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# THE CANADIAN MANUFACTURER

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VOL. 14.

TORONTO, MARCH 2, 1888.

No. 5.

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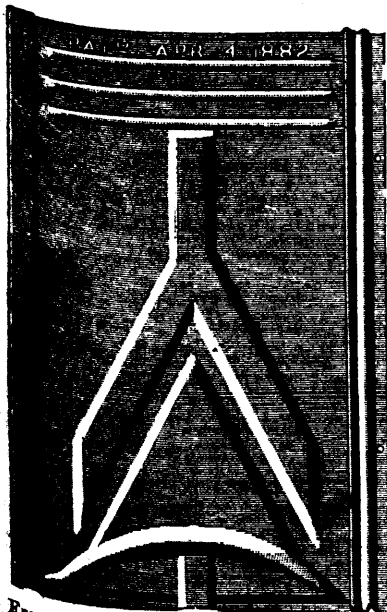
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MR FREDERIC NICHOLLS is Secretary of  
The Canadian Manufacturers' Association,  
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His Office is at the Publication Office of  
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## ORGANIZATION.

The axiom "In union there is strength" commends itself to Canadian manufacturers with as much force to-day as it did thirteen years ago, when they first organized themselves into an Association for their mutual benefit and protection. Then there were but comparatively few manufacturing industries in existence in Canada, and a Canadian National Policy had not been brought into existence. Free Traders ruled the councils of the nation; and the alternative was forcing itself upon the people whether this should be and remain a distinctively agricultural country, and as such be and continue a hewer of wood and a drawer of water for Great Britain, with a strong and increasing tendency to bear similar relationship towards our near neighbor, the United States; or, by the adoption of a tariff system, similar to that which has advanced the United States to be the wealthiest and one of the strongest nations of the earth, achieve similar greatness for this Canada of ours.

Scattered and unorganized, the few men who represented the manufacturing industries of Canada up to thirteen years ago, wielded no political power, and had no political influence whatever. The Government was in control of free traders, and all applications for the adoption of some system by which their industries might be encouraged and protected were repulsed, and the applicants given to understand that their industries might survive or perish, but no governmental aid or encouragement might be expected.

This was a crisis that demanded prompt and organized action; and in defense of their interests a number of manufacturers

met and organized for the purpose of awakening public interest, and formulating a sentiment, the demands of which should result in a radical change or policy on the part of the Government. This was the beginning of what is now the Canadian Manufacturers' Association; and it was of this organization that what is now so widely and favorably known as the Canadian National Policy was born.

That this policy has had and is having the desired effect is evident to all who have eyes and use them. Instead of being only the agricultural State we were at the time of its inauguration, with only a few comparatively insignificant and isolated factories scattered about the country; and the largest and most important industrial enterprises being those in which the timber of the forests was converted into rough lumber for transshipment to the factories and workshops of Great Britain and the United States, there to be manufactured into finished products; we now see the tall chimneys of our industrial establishments rising in all directions, and in which our own raw products and materials are converted into every finished article necessary for our comfort and welfare. Canadian factories and mills, now supply Canada with cotton and woolen fabrics and knit goods of every description; our agricultural implements are the equal of any in the world, and cheaper than similar articles in the United States; our railroads are equipped with the very best passenger coaches and freight cars, built in Canadian shops and are drawn by Canadian built locomotives; our foundries produce stoves, hollowware and every variety of castings of the very best quality and highest finish; we build our own waterworks and pumping engines, and there is nothing necessary for the comfort, convenience, and welfare of Canadians that is not produced in this Canada of ours, of quite as good quality as any in the world.

All this has been accomplished in the face of an intense opposition that has never been greater or less than it is at this time. The road to this success has not led through flowery beds of ease; and if the watchfulness and intelligent perseverance that has brought this reward were relaxed now, the enemy would soon capture and hold the situation, and the glory of our success would be quenched in disaster and destruction.

The accomplishment of what has been done was through the organized efforts of Canadian manufacturers—mainly through the Canadian Manufacturers' Association. Without such organization even the most sanguine could never have hoped for success. The perpetuity of this success can only be assured through and by the perpetuity of the organization that effected it. All important interests are conserved and advanced by guilds and organizations. Boards of Trade and Chambers of Commerce are essential for the successful carrying on of commercial and mercantile business; farmers have their Agricultural Societies and Farmers' Clubs, and those who strive to send the gospel to the heathen find that they cannot do so with any gratifying measure of success without organization.

On the other hand, we are not without abundant warning as to the danger of non-organization, or of suffering organization already perfected to cease, particularly such as is formed for the advancement of manufacturing industries. Thirty years ago—in 1858—in Old Canada, under the leadership of Isaac Buchanan, a movement was begun which resulted in the adoption

of a protective policy for the province, intended to foster and build up manufacturing industries; and that policy prevailed and met with general favor as long as the promoters of it preserved their organization—the Canadian Industrial Association. Through it public sentiment was worked up to such a degree that a tariff averaging about 25 per cent. was imposed upon imports of foreign merchandise; but unfortunately those who had been the life of the movement rested from their labors and allowed their organization to cease, with the result that when the details of Confederation were being settled—in 1865-66—the tariff was reduced to 15 per cent. The Canadian Industrial Association, through whose influence the higher tariff had been brought about, had died of inanition, and there was no strongly organized moral influences existing in the community able and ready to combat the free trade influences brought to bear by the Cobdenites in Great Britain and their free trade adherents on this side of the water. At the time of Confederation the then existing tariff was working well in both Ontario and Quebec; but when the terms of Confederation were being discussed in the Convention, and when the free traders were on the alert in all directions to have their policy prevail, there were no countervailing influences at work, and no existing organization of manufacturers to urge a continuance of the previous policy, and Protection went by default. This was a fatal mistake, and it cost the new Dominion untold millions of dollars and the destruction of what had given good promise of being a most valuable and important feature of our new national life—the ability to manufacture in Canada everything that Canadians might need.

Fortunately for Canada there came an awakening to the necessity of the situation; and with the awakening appeared men who could lead the people up out of the wilderness into which they were plunged, and other men who were ready, willing and able to hold up the hands of their leaders and captains; and through the valiancy of these, and the organization now so well known throughout the Dominion as the Canadian Manufacturers' Association, our National Policy was established and has been perpetuated until this day. Organization did it; and now let no Canadian manufacturer be deceived into the idea that the work is all finished, and that having fought a good fight they can now lay aside their armor. The greatest possible necessity exists to-day for thorough and complete organization and the continuance of the enthusiasm in the work of the Association, heretofore displayed. Canadian manufacturers do not beg favors, but only demand their rights; and through persistently demanding them can they only hope for the continuance of that policy that has made this Canada of ours what she is to-day. Eternal vigilance is the price of prosperity.

#### CANADIAN INGENUITY.

The assertion has been made by a Free Trader in the United States, that "the effect of a protective tariff is not to stimulate ingenuity, but, on the contrary, to lead its votaries to lean on the Government, and to look to it for an artificial defence from the competition the rest of mankind are obliged to meet." This assertion seems to have been based upon the fact that the number of patents issued in Great Britain, where Free Trade prevails, is increasing more rapidly than in the

United States, under Protection. It is a fact that there were more patents issued in Great Britain in 1887 than in 1886, the increase being from 17,107 to 17,770, but this is owing probably to the reduction of fees. On the other hand, in the United States there was a falling off last year of 1,348 patents from the year before, the numbers issued in 1886 being 21,797, against 20,449 in 1887. In Canada the falling off was very slight, being from 2,610 in 1886 to 2,595 in 1887; while in Germany the decrease in the same time was from 4,008 to 3,882. Inventive activity of the world is greatest in the four countries here alluded to—England, Germany, United States and Canada; and, as far as numbers of inventions are concerned, the United States is ahead of both England and Germany. But as between the United States and Canada based on population, the showing is more favorable as regards this country. Canada, with a population of only 5,000,000, has an annual productive capacity of 2,600 patents, while the United States, with over 60,000,000 population—more than twelve times as great as ours—has capacity for only about 21,000 patents—more than 10,000 less than what it would be if in the same proportion to population as ours. Canada, under a protective policy, is relatively far ahead of Great Britain in respect of ingenuity as displayed in the number of patents issued, and immeasurably superior to Germany.

#### AN IMPRACTICABLE SUGGESTION.

DISCUSSING the evidence of Warden Lovell, of the Kingston Penitentiary, before the Labor Commission, in which that gentleman suggested that the convicts should be set at work for the Government making supplies for the mounted police and clothing for the militia—the suggestion being made as showing one way in which convict labor could be utilized without being made to compete with free labor—the *Hamilton Spectator* says:—"Of course the convicts should be kept at work, and it should be useful work, too. \* \* It ought to be possible for the Government to commence the manufacture of some article which is not now made in Canada, and for which there is a good market, both at home and abroad. If such a manufactory were started, it would not in the least interfere with the 'vested rights' of free labor—the product of the factory would not come into competition in the market with any similar goods now made in the country."

When it is remembered that the editor of the *Spectator* was one of the commissioners before whom Warden Lovell testified, and on whose testimony the above quoted comments were made, the utter failure to grasp the situation is remarkable. It is a crude and undigested idea to suggest that convicts should be put to work in any employment where they might compete with free labor. They are not sent to prison with a view to getting any work out of them whatever, but as punishment for crime committed, and it would be the height of cruelty to honest free workmen, and the grossest injustice to employers of free labor, to antagonize them with convict labor. If the *Spectator* thinks that it ought to be possible for the Government to engage its convict labor in the manufacture of some article which is not now made in Canada, and which would not, consequently, interfere with the "vested rights" of

free labor, will it kindly indicate any remunerative industry at which convict labor might be put, that is not now engaged in by free labor? If it knows of any such, let it mention it, and thereby enlighten the Government. But is not the proposition the sheerest nonsense? If the *Spectator* should happen to know of any such industry, and if the Government should happen to act on its suggestion, and put the penitentiary convicts to work in it, would that be a bar to free Canadians engaging in it also? Would the Government undertake to warn trespassers away from engaging in the occupation under pain of the fierce competition of convict labor which would not be withdrawn?

The manufacturing industries of Canada and free Canadian workmen demand that convict labor shall not be brought into competition with free labor under any circumstances; and this demand they will see enforced. This point settled, it remains with the Government to otherwise do with the convicts as they please.

#### ARBITRATION.

THE recently issued report of the New York State Board of Arbitration and Mediation calls attention to the fact that many of the recent labor difficulties in that State and elsewhere in the United States were not so much over disagreements as to wages, but whether employers should control and direct their own business without interference or dictation from outsiders; and whether employes, combined in trade organizations, should exercise a power of control and direction, and of limitation over the labor in the establishments and business of such employers.

The result of the attempt to force employers to submit to outside dictation has been that the employers have during the past year perfected organizations among themselves to a greater extent than ever before, and that their objective point is to break down the combinations of the trades as controlling powers over labor employed, and deal directly with their employes, each in his own establishment. The contest is one of combinations of employers on the one side and of the employed on the other. Any one but an ignorant labor demagogue and his blind followers, must have seen that a combination of employers must follow one of employes when the latter, instead of confining its efforts to the protection of labor from manifest injustice, and to the improvement of labor as a marketable commodity, attempted to pre-empt the plain rights of employes. The report says that progress has been made in the establishing of a system of arbitration which reduces the friction between labor and capital. This is, as the report says, a step in the right direction, and we think it will yet lead to the dethronement of the professional agitator.

But one point the report brings out with reference to the strikes on railroads which must appeal forcibly to every thinking man. The report says: "Of what avail is it for the State to possess and exercise a power of control and regulation over railroad corporations created for the public benefit, and over private persons holding and using their property for public purposes, if it permits combinations of authorized and irresponsible employes of such corporations and persons, or others, to arbitrarily arrest and hold at will the operation of railroads and other properties in the service of the public?"

This is a question which should be settled speedily, and the Board of Arbitration suggests a remedy which ought to be adopted, and which is bound to be, sooner or later, for the protection of the public against those who work labor strikes for the money they can get out of them.

The report says:—"The operatives of a railroad, from engineer down to trackmen, are, in the practical relations of their services to persons and property transported, far more important as factors than officers of the corporation, and should be held to due responsibility. Nor would the extension of regulations by law to employes upon railroads work any hardship to them. On the contrary, it would be their guarantee and protection, as well as the guarantee and protection of the corporations and the people. A railroad is a quasi-public highway of the State, subject as much to regulation by the State, for the public benefit and for the protection of the lives of people who travel and the transit of the property carried upon it, as if the State owned and operated it itself. When a man takes service upon a railroad, whether as an agent of the corporation or an operative upon the line, he becomes a quasi-public officer, and hence subject to such regulation by law in the discharge of all his duties and the time and manner of his abandonment of them as are appropriate to protect the lives of persons and secure the transit of property carried upon the road. No dispute between these quasi-public officers about the price of labor or any kindred thing should be permitted to jeopardize the lives or interrupt the transportation of property of citizens, to whom the use of a railroad daily has become a matter of necessity as well as of convenience, any more than a dispute between the officers of a railroad and other parties about the price of cars, or rails, or ties, or spikes, or anything else that enters into the equipment and operation of such road. The State should lodge somewhere a power, with ample means of law to make its intervention effective, for the speedy settlement of all disputes between the officers of railroad corporations and operatives of railroad property."

The fact is, many of the phases of the labor difficulties that beset the country, and for which "arbitration" is offered as the only panacea, would be exceedingly ridiculous if it were not that so much damage is done; and if the State can bring any measure of relief to those oppressed by the outrageous conduct of strikers, that relief should be afforded. No matter what the complaint may be, the master of a ship on the high seas has authority to enforce obedience to his proper orders in the management of his vessel, and he is justified in suppressing mutiny even at the expense of blood; and the suggestions of the New York Board of Arbitration are in line with this. But aside from such a solution of the question the demand for arbitration usually made by strikers is after the strike has been inaugurated, and when the time for arbitration is passed. The demand to arbitrate under such circumstances is ridiculous.

If employers will take a firm stand, and refuse to arbitrate whenever the demand for arbitration is preceded by a strike, they will not only benefit themselves, but do the employes and the public a lasting good. An employer who unjustly refuses to submit to arbitration a reasonable demand of his workmen, when arbitration is asked unaccompanied by an attempt to injure or coerce him, may be a fit object of strike logic, and public opinion, which is a most potent factor in the settlements

of disputes between labor and capital, would be arrayed against him. But under no circumstance is a strike justifiable when it precedes a request for arbitration. When this principle is generally recognized and enforced, labor will find its wrongs rectified, while it will also be released from the thralldom of professional agitator's rule.

