

for educating doctors than it now is ; the output couldn't be less valuable as a general thing than it now is, and the free laboring man would not have to contend in his struggle for existence with convict-made goods.

Why not try the experiment ?

THE BRITISH CENSUS.

THE cable states that the population of England and Wales, according to the census taken on April 1st, is 29,000,000, as compared with 26,000,000 in 1881. This is a matter which deserves, though it is not likely to receive, the attention of those ninety-three members of the Dominion Parliament who are reported in yesterday's papers as having pledged their support to Mr. Howard Vincent's scheme for restoring in Britain the old policy of protection, with preferential duties in favor of colonial products. In England population has grown amazingly, all things considered, since the beginning of the era of railroads, steamships, telegraphs and free trade. Swarms of men and women have left the three kingdoms for other English-speaking lands—the United States, Canada and Australia—for Britain is both an old and an over-crowded civilization. Nevertheless, the home population has steadily risen, and with it the average of comfort among the poorer classes, including, of course, wages.—*Toronto Globe*.

In discussing Canadian politics, the *Globe* takes pleasure in pointing to what it calls the exodus of Canadians to the United States because we have a protective policy, but it here tells us that "swarms" of people have also left Great Britain for the United States because that country has—not free trade, but because it is "an old and overcrowded civilization." In our opinion, the age of the country and the density of the population has less to do with the exodus from Great Britain than the financial system of free trade prevailing there, by which the agricultural classes at first, and now the mechanical classes, are being driven out of the country. The emigration from Great Britain, including Ireland, to the United States alone, from 1820 to 1890, aggregated 5,961,717, notwithstanding which fact, because the home population has risen, the *Globe* attributes it to increasing of the average comfort among the poorer classes, including increased wages.

A few days ago, in the British House of Commons, Mr. Jennings enquired of the Government whether it had information as to the accuracy of the statement made in Russian newspapers to the effect that societies existed in Russia for assisting an extensive emigration of the most indigent class of Russian Jews to the United Kingdom, that steamers from the Baltic would begin conveying these emigrants to London immediately, and that 60,000 were likely to be landed there before next winter. This is a large influx of population, and accounts in some measure for the increase of population in the kingdom, regarding which the *Globe* speaks so gleefully, notwithstanding the large emigration constantly going on. Last year the total emigration from Britain amounted to 315,980, and the immigration to 155,910, being a net excess of emigrants of 160,070 ; but this net excess in 1890 was not so large as the net excess of emigration of previous years, which in 1889 was 195,248, and in 1888 no less than 269,615. Unfortunately for Britain, her native emigrants are of a very different class to the foreign immigrants who are flooding her shores. Circumstances are tending to drive away from Britain her best men, and to receive the worst that can be mustered on the European continent.

Her emigrants are skilled workmen ; her immigrants are the worst set of bums and paupers to be found on the face of the earth. Britain is being depleted of Britons and is being populated with paupers.

The causes for this condition are easily found. The foreign paupers, who are constantly swarming into England, work at wages at which British workmen would starve : and the British workman, observing fairer fields and greener pastures in other parts of the world, abandons his country for them. Speaking of the increase of Britain's population, the *Globe* says : "No one pretends that free trade has done it all, but a policy which has cheapened food and augmented commerce, must receive at least a portion of the credit." But it is the very process by which food has been cheapened under free trade and unrestricted immigration which is depopulating Britain of Britons. A few weeks ago, when the price of wheat in England advanced fully ten shillings per quarter, and bread rose a penny on the quarter loaf, the *London Times* mentioned the fact as a "hopeful sign." We all know that in recent years the price of wheat in Britain has been below the price of production there, and that for this cause the cultivation of wheat has been almost entirely abandoned. Within the past few years some 1,200,000 acres of wheat growing land in England, producing annually over 4,000,000 quarters of wheat, have either gone out of cultivation entirely, or been laid down in grass. This means that the loss of this production at home has deprived 200,000 agricultural laborers of employment on the farms, and driven them to the cities and manufacturing centres, with their families, to compete with the already overcrowded industries there ; or, failing to find employment at home, to emigrate. This is clearly the result of foreign imports of wheat and the cheap loaf. Of what benefit is the cheap loaf to the starving Briton who is deprived of the ability to earn money with which to pay for it ?

The annual importation of food products into Great Britain is valued at about £130,000,000, every pennyworth of which could be produced in Britain and her possessions. But against this the free traders protest, on the ground that to restrict foreign importations would be to enhance the price of food. And thus it is that this liberality to foreigners deprives the working classes of the ability to buy food.

The British Board of Trade returns for May show that during that month the exports from Great Britain of textile fabrics and yarns had decreased no less than £1,613,777 from a total of £9,344,807 in May of last year ; the exports of metals and manufactures thereof, a decline of £233,657, and general manufactures of £486,133, the total falling off, during the month of exports of British manufactures being £3,196,306, and of foreign and colonial re-exports, £1,029,584. In the imports there was an increase for the month of £1,036,693, as contrasted with these decreases of exports. From this it is evident there is a falling away from the conditions of flourishing trade. In the first five months of 1891 the imports into the kingdom were £175,487,916, against £174,084,463 for the corresponding period of the previous year, while the exports were £129,801,811 for the same months in 1891, against £133,836,369 in 1890—a decrease of £4,034,558. Analysis shows this increase of imports of £1,403,453 to be made up as follows :—

Increase of goods, etc.	£2,250,428	
Less decrease of live animals	1,087,258	
		£1,163,170

Increase of raw textile materials	£1,351,845	
Less decrease of other raw materials ...	1,018,562	
		333,283
		£1,496,453
Net decrease of all other articles		93,000
		£1,403,453
Net increase of imports	£1,403,453	
And in the exports of British products we find the decrease of £3,391,295, during the five months, made up as follows:—		
Textiles	£1,199,235	
Metals and manufactures thereof	1,500,545	
Other manufactures	479,250	
Net decrease of other articles	212,265	
		£3,391,295

There is nothing to compensate for this loss of exports of British products, but there was also a loss of £643,263 of re-exports; and it is to be noticed that the increase of imports was mainly of food products, most of which might have been produced at home, and that the decrease of exports was in the produce of British looms, mills, factories ironworks and foundries.

The *Globe* tells us "In England population has grown amazingly, all things considered, since the era of railroads, steamships, telegraphs and free trade," and asks the world to believe that this amazing growth is due to free trade. A recent return issued by the British House of Commons shows the growth since 1864 of the external trade of certain foreign countries as compared with that of Great Britain, the results showing in a most striking manner how rapidly those countries are outstripping Britain in their international trade. Ten of the countries included in the report include France, Belgium, Holland, Russia, Austria-Hungary, Denmark, Sweden, Norway, Spain and Portugal. In 1854 the imports of foreign merchandise into these amounted to £179,614,000, and in 1889 to £629,119,000—an increase in the thirty-five years of £449,505,000; each £100 in 1854 growing to £350 5s. 2d. in 1889. In 1854 the United Kingdom imported £152,389,000, and in 1889 £427,638,000—an increase in the 35 years of £275,249,000; each £100 in 1854 growing to only £280 12s. 5d. in 1889. The exports of the ten countries in 1854 were £185,759,000, and in 1889, £621,952,000, an increase of £436,193,000; each £100 increasing to £363 16s. 4d. in the period: while in the case of the United Kingdom the increase was from £115,821,000 in 1854 to £314,705,000 in 1889, or £198,885,000; each £100 increasing to only £271, 14s. 4d. Combining both the imports and exports the showing would be as follows: the total foreign trade of the ten countries in 1854 aggregated £365,373,000 and in 1889, £1,251,071,000, an increase in 35 years of £885,698,000; each £100 increasing to £342 8s. 1d.; while in 1854 the total foreign trade of the United Kingdom was £268,210,000 against £742,344,000 in 1889, an increase of £474,134,000; the increase of each £100 being to only £276 8s. 1d. This means that although the foreign trade of Great Britain increased very much in the period named, the foreign trade of the other countries increased to a very much larger extent. Each £100 employed in the trade of the ten countries increased to £342 in the 35 years, while each £100 employed in the foreign commerce of free trade Britain increased to but £276.

A CHANGED TUNE.

It is refreshing to turn from the doleful dronings of Sir Richard Cartwright, the *Toronto Globe* and the Opposition generally, who never tire of telling the Canadian farmers that they are being ruined by the operations of the National Policy, to that other pessimist when in Canada, but who is a most enthusiastic optimist when at home in the United States, Mr. Erastus Wiman. It is well known that the condition of farmers in the United States for years has not been exceedingly pleasant, but Mr. Wiman, in a recent article in the *North American Review*, figures out that a better time is in store for them, and that, as the title of his article indicates, the farmer will soon be on top.

The rapidity with which spare land was taken up and tilled between 1870 and 1880 has been, he says, the cause of the depression that has existed among the farmer class. This is shown by the fact that for a period of fourteen years, ending with 1885, the cultivated area of the United States increased 112 per cent. while the population increased but 44 per cent. But this very rapidity has caused a reactionary effect, not because land is not wanted, but because there is so little land available that is profitable to cultivate. While the population is now increasing at the rate of 12½ per cent. in five years, the area of cultivated land, in the same time, has only increased at the rate of 7 per cent. and is yearly and progressively lessening.

To show the trend of the taking up of available land for the last twenty years, he gives the following significant table:—

Year.	Cultivated area in Staple Crops.		Increase of cultivated area in each period and rate per cent. of increase.		Increase of cultivated area each year during each period and yearly per cent. of increase.	
	Acres.	Acres.	Rate per cent.	Acres.	Rate per cent.	
1871 ..	93,000,000	
1875 ..	123,000,000	30,000,000	32.2	7,500,000	8.1	
1880 ..	165,000,000	42,000,000	34.1	8,240,000	6.8	
1885 ..	197,000,000	32,000,000	19.4	6,400,000	3.9	
1890 ..	211,000,000	14,000,000	7.1	2,800,000	1.4	

The inference which he draws from this steady decline in percentage of area of cultivation, is that there must be an increase in price of food products, and that the abandoned farms of New England and the exhausted soils of the Middle States must again be called upon to contribute their share to the food of the people.

The figures in regard to the increased wheat area he claims have been ascertained and show how marked has been the decrease in proportion to the increase of population. Thus, in the decade from 1870 to 1880 the wheat-area of the world increased twenty two million acres, to which the United States contributed nineteen millions. From 1880 to 1890 the wheat areas of the world increased only five millions of acres, to which the United States contributed not an acre. Meanwhile the population of the wheat eating world increased 11 per cent. The whole situation, he says, is summed up in the *American Agriculturist* in these brief words:

It is quite safe to say that the yearly additions to the bread-eating population of European blood are such as to

require an addition yearly to the wheat and rye supply of the world of from 30,000,000 to 32,000,000 bushels, or a product of 2,500,000 to 2,700,000 acres. Yet the entire wheat and rye growing world has, of recent years, been adding not to exceed 400,000 acres per annum, or less than one-sixth of the increased requirements. Moreover, there is no country where the present rate of increase is likely to be much accelerated at an early day.

The counts just made of eight principal countries of the Old World, the United Kingdom Austria, Hungary, Germany, France, Russia, Italy and India, show an addition of 76,000,000 to the population of the world to be fed, without any corresponding increase in either cultivable area or productiveness of land; and this, in the face of the fact that there appears upon the authority of one who has investigated the subject, that there is at this time a deficit of some 70,000,000 bushels annually of wheat and rye needed for yearly consumption. This is fast using up the surplus which had accumulated during the great increase of wheat culture some years since, and there are indications that this reserve is now nearly exhausted.

We sincerely trust that Mr. Wiman's prognostications are well founded, for whatever benefit comes to American farmers from this direction will also be shared by Canadian farmers.

EDITORIAL NOTES.

An export duty of ten cents per pound upon the nickel contained in the ore taken from Canadian mines, or the matte extracted from it, would recoup the treasury to some extent for the deficit caused by the removal of the duties upon sugar-

THE country has prospered under the N.P. Revenue can more easily, more surely and with less objection be raised under the N.P. than otherwise. The N.P. diversifies employment and largely relieves wage earners from foreign competition, thereby enabling them to be liberal consumers as well as producers. An effect of the N.P. is to cheapen home products. The theory of free trade between nations is as fallacious, impracticable and absurd as is free love.

