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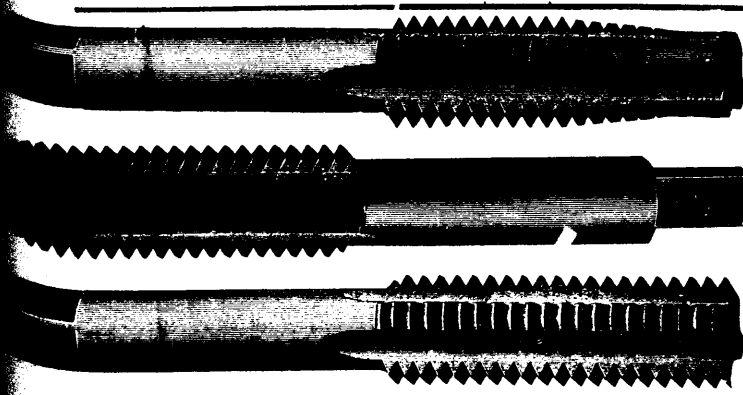
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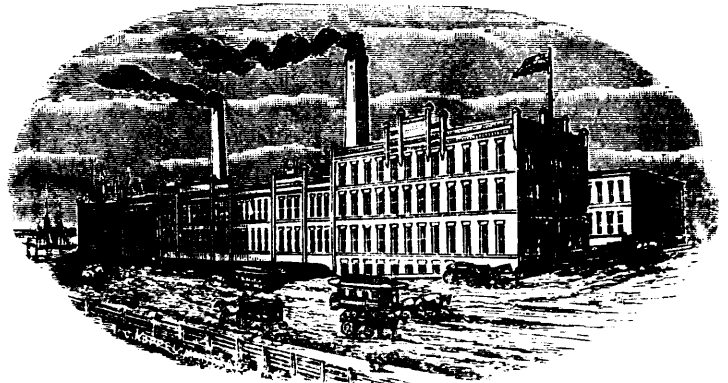
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PROTECTION IN ENGLAND.

THE *Toronto Mail*, in an editorial, "Protection in England," says: "Those Canadians who imagine that Britain will revert to the idol of Protection for the sake of effecting a federation of the colonies, will not find much comfort in the fate that has befallen Lord Salisbury's sugar policy." In his speech at Bristol on April 24, referring to the recent Sugar Bounties Convention, Lord Salisbury said: "The greatest difficulty we have to face is the impression that our proposals are in some measure hostile to the principles of Free Trade." His Lordship was strenuously endeavoring to create the impression that the Government were as strongly as ever opposed to any policy bearing any semblance to anything like Protection; and the failure of the British Parliament to ratify the action of the Sugar Bounties Convention was the provocation to the *Mail* to emit the exultant shout above quoted.

While it is loudly and persistently claimed that Britain is ultra-Free Trade in all things, such does not seem to be borne out by facts. There are numerous instances in which it can be shown that Britain maintains a decidedly protective policy, one of which is as regards the manufacture of tobacco. Chambers' Encyclopædia, in its article on "Tobacco," says: "Tobacco, owing to the high rate of duty when in any manufactured form, is mostly imported in the leaf, but small quantities are brought in chiefly for re-export, in various states of manufacture." No British farmer is allowed to grow tobacco under

a penalty of £1,000 fine and one year imprisonment, the exception being in favor of the medical gardens attached to three universities, where the space allowed for the cultivation of tobacco is restricted to an area of only sixteen and a half feet square. This is rather rough on the vaunted freedom of the British agriculturist, and his influence in the government of the kingdom; and all the more so when it is remembered that a purely protective duty of 1s. 6d. sterling per pound is levied on manufactured tobacco over and above the revenue duty of 3s. 6d. sterling per pound on leaf tobacco; and that while the leaf must be imported—and it is a criminal offence to produce it in the country—the foreign manufactured article is absolutely shut out by the exceedingly high duty. All the manufactured tobacco that is consumed in Britain must be manufactured there of imported leaf.

During 1888 the exports of unmanufactured tobacco from the United States to Britain amounted to 76,610,820 pounds; and if all this had been received for consumption there, and had paid the lowest rate of import duty—3s. 6d. per pound—the accretion to the revenues would have been \$66,651,413. The amount credited as collected on imports of tobacco was, however, only \$43,569,720, while the value of tobacco drawn from the United States was only \$6,646,930, or, according to the *Economist*, less than one-eleventh of the revenue Great Britain would have collected on the whole, and about one-sixth of the sum actually collected on two-thirds of the whole quantity sent from the United States. This shows an average duty, collected on the American product, of 900 per cent. on its export price. This is a beautiful specimen of Free Trade and nominal duties, and the boasted influence of British farmers in British politics. If there had been no discrimination in the duty between the leaf and the manufactured article, and all the American tobacco sent to Britain had been in a manufactured condition, as it probably would have been, the American manufacturer would have been benefited to extent of over \$29,000,000 additional value, which was distributed among the British manufacturers. One never hears of British tobacco manufacturers clamoring for Free Trade; for while British farmers are prohibited by law from producing annually a \$7,000,000 crop of tobacco, they are secure in their monopoly, assured by the Government, of adding nearly \$30,000,000 a year to the value of imported leaf tobacco, not one cent of which goes into the British treasury.

BINDER TWINE.