**FALSEHOOD—A HOME INDUSTRY THAT REQUIRES NO PROTECTION.**

THE Toronto *Mail* recently endeavored to show that Commercial Union was viewed with favor by quite a number of Canadian manufacturers, and in proof of which it undertook to produce the names and particular views of as many as fifty-two such persons. In this it failed most signally, as the list as far as published, does not embrace the names of a dozen manufacturers who view the fad with any degree of favor whatever and they are of a class who manufacture patented articles and enjoy a protection because of the patents which is of greater value to them than any tariff could possibly be, and which makes it impossible for any unauthorized manufacturer to enter into competition with them.

A few weeks ago the Toronto *Empire* printed a three-column list of names of Canadian manufacturers who were known to be opposed to Commercial Union and in favor of our National Policy, and suggested that the *Mail* interview some of the gentlemen and publish their views on the subject. The challenge has not been accepted, nor will it be, but the publication of the list has created consternation among the Commercial Unionists, and they squirm like worms in hot ashes. The Hamilton *Times* asserted that the weekly newspaper editors were kept busy printing the statements of prominent manufacturers denying the right of the *Empire* to class them as opponents of Commercial Union, which statement the *Empire* stigmatized as being manufactured of whole cloth, and called upon the *Times* to prove or withdraw it. After a delay of several weeks spent in trying to fortify its position by an accumulation of facts (?), the *Times* reproduces what only three of "the weekly newspapers" say, and in neither of which do any of the manufacturers whose names appeared in the *Empire's* list, state that they are in favor of having Canada abandon the National Policy and substitute Commercial Union in the place thereof. The Dufferin *Advertiser* mentions the name of one manufacturer doing business in Alton, Ont., who, it says, is not opposed to Commercial Union, but the statement was not authorized by the gentleman whose name it used. The Mitchell *Recorder* mentions the names of two manufacturers of that town, one of whom, it says: "We know to be quite in favor of Commercial Union," although the gentleman, as is well known, has declared against it; and the other has told the *Advertiser* man that "he could hold his own against the American woolen manufacturers at home and beat them in their own market;" all of which may be true, but which does not say that this well-fixed Canadian manufacturer was at all in favor of Commercial Union. The Brantford *Expositor*, as quoted by the *Times*, devotes a long article—not in showing that the *Empire* had included in its list the names of any Brantford manufacturers who were in favor of Commercial Union, but in denouncing and belittling some of those whose names were given as against

it, the article verging so closely upon blackguardism and libel as to preclude its reproduction here.

And this is the extent to which the weekly newspapers have been kept busy printing the statements of prominent manufacturers denying the right of the *Empire* to class them as opposed to Commercial Union, as alleged by the Hamilton *Times*. Not one authoratative denial—not one of the manufacturers whose names are given in the *Empire* arising to state over his own signature that he is in favor of Commercial Union. Not one.

**CANADIAN FOREIGN TRADE.**

THE attention of Canadian manufacturers generally, and those of Ontario especially, is directed to the following letter which explains itself. Never before in the history of Ontario has such a thoroughly organized scheme been put on foot by which our manufacturers might make experimental shipments of their products to South American countries on such favorable terms, through the hands of such perfectly reliable agents, and at such small cost; and if they desire to extend their business in that direction they should not fail to avail themselves of the opportunity now offered:—

St. JOHN, N.B., Feb. 22nd, 1888.

FREDERICK NICHOLLS, Esq., Secretary Canadian Manufacturer's Association, Toronto:

DEAR SIR,—As acting agents of the St. John Forwarding and Trade Promoting Association, we have appealed to the manufacturers and producers of Canada, in *re* dispatching a vessel from this port at an early date for Buenos Ayres in connection with the Government Commissioner's effort to further extend Canadian trade with that enterprising country. We have already received responses from all parts of Canada, and some from your flourishing city, but not to the extent that we might have anticipated.

Our Association are doing this work cheerfully and without any remuneration, and are deeply impressed with its importance in the interests of our common country. We think the time has arrived for Canada to recognize her own maritime ports, instead of those of a foreign country, and we specially appeal to your Association to co-operate with us. We as a firm refer you to Messrs. Dun, Wiman & Co.'s agency, or to any of the banks of Montreal, Nova Scotia, or New Brunswick, as to our reliability in carrying out anything we may undertake. We are doing this work for our Association without any remuneration, or we would not have appealed to the press to support us, if we had hopes of personal gains.

Yours very truly,

GEO. ROBERTSON & Co.

**CANADIAN MINES AND MINING.**

At a meeting of the Geological and Mining Section of the Canadian Institute, held in this city last week, Mr. W. Hamilton Merritt, president of the Institute, read a paper in which the following totals of the output of Canadian mines during 1887 were given.

Coal, tons.....	1,935,273
Gold, dollars.....	1,200,000
Gypsum, tons.....	163,975



Iron ore, tons.....	73,347
Manganese ore, tons.....	1,586
Copper ore, tons.....	5,267
Silver, dollars.....	214,937
Salt, tons.....	65,800
Petroleum, crude, bbls.....	768,333
Phosphates, tons.....	21,733
Asbestos, tons.....	4,500
Mica, lbs.....	30,000
Antimony ore, tons.....	174
Pyrites, tons.....	35,000
Plumbago, cwt.....	7,180
Barytes, tons.....	3,000

Sand and gravel, building stone and marble, grindstones, lime, granite, serpentines, slate, flagstones, bricks, tiles, and miscellaneous clay products, say \$2,000,000. Exports of product of the mines for 1887:—To the United Kingdom, \$477,722; to the United States, \$3,085,431; to all other countries, \$246,806; total, \$3,805,959. The total export of the product of the mine for 1887, as given by the Trade and Navigation returns, was a little short of that recorded in 1886. In the aggregate the production of mineral did not seem to have increased materially, notwithstanding that the output of coal, iron, salt and petroleum was large; but while the quantity mined in one or two products may have fallen off temporarily, yet the result of the past year's work showed that the mining at large had been persistently continued in every department, and that prospective and preliminary development has made enormous headway, particularly in the Rocky Mountains and Selkirk, and in the Georgian Bay and Lake Superior districts.

#### EDITORIAL NOTES.

It will go thundering down the aisles of time as the "Tupper Treaty."

SENATOR SHERMAN says that New England alone consumes far more of the products of the Western farmers than all of Europe.

ONE of the great necessities of Canadian farming is a machine that will pull flax as satisfactorily as it can be done by hand. A fortune awaits the man who invents the machine.

STEEL rails are worth about \$21 per ton in English mills, and it costs about \$2 per ton to lay them down in United States ports, where the duty is \$17 per ton. Steel rails at American mills are worth about \$32 per ton. See the point?

MARY had a little lamb, its fleece was white as snow, but Grover in his message said that little lamb must go. And so he tried to drive it out, but still it lingers near, and threatens to make Grover go within another year.

THE milling interest is one of the largest in the United States, and yet the industrious hen leads the honest miller. At least, statisticians say that the people of that country pay more for eggs than for flour. People who keep market books are continually surprised by just such revelations.

More than a year ago the boxmakers employed in Maxwell Bros. box factory, in Chicago, quit work because a box nailing machine was introduced into the works. Some of the strikers subsequently started a co-operative box factory of their own, and now, according to the *Woodworker*, the very same box nailing machine is being used in it.

THE National Association of Stove Manufacturers of the United States held their annual meeting in Cincinnati, O., beginning February 1, the proceedings of which were recorded from day to day in the *Daily American Artisan*, of Chicago, which scooped all its competitors by issuing a daily edition in Cincinnati during the sitting of the convention.

HENRY GEORGE preached the theory to the people that land should be assessed at its real value. The people to whom he preached have accepted Mr. George's theory to the extent of assessing him at his real value; and the assessment discovers that both he and his theory are worth just about as much and no more than the land over which the Atlantic cables are laid.

THERE are not yet a sufficient number of establishments in Canada for the manufacture of railway freight cars, passenger coaches and locomotives to meet the demands of business, and many orders are being placed abroad. The excellence of these articles made in Canada is equal to the very best made anywhere else, and there is a fine field open here for investments in the direction indicated.

IMMENSE canning establishments are constantly coming into business in all parts of the United States. These give increased impetus to the production of fruits and vegetables in their vicinity, and insures the growers against the loss of their products when the usual consuming markets are not remunerative. Canning is a large and important business in Canada also, but large as it is, it is comparatively in its infancy.

IT is estimated by manufacturers that the consumption of binding twine in Canada last year amounted to not less than 2,600 tons, of which all was made in Canadian mills, except only about forty tons, which came from the United States. The quality of the home-made twine is fully equal to any made anywhere else, and it is sold to consumers at two and a half cents per pound less than the imported article.

MR. R. McCLAIN, of Messrs. J. & J. Taylor, proprietors of the Toronto Safe Works, and manufacturers of all kinds of fire and burglar-proof safes, will take passage for Europe on a steamer that leaves New York to-morrow. He goes in the interest of his house and will be absent about three months. The rapidly increasing demand for the safes manufactured by this concern, both in Europe and Australia, necessitates the personal attention of a member of the firm in Europe.

THE output of the Disston Saw Works at Philadelphia, last year included 40,000 circular saws, 1,400,000 hand saws, 173,

000 long mill, mulay and gang saws, 3,000,000 files, 60,000 brick trowels, and other products in similar proportion. These articles are the equal of any made in the world; and these works are only one of many similar establishments in the United States, which have been built up under a protective tariff. Given an equal chance, Canadian saw manufacturers will do equally well for Canada.

WHEN the bonusing craze was in its most virulent and aggressive form, this was the first journal in the country to denounce the system and to demand a halt. Time and again we pointed out the inevitable evil and injustice resulting from it, and for a long while we fought it single handed and alone. The correctness of our views regarding bonusing is now being endorsed in all directions, and it is more than probable that in consequence of the agitation the Ontario Legislature will repeal the clauses of the Municipal Act which enables municipalities to grant such bonuses. The bonus must go.

It is reported that, in view of the increasing attempts to defraud the Customs, the Dominion Government intends publishing a black list of a large number of Yankee exporters who have been detected supplying false invoices to their Canadian customers for Customs purposes. The list, it is said, will contain the names of some of the largest exporting houses in the United States. This report may or may not be true, but if the Government intend to publish such a list it would be incomplete if it did not also contain the names of the numerous patriotic Canadians who counsel, aid and abet their Yankee friends in defrauding the revenue.

It is estimated that in the State of Maryland there is invested at least \$16,000,000 in the canning industry, and that one-third of the population is in one way or another dependent upon that industry. In the whole United States the capital invested in canning, including meats, is probably over \$90,000,000. The heaviest packer of corn cans 125,000 cases a year, and of tomatoes, 150,000 cases, each case containing twenty-four tins. The demand for canned goods is principally from the West, where the severity of climate does not permit of the vegetables being raised advantageously. The mining and lumber districts are heavy consumers.

WE gladly lend such assistance as lays in our power to further the objects of the Forwarding and Trade Promoting Association of St. John, N.B., as set forth in the letter of Messrs. George Robertson & Co., to the secretary of the Canadian Manufacturers' Association, printed in another page of this journal, by calling attention to the matter, and by urging all manufacturers of suitable goods who desire a foreign market for their surplus products, or who wish in any way to identify themselves with a movement for the extension of the trade of the country, to take advantage of the opportunity now afforded.

A MEETING of tariff protectionists was held recently in Boston, which was addressed, among others, by Mr. John F. Scanlan. Mr. John Jarrett, of Pittsburg, the well-known labor

leader had closed his speech and had retired from the stage, when a man in the gallery requested Mr. Jarrett to explain why higher wages were paid mechanics in Australia than in the United States. Mr. Scanlan had by this time advanced to the front of the stage, and promptly answered the question by saying: "Australia is a protective tariff country. She followed the lead of the so called home country until she was nearly stifled, and then, like Canada, she threw off the yoke." This reply was Mr. Scanlan's introduction, and it was greeted with great applause.

THE American Iron and Steel Association has received statistics of the importation of iron and steel and of iron ore into the United States during the past year. The imports of iron and steel in 1887 amounted to 1,783,251 gross tons, against 1,098,564 tons in 1886. The imports of iron ore in 1887 amounted to 1,194,301 gross tons, against 1,039,443 tons in 1886. The total value of imports of iron and steel, excluding iron ore, and including machinery, cutlery and fire arms and similar products, the weight of which is given, in the twelve months ended December 31st., 1887, was \$56,420,540, against \$41,630,779 in the corresponding period of 1886. The value of the imports on iron ore in the year 1887 was \$2,206,958, and in 1886 it was \$1,912,437.

THE Industrial League, of Philadelphia, don't propose to let the existing American tariff go by default if a liberal gratuitous dissemination of tariff tracts for the enlightenment of the people will prevent it. The League is sending out such literature, through the office of the American Iron and Steel Association, at the rate of about a quarter of a million tracts a month, in acceptance of President Cleveland's challenge for a general discussion of the merits of the Protective and Free Trade policies now being so thoroughly discussed, and one of which will undoubtedly be chosen at the forthcoming general election next November. Canadian manufacturers, and all others interested in maintaining and perpetuating our National Policy, should take a lesson from our protective neighbors.

THERE is probably no place in the United States where market gardening and farming pays better than in and about Pittsburg, Pa., where the largest iron manufacturing industries of the country are concentrated. Crops in that section were not very abundant last summer, and all sorts of "truck" are commanding exalted prices, so much so that potatoes, cabbage, etc., are being imported in immense quantities from Europe, ordinary size cabbage selling readily at twenty-five cents each—five times the usual price. The question presents itself, "If Free Trade should prevail in the United States, and these immense manufacturing industries cease to exist, would the market gardeners of Pittsburg get anything at all for their products?"

At a recent meeting of the Sheffield, Eng., Chamber of Commerce, tariff protection as a remedy for the prevailing depression in English manufacturing industries was strongly advocated. Mr. F. Brittain, one of the most prominent manufacturers in that city, said he had frequently at the annual meetings of the Chamber expressed his convictions that the

depression was caused by matters of permanency, and was not merely a temporary misfortune. Twelve years ago a great part of British foreign trade was being transferred to other countries; that the world was buying as many manufactured goods now as then, but that England was not supplying them. This trade had been taken away from England "owing to causes which need not be mentioned." England had been flooded with foreign made merchandise which had resulted in an enormous loss to home manufacturers.