THE importation of sheep from Washington and Oregon into British Columbia, says the *Victoria Commercial Journal*, is assuming large proportions. The manager of a large cattle company has recently returned from across the line, where he has purchased about 9,000 sheep for breeding purposes on the company's ranges in Okanagan. The sheep are to be driven overland, a distance of nearly 400 miles, and the journey is expected to take almost two months. The sheep are mostly high grade merinos, and are the first ever handled by the company, cattle having hitherto been their specialty.

THERE is a proposition on foot in Vancouver, B.C., according to the *World* of that city, to form a company for the purpose of exporting good milch cows from British Columbia to Japan. At present there is a splendid demand for good cows in Japan. All the native cattle are of very poor breed and give only about one-third as much milk as the ordinary Canadian milker. Last year there were imported into that country 228 cows. China sent nineteen, the United States eighty,

Corea 115, France six, Russia one, England two, and Canada five. The average price was \$300; some were sold for much more.

LONDON *Ironmonger* says, apropos of American implements, that no doubt many of them "are very good in their way. Some of them are quite ingenious and some are of sorts which the farmers of no other country would consent to use." The *Chicago Farm Implement News* (says the *Ironmonger*) "says the American harvester manufacturers care nothing about tariff protection, except that it does to some extent increase the cost of materials, yet they fight for the retention and increase of the tariff, and recoup themselves by charging their home consumers higher prices than those they quote to consumers in Canada and other outside countries."

IN his address at Cooper Union, New York City, on June 2nd, Senator Peffer, of Kansas, said:

One half the homes of this country are mortgaged for more than they are worth. If the whole state of Kansas was put up at auction at thirty days' notice it would not bring enough to pay her indebtedness. I make the same assertion regarding every agricultural state in the country.

The Senator for Kansas should know the condition of affairs in his own State, and from what he says it is not very encouraging. The pessimists in Canada are constantly telling the farmers that what they most need is free access to the sixty million market. Kansas is a part of that market.

A PRESS telegram from Sudbury, a few days ago, stated that the Canada Copper Company were then shipping 240 car loads of nickel matte to the United States, the value of which was over \$1,500,000. It was required for the manufacture of a large quantity of nickel-steel armor plates recently contracted for by the United States Government with Messrs. Carnegie, Phips & Co., of Homestead, Penn. Canada's interest in this transaction is represented by a hole in the ground from which the ore was taken. An export duty of ten cents per pound upon the nickel contained in that 240 car loads of matte would have insured either a handsome sum converted into the Dominion Treasury or the manufacture of the refined metal in Canada instead of Pennsylvania. Impose the duty.

THE exports of iron and steel from Great Britain to all countries during the first five months of the present year aggregated 1,303,313 gross tons, as compared with 1,672,968 tons in the same period of last year, a decrease of 369,655 tons, the falling off being very heavy in railroad iron of all sorts. The aggregate exports of iron and steel from Great Britain to the United States, however, for the five months under review show a considerable increase, the exports for the first five months of 1891 aggregating 233,910 tons, as compared with 176,874 tons in the first five months of 1890, the increase being wholly in tinplates, of which the United States have imported 199,686 tons this year against 108,234 tons last year. In pig iron the exports from Great Britain to that country show a decrease of 28,976 tons.

DEMANDS are being made in England for the revision of the treaties negotiated under Lord Palmerston's government in

1862 and 1865, which prevented the colonies from giving preference to British trade. Lord Salisbury had something to say in criticism of these treaties in reply to a delegation representing the United Empire Trade League. "Those treaties were," he said, "unlucky and most unfortunate. No Government," he added, "was likely to repeat the error then made. Nevertheless," he explained, "it was impossible to denounce the treaties in bits. The same treaties contained provisions of the utmost importance to England, especially now, when the spirit of protection was running very high in every country except England. The government" Lord Salisbury continued, "would seize the earliest chance to deliver the country from these unfortunate engagements, but not at the price of losing the valuable provisions of the treaties referred to." Means of mitigating the evils complained of might be found before very long.

ANOTHER century will witness tremendous changes in England. The continent of North America, with its tremendous natural resources in the shape of mineral and coal, is an actual menace to England's industrial and commercial supremacy.—Victoria, B.C., *Times*.

To a certain extent this is true; but so long as the North American nations maintain their high protective tariffs the industrial and commercial supremacy of Great Britain will not be seriously endangered. The dangerous competition will come when Canada and the United States adopt free trade — *Montreal Herald*.

"So long as the North American nations maintain their high protective tariffs the industrial and commercial supremacy of Great Britain will not be seriously endangered." Eh? Will the *Herald* kindly express its views, if it has any, regarding the effects that this American-Brazilian reciprocity is having upon the industrial and commercial interests of Great Britain. For some time past all intelligence from across the water represented John Bull as being quite sick over the situation.

THE Canadian Copper Company, who are the owners of the largest nickel deposits in the Sudbury region, announce that they have purchased about thirteen acres of land near Brooklyn Station, Ohio, upon which they will immediately erect a copper-nickel alloy plant, the expectation being that the works will be in operation by August. *The Canadian Mining Review* trusts that the result of this enterprise will be such as to "induce some Canadian companies to follow their example on this side of the line." If the establishment of nickel refining works in Canada is to be desired the result can be attained in only one way—the imposition of an export duty upon nickel ore and matte. As it is we observe the crude products of the Canadian nickel mines being hauled away to the United States in immense quantities, to be refined and prepared for manufacture into armor plates and other things and all that Canada has or can have in exchange in giving up her valuable nickel is the hole in the ground from which it has been taken. If Finance Minister Foster wants to find a way to recoup the treasury to some extent for the deficit caused by the removal of the sugar duties, let him place an export duty of, say, ten cents per pound upon the nickel contained in the ore or matte taken from Canada. And he ought to do it, quick, too.

THE growth of the wire nail industry in the United States,

shows the results of protection in encouraging manufactures, and that by this encouragement competition is created, the effect of which is to lessen prices. The production of wire nails was begun there in 1875, when the duty was one cent per pound. In that year the production was only about 1,000 kegs, the market value of which was ten cents per pound. The tariff duty remained at one cent per pound until 1883, when it was increased to four cents per pound, at which it remained until 1890, when, under the McKinley Act, the duty was reduced to two cents per pound, because of the permanent establishment of the industry. As the production increased the price receded. In 1878 the production was 5,000 kegs, and the price nine cents per pound. In 1880 the production was 20,000 kegs and the price eight cents. In 1882, the last year of the one cent per pound duty, the production amounted to 50,000 kegs; in 1883, under the high duty of four cents per pound, the production was 80,000 kegs, which was increased 50 per cent the next year to 120,000 kegs, since which time the increase was by leaps and bounds, until in 1889 the production was 2,200,000 kegs and the price less than three cents per pound. And here is presented the fact that confounds the theory of the free traders that the duty enhances the cost, increasing the cost to the extent of the duty, that although the duty was four cents per pound, the market price of the article was actually less than three cents per pound. In 1890 the production amounted to 3,500,000 kegs, the market value of which was only 2.85 cents per pound.

SPECIAL ADVERTISEMENTS.

Advertisements will be accepted for this location at the rate of two cents a word for the first insertion, and one cent for each subsequent insertion. Subscription \$1.

"TRIUMPH OF THE AGE." Attention is called to the advertisement of The Enø Steam Generator Company, Limited, on page 56 of this issue. This Generator is being adopted by the leading manufacturers in Canada and the United States. Every steam user should investigate its merits.

J. L. O. VIDAL & SON, City of Quebec, are agents to sell and handle on commission all sorts of new and second-hand machinery, engines, boilers, pumps, agricultural implements, belting, hose, safes, saws, files, bolts, machines and tools for shoe factories etc. Consignments solicited. Best references given.

THE Coggeshall Manufacturing Company, of Melrose, Mass. U.S.A., owners of the patents for the Dominion of Canada for the Hamblin High Speed Cotton Loom, have made arrangements with Young Bros, of Almonte, Ont., for the building of some looms immediately, and which, when completed, will be placed in some of our leading mills for trial. John Elliott, of the late firm of Elliott & Co., woolen manufacturers, Almonte, has been appointed selling agent for the Dominion, and solicits correspondence.

THE HEESON IMPROVED SHAKING FURNACE GRATE has no equal for all kinds of furnaces, round or square, boilers, heating furnaces, ovens and stoves. It is the only grate that

will clean fires without opening fire doors. It is the strongest bar known, having the most air space, thus securing better combustion. These bars are saving more fuel and generating more steam and will last longer than any other bars on the market. Ten per cent. saving in fuel guaranteed or no sale. References on application. **HERSON GRATE BAR Co.**, 38 King St. East, Toronto

FOR SALE, A VALUABLE CANADIAN PATENT.—The Trenholm Improved Perpetual Hay Press, patented 1882, has been manufactured in New Brunswick for nine years, and stands without a rival in the Maritime Provinces. As it has not been introduced in the Upper Provinces, the purchaser can, if he manufactures there, get practically a complete control of the business in Canada, as this machine is cheaper, stronger, easier running and more durable than any other Press of its class, and is well protected by patent. Full investigation invited. Terms easy. Write for particulars to **A. J. TRENHOLM**, Sussex, N.B.

A RISING TOWN.—The Town of West Toronto Junction possesses exceptional residential and business advantages, and promises to speedily become the chief manufacturing centre of the Dominion. This town has the following railways, viz: Grand Trunk Main line (Carlton West Station); Northern Division of the Grand Trunk (Davenport Station); The Toronto, Grey and Bruce, and Credit Valley, and Ontario and Quebec Divisions of C.P.R., and Belt Line Railway (now in progress). The town offers to large manufacturers free sites, water at cost and exemption from taxation. Any information regarding the same will be given upon application to **ROBT. J. LEIGH**, Town Clerk, or **D. W. CLENDENAN**, Mayor.

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

Just before her bereavement, Lady Macdonald, widow of the late Sir John Macdonald, completed her first ambitious literary effort in a series of articles for *The Ladies' Home Journal*, the first one of which will appear in the August number of that periodical. Last summer Lady Macdonald, with a party of friends, traveled in her private car through the most picturesque parts of Canada, and in a delightfully fresh manner she describes her experiences on this trip, in these articles to which she has given the title of "An Unconventional Holiday." A series of beautiful illustrations, furnished by Lady Macdonald, will accompany the articles.

The American Manufacturer, published at Pittsburgh, Penna., has made a great and desirable change in its appearance, which will commend it to its many friends and readers. Instead of the large and rather inconvenient style in which it has heretofore been published, it now comes to us containing three columns to the page, the columns being only 10½ inches long. Of course the abbreviation of the individual pages is recompensed by a multiplication of them, with the result of greater convenience in handling and better opportunities to display advertisements and reading matter. Our contemporary has certainly been drinking at the fountain whence flows prosperity and perennial youth.

The issue of the *Dominion Illustrated*, for July 4th, has a fine account of a fishing trip by Douglas Sladen, the poet, on the north shore of Lake Superior, in that wild, grand and picturesque region opened up by the C.P.R. Miss McLeod, whose "Reverent Pilgrimage" was so delightful a series of letters, contributes a charming article on "Balmoral and the Highlands," illustrated by views of the Queen's favorite residence as seen from the river. "My first Twenty-four Hours in a California Mining Camp" recalls vividly the famous days of the forty-niners. There are many fine engravings and much bright reading matter in this issue. The *Dominion Illustrated* is a delightful weekly visitor that should be found in every cultured home.

MR. J. S. JEANS, Secretary of the British Iron Trade Association has sent in his annual statistical report to that Association on the home and foreign iron and steel industries in 1890. This report is very similar in character and scope to that made annually by Mr. Swank, for the American Iron and Steel Association, and is of equal value, showing as it does the details of the subjects of which it treats. These subjects include the production and consumption of iron ores in the United Kingdom, the coal industry, the pig iron industry, the manufactured iron industry, the Bersemu Steel industry, the open hearth steel industry and the tin plate industry, all in 1890. Other portions of the report are in reference to the exports and imports of iron and steel, iron and steel shipbuilding, etc. The section of the report treating of the iron and steel industries of foreign countries is exceedingly interesting as showing their relative extent and importance as compared with those of Great Britain.

The Intercolonial Railway management have sent us what they call "An Intercolonial Outing along the shores of the Lower St. Lawrence, and through the Provinces by the sea." It is a most charming book, convenient to be carried in the pocket or satchel, in which is given all the desirable particulars regarding the interesting points along this railway which is described as being the direct route to the famous seaside and fishing resorts of the Lower St. Lawrence and Bail de Chaleurs, and of New Brunswick, Nova Scotia, Prince Edward Island, Cape Breton and the Magdalen Islands. A miniature map conveys a correct idea of the route of this railway, the names of all the places through which it passes and those contiguous to it, and also of the geography of Quebec and the Maritime Provinces, and of the New England States. It also shows all the railway connections available in reaching the Intercolonial. Readers should be made aware of the fact, however, that if they stop over any considerable length of time at every point in which they may become interested in reading this delightful book descriptive of what is to be seen, they should be prepared for a protracted outing.

In the forthcoming August number of *Popular Science Monthly* Hon. Carroll D. Wright will discuss "The Value of Statistics," explaining how tables of figures should be used, and showing how they are sometimes made to give false evidence. In his article, entitled "From Fetich to Hygiene," Dr. Andrew D. White presents a terrible picture of the ravages of epidemics in the times when prayers and processions were the only means relied upon to check them. Mr. S. D. North will conclude "The Evolution of the Woolen Manufacture." The coming paper deals with dyeing and finishing processes, and some general features of the industry, and is fully illustrated. A series of illustrated articles on "Dress and Adornment" will be begun by Professor Frederick Starr. The first paper is on Deformations, and describes the cutting, painting and tattooing of the skin, filing the teeth, flattening the skull, etc., which are customary among certain peoples. Two instalments of Gladstone's discussion with Huxley over Christ's sending the devils into the herd of swine will be printed. The title of Mr. Gladstone's paper is "Professor Huxley and the Swine Miracle," and that of the rejoinder is "Illustrations of Mr. Gladstone's Controversial Method;" and "Head-flattening among the Navajo Indians" will be described in an illustrated article by Dr. R. W. Shufeldt.

FROM the frontispiece, on which that wonderful Yankee creation, the yacht *Gloriana* is seen dashing along under full sail, throughout

its pages, *The Illustrated American* for the week ending July 11th is filled with interesting material. Advantage is taken of the recent unveiling of statues to Henry Ward Beecher and to Archbishop Hughes to recall the story of their mission abroad to influence public opinion in Europe in favor of the Union during the dark days of the Civil War. The article is illustrated with views of the statues and scenes at the ceremonies. "Evolution of the Small Yacht" is the title of an account of the experiments of American yachtsmen which have resulted in the building of the *Gloriana* and the developments of the prevailing type of vessels for coursing and racing. A portrait is given of Loantaka, the race horse that proved as great a surprise in his way as the *Gloriana* did in hers, by winning the Suburban Handicap from a field of famous horses. Postmaster General Wanamaker is treated of as the Man of the Hour; Secretary Rusk's creditable rise is described as a possible President; court room sketches are presented of the trial of Chauncey M. Depew and his fellow railroad directors, and "A Mad Bridal" is the title of a short story. It is announced that so great is the number of readers desiring their character described from their handwriting that the department devoted to graphology is about to be enlarged.

ONE of the interesting features of the July *Wide Awake* is an illustrated article concerning a famous piece of the handiwork of one of Hawthorne's characters, "Deacon Shem Drowne," of the tale of "Drowne's Wooden Image;" the *Wide Awake* article (in two parts) relates to "Ye Boston Grasshopper," namely, the big gilded creature which forms the Faneuil Hall weather-vane, and is written by Lucinda J. Gregg and Elizabeth Drowne McPherson, the latter a descendant of Hawthorne's Drowne; it gives portraits of the Grasshopper and of Peter Faneuil, and views of the three Faneuil Halls. Another interesting illustrated article is by Frances A. Humphrey, "Amy Robsart's Embroidery, and the Gates of Warwick." Still another is "Pussy in Private Life," by Eleanor Lewis; notable mention of notable cats of notable people. There are two illustrated stories specially good reading for the Fourth, "The Anti-Boy Picnic," by Helen A. Hawley, and "The Rogue's Path," by James McKay, the latter a historical tale of two plucky children. Another pair of stories, fresh and amusing, are "The Wrong Muscles," by Clara Doty Bates, and "How Teddy Morris made the Weather," by Olivia Lowell Wilson. The serials are of goodly length: old and young are reading and talking of the Margaret Sidnev serial, "Five Little Peppers Grown Up;" the critics pronounce "Miss Matild Archambeau Van Dorn" delicious, and the Italian child-life serial is full of fresh episodes. The short ten-minute articles include, "A Rush Light," by Amanda B. Harris, "Mosaic Work," by Margaret Lake, "Edgar's Secret," by Susan Chenery, "Sea Daisies," by Mary E. Bamford, "The Chimney Swallow," by Rose Dalton, "Horology Problems," by E. H. Hawley, of the Smithsonian Institution, "Figure Drawing for Children," by Miss Rimmer, "How one Mother is being Brought Up," by E. P., and "A Midnight Ride," by M. S.; and there are several bright pieces of verse, suited to the popular taste. The four pages of "Men and Things" are highly enjoyable. *Wide Awake* is \$2.40 a year; 20 cents a number. A specimen (back number) will be sent on receipt of 5 cents. D. Lothrop Company, Publishers, Boston.

CIRCULAR SAWS AND THEIR DANGER.

In the last annual Report of the Inspectors of Factories for the Province of Ontario, Mr. Robert Barber, Inspector for the Western District, gives an interesting chapter upon "Circular Saws and their Danger," in which he says:

"As saws are responsible for a large proportion of the accidents—over one sixth of those reported—I wish to make a few remarks concerning these dangerous tools that are so universally in use; for I suppose one-half of the manufacturing industries have one or more in use, all of them sufficiently dangerous, and many of them particularly so, to every person on the premises.

"Saws in general may be known as upright, band and circular. To these latter I will more particularly refer. They have various names according to the work they are required to perform, or on the manner in which they are set up and operated in their frame: such as shingle, veneer or section, butting, edging, re-saw, stave, equalizing, swing, railroad, angle, concave, cylindrical, grooving and others. These saws are supposed to be made of the best crucible or finest silver steel, and to be carefully and uniformly tempered throughout, requiring great skill and watchfulness on the part of the temperer. Great care is also required in hammering out these saws, as often the process forces the strain to one part, causing a slight bulge which may crack when some unusual strain is put upon the saw. The crack relieves the strain caused by the bulge, and by

boring a small hole at the terminus of the fracture it will go no further, and the saw, I have been informed by a maker of them, is safer than before the fracture.

"Shingle saws vary in diameter from 30 to 36 inches, are rather thin for their work, one would judge from their appearance, being about one-eighth of an inch in thickness, supported at the back by an iron flange to which the saw is made fast by proper screws. This flange will extend to within six or eight inches of the saw's circumference. These saws occasionally break, as one did in this city in October, the flying piece striking a workman near by in the side, causing his death ninety minutes later.

"Veneer saws are necessarily thin, in order not to waste the valuable wood being cut into veneer. They are made in sections, fastened as a circumference to a steel blade or disc.

"Butting saws are in use in various works, to square off the ends of lumber in saw mills and for cutting off butts of smaller sticks in other industries. Most of these saws I look upon as being very dangerous, as the saw overhangs the frame, so that persons may accidentally walk or stumble against it.

"Edging saws are chiefly used in lumber mills for cutting off the bark edge from boards. I do not know that there is any special danger from these, except it be that in many saw mills the saw for cutting the logs and the butting and edging saws with their tables or frames are rather crowded together so that the workers are sometimes jostled by the lumber being handled, and thereby thrown against a saw.

"In a re-saw machine I do not consider there is any special danger. They are common in planing mills and in other wood-working industries, and no accidents have as yet been reported to me from this machine.

"The stave or cylindrical saw is a tube of steel about two feet in diameter, by about thirty-six inches in length, with the teeth on the outer end, and is used for cutting heavy staves such as are used for oil and liquor barrels. The cylinder is set up in a frame and runs horizontally near the floor. The special danger of this saw is the liability of a person to run against it. It would be difficult to prevent this by a guard, as the wood can only be fed in from the end exposed.

"Equalizing saws are two cross-cut saws on the same mandril at the extreme ends; each saw overhangs the frame in which it is set and projects a few inches in front of it. They are used for cutting off the staves or stave-bolts to an equal length. In stave works they are set the length of the stave—thirty-two inches apart; they are also used in factories making wagon or carriage wheels for equalizing the spokes. In some of these equalizing saw machines the wood to be cut is fed into the saws by being placed on a table swinging from above, and in others the feed table rests on pivots below. I consider these saws to be very dangerous, and not easily guarded; but those with the table resting on pivots may be guarded in respect to the top and front of the saws by putting a suitable box across the table covering the saws, allowing room at the ends for the clearance of pieces of wood cut off. But this does not prevent risk of injury from the lower part of the saws, which in this arrangement of feed-table it seems impossible to guard against. On the other hand, those equalizing saw machines, so arranged as to feed by the table swinging from above, cannot be guarded in the same way as the other, as the box-covering of the saws would be in the way of the feed table swinging through between the saws. So while the front and lower part of the saws in this arrangement can be guarded, I do not feel satisfied that the top of the saws can be. At best these saws are dangerous—more than ordinarily so.

"Swing saws are those attached to a frame, which is usually swung from the floor above. There is more than ordinary danger from these. The operator has to pull the saw up to its work, overcoming the resistance of a counterbalance weight, which is attached to the swing frame, generally by a rope, but occasionally by a chain. Sometimes the rope gives way and allows the revolving saw to come forward with sufficient force to reach the operator, often causing serious injury. As a check to this there ought to be a frame built down from the floor above in such a position that its cross piece will arrest the forward motion of the swinging frame at a point which would prevent the operator from being touched by the saw. There is no difficulty in putting a guard over the saw itself of this machine and many have them.

"As to rip saws, several practical men have informed me that all of this kind should have a wedge set in the table behind the saw to keep open the cut so as not to bind the saw, which causes the board to be thrown forward and frequently injuring the sawyer. This year in this city one young man was reported to me as meeting his death from this cause; also other injuries more or less serious were reported.

"The railroad saw is for a similar purpose to the swing saw, but

usually for lighter work; it is of quite different construction—put in a suitable table, the saw being set in a sliding frame within the table, and by pressure of the foot on a lever is moved up to its work. I can see no special danger in this machine more than appertains to all saws; in fact I think there is less than in any other I have noticed without guards.

"The angle saw I consider very dangerous to the attendant, nor do I know of any way by which it may be made less so. The device consists of two saws set at right angles to each other, with their teeth just escaping contact. The saws operate on the top of the log to be cut, one cutting down and one cutting in, thus sawing out a square stick. They are used chiefly in chair and handle works. Here, as about many of the uses to which saws are put, all depends on the watchfulness of the attendant.

"Concave saws are used for various purposes, but there is no special danger from them more than from a flat saw, rigged up in the same way.

"Another dangerous use of the saw is the machine for making axe handles. In this machine, the saw, a thick one of about twelve inches diameter, projects in front of the frame—about one-half its diameter—and there is nothing to prevent the attendant or other persons from coming in contact with it and receiving most serious injury. This can easily be guarded, and I have asked to have it done wherever I have seen this machine in use. There are many other devices for using circular saws, but those I have referred to are most common.

"Generally speaking the circular saw is always dangerous when in motion, and care is needed on the part of the attendant when operating any style of a saw machine; but there are some adjustments or adaptations of saws much more dangerous than others. Those running through a slot in the table are, perhaps, the most harmless as regards cutting accidents, while those overhanging their frames and projecting out are the most dangerous. Of the many guards devised none are free from objection for one reason or another. I know of two saws breaking in my district this year—one a shingle saw, thirty-five inches diameter, tearing off about one-quarter of its circumference to the flange, about seven inches deep; the piece flying struck a man near by causing his death. The cause is supposed to be that the shingle block fell into the saw diagonally across the grain of the wood, probably through want of care in putting the block in place. The other saw broken was in a waggon wood-work factory. On the frame or table of the butting saw the attendant left the hammer; it jarred around till the handle touched the saw teeth and next the steel head was in the teeth causing the saw to break and a piece to fly, fortunately without injury to any person.

"As to covering or guarding all saws it is impracticable without very much interfering with the quantity of work turned out; yet in some factories manufacturing continuously the same certain articles when the lumber in process is always about the same size and thickness, it is easy enough to devise a special guard for a particular saw. But there are industries where it may be that every other stick to be sawn is of different dimensions from the previous one, and there is no adjustable guard with sufficient scope designed as yet, that I am aware of, which will meet these cases. I know of several instances where the latest device of guard had been purchased and applied to saws, which after a short trial by the operator has been taken off and abandoned as impracticable.