At the recent banquet of the Merchants and Manufacturers' Association, at Baltimore, Mr. Butterworth, who was an invited guest, in advocating Commercial Union said:—"We manufacture only to sell, and our purpose is to find a market in which to sell." He advocated Free Trade with Canada, but claimed that Protection had made the United States the greatest manufacturing country in the world. Senator Vance attacked Mr. Butterworth's arguments, and exposing the animus of the Commercial Unionists, said:—"There will always be people who endeavor to secure the enactment of laws that will give them a legal advantage of their neighbors." Senator Vance seems to be of the opinion that if unrestricted Reciprocity or Free Trade between Canada and the United States is desirable, it should be brought about—not through special legislation, but by the acceptance of Free Trade generally in which all nations might participate.

AMERICAN Protectionists are sending out tariff tracts in almost countless profusion all over the country, with a view to enlightening the people on the subjects discussed in them, in anticipation of the Presidential election, which occurs on November 5th next. A series of six tracts, which are being sent out by the Industrial League, of Philadelphia, discuss:—"The Farmer and the Tariff," an address delivered before the recent Farmers' Congress in Chicago; "The Western View of the Tariff," a paper recently published in the *Forum*; "How Protection Benefits Farmers and Mechanics;" "Reduction of Internal Taxes;" "European Wages;" and "Producers and Consumers," a series of statistical statements proving the benefits of Protection to consumers as well as producers. These are all able and unanswerable arguments, and indicate some of the lines on which the great battle for and against Protection is now being fought in the United States.

OPPONENTS of the National Policy tell us that Commercial Union would be the panacea for Canadian ills, and that if we were blessed with it all articles of iron and steel would be greatly reduced in price. It cannot but be admitted that the iron and steel industries of the United States have grown to immense proportions under Protection, and that without Protection they would have remained small and inconsequential; and from this fact we may fairly conclude that if the iron and steel industries of Canada are ever to assume relative importance it must be through the operation of similar laws. The United States duty on pig iron is 50 per cent. greater than the Canadian duty; and great as the production of the article is in that country, during the year 1887 the importations of it into

the United States amounted to 467,000 gross tons. Why should we pay \$6 a ton duty on pig iron under Commercial Union with the United States, when we can now get what we want from Great Britain at \$4 per ton duty?

SPEAKING of the radiation of industry from centers where important works are established, the Baltimore *American* calls attention to the fact regarding two coke furnaces now nearing completion at Anniston, Ala., and where four charcoal furnaces are already in successful operation. It says:—"These furnaces will require weekly, in order to make 2,200 tons of pig iron 5,500 tons of ore, 2,800 tons of coke, and 1,400 tons of limestone. This weekly business is calculated to be equal to 100 carloads per day, brought into a small town. Hundreds of men will be employed in mining ore; digging coal, preparing coke, making iron, and managing the additional railway trains required to feed these furnaces and transport their product. This means the distribution of many thousands of dollars in wages. It means population, house building, prosperity to all trades and professions. It means a market to the neighboring farmer for everything he can raise by diversified agriculture. It means that around these great furnaces smaller industries will spring up, and they in turn create thrift and wealth. There is another meaning in such enterprises. The practical understanding of and belief in Protection are inevitably established over a considerable area where Free Trade once held benighted sway.

THE annual report of the Ontario Minister of Education calls attention to the remarkable disparity between the salaries paid to male and female teachers in this province. The salaries paid in country schools average to male teachers \$400 a year, and to the females \$270. In towns the respective salaries are \$617 and \$288; and in cities, \$794 and \$401. When it is remembered that these teachers must of necessity be well educated and possess other requisite qualifications, the salaries paid them are ridiculously small and entirely inadequate. It is noticeable that female teachers are paid but little more than half as much as male teachers are paid, although in most cases they perform an equal amount of work and bear quite as much responsibility; while, as the Minister says, in certain grades of schools, female teachers are more successful than male teachers. Teaching is an honorable and responsible occupation, and there are thousands more of qualified applicants for teachers' certificates than there are situations to be filled, owing to which fact, it would seem, school trustees, instead of paying adequate salaries, avail themselves of the necessities of applicants, and award the situations to the lowest bidders.

THIS journal recently took occasion to criticize the action of Mr. Freed, of Hamilton, as a member of the Labor Commission, in that while the Commission was in session in Hamilton it failed to take any notice whatever of the fact that the labor union there had so persecuted some poor laboring bricklayers because they were non-union men, as to cause them and their families intense suffering. The facts in these cases have been published from time to time in the *Hamilton Spectator*, of

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which Mr. Freed is the editor; and Mr. Freed, the Labor Commissioner, therefore certainly knew of them. Our editorial regarding the matter was brought to Mr. Freed's attention through the comments thereon in another journal, to which he makes reply in the *Spectator* to the effect that he has been in "blissful ignorance" regarding the matter, and that he "dislikes worry and loss of sleep." It is not quite clear just what Mr. Freed means by this latter expression, but the object of his appointment on the Commission was to investigate just such circumstances as those to which his special attention was called, but concerning which he "dislikes worry." We presume Mr. Freed draws his salary as commissioner with great punctuality.

THAT staunch champion of American manufacturing industries, the late Henry C. Carey, of Philadelphia, in a series of letters written by him to Hon. Schuyler Colfax, who was at the time Speaker of the United States House of Representatives, demonstrated the proposition that in that country the question of maintaining a protective tariff was especially the farmers' question; that without a large development of the mining and manufacturing industries spread over the country as would bring a non agricultural population into agricultural districts, the people would degenerate into mere producers of bulky raw materials. Without such a diversification of employments, giving sympathy and solidity to productive pursuits, there would be no home market for cereals and other great agricultural staples, as every farmer would supply his own wants. Whereas mining and manufacturing reduce the number of farmers and give to the diminished number home markets for at least 90 per cent. of their staples, exclusive of cotton, and also make markets for milk, butter, cheese, poultry, eggs, veal, lamb, fruits, vegetables and other matter which pay well when sold in a near market, but which will not pay for or even bear distant transportation. These facts apply with equal force to Canada.

THE recent decision in the United States Court of Iowa affecting the validity of what are known as the barb wire patents, owned by the Washburn & Moen Manufacturing Company, of Worcester, Mass., does not seem to have completely assured the licensed manufacturers of that company of the final result of the question at issue, nor of the Washburn & Moen people themselves. There was a large meeting of these licensees held in St. Louis, February 15, at which several of the owners of the patents were present, which resulted in what will be considered a truce. Heretofore of late the licensees have been paying the licensors a royalty of fifteen cents per hundred pounds for all the barb wire manufactured by them; but at the St. Louis meeting a reduction of the royalty to five cents per hundred pounds was agreed to for a term, extending from January 1 last for six months. No conditions were required or imposed other than the payment of the five cents royalty, and it was understood that the future action of all concerned would depend upon the outcome of the pending litigation. Only one licensee refused to enter into the agreement, and they have transferred their barb wire manufacturing business to another concern, who will operate without license. Meantime the barb wire pool, or trust, otherwise known as the American Barb Wire Company, manage to control the output

of the article and to maintain prices, which are now quoted at distributing points at \$3.20 per hundred pounds for painted, and \$3.90 for galvanized, in car load lots. We understand that there are but two known "moonshine" or unlicensed barb wire factories in operation in the United States—both in St. Louis—and these quote prices five cents per hundred pounds below the above quotations.

*Wide Awake* is one of the most valued publications that comes to this office, and we hope that all of our readers have the opportunity of enjoying its monthly visits. We say *all*, because although the *MANUFACTURER* circulates chiefly among business men who find time precious, they will feel all the better after having read a magazine which, while intended primarily for the edification of young people, always contains information that is valuable to those of maturer years. The March number maintains the general high reputation for excellence long since achieved; and parents could not do better than to have it made a regular monthly visitor to their children. The D. Lothrop Co., Boston, Mass: \$2.40 a year.

SOME time ago we mentioned the fact that Mr. G. M. Fairchild, jr., vice-president of the Canadian Club of New York, was preparing a volume which would consist of a number of papers or lectures which had been read before the Club relating to Canadian persons, places and things, and which would be called "Canadian Leaves." The book has been published, and a copy of it is before us—a really handsome volume, beautifully illustrated by Mr. Thomas Willing, A. R. C. A. The essayists are Prof. Goldwin Smith, the Rev. Dr. Eccleston, the Rev. Principal Grant, the Hon. B. Butterworth, Prof. Roberts, Dr. Geo. Stewart, Mr. Erastus Wiman, and Messrs. Edmund Collins, J. W. Bengough, J. M. LeMoine, F. R. S. C., John McDougall, and John A. Fraser, R. C. A. Mr. Fairchild gives a sketch of the club which was founded on the 30th of April, 1885, and formally opened on the following Dominion day, Mr. Wiman being its first president. The subjects of the paper comprise our early and later history, our resources, scenery, romance, humor, literature, manufactures, commerce and national aspirations, and the treatment of them does us no discredit.

THE Customs Department at Ottawa made the following Departmental decisions in January:—Artotype engravings, 20 per cent.; Alhambra colored cotton quilts, colors woven, 25; bagatelle balls, when imported separately, 35; billiard balls, paper mache, when imported separately, 35; billiard balls, bone or ivory, when imported separately, 30; billiard balls, celluloid, when imported separately, 20; counterpanes or quilts, white, with woven colored border, 25; carpenters' tool baskets, 10c. each and 30 per cent.; composition buttons, 25; cocoanut pudding preparation, a mixture of cocoanut, rice, tapioca, etc., etc.; 8c. per lb.; cuticura resolvent in dry powder, 25 per cent.; coppered iron or steel wire, 15 gauge or coarser, 30; copper sheets or plates, 1/2 inch thick, free; corn flour—when found to contain all the properties of the corn or corn meal, less the bran and other parts removable by bolting only, and not capable of being used as starch without further change, 20 per cent.; *Dental Journal*, illustrated advertising periodical, 6c. lb. and 20 per cent.; earthenware door knobs, 35; electric light apparatus—parts of, when imported separately, and which cannot be used for any other purpose, i.e., lamps, carbons, etc., 25; fire brick for building or repairing furnace for gas works, free; fruit tree seedlings, grafted, irrespective of age or size, to be rated according to their kind under items Nos. 473 to 479; gluten flour and special diabetic food, 20 per cent.; hats and caps, of linen or cotton cloth, 25; harness for cotton looms, manufactures of twine, 25; homeopathic alcohol, \$1.75 per proof gal.; homeopathic tinctures, \$2 per imp. gal. and 30 per cent.; leessive phenix, washing preparation, as soap powder, 3c. lb.; lap dusters, of cotton, with woven colored stripes or borders, but not embroidered, 25 per cent.; lap dusters, entirely of linen, plain, 20; patterns, of iron or brass, 30; pressed paper, in sheets, 35; plant bed muslin, a low grade of unbleached cotton, 1c. s. y. and 15 per cent.; raw hide pickers for cotton looms, 20 per cent.; sapolio, 3c. lb.; sugar disks and globules, 1 1/2c. lb. and 35 per cent.; sugar of milk, 20 per cent.; sugar of milk tablets, not further sweetened, 20; sappato gum, a crude mastic gum, 20; steel discs for harpooners, 35; "Traveller's Official Guide of the Railway and Steam Navigation Lines of the United States and Canada," 6c. lb. and 20 per cent.; wheat meal, as wheat flour, 50c. bbl.; waggon and cart bushes, 35 per cent.; watch keys, steel or brass, 30; Yaggy's anatomical study, 6c. lb. and 20 per cent.

# Manufacturing.

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

MR. JOHN READHEAD, St. Anns, Ont., near Lowville, will build a saw mill this spring.

MR. A. BIOT, Montreal, will build a glass works at Ottawa, if an inducing bonus is offered him to do so.

THE Galt Knitting Company, Galt, Ont., will make large additions to their factory the coming spring.

MR. W. H. BLACKBURN, Middleville, Ont., near Almonte, is building a cheese factory for the dairymen of that vicinity.

A COMPANY is being formed at Hamilton, Ont., to bore for natural gas in that city, and will go as deep as 2,200 feet if necessary to find it.

THE Lindsay-Seldon Furniture Company, Peterboro', Ont., have moved into their new factory. The building is 80 x 40 feet, four stories high.

THE Buckingham Brick and Tile Co., Montreal, have been incorporated with \$30,000 capital stock for the manufacture of brick, drain tile, etc.

THE Essex Centre Handle Works, Essex Centre, Ont., have recently been making shipments of considerable quantities of handles to England.

MR. JOSEPH KIDD, JR., has purchased the Scobie Salt Works in Goderich, Ont., and will run them under the name of the Dominion Salt Works.

MR. CHARLES RUSAW, living on a farm near Dummer, Ont., has discovered petroleum on his land and will organize a company to make explorations.

MESSRS. W. H. VEYSEY & SON, of Waterboro', N.B., will build a saw mill this spring at the thoroughfare between Grand and North Lakes, in that province.

MR. P. JACOBI, late of Toronto, has purchased the cordovan tannery at Acton, Ont., and will operate the same under the management of Mr. Wm. Smith.

MR. W. E. ADAMS, Paris, Ont., has decided not to leave that place, but will immediately build a new factory and commence the manufacture of knitted goods.

THE Preston Carriage Company, Preston, Ont., have acquired the site of the old woolen factory in that town on which they will erect their proposed carriage works.

MR. K. J. MILLAR, of Messrs. Millar & Sons, manufacturers of agricultural implements, was in St. Catharines a few days ago hunting a bonus. He wants to move.

MESSRS. GOLDIE & McCULLOCH, Galt, Ont., have recently furnished and put in operation a 125 barrel a day roller process flouring mill for parties at Comber, Ont.

TILBURY CENTER, Ont., near Essex, is offering inducements for the establishment of a flax mill. The surrounding country, it is said, is well adapted for flax-growing.

MR. S. BADHAM, Pakenham, Ont., is about concluding a purchase of Messrs. Gillies Bros. grist mill at that place and will convert it into a roller process flouring mill.

MR. JOHN McCONNELL, carriage manufacturer, Guelph, Ont., is closing out his business preparatory to going to Australia, where he will resume his manufacturing business.