"I wish to add that there are two precautions that should be taken in every factory where there is a circular saw in use, that I know will prevent some accidents. One is that saws should not be left running when not in use, as I find is too frequently the case, and I always caution the workman, foreman or employer when I find it so. The other is, that the aisles or passages near saws should be kept free from bits of sticks that may trip or cause a person passing to fall towards the saw. Many wood-working places I visit are quite clean in this respect, but others are very bad. I went through one in this city two years ago, where I had to walk altogether on the sticks and refuse from the saws and where I believe the floor was two feet below me."

THE MANUFACTURERS' LIFE INSURANCE COMPANY.

A SPECIAL meeting of the Directors of the Manufacturer's Life Insurance Company and of the Manufacturers' Accident Insurance Company was held in this city a few days ago, for the purpose of electing a President in the room of the Right Hon. Sir John A. Macdonald, deceased.

After the Secretary had read the notice calling the meeting, the following resolution, moved by Mr. George Gooderham and seconded by Mr. James Mills, Guelph, was read:

Whereas an All-wise Providence has seen fit to remove by death our esteemed President, the Right Hon. Sir John A. Macdonald.

Resolved: That the Manufacturers' Life Insurance Company and the Manufacturers' Accident Insurance Company express and place upon record their sense of deepest sorrow at his loss, and their sincere sympathy with Lady Macdonald in her great affliction.

Resolved: That in his death the Companies have lost the invaluable services of one who has been to the Companies ever since their organization a guide, counsellor and friend. Although burdened with the cares of Premiership and the manifold duties and obligations of his high position, and that at an age when most men desire to escape from the cares and worries of business, yet he was at all times ready and willing to give his advice and counsel on matters relating to the interests of the Companies, which he had so much at heart. His commanding talents, his sound and matured judgment, which raised him to the exalted position he occupied for so many years as the ruling genius of the destinies of Canada, his kindness of heart, his courtesy, his genialty of disposition and his rare tact endeared him to all who had the privilege of his friendship, or of his acquaintance.

Resolved: That a page of the Minute Books of these Companies be devoted to an inscription of the name of our deceased Premier President, with the date of his birth and death.

Resolved: That these resolutions be extended upon the Minute Books of the Companies, and that a copy of them, suitably engrossed, be sent to Lady Macdonald.

It was then moved by Mr. C. D. Warren and seconded by Mr. H. Lowndes, that Mr. George Gooderham be elected President of the Manufacturer's Life Insurance Company for the remainder of the year. The motion was carried unanimously, and Mr. Gooderham in reply said:

"We have, as a Board, already expressed our deep sense of the loss we have sustained as a Company in the death of our late President, the Right Honorable Sir John Macdonald. To this I may be permitted to add an expression of my own grief at the loss of one who had been a close personal friend for many years, as well as a faithful co-worker in the interests of the Manufacturers' Life Insurance Company.

"Now, as to the Presidency, I accept the position with pleasure. The business of the Company is an established fact: the volume of its business is steadily increasing; its affairs are being administered with due economy and its death rate continues satisfactory, and in addition to this its reputation for fair dealing and prompt payment is becoming established throughout the Dominion.

"Without adverting to the peculiar circumstances under which Sir John Macdonald and myself became connected with the Company, I may say that I determined long since to identify its future with my own, asking only the hearty co-operation of all the shareholders. With this co-operation, whatever I have of means or ability stands pledged to place the Manufacturers' Life Insurance Company in the first rank with the life insurance companies of Canada."

TWO IMPORTANT SHIP-RAILWAY PROJECTS.

FROM the manner in which engineering societies in this country and Canada are becoming interested in the proposed ship-railways across the lower Michigan peninsula and across the peninsula between Owen Sound and Lake Ontario, it would seem that something definite in the way of legislation regarding these projects may soon be expected. The people of Toronto, and in fact all Canada, are especially interested in the Owen Sound—Lake Ontario—connection. The paper recently prepared by E. L. Corthell, C.E., of Chicago, entitled "An Enlarged Waterway Between the Great Lakes and the Atlantic Seaboard," is being discussed in all of the lake cities. At a meeting of engineers and capitalists recently held in Toronto great enthusiasm was caused by a consideration of the data presented by Mr. Corthell. Toronto would derive a large increase in shipping from such an improvement.

Gen. F. L. Hagadorn, an army engineer of some prominence who has given a great deal of attention to ship-railways, takes up the subject in a recent issue in one of the Detroit papers. He also refers particularly to that part of Mr. Corthell's paper relating to ship-railways from Owen Sound to Lake Ontario and across the lower Michigan peninsula from Michigan City, Ind., to Toledo, Ohio, this latter making a direct line for lake propellers from Chicago to Buffalo. He says: "As early as 1837 the project of building a ship-canal around the falls of St. Mary's river was discussed in the legislature of the state of Michigan, and the matter was brought before congress in 1840, but was earnestly opposed, one of its opponents—the distinguished Henry Clay—speaking of it as 'a work beyond the remotest settlement in the United States, if not in the moon.'" This, of course, produced a laugh, and it was not until twelve years after the general government donated 750,000 acres of

public lands, and a right of way 400 feet wide, to enable the State of Michigan to undertake the work. (Henry Clay had laughed the proposition out of twelve years growth.) And everyone will remember the opinion of the naval experts who were called upon to report upon the model of Ericsson's Monitor. "Take it home with you," said one of them, "and worship it. You may do so without breaking any of the commandments: for it is not in the likeness of anything that is in the heavens above, or in the earth beneath, or in the waters beneath the earth." It has been said that no ship-railway is at present in operation; but it should be added that a very important one is now under construction, and will probably before long be carrying ships weighing 2,000 tons 17 miles overland across the isthmus of Chignecto between Nova Scotia and New Brunswick. For the last sixty years the necessity of a ship canal across the lower Michigan peninsula has been repeatedly urged, and a survey and estimate has been made for the route from Benton Harter, Lake Michigan, to a point near Monroe, on Lake Erie, a distance of about 160 miles. This would require sixty-five locks and the crossing of nineteen railroads, at a cost of \$138,405,432. A ship-railway over the same peninsula fully equipped for service, will not cost over \$39,000,000.

"In 1867 Congress directed a survey to be made for a ship canal around the Falls of Niagara. The work was performed by Col. E. C. Blunt, U.S. engineer, his project being for a canal of fourteen feet deep; and twenty-one years after (1888) Congress ordered another survey for a channel sufficient for ships drawing twenty feet. The route was twenty-five miles long, and the estimate \$23,617,900. This was again revised with a large canal prism and an increase of rock excavation, the total estimate being \$35,000,000. The estimate for a ship-railway over the same route, less six and a half miles, to accommodate vessels of twenty feet draught and 5,000 tons displacement, is \$10,731,613, fully equipped. These figures are given to show the comparative cost of railways and canals over familiar routes, but the comparison will hold good in all cases, and under all circumstances, the variations, if any, always in favor of the railway. The comparative rate of speed is also a matter to be taken into account. On a ship-railway the speed can never be less than ten or fifteen miles per hour. On the Suez Canal it is limited to five miles, and on the Welland to four, but it scarcely ever attains to these on either."—Cleveland, Ohio, *Marine Review*.

CANADIAN RAILWAYS.

CANADA'S first railway was the Champlain and St. Lawrence line, connecting La Prairie and St. John's, Quebec. The charter for its construction was obtained in 1832, and it was first opened for traffic on July 23, 1836, by Lord Gosford. A return of its operations for 1842 shows that in that year it carried 27,041 passengers and 7,716 tons of freight, and that its earnings were \$13,650, and its working expenses \$10,745. How great the progress of the country has been in the half century that has since almost elapsed is strikingly shown by the railway statistics recently submitted to Parliament. In the year ended June 30, 1890, there were 13,256 miles of road in operation; the number of passengers carried was 12,821,262; of tons of freight, 29,787,469; and the total earnings were \$46,843,826, and the total working expenses \$32,913,350. This is a record of advance of which Canada may well be proud.

The return above mentioned shows that the number of miles of completed railway in Canada is 14,004, and of sidings 1,679. In the construction of this great iron network a vast sum of money has been expended. The paid up capital of the various systems aggregates \$786,447,811, or \$56,174 per mile. From first to last the Governments of the country have granted aid, in the shape of loans, bonuses and subscriptions to shares or bonds, to railways completed and under construction, as follows:—

Dominion Government	\$145,445,323.02
Ontario	6,097,007.52
Quebec	13,177,453.02
New Brunswick	4,517,346.81
Nova Scotia	2,135,995.87
Manitoba	2,478,300.00
British Columbia	37,500.00

Total

In addition to this the various Governments have granted about 32,750,000 acres of land to railways, not including the grant to the Winnipeg and Hudson Bay road. Municipal aid has been given by way of bonus to the amount of \$10,594,915, in loans \$2,992,000, and in subscriptions to shares or bonds \$2,245,500. By Provinces, the assistance rendered by the municipalities is as follows:—

In Ontario	\$10,344,541.78
“ Quebec	4,253,274.00
“ New Brunswick	316,500.00
“ Nova Scotia	250,000.00
“ Manitoba	595,600.00
“ British Columbia	37,500.00
“ North-West Territories	35,000.00

Total

The greater part of the Canadian railway system is now either owned or controlled by two companies, the Grand Trunk and the Canadian Pacific. The former operates 3,122 miles of line, and the latter 5,085 miles. The four Government railways aggregate 1,352 miles.

AN association of women is about to start in business to undertake by contract, the care of London conservatories, window-boxes, balconies, and small gardens, by the year, season or month. The members of the association will themselves attend to all orders, employing men for the digging and rough work only. Plants will be received and tended at the premises of the association during the absence of the owner from town. The title of the new business is the Women's London Gardening Association.—*Vick's Magazine*.

DRILL derricks are becoming as common in Texas as in the oil regions of Pennsylvania. Some magnificent flows are being obtained. Artesian wells have reduced the cost of water supply to a minimum in several Texas cities. Some novel uses for artesian water have been developed. In Waco dozens of small industries are being operated by water power from artesian wells. Among them are wood-working machines, circular saws and planing mills. A clothing factory is running several hundred sewing machines with artesian power, costing practically nothing.

THE managers of the Children's Fresh Air Fund, to provide summer excursions for the poor children of Toronto, have issued a pamphlet containing an account of the work carried on during the season of 1890, together with a statement of the Poor Children's Christmas Fund. The ladies and gentlemen who have this matter in charge are doing so gratuitously, and they are doing a great and beneficent work; and all who are interested in the welfare of these children—and who that has a feeling heart is not—can contribute in some way to their happiness and health.

A MAN put on a pair of woolen stockings over his silk ones on a cold winter day. At night he pulled the stockings off without separating them and was astonished by the crackling noise and even the sparks of electricity which followed. When he drew the silk stockings out of the woolen ones the electrical attraction was so manifest that the stockings would incline toward one another when held some distance apart. It happened that the silk stockings were black and the woolen ones of light color, but when he tried the experiment with both stockings of the same color, there was no electrical manifestation.

TOADSTOOLS make excellent dressing for certain kinds of wounds, are highly valued by surgeons and are in big demand in hospitals. Germans use toadstools exclusively as pipe-lighters also. The dried fungus makes perfect tinder. It is cut in long strips and these in turn are clipped at the edge in a sort of fringe and tipped with phosphorous and sulphur just like match-heads. By rubbing the fringe against any rough surface it ignites just like a match, and burns like punk. If you thrust a bit into the bowl of your pipe you can light the tobacco with ease in the highest wind. In fact, the harder it blows the better your pipe will light. Hunters and fishermen find this sort of match much preferable to any other. A dried toadstool makes a curiosity, too, for it is astonishing how few people know what it is when they see it.—*New York Sun*.

"To the best of my belief no boy ever learned any harm while either fishing or shooting, and I would unhesitatingly advise parents to encourage in their sons a taste for field sports and an admiration of all manly pastimes. But good, sound common sense should govern the teaching of the young people, and before giving a boy a gun and permission to use it I would advise a careful study of his character and disposition. If careless and reckless he is no fit guardian for a deadly weapon, but if he has sense and caution enough to be trusted there is no good reason why he should not have a gun of his own. Providing he takes proper care of it, makes a cast-iron resolve never to allow the muzzle to cover anything but legitimate game and does not neglect his studies for the pleasures of a tramp afield, the use of a gun can do him no possible harm and may do him much good."—*Outing*.

THE managers of the St. John, N.B., International Exhibition, are laying themselves out to make it an unprecedented success. It will maintain its international character, for, in addition to the displays from the Maritime Provinces, a number of exhibitors from the United States, England, Germany and Italy have already applied for space, and there will be a very comprehensive Spanish exhibit. Some of the more attractive exhibits from the Jamaica Exhibition will also be there. Arrangements are being made whereby the Machinery Hall will be far more attractive than at any previous exhibition, as it is expected that nothing but live machinery (or machinery in motion) will be shown here. A number of the different processes of manufacturies, including some specially attractive novelties in the manufacturing line, will be shown. Arrangements are in progress for a special electrical display, and it is expected that most of the novelties in this wonderful science will be represented.

THE Montreal Agricultural and Industrial Exhibition will open September 17th next, and continue open until the 25th of the same month. The commodious and conveniently situated Exhibition grounds are on Mount Royal Avenue, and are easy of access from all directions. Extensive alterations and improvements have been made to the buildings and grounds, also a new speeding track, and many features of more than ordinary interest will be presented in connection with the exhibition. There will be large displays from different parts of the Dominion, and also from the United States. Reduced fares will be given by all railway and steamboat lines to visitors; and exhibitors' round trip tickets will be issued for one fare. Steam-power and shafting will be provided in Machinery Hall free of charge. Mr. S. C. Stevenson, 76 St. Gabriel Street, Montreal, is Manager and Secretary. Among the list of directors we observe the name of Mr. G. W. Sadler, of Robin & Sadler, the well-known manufacturers of leather belting, Montreal.

TAPE measures of linen or cotton, of various lengths, are indispensable in every household. Brooklyn for forty-one years has been manufacturing these useful little things and shipping them all over the country. There is only one other manufactory of the kind in the United States, and that is in Cleveland, Ohio. Besides the ordinary tape measures, the concern in this city makes the steel measure of 100 feet upward, used by surveyors and railroad men. The cotton and linen used in the manufacture are imported from England and the steel from France. The first two are painted with a peculiar kind of paint, and have feet and inches printed on them from plates, much in the same manner as a newspaper is printed. With regard to the surveyors' measures the figures are etched on by an acid solution. The measures come in different lengths, and rolled up in cases or not, as the purchaser chooses. In determining the depths of wells, etc., the measure used is made of a metal resembling iron, and is marked off every hundred feet.—*Brooklyn Eagle.*

THE poet Tennyson can take a worthless sheet of paper, and by writing a poem on it, make it worth sixty-five thousand dollars.—That's genius. Vanderbilt can write a few words on a sheet of paper, and make it worth five million dollars.—That's capital. The United States can take an ounce and a quarter of gold and stamp upon it an "Eagle Bird," and make it worth twenty dollars.—That's money. The mechanic can take material worth five dollars and make it into a watch worth one hundred dollars.—That's skill. The merchant can take an article worth seventy-five cents and sell it for a dollar.—That's business. A lady can purchase a very comfortable bonnet for three dollars and seventy-five cents; but she prefers one that costs twenty-seven dollars.—That's foolishness. The ditch digger works ten hours a day and shovels three or four tons of earth for two dollars.—That's labor. The editor of this paper could write a check for eighty million dollars, but it would not be worth a nickel.—That's rough.—*The Bookkeeper.*

DAVID BELL, vessel and machinery builder of Buffalo, writes the *Cleveland, Ohio, Marine Review* with reference to the claim that the *Mackinaw* was the first boat ever taken through the Canadian canals to the seaboard in sections: "In 1866, soon after the close of the war, the *Chicora*, a noted and successful blockade runner, almost as long as our large freight propellers, was cut in two at Montreal and brought through the Welland canal to Buffalo, where I put her together. She was then taken to Lake Superior and employed on a mail route from Collingwood to Fort Williams for a few years, but the owner not being on the moving side of politics lost the mail contract, and over ten years ago the steamer was brought to Buffalo where I cut her in two, and transported her in two sections through the Welland canal to Port Dalhousie where I put her together again. She has since been employed in passenger business on Lake Ontario. The operations necessary on the *Chicora* were of a somewhat difficult and tedious kind from her having a pair of large

oscillating cylinders and feathering wheels. The wheels had to be taken off the shaft inboard to admit of passing through the old Welland canal."

WHEN a nail or spike has been driven into a live tree, or into timber, after a year or more the fibers of the wood will have contracted so tightly about the metal that it will be exceedingly difficult to withdraw the iron. But, strike a nail or spike a sharp blow with a hammer and drive it in a trifle so as to break the wood fibers around the metal, and a nail can be withdrawn with only a little force. Iron gate hinges are frequently driven into a living tree. When one is not in possession of a large and strong claw bar, bore a hole close to the hinge on the under side and the hinge can be easily crowded down into the hole and withdrawn. When a large nail has been driven head and all beyond the surface of the timber, bore a hole close to the nail, and with a nail set crowd the nail into the hole. When nails have become rusty, they will usually break in two, leaving a portion of the iron in the timber. But, strike a rusty nail a sharp blow, and one can sometimes withdraw it with his fingers. In tearing down an old building, if it is desirable to take off the boards or casings without splitting them, place a nail set on the head of each nail, and with a hammer start it inward about an eighth of an inch. One blow will break the whole nail so that most of the nails will come out when the boards are driven off.

It appears from statistics just compiled on the rise and progress of wool-growing in Australia, that although New South Wales actually commenced wool-growing in 1792, the first record of any appreciable export was in 1815, when 32,971 pounds were exported. In 1822, when Tasmania appeared on the scene as an exporter of 157,467 pounds, New South Wales was credited with only 172,880 pounds. In the year 1837 Victorian exports were first separately quoted at 175,081 pounds, and New South Wales at 4,448,796 pounds; but in 1847, ten years later, when South Australian exports had assumed important dimensions, the exports stood thus:—New South Wales, 22,379,722 pounds; Victoria, 10,210,038 pounds; Tasmania, 5,241,300 pounds; South Australia, 1,804,918 pounds; or a total of 39,635,978 pounds. Ten years later, in 1857, the exports were:—New South Wales, 17,044,201 pounds; Victoria, 17,176,920 pounds; South Australia, 9,656,465 pounds; Tasmania, 5,157,086 pounds; and Western Australia, 437,760 pounds, or a total of 49,472,442 pounds. In 1857 New Zealand contributed an additional export of 2,648,716 pounds. Passing over a period of twenty-five years, in 1882 the total export from the Australasian colonies and New Zealand reached the enormous quantity of 342,815,000 pounds—the product of 77,000,000 sheep. In 1889, the export which is now reckoned in bales, had risen to something like 1,200,000 bales.

WHEN men begin first to become familiar with the methods of measuring mechanical power they often speculate on where the breed of horses is to be found which can keep at work raising 33,000 pounds one foot per minute, or the equivalent, which is familiar to men accustomed to pile driving by horse power, or raising 330 pounds 100 feet per minute. Since 33,000 pounds raised one foot per minute is called one-horse power it is natural for people to think that the engineers who established that unit of measurement based it on the actual work performed by horses. But that was not the case. The horse-power unit was established by James Watt about a century ago, and the figures were settled in a curious way. Watt, in his usual careful manner, proceeded to find out the average work which the horses of his district could perform, and he found that the raising of 22,000 pounds one foot per minute was about the actual horse power. At this time he was employed in the manufacture of engines, and had almost a monopoly of the engine-building trade. Customers were so hard to find that all kinds of artificial encouragements were considered necessary to induce power users to buy steam engines. As a method of encouraging business Watt offered to sell engines reckoning 33,000 foot pounds to a horse-power, or one-half more than the actual. And thus what was intended as a temporary expedient to promote business has been the means of giving a false unit of a very important measurement to the world.

An illustration of the intimacy of the most modern and most ancient of civilizations is found in the fact that it was left for an American citizen to first successfully essay the mechanical fabrication of felted cloths. Thomas Robinson Williams, of South Kingston, R.I., invented the process of making felted cloths of commercial length, and patented it May 22, 1830. Since that day felts have appeared in innumerable forms—as printed and embossed piano-cloths, ladies' skirts, floor coverings, often with highly artistic designs, material for roofs and protectors against weather, piano hammers, shoe linings, etc. It is difficult to imagine any depart-

ment of industry in which wool, in its felted form, does not somewhere play its part. Thus we have taken the simple discovery of antiquity and made it among the chief instrumentalities of civilization. The Tartars are kindred people who occupy the middle and northern regions of Asia, and whose manners and customs have remained unchanged from the most remote antiquity, employ the felted wool in a variety of functions, only less important than the supplying of foods. Both their clothing and their habitations have consisted of felt since a knowledge of them first went upon record in the fourth century. The process of felting was generally known among ancient nations. The Greeks gave to it the name *piledis*, from *pileo*, to compress; literally, a compression, or thickening, of the wool. The ancients employed felt for a great variety of uses, just as we do, the chief being to make coverings for the head, the most common form among the Greeks and Romans being the skull cap.—*Popular Science Monthly*.

VERY often a form of cement is required around shops and mills for filling cracks in stone or brick work. New factories, especially, often develop awkward cracks between the window frames and the brick walls, and during the cold months the air entering here will largely reduce the coal pile. The *American Woodworker* suggests the following: "Procure a lot of paint—old paint if possible—from a dealer, the skins forming on top of the paints, settlings from the bottom of paint pots, and, in fact, any refuse which contains oil, zinc or other mineral body may be used for the purpose. Reduce this mass, especially if hardened from continued standing exposed to air, to the consistency of cream by soaking in some cheap oil. Heating may be resorted to if the hard paints cannot otherwise be softened. When the whole has become soft enough to be stirred into a homogenous mass, more oil may be added, and the whole worked through a sieve and then run through an ordinary paint mill. A quantity of common whiting is next to be worked into the oil and paint, much in the same way as when ordinary putty is to be made. The thickness of this putty, as we may now call it, should not be as dense as when used for glazing. When the whiting has been thoroughly mixed in and the mass well worked over, add a quantity of good Portland cement, sufficient to bring the putty to consistency which will enable it to be handled readily. When in this state, the putty may be worked into cracks in brick or stone work, much as ordinary putty is used when allowed to set and harden, and it will become nearly as hard as iron, impervious to moisture, and any reasonable degree of heat."

G. BLUMCKE, a well-known mechanical engineer of Hamburg, Germany, who represents the Westinghouse Machine Company, of Pittsburg, Pa., in Germany and Austria-Hungary, has devised and put into very successful operation on a number of freight vessels entering the seaports of North Germany, an invention for rapidly and cheaply unloading coal, iron ore and low-grade freights. The ordinary colliers which enter the port of Hamburg, for instance, require seventy-two men, working twenty-four hours, to unload them, whereas with the new invention, Mr. Blumcke is able to do the same work in twelve hours with thirty men. Each collier has four hatches, and between each pair of hatches a small Westinghouse engine is placed temporarily on deck, which is supplied with steam through a hose from a portable boiler located on the adjoining dock. Shafts temporarily bolted at one side of each hatch are driven by belts from the engine. Each shaft carries three grooved friction spools. The workmen by simply bearing down on a treadle, cause the friction wheels to engage the spool, which in turn lift the basketful of coal from the hold of the vessel at a speed of twelve feet per second. The whole apparatus, consisting of two small Westinghouse engines and the four shafts, is easily put in place on deck in thirty minutes' time. Steam is furnished from portable boilers on the docks at Hamburg as an article of merchandise, and is therefore readily available for sailing vessels such as these colliers are. In the first plant put into operation by Mr. Blumcke he used ten horse-power engines, which, generally speaking, furnished ample power. When, however, as sometimes happened, all six treadles on each engine would be pressed at the same time (thus demanding the engine that it lift six baskets at once) the power was insufficient, and the engine would stop until relieved of some of the load. For this reason Mr. Blumcke has since used twenty-five horse-power engines for the purpose, which are found to have abundant power to lift all the baskets at the standard speed at once.