THE Teeswater Milling and Manufacturing Company, Teeswater, Ont., have renewed the lease of their property at that place to Messrs. Hewson Bros., for a term of five years.

THE Owen Lumber Company, Sherbrooke, Que., have acquired a tract of 84,000 acres of land near that place, and will erect mills for the conversion of the timber upon it into lumber.

MR. WALTER BEATTY, Pembroke, Ont., whose sash and door factory was recently destroyed by fire, has refused the offer of a \$3,000 bonus to assist him in rebuilding the same.

MESSRS. PETER SMITH & Co., Robinson Bury, near Sherbrooke, Que., have started a factory for the manufacture of every description of cemetery work, from all kinds of marble and granite.

THE Mowat Manufacturing Company, late of Toronto, are negotiating for the purchase of the Paterson foundry property at Oshawa, Ont., proposing to engage in the manufacture of mowers.

MESSRS. EVANS BROS. & LITTLER, Ingersoll, piano manufacturers, have offered to compromise with their creditors. This is the firm which received a bonus from Ingersoll to remove from London.

MR. G. B. ST. JOHN, of the St. John Plow Company, Kalamazoo, Mich., was in Hamilton, Ont., a few days ago, looking for a suitable location at which to establish a Canadian branch of their works.

MR. H. S. TOFFEY, Fallbrook, Ont., near Almonte, is building a cheese box factory, which he will have in operation in a few days, and which will enable him to supply the demand of that section.

MESSRS. J. & J. TAYLOR, Toronto, manufacturers of bank vaults, burglar and fire proof safes, etc., recently supplied the Bank of British Columbia, at Vancouver, with one of their excellent safes.

MESSRS. C. WILSON & SON, Toronto, manufacturers of scales, is constructing a caliper scales of special design for the Gooderham & Worts Co., Toronto, distillers, intended for weighing spirit barrels.

MR. JAMES HAMILTON, Lindsay, Ont., a few days ago shipped a carload of sleighs, wagons, buckboards and buggies, manufactured by him, to Brandon, Man., in which section he is building up a fine trade.

ALD. BOWLEY's action at the city council in regard to discouragement of bonuses, is generally commended on the streets to-day. Brantford expended \$70,000 on bonuses last year.—*Brantford Courier*.

MR. WOON, late secretary of the Joseph Hall Machine Works, Oshawa, Ont., has bought all the patterns and the partly finished materials of that concern, and will soon again put the works into operation.

THE output of coal at the Nanaimo, B.C., collieries during 1887, aggregated 436,954 tons, of which there was exported to California, 434,949 tons; to other countries, 9,390 tons; home consumption, 99,215 tons.

MESSRS. MCSLOY BROS., St. Catharines, Ont., who have heretofore carried on an extensive bakery business, have sold out the same, and will go more extensively than heretofore into the manufacture of hair cloth.

MESSRS. E. H. BARNES & Co., box shoo manufacturers, New York, will establish a large branch factory at Ottawa, provided they are guaranteed exemption from taxation for ten years. They will probably get it.

RIDGETOWN, Ont., thinks that there is plenty of natural gas in the earth beneath the place, and wants some of it bad enough to bore wells will be sunk.

THE Dodge Wood Split Pulley Co., Toronto, have recently put in two rope power transmissions of 75 horse power each, and a series of Dodge wood split pulleys into the Grand Trunk Railroad elevator at Point Edward, Ont.

MESSRS. M. MACFARLANE, E. W. Farwell and H. E. Macfarlane have become the owners of the grist mill at Sherbrooke, Que., and will enlarge its capacity by the addition of roller process machinery for manufacturing flour.

THE firm of Pillow, Hersey & Co., Montreal, has been incorporated as a joint stock company, with a capital of \$800,000. The concern will be known in the future as "The Pillow & Hersey Manufacturing Company."

THE Cedar Dale Works are getting in several carloads of white ash from Ohio. They have also put up one of the best lathes in use and are turning out handles of a quality that is not equalled in Canada.—*Oshawa Vindicator*.

MESSRS. A. HARRIS, SON & Co., Brantford Ont., manufacturers

# TO USERS OF LEATHER BELTING

## SOME PERTINENT SUGGESTIONS.

**FIRST** { We tan our own Leather especially for Belting.  
 We have increased our trade threefold during the last few years.  
 We sell our Belting according to a list that is 25% to 30% lower than the American list, which some sell by in Canada.

**BUT** { We have heard some consumers who are N.P. manufacturers say that they cannot get good Belting made in Canada.

**NOW** { **WE HAVE CUSTOMERS** { To whom we have sold 3,000 to 40,000 Dollars worth of Belting.  
 AMONG THE { One firm alone buying from us last year to the amount of \$10,000 for their Mill.  
**BEST MILLS IN CANADA.**

**CAN YOU** { **HARMONIZE THESE FACTS WITH** { 1st. That our PRICES are RIGHT?  
 ANY OTHER THEORY THAN { 2nd. That our LEATHER is GOOD?  
 { 3rd. That our BELTS are WELL MADE?

**IF NOT** { Send us a Sample Order and see if we cannot please you.

**ROBIN & SADLER,**  
 MANUFACTURERS,

129 Bay St., TORONTO.

Notre Dame St., MONTREAL.

of agricultural implements, are making binders at the rate of thirty-two per diem for the spring trade. Already there is an advance sale for nearly one thousand.

MR. ANDREW CRUICKSHANKS, North Coaticook, Que., has acquired what used to be the batten factory at that place, and having put it in thorough order will engage in the manufacture of a fine variety of knit goods for ladies' underwear.

THE Osborne-Killey Manufacturing Co., Hamilton, Ont., who recently built and put in operation a new steam pumping engine for the water works of that city, have begun the construction of a duplicate engine for the same works.

A NEW saw mill will probably be erected where the Manitoba and Northwestern crosses Shirt Tail creek, four miles from Birtle, Man. There is a mill at present at Birtle, but the lumber has to be hauled a mile up a steep grade to the railway station.

MESSRS. CAMPBELL, STEVENS & Co., who own large flour mills at Chatham and St. Thomas, are considering the matter of doubling the capacity of their St. Thomas mill, making it six hundred barrels a day, instead of three hundred as at present.

MESSRS. CHAS. F. TODD & SON, Milltown, N.B., are preparing to rebuild their lumber mills on the same site of their mills recently burned. Work will be rapidly pushed as soon as the foundation is laid, that they may be ready for operating next season.

THE Cochrane Milling Company, Hamilton, Ont., manufacturers of the new Cochrane patent flour milling machinery, and whose extensive works are at Dundas, Ont., are in receipt of enquiries from the Cape of Good Hope, South Africa, concerning their machinery.

THE Anthes Manufacturing Company, Berlin, Ont., have been incorporated with \$25,000 capital stock. This is an enlargement and extension of the business of Mr. J. S. Anthes, proprietor of the Berlin Novelty Works, manufacturer of willow and rattan ware, etc.

THE Joggins' timber ship has not yet been begun, but the timber is being placed on the ground as rapidly as possible, and in a few

days the "keel" will be laid. It is expected that the "ship" will be ready for launching about the 10th of May.—St. John (N.B.) *Globe*.

THE company who own the quarries at Madoc, Ont., and in which Messrs. P. W. Ellis & Co., of this city, are largely interested, are pushing work with great vigor and expected to begin hoisting out blocks of marble this week. This is claimed to be the finest marble quarry in Canada.

THERE was quite a large meeting of manufacturers of brass goods held in Toronto a few days ago the proceedings of which were kept very quiet; but it is understood the object was to fix a uniform and equalized scale of prices throughout the Dominion, particularly upon plumbers' supplies.

THE St. Croix Soap Manufacturing Company, St. Stephen, N.B., began business three years ago in a building 50x35 feet, since which time their works have been enlarged four times, their power now being supplied from a 70-horse power steel boiler and a 20-horse power steam engine.

THE oil wells recently sunk at Comber, Ont., near Essex, have proved a great success, pumping going on steadily and a fair quantity of excellent oil is being brought up. Another well which is being sunk has reached a depth of 800 feet, with strong indications of oil in paying quantities.

MR. GEORGE ROBERTSON, of the Trade Promoting Co., St. John, N.B., is issuing circulars to manufacturers and others producers of Canada asking for consignments of goods to be forwarded as a sample cargo to the Argentine Republic, in connection with the mission of Mr. Simeon Jones.

MR. R. L. PATERSON, Toronto, has been awarded the contract for furnishing 85,000 pounds of new type, about two-thirds of the whole quantity required for the use of the new Dominion Bureau of Printing, the Dominion Type Foundry, of Montreal, being awarded the contract for the other third.

MR. STEPHEN COLLINS, St. John, N.B., whose link-bending machine is alluded to elsewhere in these pages, is now engaged in per-



C. C. CLEVELAND.

**J. L. GOODHUE & CO.**

G. F. CLEVELAND.

MANUFACTURERS OF

**LEATHER BELTING**

Canadian Leather,

Canadian Made,

Canadian Price List.

Thoroughly Stretched.

Carefully Made.

Rans Straight.

— AND —

**LACE LEATHER,  
DANVILLE, - QUE.**

OUR BELTING IS MADE FROM

**CANADIAN TANNED LEATHER**

Tanned in the most careful manner expressly for Belting in our own Tannery. We warrant it equal to any imported, either American or English, or any made from imported American or English Oak Leather. All widths, single or double, for any duty, Saw Mills, Cotton Mills, Woollen Mills, Electric Light, etc., etc.

**Canadian Manufacturers should use Canadian Belting.**

*Specimens of these goods are to be seen at the Permanent Exhibition of Manufactures, 63 to 69 Front Street West, Toronto.*

fecting a spike machine, which will turn out sixty spikes a minute, already headed and pointed. He will apply for a patent as soon as he has the machine perfected.

MR. STEPHEN COLLINS, St. John, N. B., has invented and patented a link-bending machine, by which about forty links per minute can be manufactured. The contrivance is very simple and does its work effectively and rapidly. Mr. Collins is a machinist employed in the Coldbrook Rolling Mills, St. John.

THE linseed oil works of Messrs. J. & J. Livingstone, Baden, Ont., now have a capacity of manufacturing 300,000 bushels of seed annually. The oil is sold boiled and raw, while the oilcake is either sold whole or ground to flour. This firm own and operate a foundry, a flax mill and a grist mill.

THE town council, of Paris, Ont., have petitioned the Ontario Government to amend the statutes so as to enable the council to acquire and develop the water power on the Grand River, south of the town. The object is to put the water power in such shape as to induce manufacturers to locate here.

MESSRS. BRONSON, WESTON & Co., lumber merchants at the Chaudiere, have just disposed of five million feet of lumber to the Export Lumber Company of Montreal for shipment to South America. The same prices as those received last year were realized. The sale represents upwards of \$70,000.

MR. RICHARDSON, has "struck it rich" at his gas well, Port Colborne, Ont., and everything is working satisfactorily. Already he is heating and lighting his house, running a 40-horse power boiler at his bee-hive factory, and blowing off large quantities of surplus gas at the well. The supply seems unlimited.

CAPT. BOYD SMITH, who owns many phosphate mines in the vicinity of Kingston, Ont., has gone to Europe, and expects to send a large number of miners and their families to settle on his property. He expects to have a large output of fertilizers during next season, as he is putting in improved machinery to assist the miners.

MESSRS. GEO. F. HAWORTH & Co., Toronto, manufacturers of Hoyt's pure oak-tanned leather belting, cut from the solid part of the leather only, display a beautiful cut in their advertising space

in which is represented a main driving belt. The design, which is original, was gotten up by Mr. Haworth, and is registered.

MESSRS. J. S. AINSLIE & Bro., Comber, Ont., manufactured over 2,000,000 barrel staves last summer, and now have at their mills over 2,000,000 feet of logs, and 2,000 cords of elm bolts which they are making into staves and headings. They employ about sixty hands, and about all of their products goes to the English market.

THERE is room in Meaford for many manufacturing works, but there is an excellent opening for a fruit and vegetable canning factory and other works of a kindred nature, and, we have no doubt, if properly approached, the corporation will offer liberal inducements to prospective investors in such directions. — *Meaford Mirror*.

SPECIMENS of mineral from Thomas Storey's mine, in Escott, have been assayed by Government experts, who report traces of gold and silver. The specimens were sent to Ottawa by Mr. Taylor, M.P. It would appear that Mr. Storey has a valuable mine, but he has not quite decided yet what he will do with it. — *Kingston News*.

ALLUSION was recently made in this journal to the fact that Messrs. L. Schepp & Co., of New York, manufacturers of desiccated cocoonut, etc., were seeking a suitable location in Canada to establish a branch of their works. Such a place has been secured in Hamilton, Ont., and the new works will be put into operation immediately.

THE Dominion Dyewood and Chemical Company, 77 Front Street East, Toronto, whose works are at Don Station, near this city, are calling the attention of textile manufacturers and the trade generally, to the indigo extract manufactured by the Collinsee Chemical Company, Paisley, Scotland, and for which they are the sole agents for Canada.

MESSRS. R. FORBES & Co, Hespeler, Ont., proprietors of the Hespeler Woolen Mills, who have been making considerable additions and improvements to their works, and introduced the Dodge system of rope transmission of power, etc., manufactured for them by the Dodge Wood Split Pulley Company, Toronto, have started up their mills.

Messrs. Lennard Sons & Bickford, of the Dundas Knitting Mills, Dundas, Ont., report business good in their line. They are employing twenty more hands now than at this time last year. They regard the present troubles in the wholesale dry goods trade as being rather a blessing than otherwise, as tending to clear out trade robes, as it were.

Messrs. A. Muir & Bros., Port Dalhousie, Ont., own and operate a dry dock which is 265 feet long, 100 feet wide, gates 46 feet wide in the clear, and admits entrance to a draught of 10½ feet of water. If it was necessary, this dock could be lengthened another hundred feet at comparatively small expense. It is operated with water drawn from the Welland Canal.

The Chatham Wagon Company, Chatham, Ont., whose works have been idle for a short while, have started up again with excellent prospects for the coming season. They start with an order for 500 wagons, and expect to build at least 2,000 of these vehicles during the year, besides producing their usual quantity and variety of other goods. This company pay out \$1,000 a week in wages alone.

An association of business men is being formed at Port Colborne, Ont., who will expend about \$5,000 in sinking gas wells at that place, and if gas is found in sufficient quantities, the free use of it, and suitable land for building purposes, free of local taxes for ten years, will be offered any manufacturing concern who will establish works there that will give employment to forty hands.

Mr. W. G. Carson, late manager of the St Croix Soap Manufacturing Company, St. Stephens, N.B., has organized the Carson Manufacturing Company, who have already secured suitable buildings at Halifax, N.S., where they will manufacture soap on a large scale. Mr. Carson's skill as a manufacturer of soap, and his well-known business ability, will no doubt crown his new enterprise with success.

In 1820 Wm. Underwood emigrated from Liverpool to Boston, and started a preserving factory, having acquired the art of pre-

serving food in his native land. In 1835 he imported tomato seed from which to grow tomatoes for catsup. In 1848 he established the first lobster packing factory at Harperswell, Me., and in 1853 he started what is said to be first salmon cannery at Bathurst, N.B. He died in 1864.

The Hamilton Powder and Dominion Cartridge Companies intend offering prizes to the value of \$1,000, to be shot for at a gun club tournament on the Queen's birthday at Montreal. It is said that in addition to Montreal men, the crack shots Bogardus and Carver will probably take part. The tournament is expected to last a week. Several other arms and ammunition makers have signified their intention of offering prizes.

The Nova Scotia Cotton Manufacturing Company, Halifax, N.S., inform us that they have recently made extensive alterations and additions to their works, which enables them to improve certain of the operations upon which the quality of the goods produced by them depends. This company have recently made a change in their Toronto agency, Mr. S. Davison having charge of their business in this city and district.

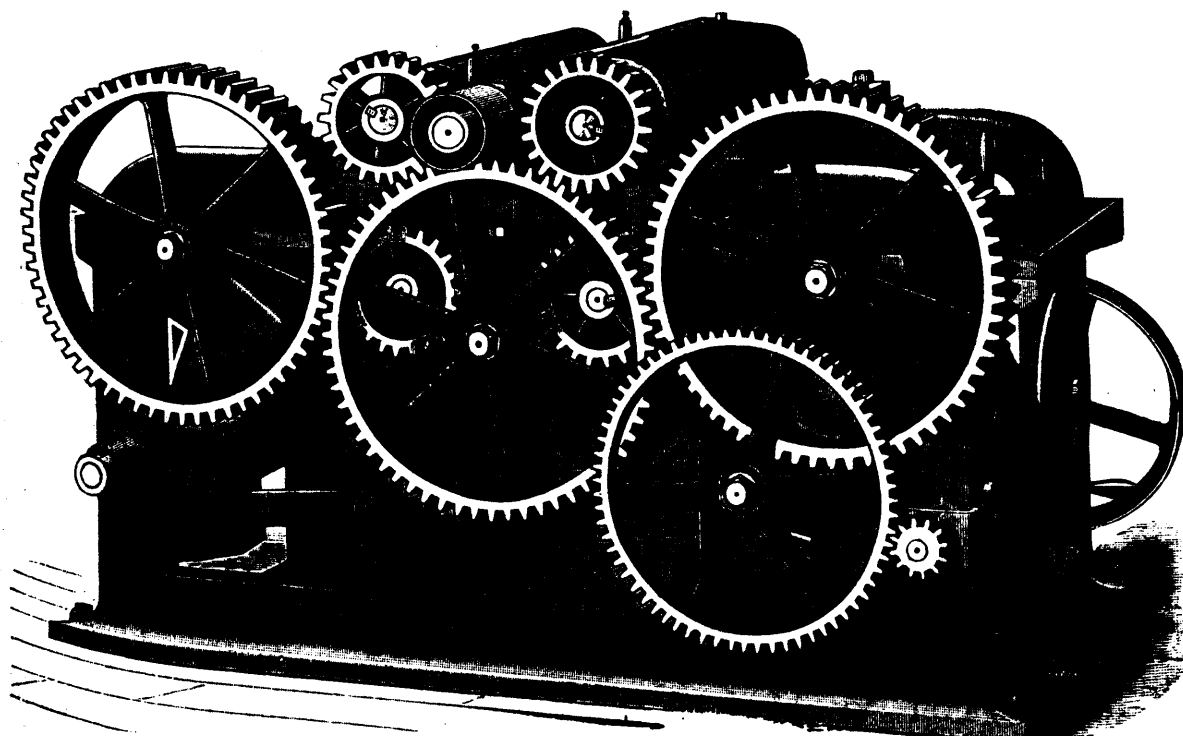
The Imperial Mineral Water Company of Ontario, Hamilton, Ont., commenced business in 1883 with a stock capital of \$10,000, but since then its business has increased to such an extent and is spread over such a wide area, not only in Canada but in the United States, that it is now found expedient to increase the stock capital to \$50,000, and application has been made to that effect. Mr. J. G. Pearson is managing director.

At the recent meeting of the Montreal Rolling Mill Company, held in Montreal, a dividend was declared, making the total dividends for the past year amount to eight per cent. The officers elected for the ensuing year were:—President, Mr. Charles S. Watson; vice-president, Mr. Andrew Allan; directors, Hon. John Hamilton, Messrs. Geo. A. Drummond, H. Montagu Allan, Hugh McLennan and E. C. Clouston.

Canada Tool Works,

# JOHN BERTRAM & SONS

DUNDAS, ONT.



WHITNEY SURFACE, 36 & 30 in. Weight, 4,500 lbs.

Manufacturers  
of  
**Machinists' Tools**  
and  
**Woodworking**  
**Machinery.**

LATHES,  
PLANERS,  
DRILLS,  
MILLING  
MACHINES,  
PUNCHES,  
SHEARS,  
BOLT  
CUTTERS  
SLOTING  
MACHINES,  
MATCHERS  
MOULDERS,  
TENONERS,  
BAND SAWS,  
MORTICERS,  
SAW BENCHES

Locomotive and Car Machinery, Special Machinery, Price List and Photographs on application.

Warerooms: Permanent Exhibition, Toronto; Polson Engine Co., 38 Yonge St.; Machinery Supply Ass'n, Montreal.

MR. R. J. DOYLE, Owen Sound, Ont., has discovered a very valuable deposit of clay with an overlying strata of carbonate of lime in the bed of a small lake a few miles from Owen Sound, recently drained by him. Mr. Doyle proposes to engage at once in the manufacture of Portland cement from this deposit, the carbonate of lime to be made into whiting. A stock company is being formed with sufficient capital to carry on the works.

MR. A. W. HEPBURN, Picton, Ont., has built a marine railway that has capacity to take out of the water any craft that sails the lake. It can accommodate at present any boat up to 200 feet in length, and will be able at any time to be extended, at a small expense, to handle any length up to 300 feet. It is built in the most substantial manner of white oak, at a very large expenditure, and is one of the best marine railways in Canada.

THE Lake of the Woods Milling Co., Keewatin, Ont., who have already built a 150,000 bushel grain elevator to be used in connection with their 1,200 barrel a day flouring mill, have determined to build an additional elevator of 350,000 bushels capacity. The company are getting in some of the machinery for their mill, manufactured for them by Messrs. E. P. Allis & Co., Milwaukee, Wis., but it is not expected to have the mill in operation before May.

At the recent annual meeting of the American Watch Case Company, in Toronto, it was determined to increase the capital stock of the company to \$200,000. The company have recently added about \$2,000 worth of new machinery to their already large plant. Amongst other things is a pair of patent rolls which weigh over two tons. The rollers weighing three hundred pounds apiece, and are calculated to work to the thousandth part of an inch.

MR. W. B. UNDERHILL, of Brantford, proposes to establish a cordage factory at Paris, Ont. The capital invested would be about \$30,000, and twenty-five hands would be employed, providing suitable inducements would be offered in the shape of exemption from taxes and a cash bonus. The council has referred the matter to the finance committee with instructions to report on the advisability of submitting a by-law for a \$5,000 bonus and the exemption.

THE town of Welland offers a loan of \$20,000, without interest equal to a grant of \$800 per annum, and exemption from taxation for ten years, as an inducement to a Morrisburg implement manufacturer to remove to the town. Under this arrangement the municipality will contribute about fifty per cent. of the capital invested in the industry, to say nothing of the exemption.—*Mail*. The concern here alluded to are Messrs. J. F. Millar & Sons.

LAST week the Brantford City Council passed a resolution condemning the bonus system, and appointed a delegation to wait on the Ontario Government to urge the adoption of legislation in accordance with the views of the council. This is a step in the right direction, and it is gratifying to notice that a large majority of our exchanges endorse the views of the Brantford Council, and urge the legislature to stop what has become a great abuse.—*Paris Star-Transcript*.

MESSRS. B. GREENING & Co., proprietors of the Victoria Wire Mills, Hamilton, Ont., present an attractive card in their advertising space in this journal, in which reference is made to some of the goods manufactured by them. Among the articles enumerated are wire cloth, all grades; wire rope, perforated sheet metals, galvanized poultry netting, sofa and chair springs, etc. They are also manufacturers of general wire work, window guards, stable fixtures, railings, sand screens, coal screens, etc.

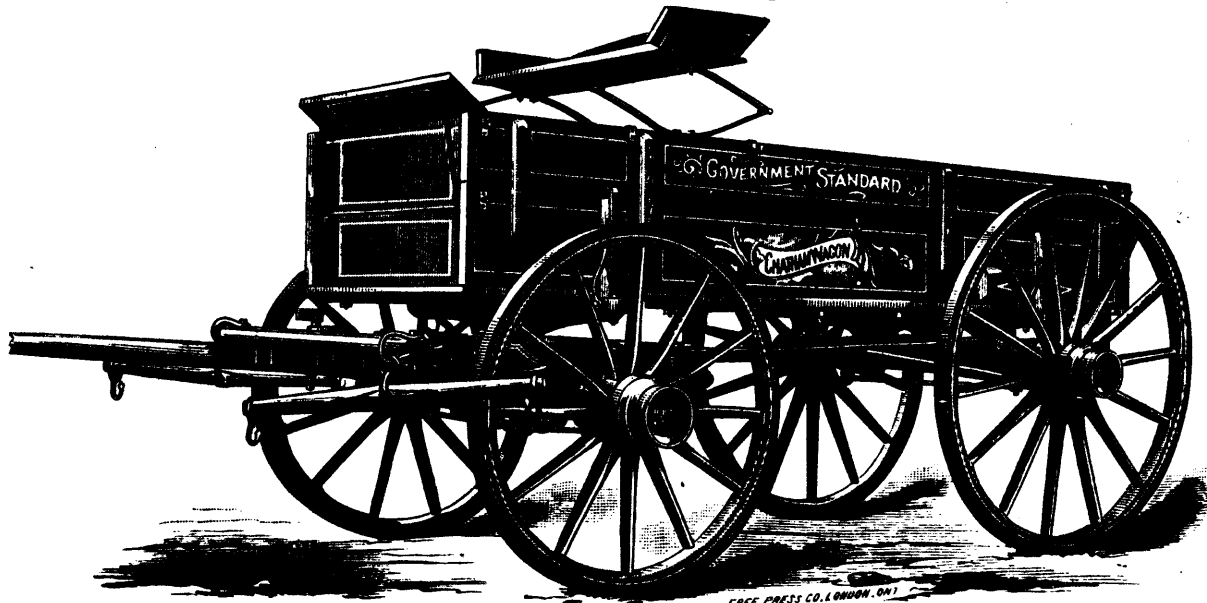
MENTION was recently made in this journal of the immense steel vault being manufactured by Messrs. J. & J. Taylor, Toronto, for the Bank of Commerce, this city. The outside shell of this vault, as large as a small cottage, was hauled through the streets a few days ago from the safe works to the new bank building, somewhat impeding traffic and creating considerable interest. It has been placed in position upon its fire brick foundation, and the work of putting it together will be proceeded with.

MESSRS. A. LOMAS & SON, Sherbrooke, Que., manufacturers of fine woollens, etc., occupy a factory building 140 x 40 feet, four stories high, give employment to sixty hands, and manufacture 300,000 yards of cloth a year. This concern was established in 1842 by the late Mr. Adam Lomas, and consisted of a small custom mill, the products of which were confined to gray Canadian cloth, and blankets.

# THE CHATHAM MANUFACTURING CO. (Ltd.)

MANUFACTURERS OF

HARDWOOD LUMBER,



SHIP PLANK AND

THE CHATHAM WAGON, Of which wagon the above is a faithful cut, and which the Government of the Dominion of Canada has adopted as the STANDARD WAGON.

We simply ask intending purchasers, in their own interests, to send to us for particulars of the Chatham Wagon, or if there is one convenient closely examine it before purchasing any other.

We also make Railway Platform Baggage Trucks, Farm and other Dump Carts, the Celebrated Main Bob Sleigh, the Patent Champion Hay Rack, etc., etc.

CORRESPONDENCE SOLICITED.

CHATHAM MANUFACTURING CO. (LIMITED).

The pattern book of the factory now shows that more than a thousand different designs in products are being made.

Messrs. WM. PARKS & SON, St. John, N.B., proprietors of the New Brunswick Cotton Mills, recently made an experimental consignment of a lot of their products to the island of Bermuda, West Indies, on the ship *Isaac Burpee*, which was sent out by the Trade Promoting Company, of St. John. Mr. Wetmore, who went in the vessel as supercargo, has written to Messrs. Parks reporting that the goods sent were regarded in Bermuda as of a very superior quality, and enclosing an order for a considerable quantity more of them.

SECRETARY SHARP, of the Iowa Mill-Owners' Mutual Fire Insurance Company, frankly confesses that he has a hobby; and that is, the dangerous character of cotton belts for elevating purposes. The fires that may be traced to elevator heads where the belt stops and the pulley keeps on running, form a large percentage of the total; and Mr. Sharp believes, in common with President Nichols, that the cotton belt for elevating purposes is something of a firebug. He would substitute leather or rubber, as neither would be so combustible.

Messrs. J. G. KIDD and Duncan McLaren recently felled a giant oak on the farm of the late G. McLaren, lot No. 20, Beckwith, the extreme length of which was 103 feet; from ground to first limb, 61 ft.; girth, two feet from ground, 11 ft.; girth, fifty feet from ground, 9 ft. It was purchased by the Canada Lumber Company, of Carleton Place, and will be used in repairs in their mills there. The company despatched their foreman with four men and two teams to cut and convey it into town. It is said that the tree cost the firm \$50.—*Renfrew Journal*.