THE greatest quality of safety in modern small yachts is their stability. It is simply an impossibility to capsize them; and it is this trait which is creating a demand for the modern type everywhere in the United States, even on the great lakes. I know from personal experience that a modern thirty-footer, carrying that powerful lever of six tons of lead on a keel of seven feet deep, can

be sailed safely with sheets trimmed flat and a stiff breeze abeam, so that she lies literally on her beam ends with the water running along the cabin skylight. The moment you ease the helm she will come up again. You cannot put her down any farther, because in that position her sails are spilling the wind horizontally. The most unskillful helmsman on earth could not upset one of these yachts. These yachts are fit to face weather of the liveliest sort. No ordinary summer gale need terrify a man who is aboard one of them. A gentleman of Boston who owns a thirty-footer was starting from Marblehead to Provincetown one morning—forty miles across the seaward opening of Massachusetts Bay. I asked him if he did not run the risk of being becalmed and afterwards caught in a squall. He smiled, and answered: I have four rows of reef-points in my mainsail. When my topmast is housed, bow-sprit reefed, hatches battened down, and that fourth reef tied in, its time for ships to come in. I can stay out there as long as any of them." And the truth is, that with good seamanship one of our modern small yachts possesses as many lives as a cat. Finally, for solid comfort below decks no other type of small craft can equal them. The ordinary modern thirty-footer is arranged in about the following way: In the run is a large sail locker. The cabin occupies the body of the yacht from the companion way to a point a foot or so abaft the mast. On each side of the companionway is a good sized closet. Along each side of the cabin runs a wide locker. On each locker there is room for two men to sleep, and inside the two lockers storage room for a large quantity of canned and bottled stuff. Behind and above each locker, the space made by the swell of the boat's side affords room for the swinging of a small hammock, which is hidden in daytime by a drawn curtain. Thus the cabin gives sleeping accommodations for six persons. Forward of the port locker, are an ice box and a china closet. Forward of the starboard locker is a diminutive toilet-room. Ahead of these things is the forecabin, in which are a small cooking stove and two hammocks, swung right up in the eyes of the vessel. And one never feels crowded in one of these thirty-footers. The forty-footers are built on the same general plan, except that they boast the luxurious addition of a state-room.—*The Illustrated American*.

THESE are at present under construction at private shipyards in the United States sixteen vessels, including three tugs, for the navy, and at navy yards three more, making sixteen ships in various stages of building. This does not include the *Concord*, *Bowditch* and *Monterey*, the former two fitting for sea at New York and the latter recently launched at San Francisco. The *New York*, for which the Cramps are to receive \$2,985,000, will be launched in about three months. She is more than half completed, although after she gets into the water there will remain a good deal to do on her, just as there has been on the *Maine*. The reports from the Government officers at the Union Iron Works make a good showing for the work on Cruiser No. 6, whose keel has been laid and whose frames are in course of erection. The keel of the coast line battle-ship *Oregon*, also building at the Union Works, has not yet been laid. Cruisers 9 and 10, identical in plan and cost, are well advanced at the Columbia Iron Works, and it is expected that they will be launched in about four months. Cruiser No. 11, which Harrison Loring, of Boston, is under contract to build for \$674,000, is a sister ship of the *Columbia* people's 9 and 10, and although the contracts were entered into at the same time, the Boston firm has not pushed the work on its vessel as the Baltimore contractors have on theirs. The keel of No. 11 has been laid and the frames are partly in position. The vessel will be launched in about ten months. Loring is also building three steam tugs, of which the navy stands in great need. These craft are in frames and are being plated, and will be launched in about six months. The Bath, Maine, Iron Works is making satisfactory progress with the two gunboats, which are in frames and being plated and are expected to be ready for launching in six months. The Ammen ram, the contract for which was recently awarded to the Bath Company, has its keel laid, and a good deal of the material is in the shipyard. The Cramps are slightly ahead of the Union Iron Works in the work of the other two battle-ships, the *Indiana* and *Massachusetts*. The keels are being laid and numerous frames bent. The keel of Protected Cruiser No. 12, which the Cramps are also building, has been laid, the frames erected and the plating begun. Of the vessels now being constructed at the navy yards, all are well advanced. The *Cincinnati*, or No. 7, at the New York yard, will be launched in about six months, by which time the *Raleigh*, or No. 8, is expected to be in the water. The *Texas*, whose construction has been impeded so much by discussions among the constructors, will be launched in about nine months. All the work in the hands of contractors will be completed within the contract time, so far as one may judge from reports received at the Department.

Manufacturing.

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

THE E. R. Burns Saw Company, Toronto, have taken over the plant and business of the late firm of Burns & Thomas.

THE extensive saw mill of the Georgian Bay Lumber Company at Byng Inlet, Ont., was destroyed by fire, July 2nd, loss about \$85,000.

THE Canadian Pacific Timber and Lumber Company, New Westminster, B.C., have begun the construction of a large saw mill on Lulu Island, Fraser River, near that city.

THE British Columbia Paper Manufacturing Company has been formed at Victoria, B.C., with a capital stock of \$40,000 and will build a paper factory at Alberni, at the first rapids of the Soanias River, Vancouver Island, B.C.

WHAT is said to be the largest ship ever built in Canada was launched at Kingsford, N.S., July 6th. She is called the *Canada*, and is 175 feet long over all, 45 feet beam, 27 feet depth of hold, registers 2,400 net tons and cost \$100,000.

THE new saw mill at Chemainus, Vancouver Island, the property of Victoria Lumber and Manufacturing Co., has started work. The machinery used is of the latest and most improved pattern and capable of cutting 250,000 feet per diem when running full blast.

MESSRS. TALLMAN & SON, proprietors of the Beamsville Pressed Brick Works, Beamsville, Ont., are working up about 100 tons of clay per day in the manufacture of brick, tiles, etc. The machinery used in these works was supplied by Messrs. Goldie & McCulloch, Galt, Ont.

THE Edison General Electric Company, have contracted to supply the Nanaimo mine of the new Vancouver, B.C., Coal Co., the first electric mining tramway on the Pacific Coast. The plant will entirely replace the mules used in coal hauling in the pit, and increase the output capacity nearly three-fold.

MESSRS. GAST & ATCHISON, Toronto, manufacturers of fire and frost-proof mineral wool, and of steam pipe and boiler covering, made under Lamkin's patent, have been awarded the contract for deadening the floors of Toronto University, now being rebuilt, and also for covering the steam pipes in that building with mineral wool.

UNDER the Joint Stock Companies Act of the Province of Ontario letters patent of incorporation have been issued to the following new companies: The Floeter Fanning Mill Company of Chatham (Limited), capital \$20,000; the Crossen Car Manufacturing Company of Cobourg (Limited), capital \$150,000, the Port Elgin Tanning Company (Limited), capital \$15,000; the Tupperville Milling and Elevator Company (Limited), capital \$15,000.

THE Toronto Rubber Company, recently incorporated, is now fully organized and doing business. The directorate includes Messrs S. Nelson, president; T. McIlroy, jr., vice-president; and John H. Taylor, treasurer. The company have taken over the business of Messrs. T. McIlroy, jr., & Co., of this city, and propose to expand it forthwith. To this end they have secured a splendid water power privilege at Port Dalhousie, Ont., and factory buildings, and they expect to have all their machinery up and running before the 1st of August. At that date at least 100 hands will be set at work. A thoroughly experienced foreman has been engaged in Boston, also a number of first class workmen.

MESSRS. G. F. STEPHENS & Co., Winnipeg, Man., have begun the manufacture of paints. The lines manufactured are the ordinary lead paints, coach paints, oxide paints, stains of all kinds and enamels. These are put up in the most approved class of cans, so that a portion of the contents can be taken out without injuring the can. In this way the contents can be kept air tight and fresh for any length of time. A great advantage in preparing these paints is the home supply of linseed oil, manufactured in Winnipeg. This oil is claimed to be the very best procurable anywhere, and absolutely pure, whereas it is impossible to obtain a pure imported oil,

rosin and other substances being used as adulterants. The factory is a brick building 100x30 feet, three stories and basement.

THE only paper mill in Western Canada is at Portage la Prairie, in this province. The *Portage Review* has the following to say about it: "This is a branch of the mills, one of which is in Montreal, and run by J. W. Patterson, and one in Toronto run by N. S. Patterson. They employ sixteen men here and run night and day. The building is lighted by electricity manufactured on the premises. They use eight cords of wood every twenty-four hours, and turn out from three and a half to four tons of paper a day. At present they only manufacture coarse wrapping paper and tar paper, and it keeps them busy to supply the demand. They pay from two to two and a half dollars a ton for the straw which they receive in abundance from the farmers, straw that is free from chaff being preferred. The most of their rags and old paper they receive from Winnipeg. Rags are used in the manufacture of tar paper so as to make it more tough and soft."

MORTON, ALEXANDER AND MORTON, tanners and manufacturers of boots and shoes, Winnipeg, have introduced a novelty in foot wear, in the line of dog-skin boots. The skin of the dog when properly prepared, makes a most valuable article of leather for fine boots and shoes. The firm prepare the skins at their own tannery here, by a secret process, and herein lies the great value of the leather. A number of samples of dog-skin leather were examined, and they appeared to be of excellent quality. The leather has a splendid appearance, is fine in the grain, takes a high polish, and is light, soft and flexible, readily adjusting itself to the foot. It is claimed that it is also very durable, and retains a fresh appearance longer than other fine leathers. It resembles Dongola goat in appearance, but is finer in texture. The manufacturers claim that it is superior to the famous kangaroo leather. Fine-haired dogs, such as retrievers, spaniels, etc., make the best leather, while that from coarse, straight-haired dogs is thicker, stiffer and coarser in appearance. A bulldog hide shown, was as heavy as kip. A number of pairs of boots and shoes made from dog skin were examined, and they appeared equal to anything offered.—*Winnipeg Commercial*.

THE ESQUIMALT DOCK.

H.M.S. *Warspite* will, in all probability have taken possession of the Esquimalt graving dock before this paper reaches its readers. This will practically prevent all other vessels, no matter their extremity, obtaining the benefit of the facilities which are there afforded. Already two vessels, which had applied for accommodation, have had to go away without obtaining it, and the same has been the case with other craft at previous times. The great need of the dock has been abundantly manifested, and probably without it H.M.S. *Amphion* and other valuable vessels might not now have been in commission, but would have been abandoned wrecks. Against the construction of the dock grave and repeated objections were raised, and, since it has been in operation, there have been those who have pretended that it was not a paying concern, and that its construction and maintenance have been acts of folly.

But it is not everything of public benefit that pays its own way. The general benefits conferred, however, more than make up for the balance on the wrong side of the account. Who will say that the feeling of safety which the presence and operation of the dock confer upon vessel owners and mariners does not more than make up for any adverse balance there might exist? This, we contend, has not been demonstrated. How many public works are there that are maintained at a loss which do not return a tithe of the benefits that are secured at Esquimalt? Moreover, it is the general conviction, as judged from experience, that the accommodations provided are utterly inadequate to existing requirements; much less are they likely to be equal to the demands that are sure to arise with augmented commercial and shipping developments.

What is wanted is an enlargement of the present dock or the construction of another one alongside of it. In this way, the apparatus at present on the ground, which is necessarily not always employed, could be more largely and at the same time more economically made available. Vancouver has been sturdily begging for a dock; but its site, approached by so many tortuous channels from the ocean is not nearly as eligible as that of Esquimalt, which may be said to be almost on the direct path of disabled vessels, that while they might reach Esquimalt in safety, would have their risks tenfold increased by the dangers of the passage between Vancouver Island and the mainland. It is not in this case a matter of pleasing Vancouver or Victoria but it is a question of public policy, and, looking at the subject from that point of view, we cannot see how there should be two opinions on the matter.—*Victoria, B.C., Commercial Journal*.

SOME stamps are quoted at big prices. The rarest of French stamps, that of 1 franc, orange color, issue of 1849, is worth \$90 new and \$25 if cancelled. The first Hawaiian stamp issued, with figures instead of design, is currently exchanged for a \$200 bill if in a good state of preservation. The stamps of Reunion Island of 1852, one for fifteen and the other for thirty centimes, both on sky blue letter paper and printed with ordinary types, are worth more than \$200 for the two. But the *rara avis* is that of the Isle of Mauritius, 1850. Whether it is red or blue, cancelled or not cancelled, so long as it bears the word "Postoffice" in English, it brings \$300. Between the stamps quoted at such high prices and those obtainable for a half-penny there are plenty of a good average kind worth from twenty cents to a dollar. The Mexican Guadalupe, white, half real, 1867, and cancelled, are worth \$50; the English Guianas, round, black or yellow, 1850, are worth \$55; the telegraph stamp of Bavaria, 1870, is worth \$50 if it is new, \$20 if cancelled.