The Hamilton Street Car Company have introduced a unique heating stove into some of their cars. It is the shape of a small furnace and is placed under the centre of the floor, the smoke being carried up in a very small pipe to the top of the car. The furnace is invisible, but if a passenger's feet are cold they can be warmed by placing them on the furnace, which holds about half a peck of hard coal. This miniature furnace can be improved in new cars by concealing the pipe in the woodwork; but the stove, as it is, is a valuable acquisition to a street car during the cold weather.

The total crude gypsum production in Canada in 1886, was about 162,000 tons, nearly all of which was mined in Nova Scotia. The value at the point of production was \$178,742. About 7,000 tons of this gypsum was calcined and manufactured in New Brunswick into about 51,000 barrels plaster of Paris, valued at \$51,000. About half of this was sold in Canada, and the remainder exported to the United States. Compared with 1885, it is estimated that the increase of 1886, in the production of crude gypsum, was about 50,000 tons, Nova Scotia alone adding 36,000 tons to the increase.

Messrs. A. ROBB & SONS, Amherst, N.S., inform us that they have just introduced to the trade a new and elegant parlor stove which they call the "Lansdowne," in compliment to our Governor-General. Regarding it they say that it possesses many new and valuable improvements which makes it one of the very best and most desirable heaters ever made in Canada. They have also recently introduced a box stove of new design, which not only has the top to swing, but also has two boiler holes with a movable centre-piece. Their "New Standard" is a Franklin stove, for which they claim many points of excellence.

Mr. W. W. PARSONS, of McLaren's Depot, Ont., claims to have had an economical run in saw sharpening since he has been using the Roger's saw filer. He did all the filing for a circular mill and changed saws every four hours (no pointing up between shifts) cutting 2,500,000 feet of lumber, nearly all inch boards, and 9,000 railroad ties, without the use of a file and with the consumption of just fifty cents worth of emery wheel. The machine used was a No. 3 Rodgers' saw filer, manufactured by the Hart Emery Wheel Co., Hamilton, and the emery wheel was one of the celebrated Hart's patent made by the same firm. The average daily output was 25,000 feet.

The Hamilton Bridge Company, Hamilton, Ont., have just completed the erection of a new bridge at Peterborough for the Grand Trunk Railway Company. It is what is known as a steel plate girder bridge, and consists of three spans, two of 86 feet each, and one of 126 feet, the latter being a swing. It is said of this bridge that it is the first of the kind ever erected in Canada and is one of the safest bridges made. The first steam riveting done in the Dominion was done at this bridge. The same company expect to erect the new bridge at Hastings in the spring. It will be on the same principle as this one, and will have three girders and a swing.

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TORONTO, ONTARIO.

Messrs. THOMAS McDONALD & Co., proprietors of the Queen City Galvanizing Works, 69 to 75 Sherbourne Street, Toronto, have a card in our advertising pages, in which they call attention to the Walter's patent metallic shingle manufactured by them, and which they guarantee will afford absolute protection from wind, rain or snow, to all buildings covered with them. These shingles are specially adapted for covering the roofs and sides of mills and factories, by which they are rendered not only weather-proof, but fire-proof also: facts which manufacturers would do well to observe.

MR. CHAPLEAU, Secretary of State, gives notice that letters patent have been issued to a company known as the Shuniah Manufacturing Land and Development Company, with the following object in view:—To develop the mineral, agricultural, timber and other natural resources of Thunder Bay district; to carry on the business of mining, milling, manufacturing, farming, stockraising, ranching, forwarding, smelting, treating ores and mineral substances, buying, selling and dealing in all kinds of minerals and mineral substances, wood, lumber, materials, timber, implements, machinery, stock-in-trade, general merchandise and all kinds of personal property. The capital to do all this will consist of \$25,000, in 5,000 shares.

The Royal Electric Light Company, of Montreal, has just terminated the installation of three complete plants of electric light, one of 350 incandescent lights in the Montreal Woolen Mill; one of 300 incandescent lights in the printing establishment of the *Gazette*, of Montreal, and one of 50 arc lights in the manufactories of the Granite Mills and Woolen Factory of St. Hyacinthe, the whole with great success. This last mode of lighting introduced in the important establishments in St. Hyacinthe is claimed to be without equal in the country. The purchase of a complete 30 arc light plant has just been effected for the lighting of the works of the Massey Manufacturing Company, Toronto, and one of 100 incandescent lights for one of the Toronto steamers.

The Dominion Safety Boiler Company, Montreal, of which J. Fraser Torrance, C.E., is manager, is calling attention, through the pages of this journal, to the advantages of the safety boiler manu-

factured by them. Regarding it, they inform us that it is unusually durable, being made exclusively of the best steel and wrought iron, is simple in construction, has a rapid, well-defined circulation, and a large, cool mud drum, where all impurities are collected and blown off. All parts are easily accessible for the closest inspection—a point of great importance in the construction of a boiler. The water space is divided into sections, so arranged that if any section should give away from shortness of water, any resulting explosion would be local and comparatively harmless. The company solicit correspondence.

The Dominion Safety Boiler Company, Montreal, inform us that they have just installed one of their safety boilers in the works of the Standard Drain Pipe Company, at St. John's, Quebec. The undertaking was to fire the boiler with the waste heat from the kilns, the arrangement of flues to effect which was such as to so greatly improve the draft that the manager of the works believes that the Drain Pipe Company will effect a saving of at least \$5,000 a year on their fuel bill. The company have just closed a contract for the construction of a 200-horse power safety boiler for Montreal parties, which will be operated under a pressure of 133 pounds to the square inch. It is expected that the application to the United States Government for a patent on this safety boiler will be granted and the patent issued this month.

MR. D. L. LOCKERBY, of this city, has received a letter from a miner at Sudbury, who writes of the wonderful gold bearing nature of the district. Tough & Co.'s claim is turning out magnificently, and the writer states that a piece of native gold, valued at \$50,000, was taken from one vein. Another claim, next Tough's, owned by Babcock, of Sudbury, and J. H. Johnston, of Toronto, have opened out magnificent auriferous ground. The former has gone to Toronto for material to commence operations at once. Mr. D. L. Lockerby, who has some magnificent specimens of quartz, states that lots have been taken up all around the district adjoining Tough's. Batteries and stampers are to be erected, and from all accounts a large gold-mining venture will be opened up at Sudbury and the neighbouring district.—*Montreal Star*.

MESSRS. ROBIN & SADLER, manufacturers of leather belting, Toronto and Montreal, are making some pertinent suggestions to users of such belting, in which they set forth that they tan their own leather especially for the purpose of manufacturing it into belting; that because of the excellence of their belting they have increased their trade in it threefold within the last few years, and that they sell their belting according to a list that is 25 to 30 per cent. lower than the list that some sell by. Regarding the popularity of this belting, which is based upon its intrinsic merits, they say that they have customers to whom they have sold from \$3,000 to \$40,000 worth, one Canadian manufacturing firm alone having bought for their mill last year belting to the value of \$10,000. We refer to their card for further information.

MR. JAMES LESLIE, Montreal, manufacturer of leather belting, lace leather, cotton and woolen mill supplies, etc., informs us that he has just received an order from the Hochelaga Cotton Manufacturing Company, Hochelaga, Quebec, for a 36-inch double leather belt, 150 feet long. This belt is to be made of English oak-tanned leather, which is the only kind Mr. Leslie uses in the belting department of his works, and will weigh seven pounds per running foot, and which, it is claimed, will be the heaviest belt per foot ever made in Canada. Mr. Leslie is prepared to make any kind of leather belting into round, flat angular or link belts, now much used in motions requiring a quarter twist, or for driving electric dynamos. Mr. Leslie says that he is the oldest belt manufacturer in Canada, having been in the business some twenty-seven years.

ABOUT a year ago Messrs. William Addison & Sons, Hamilton, Ont., suffered the loss by fire of their works for the manufacture of refrigerators, economist clothes mangles, etc. During the past summer they built a new factory, and a few days ago they occupied it. It is a two-story brick building, 80 x 36 feet, with brick engine room, and dry kiln 48 x 18 feet. The Lovell Manufacturing Company, of Erie, Pa., have been so impressed with the utility and practical nature of the economist mangle that they are to pay a handsome royalty for the control of its manufacture and sale in the United States. Another specialty manufactured by this concern is split wood pulleys, some of which are in use in the factory on the line shaft driving the heaviest of the machinery. These pulleys, it is claimed, save great power, owing to their lightness, and being a split pulley can be quickly and easily attached to any shaft.

At the annual meeting of the Hochelaga Cotton Manufacturing Company, held in Montreal, Feb. 15, the old board of directors was

re-elected as follows:—Messrs. A. F. Gault, R. L. Gault, S. H. Ewing, J. O. Villeneuve, Jacques Grenier, C. E. Gault and D. Morrice. At a subsequent meeting Mr. A. F. Gault was elected president and Mr. Jacques Grenier, vice-president. The annual report stated that the year, financially, had been the most prosperous the company had had since its formation. All the machinery had been kept in active operation and was now working up to the fullest capacity. Goods had been sold at satisfactory prices, and the stock on hand was small for so large a corporation, being equal only to about one month's production. The sales of the year amounted to \$1,240,671, against \$1,228,364 in 1886. It was not expected there would be any considerable increase the present year unless there should be an enhancement in prices, which was not looked for.

THE W. E. Sandford Manufacturing Company, Hamilton, Ont., are contractors for supplying clothing for the Canada Militia. At a recent official inspection at the factory, a comparative test of English and Canadian cloths was made, proving the latter to be in every particular superior to the English make—the imported cloth tearing with comparative ease, while it seemed impossible to make the home fabric move, it being of superior quality. Its weight, dye and general adaptability seemed all that could be desired. Whatever may be said to the contrary, the clothing which is now being made for our active militia by the W. E. Sandford Manufacturing Company, and which will be distributed in due course, will, if it does not prove to be the best they have ever worn, at all events compare advantageously with any previous issue. The officers noticed in particular a marked contrast between the quality of the cloth used for the trousers and that of the material worked up in most of the outfits to which they have been accustomed.

MR. GRAHAM FRASER, representing the Nova Scotia Steel Company, of New Glasgow, N. S., was in Toronto a few days ago in the interests of his company. Regarding these works Mr. Fraser said that they were first put in operation in 1873, and although holding their own, the recent impetus given to the trade by the change of tariff now places the Nova Scotia Steel Company amongst the most flourishing enterprises of the Dominion. The output of the works consist of manufactures of merchant steel, and the company, during the past year, sent goods to the value of several hundred thousand dollars to Montreal and Ontario points. The capital stock of the company is a quarter of a million dollars, and when the arrangements which we are now perfecting are complete it will very probably be increased to \$1,000,000. The company is about to be amalgamated with the Nova Scotia Forge Co., when the manufacture of steel and iron in all their branches will be carried out. Steady employment is given to between 250 and 300 men, and somewhere near \$9,000 are paid out monthly for wages.

THE J. B. Armstrong Manufacturing Company, Guelph, Ont., have assigned to their shipping agents at Melbourne, Australia, nine cases of carriage makers' supplies, being their contribution towards the display at the Centennial International Exhibition, opening there in July next. A duplicate shipment will immediately follow by another route to prevent any possibility of disappointment through loss or delay. Although not what would be considered a large exhibit in this line, it embraces all of the leading advanced and thoroughly practical improvements produced by this firm from time to time, which they consider will be most suitable for use in that distant colony. The shipment includes several very finely finished carriages of their different styles, and will without doubt compare favorably in that respect with any English or American exhibits. Mr. Armstrong, president of the company, intends personally visiting this exhibition, and at the same time the other Australian colonies, and no doubt Canada's share of the large imports in his line made by these colonies will be increased thereby.

THE coal shipments from Sydney, N. S., last year were the largest on record, reaching 428,528 tons, compared with 128,061 tons in 1873. There has been such a constant increase in the Cape Breton coal trade under the National Policy and the prospects of taking the Canadian market to a greater extent are so promising that there is a feeling of concern respecting the proposed reciprocity treaty with the United States, as we are likely to lose a sure and increasing market in Canada if the duty is removed by American and English competition for an uncertain, fluctuating and doubtful market in the United States. The coal shipments to the United States from Nova Scotia during the first eight years of reciprocity only increased 139,125 tons in 1854 to 192,642 tons in 1862. It was only during the high war prices that our coal shipments assumed any considerable proportions. They declined again as the American market came back to its normal condition; while the Nova Scotia shipments to the upper provinces under the National Policy show a steady increase from 83,710 tons in 1878 to nearly 700,000 tons in 1887.

THE quantity of cut mica of Canadian production returned as having been sold in 1886, was 20,361 lbs., valued on the market at \$29,000, the average price thereof being \$1.42 a pound. This represents the production of four different mines, three in Ontario, and one in Quebec, and is believed to be all that was produced in Canada in 1886. The low average price of \$1.42 is due to the fact that the largest producer is not selling a first-class quality; but the average price of that from the other mines is between \$2 and \$3. This shows that much of our mica is of very fine quality, as the average price in 1885 of all mica sold in the United States was computed at \$1.75 a pound. A very appropriate remark made in the report of the Mineral Resources of the United States (1885), may nevertheless be quoted:—"The fact that fine large sheets of mica have a value of several dollars per pound, reaching in exceptional cases as much as \$10 per pound for special purposes, has led to popular misapprehension in regard to the average value of the mineral, and the average price in 1885 is given, as above stated, at \$1.75 a pound. It must also not be forgotten, in considering the value of a mica mine, that great waste is always to be expected on account of numerous naturally bad portions in the deposits, causing inevitable loss in mining and cutting it."

THE writer recently had an opportunity of going through the new and extensive works of the "Galt Foundry, Engine and Machine Works," Galt, Ont., of which Messrs. Cowan & Co. are the proprietors. The moulding shop is a high and well ventilated building, comfortably and conveniently arranged. Adjoining this is a large storeroom, where flasks, etc., are kept, so that the moulders do not have to go outside for anything they may require. Next to the moulding shop is the boiler shop, an immense apartment, in which is a large travelling crane, and all other necessary appliances and machinery. All around were scattered boilers in every stage of construction. At the further end of this shop, and encased in solid fire-proof walls, is the engine-room, from which is supplied power for testing the boilers when completed. Adjoining the boiler shop is the machine shop, a large two-story building, furnished with all the necessary tools and appliances, including a tremendous steam hammer. These extensive works are situated on the Grand River, and all the machinery is run by water power, with auxiliary steam engines. This firm have been very busy all season, having had to work night and day to fill orders. The boilers and machinery are shipped to every Province in the Dominion. Among orders recently filled are large and complete outfits of wood-working machinery for Mr. A. Gauthier, Valleyfield, Que., Mr. Harrison, Owen Sound, Ont., and Smith Bros., of Brussels, Ont. They have recently supplied the Hault Manufacturing Co., Ingersoll, Ont., with a Corliss engine and boilers; Mr. A. McVean's new mill at Dresden, Ont., with outfit of power and machinery, and engine, boiler and improved saw mill, complete, to Messrs. Crawford & McCracken, of Durham, Ont. Messrs. Cowan & Co. employ a large number of hands, and are still taxed to their utmost capacity with orders, principally for wood-working machinery. Specimens of this firm's machinery can be seen at the Permanent Exhibition of Manufacturers, 63 to 69 Front Street west, Toronto.

MESSRS. W. BELL & Co., Guelph, Ont., manufacturers of organs and pianos, are making some important changes and improvements in their factories. It will be understood that there are two large factory buildings situated 300 feet apart. Heretofore there has been a steam engine and boilers in each factory, for furnishing motive power for the same. Both of these engines are to be removed, and in one factory there will be placed a new 150-horse power Wheelock engine, manufactured specially for the duty by Messrs. Goldie & McCulloch, of Galt, Ont. On the shaft of this engine will be a grooved wood pulley 216 inches in diameter, carrying nine ropes, which will transmit the power to the main line shaft by a similar pulley 52 inches in diameter. On this main line shaft will be four rope transmissions of power—the first, 50-horse power, going up about 75 feet to the top of the building; thence 300 feet to the top of the other factory; thence down 75 feet to the main line shaft in that building, from which all the machinery contained therein will be operated; the entire distance of the transmission being about 450 feet. The second transmission—50-horse power—will be for a distance of 70 feet, and will furnish all the power required on the main floor of the building in which it is located. Another transmission, of 25-horse power, making a turn at a right angle, will supply power in another part of the establishment, and still another transmission, of 20-horse power, will be used to drive machinery in still another locality. There will also be a series of friction clutches and cut-offs on the main line shaft, by which the power can be used exclusively and entirely through either of these transmissions, or any combinations of power can be used, while the

transmissions not desired to be used can be cut off and the machinery driven thereby remain idle. The pulleys, clutches, cut-offs, etc., for this extensive and comprehensive arrangement are now being manufactured by the Dodge Split Wood Pulley Company, of Toronto, and it is expected that all the improvements here alluded to will have been made and in operation sometime this month.

#### THE CANADA PAPER COMPANY'S NEW SPRINGVALE MILLS.

It will be remembered that the mills of the Canada Paper Company, at Windsor Mills, Que., were destroyed by fire in October, 1886. Since then the company have erected a very extensive plant on the old site, which, it is claimed, is the equal of any similar factory in America. These works have been finished and put in operation within the last few weeks, and we are indebted to the company for the following description of them:—Embraced in the plant are the machine building, which is 130x55 feet, with engine house projection on the river side, 41x13 feet, and a building on the opposite side abutting against the boiler house, 33x30 feet, also used as an engine house. The machine building is one story high, under a part of which is a basement. The engine building abutting against the machine building is 90x71 feet, one story and basement. Owing to the conformation of the land on which the works are built, the ground floor of the engine room is some 14 feet above that of the machine room. In rear of the engine room, and abutting against the end of the machine building, is an addition which contains stuff chests in the basement, and two Jordan engines on the floor above. On the front of the engine building, at the eastern end, is a two-story building, 33x30 feet, which contains in the first story a rotary rag boiler, 22x6 feet. This is on the same level with the beating engines, and the rag room is on the floor above. The general construction of all the buildings as to the walls is the same throughout, the foundations being of heavy stone work three feet thick, bedded on the solid rock, the lower courses being set in Portland cement. All the buildings are roomy, light, and well ventilated, and specially adapted to the site upon which they are built, and the purpose for which they are intended. Two rows of capacious drainer vats are constructed under the beating engine room, the bleach vats being under the floor in the eastern wing. All the shafting, gearing, etc., is placed in a well-lighted basement, where it is out of sight, but every part of which is conveniently accessible. The machinery equipment consists of a 6x20 foot rotary rag boiler; ten 700-pound beating engines; two Jordan engines; one 73-inch and one 93-inch Foudrinier paper machines, built by the Union Machine Company, Fitchburg, Mass., from special designs, extra heavy, all tubing and pipes being of brass and copper; composition suction plates; double acting pumps; gun-metal conch rolls; brass breast and press rolls; eight lower drying cylinders, 48 inches diameter each, and four upper cylinders, 36 inches; chilled callender rolls, nine rolls each, and revolving reels, of largest size, of 1,500 to 2,000 pounds capacity each. The cutters have improved friction winders with rubber drums. Each of these machines can be run at a speed of 250 feet per minute, and do good work, giving a united producing capacity of from 22 to 26 tons of finished paper each 24 hours. The motive power of the works is obtained from a Hercules water-wheel of 320 horse-power under a 44 foot head of water, supplemented by four steam engines, which take their steam made in a battery of three tubular boilers. These engines were built by the Fitchburg Steam Engine Company, Fitchburg, Mass. The largest are of 250 horse-power each, connected to a forged steel shaft with cranks set at right angles, the fly-wheel being 12 feet in diameter and 36 inches face. These engines are provided with automatic cut-off gear, and are remarkable for their economy in the use of steam. The paper machines are each driven by a 50 horse-power vertical automatic cut-off engine, built by the same company specially for the work they have to perform. The valves of these engines are constructed so that the exhaust steam is expelled into the dryers for drying the paper; and it requires no more fuel to operate these paper machines by steam, using the exhaust steam in the dryers, than to run them by water-power, using live steam for the drying. The mill is fitted throughout with an improved sprinkler system for fire protection, included in which is a powerful Worthington pump, which works under 100 pounds pressure. Every detail in connection with this mill, both in its construction and equipment, is of the latest and most approved description, and nothing has been left undone that the best experience of the world could suggest. The Windsor Mills, which are in close proximity to the works here described, are also owned and operated by the Canada Paper Company, and the capacity of output of paper from these two plants is about 30 tons of paper per day.

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Steam Pumps, Power Pumps, Centrifugal Pumps, etc.,

Valves, Steam and Water Gauges, Emery Wheels,

Machine Knives, Platform Scales, etc., etc., etc.

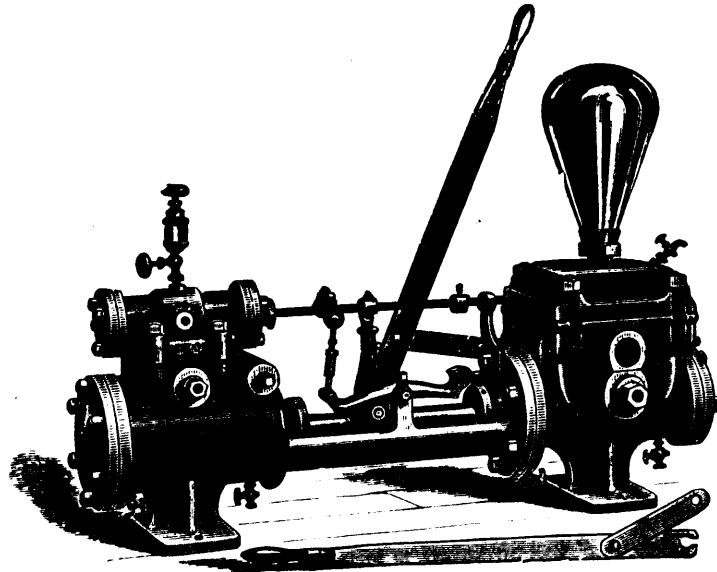
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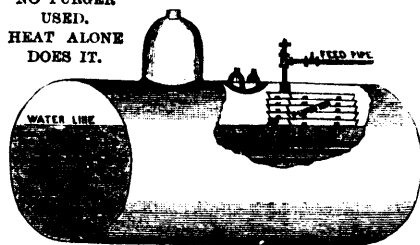
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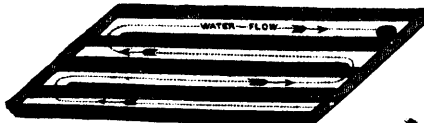
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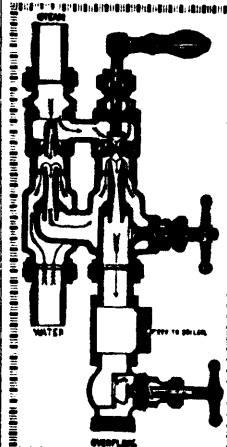
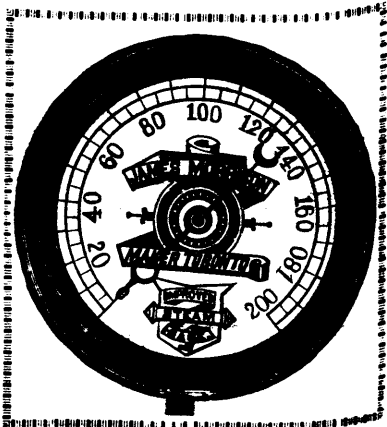
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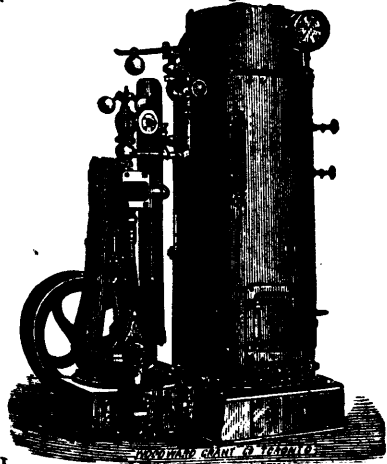
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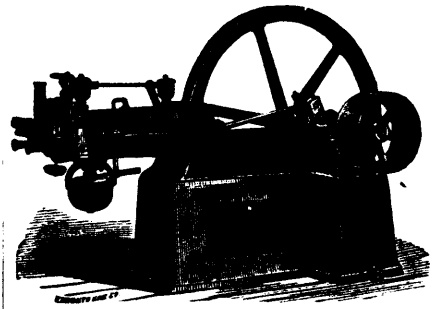
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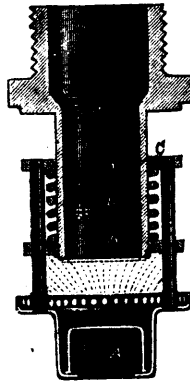
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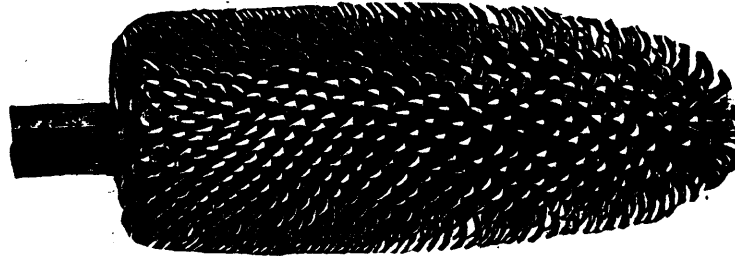
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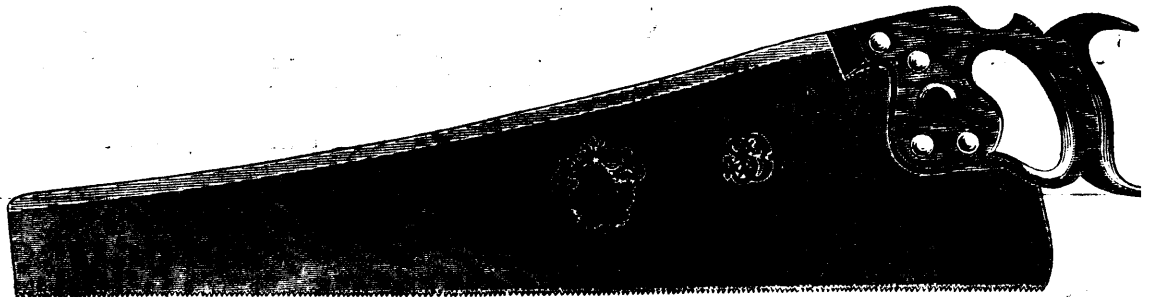
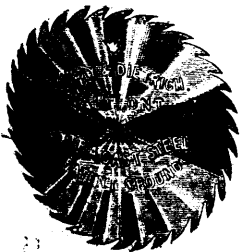
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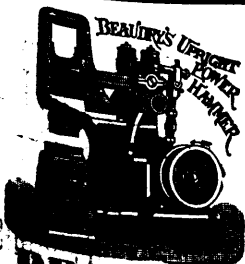
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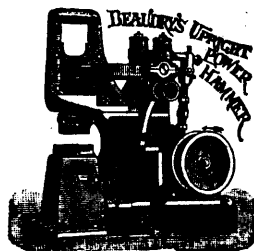