THE McKinley Tariff seems to be very materially affecting the German textile trades. The weaving industry, which was at one time in a flourishing condition, has fallen off to an extent which is without parallel in the development of the industry. This falling off is indicated by the fact that the exports from the Chemnitz district alone to the United States, which is the chief market for Saxon goods, shows a decrease of 7,122,792 marks. This decrease is almost entirely to be accounted for by the decreased orders for woven goods occasioned by the McKinley tariff. The Chemnitz district has at present large stocks of staple articles; for the better class of goods there is very little demand, and cheaper sorts have been taken off the markets for some months past. The prices of staple articles have fallen enormously. The McKinley tariff is affecting other districts also, which are employed in textile industries. The export trade from the district of Munich shows a large decrease in the first quarter of this year as compared with last year, the figures being £37,543, as compared with £59,849. A similar decrease is recorded in the district of the Dresden consulate, and in the agency of Zittau. The exports amounted in the first quarter to £64,334 7s. 6d., as compared with £103,373 in the previous year. The decrease especially affects woolen goods, as well as linen and half-linen articles.

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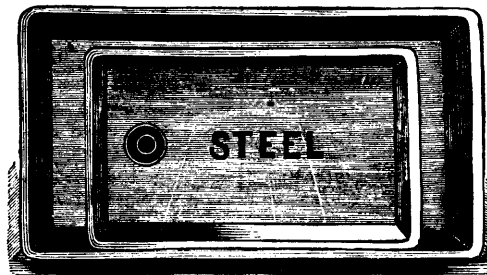
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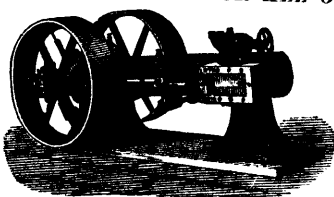
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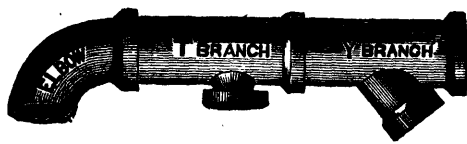


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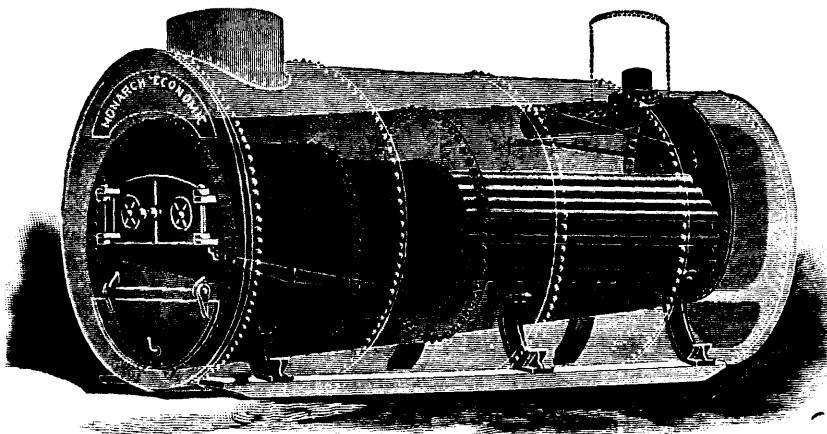
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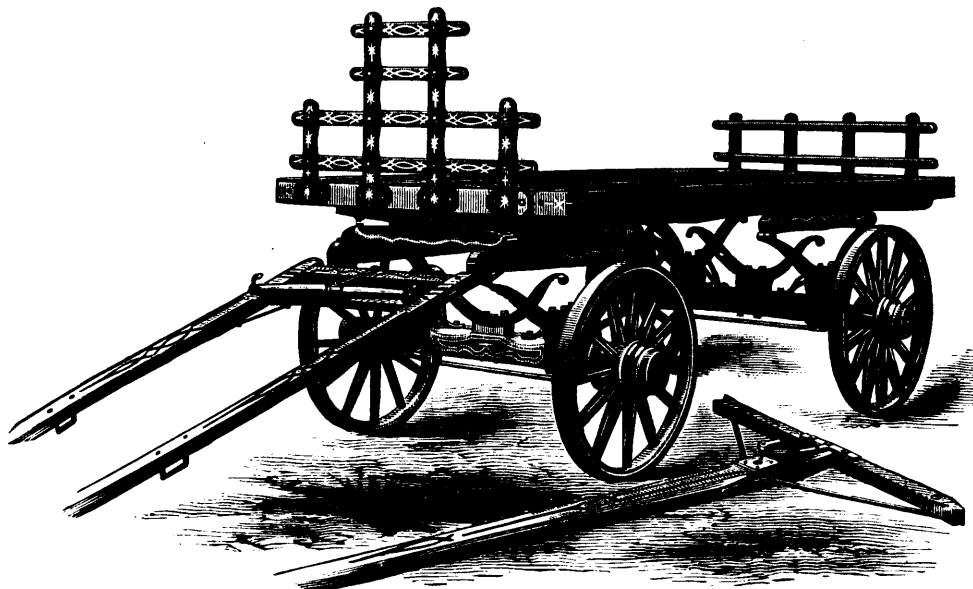
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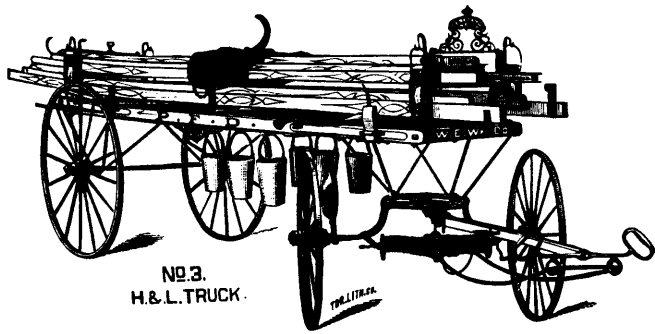
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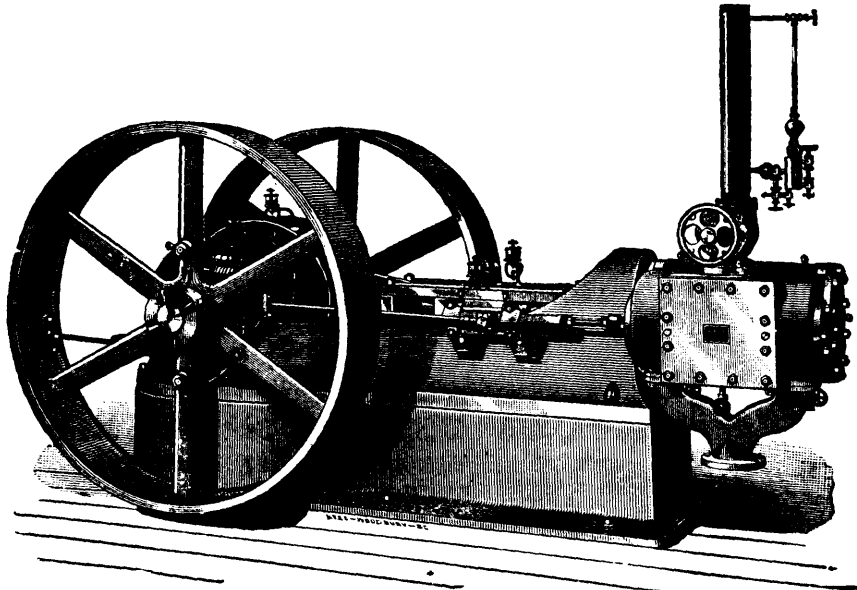
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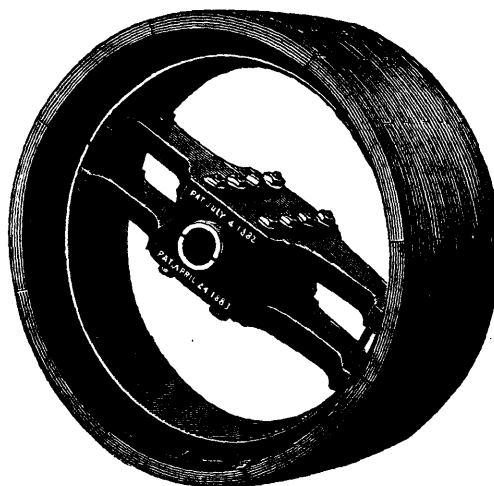
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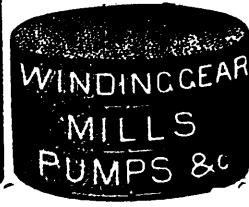
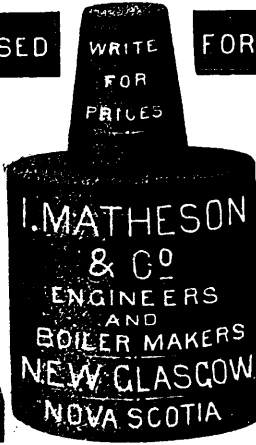
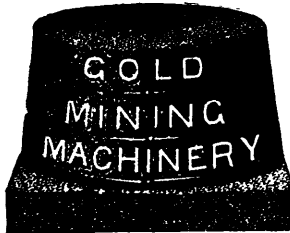
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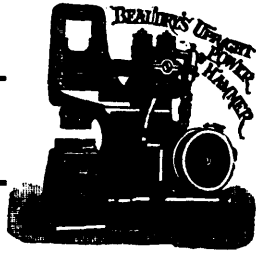
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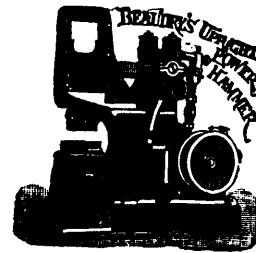
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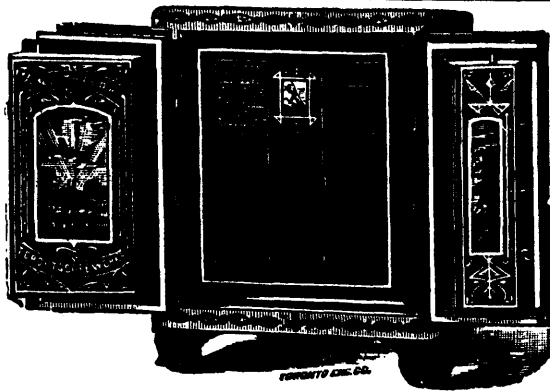


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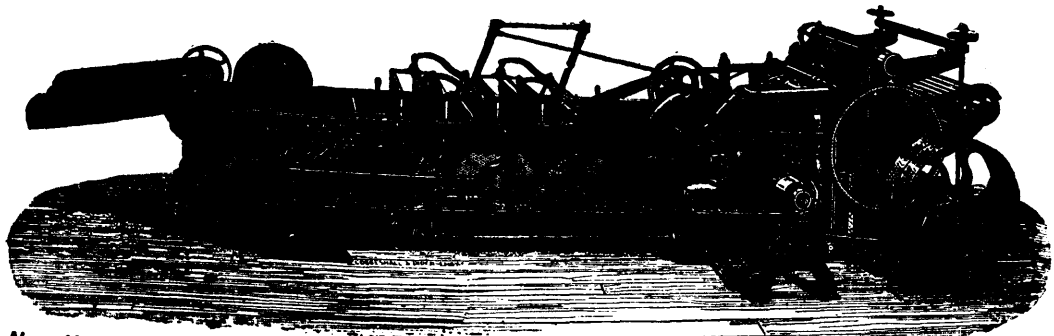
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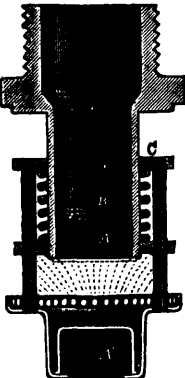
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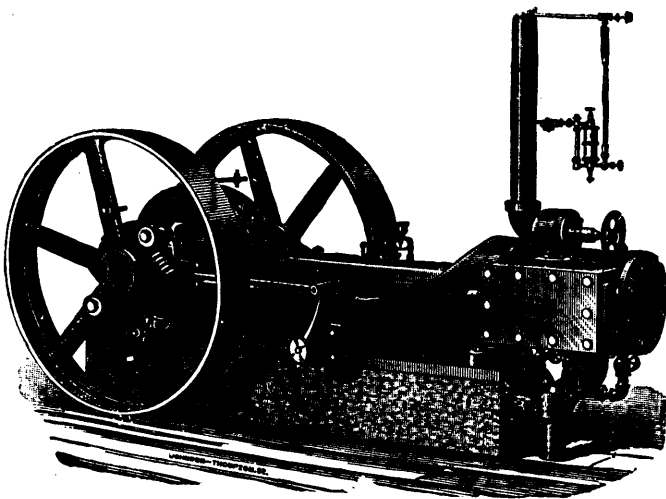
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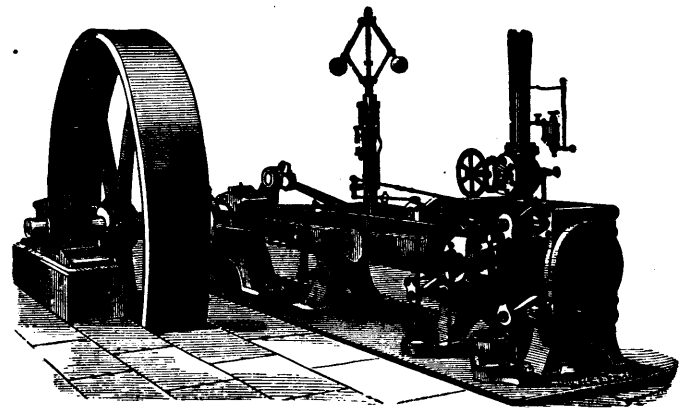
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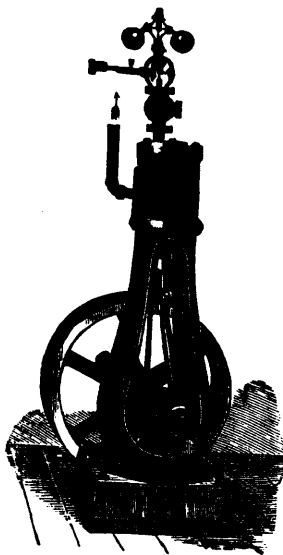
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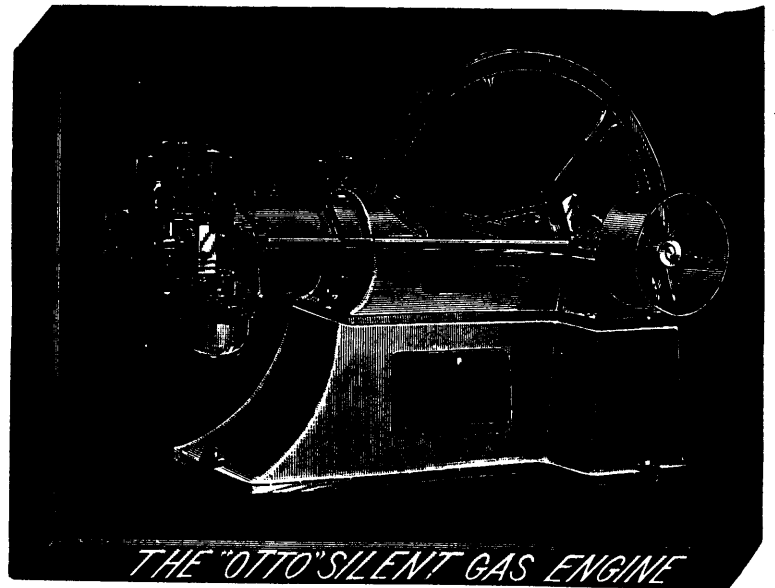
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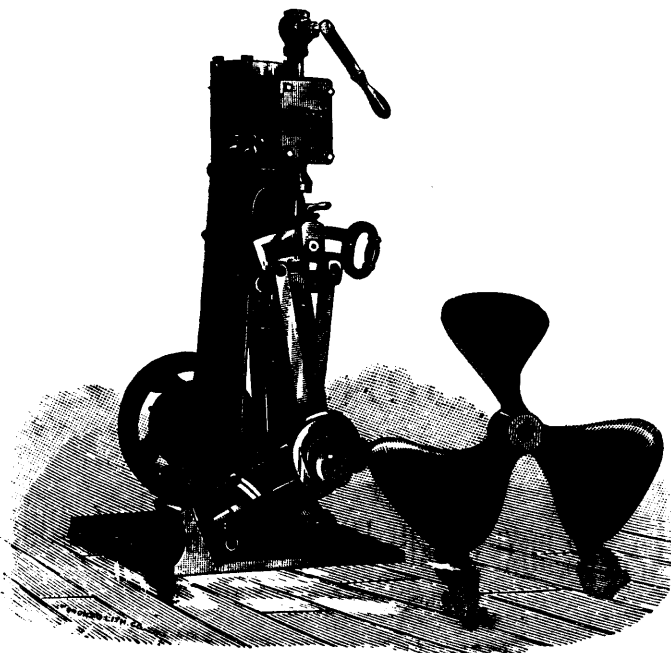
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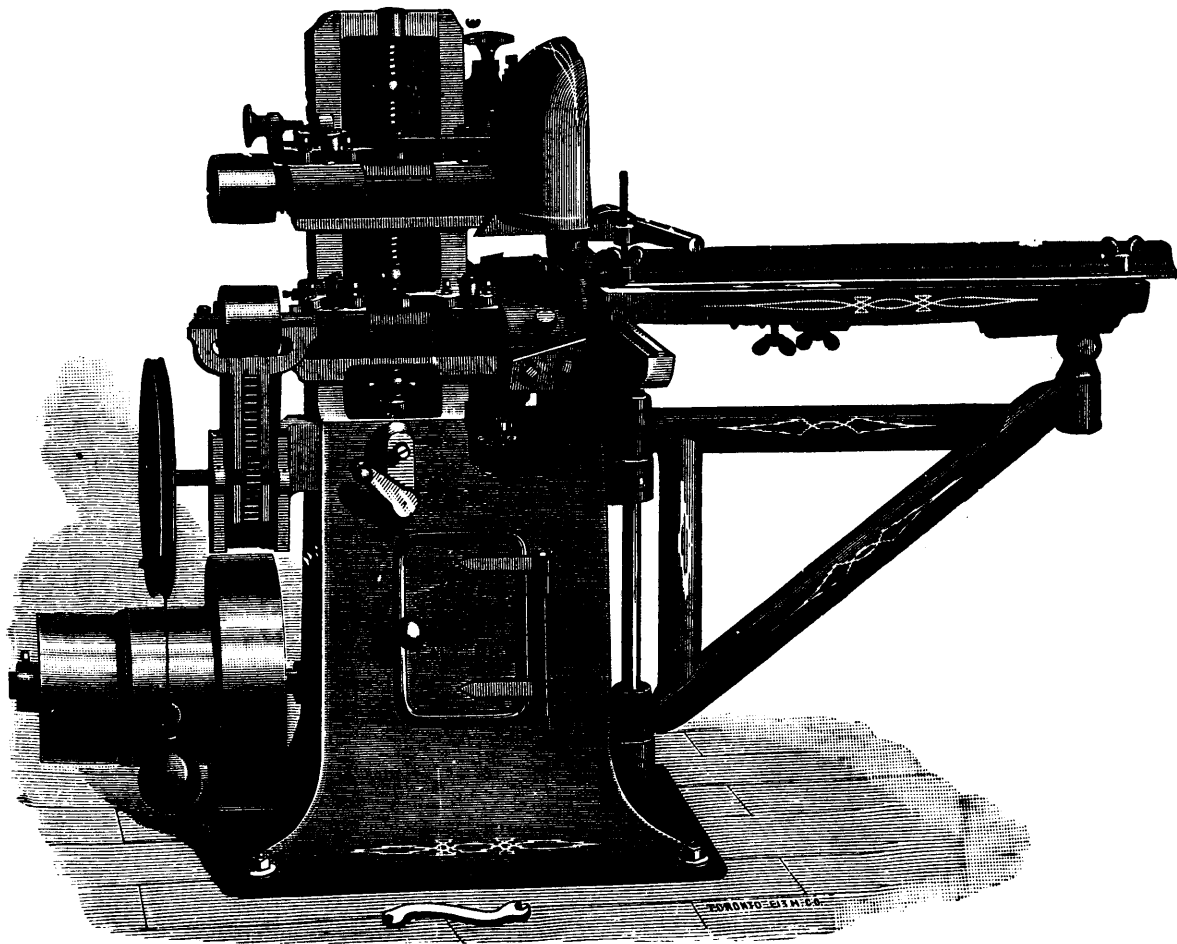
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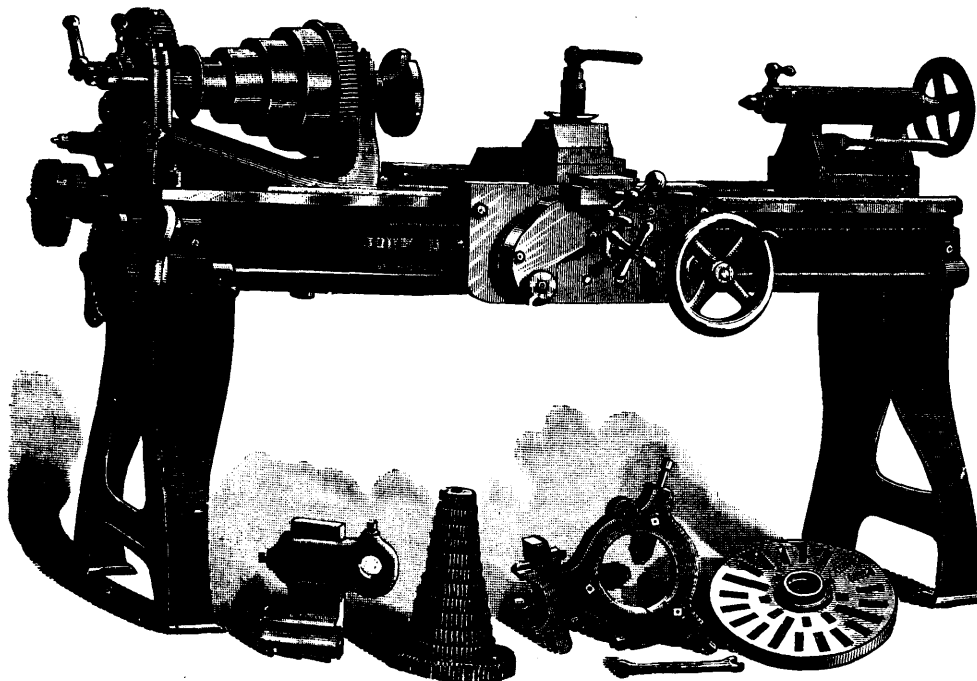
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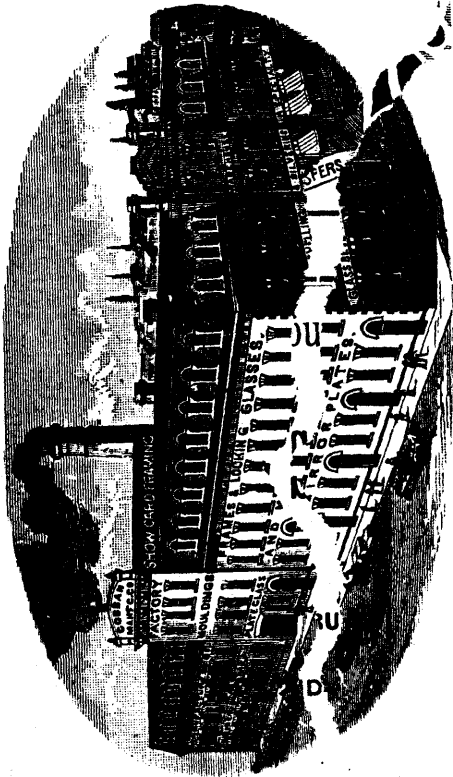
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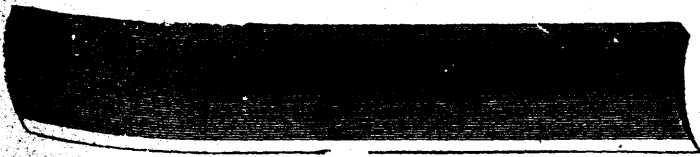
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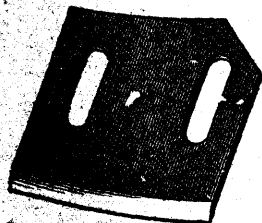


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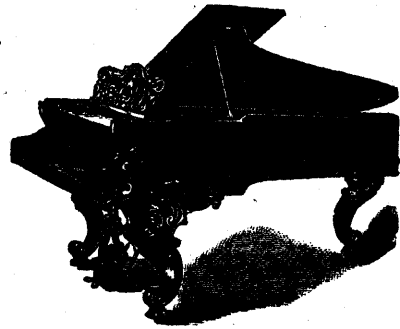
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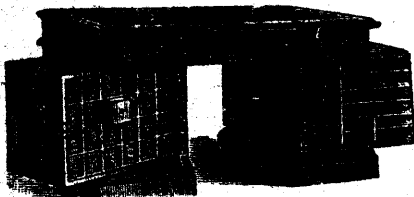
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