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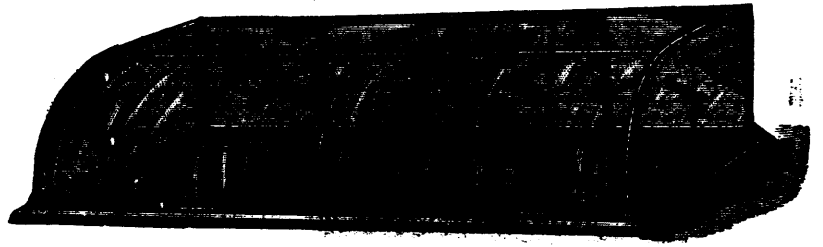
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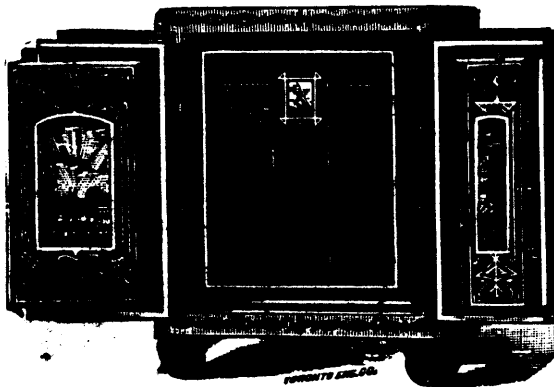
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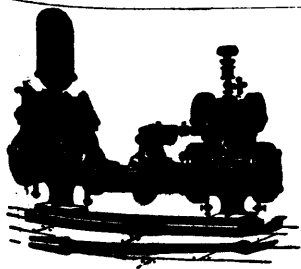
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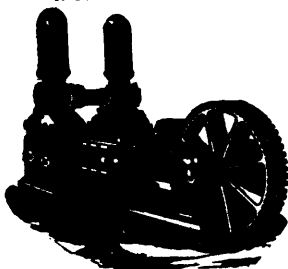
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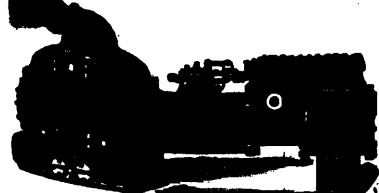
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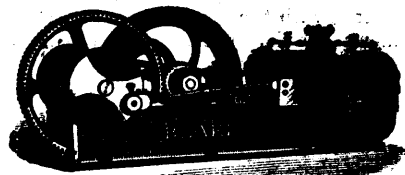
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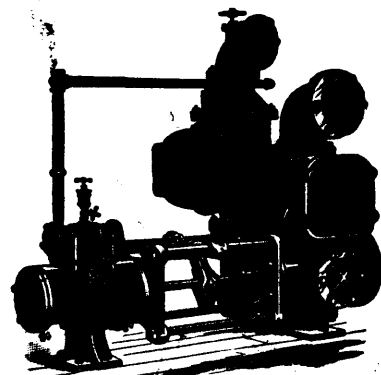
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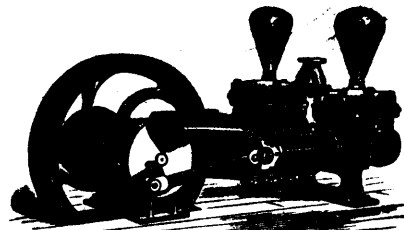
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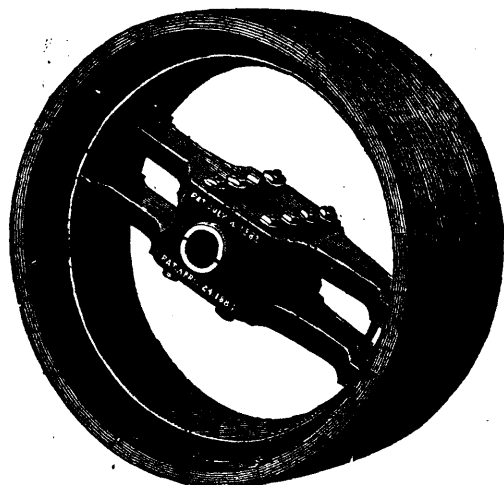


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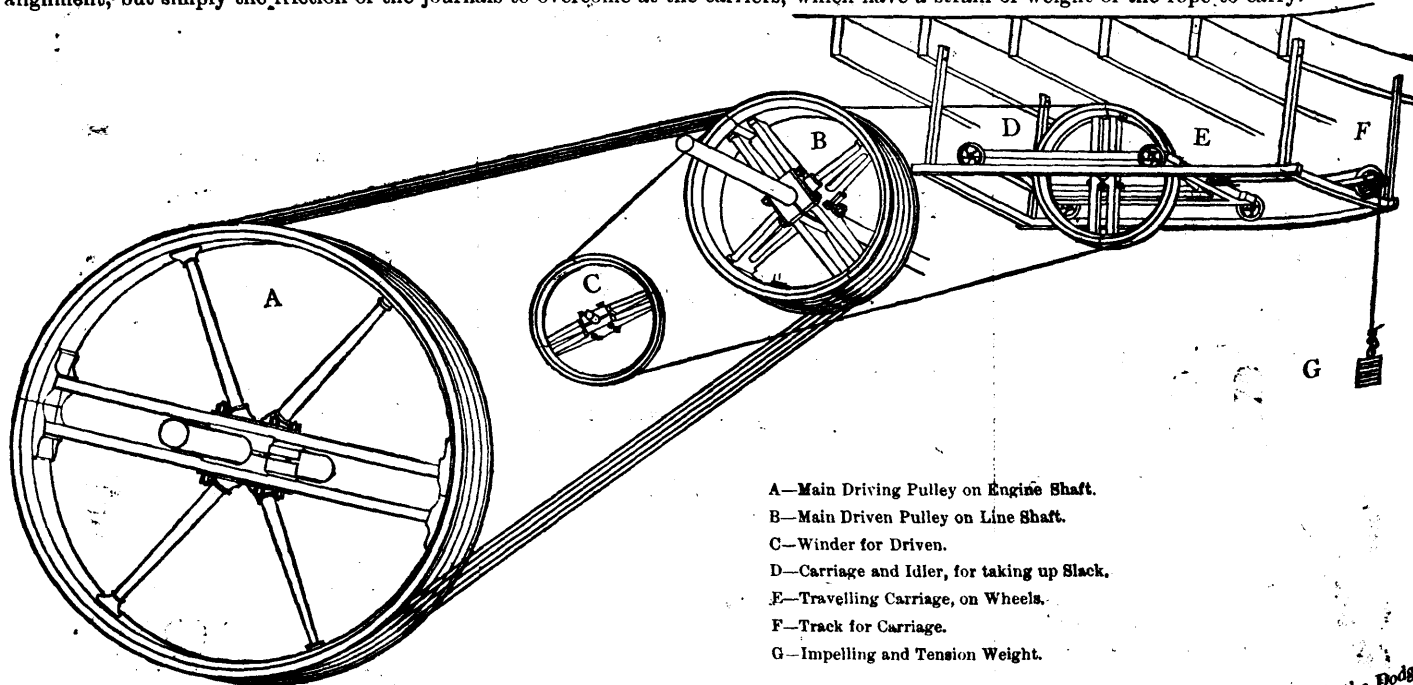
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This system of transmitting power by ropes is cheaper and superior to belts in many cases, such as where the driven shaft is at right angles with the driver, also where the drive is perpendicular, particularly when it is quarter-twist and perpendicular; also where the driver and driven are

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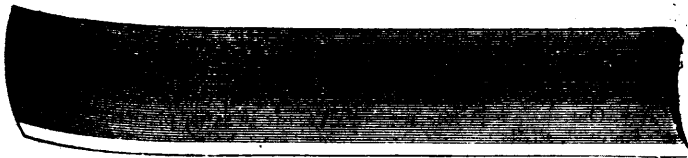
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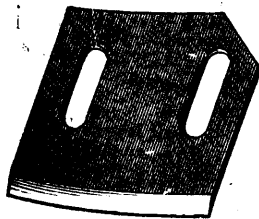
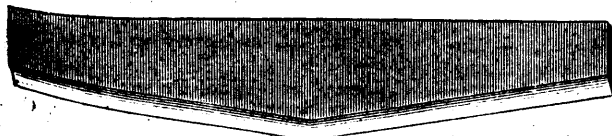
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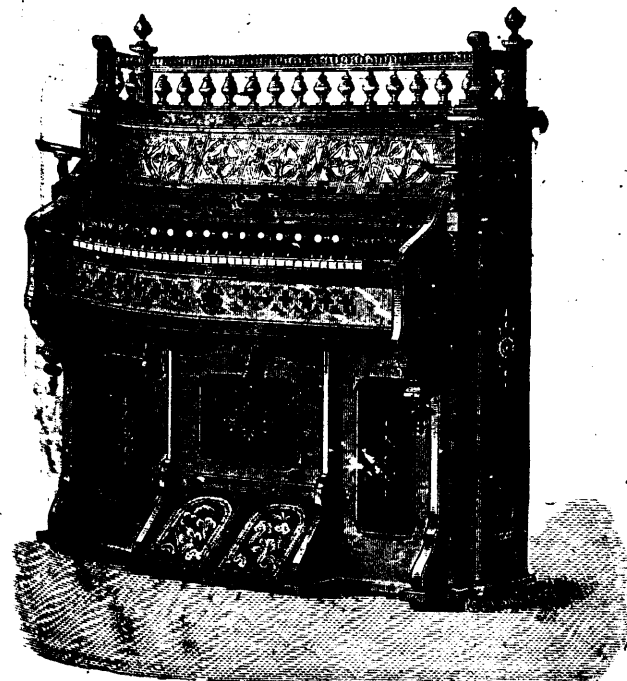
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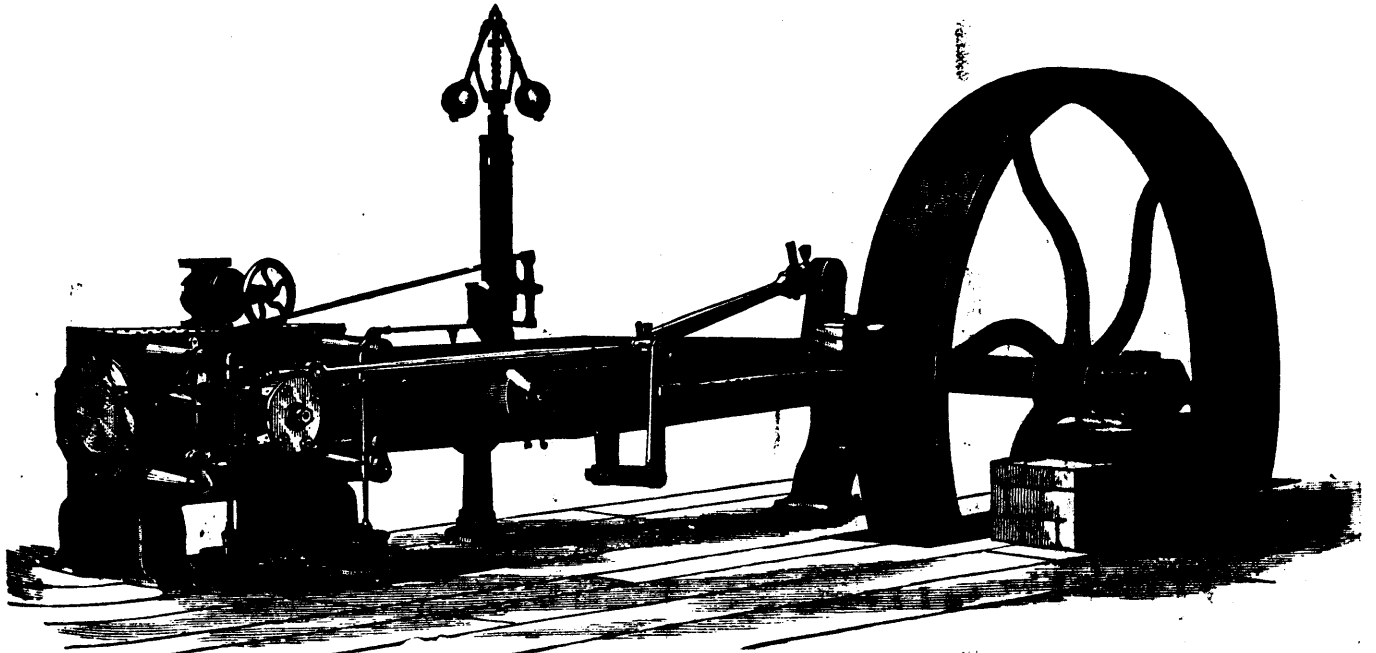
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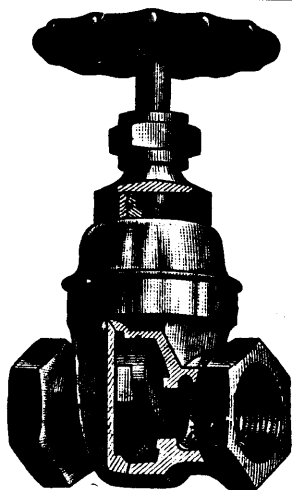
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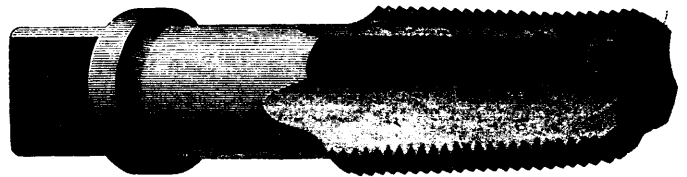
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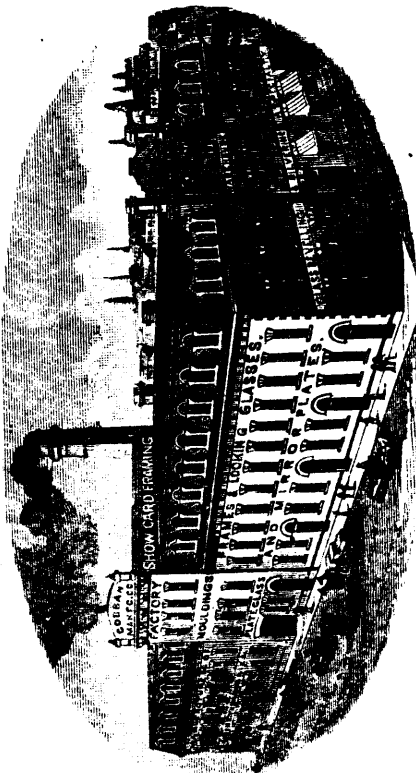
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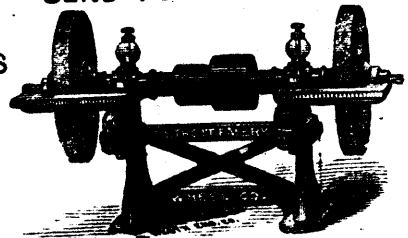
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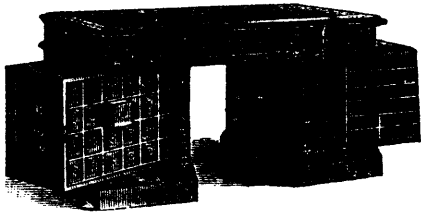
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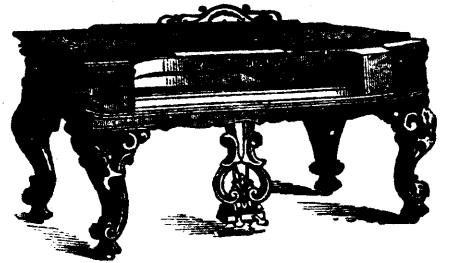


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