A FEW days ago the State Grange of Illinois offered a reward of \$10,000, to be paid to any one who would invent a machine or device to attach to reapers that would bind wheat and oats with straw. The device might work and twist its straw direct from the reaper, or it might be a separate machine that would twist the straw and wind it on spools. To obtain this munificent reward, the inventor must procure a patent that must be assigned to the Grange. The date of the offer was May 8th, and the offer holds good until July 8th.

The State Grange of Illinois is supposed to embrace and embody the concrete wisdom of the farmers of that fair and flourishing farming State, but if this offer is a specimen of that wisdom, our opinion is that the farmers of Illinois are a set of ninnies. The man who invents a machine that will successfully accomplish what is here required—a machine that would

be entirely practical in its operation—would have a snap that he might reasonably value at hundreds of thousands of dollars; and no doubt the farmers of one or two of the larger grain-growing counties of Illinois would be glad to purchase the right to such a machine in their counties at a cost not exceeding the \$10,000 offered by their Grange for the entire patent right.

These farmers do not seem to comprehend what they talk about. *Farm Machinery*, of St Louis, suggests a knowledge of a straw binder which is now nearly ready to be put on the market, upon which the inventor has already spent over \$40,000 and most of his time for five years; and yet these smart Illinois farmers think that \$10,000 ought to be an adequate recompense for such an invention. Probably the most ridiculous phase of their silly offer is that they imagine such a machine could be invented, patented, developed, manufactured and put in successful operation in fifty working days.

Farmers are restive under the advance in price of binder twine since last harvest season. As we have before shown, this advance is due largely to the rapid increase of demand for cordage and cordage material, and the failure of producers of sisal and manilla to make the supply keep up with the demand. The demand for machinery by which straw can be used for binding sheaves of wheat and similar grain is not recent, and efforts to produce such machinery have been put forth by inventors under the spur of large prospective remuneration for many years past; and, no doubt, if farmers were prepared to accept the inconveniences that such machines as might now be produced involves, they might be accommodated with them at reasonably short notice.

But do they comprehend what this means? The consumption of binder twine on the average wheat farm in Ontario is only about from one hundred to one hundred and fifty pounds. If the advance in price of binder twine is about fifty per cent. above that of last year, the additional cost to the farmer would not exceed ten dollars. He already has harvesting machinery adjusted for using twine; and now he wants to abandon that and adopt other machinery whereby he can save ten dollars a year. A device to attach to reapers that will bind with straw, would involve the use of machinery that would unquestionably weigh quite as much as the reaper itself; the probability being that it would require to be mounted independently of the reaper. But which ever way it might be mounted, either on the reaper or independently, additional horses would be required to draw it, and one or more men to manage it. What would the machine and these additional horses and men cost the farmer? Would it be cheaper to incur this expense than to pay the higher price for twine?

As we before suggested, the farmer's remedy against the higher price he will have to pay for binder twine this year, is not in abandoning his twine-binding machinery.

CUTTING OUT THE WHOLESALERS.

THE other day a well known hardware man remarked to the writer:—"If Canadian manufacturers persist in dealing with the retailers direct, at prices with which it is impossible for the wholesalers to compete, we shall be compelled to confine ourselves to imported goods, and then, mark my words, we shall give them a lively time of it. Their practice at present is to solicit our customers at prices with which we cannot compete,

and out of which, all things considered—the extra expenditures entailed upon them, etc.—they can proportionately make no more profit than they now do. The only real result is to prejudice us and destroy our business, and we are not prepared to be frozen out. It is true our business was originally that of an importing house; but, under the new fiscal regulations, we have endeavored to accommodate our trade towards the cultivation of a home market for home manufactured goods. The reward we now receive is in an endeavor, on the part of those we have tried to encourage, to take away our trade from us. But," he concluded, "if they persist we shall carry the war into Africa." Upon more than one occasion we have dwelt upon the change that was taking place in the policy of certain Canadian manufacturers; and the dissatisfaction and disquiet it was causing among the wholesale trade. But, in the case we have named we have a direct threat of retaliation, and that by no means an idle boast, but from a house that, if it begins to fight, will continue to do so.—*Montreal Trade Review*.

A few years ago when Canadian manufacturers needed encouragement, the wholesalers gave them very little patronage, but, importing their goods and despising those of home manufacture, kept alive the prejudices against Canadian made goods. Consequently, when the manufacturers could not sell to the wholesalers, they were obliged to go to the retailers and consumers. The wholesalers now find that under the National Policy they cannot make large enough profits on imported goods, and desire to force the manufacturers, whom they formerly ignored, to sell their productions through them. The manufacturers, however, are now known all over the country, and consumers prefer dealing direct with them rather than through the middlemen.

The party referred to in the *Trade Review* states that his business "was originally an importing house," therefore such it will have to remain to a certain extent.

THE HOME MARKET.

AMERICAN agriculturists and grain growers are startled by a report recently made by Mr. Dodge, statistician of the Department of Agriculture, who shows that as to wheat, Europe is practically the only market that Americans can have, and that Europe imports only 144,000,000 bushels a year, raising 1,200,000,000 bushels herself, which is more than half the world's entire crop and twice that of all America. Of the European deficiency the United States supplies 95,000,000 bushels, the exportation of other grains to Europe being 2,500,000 bushels of oats, 7,500,000 bushels of barley, and 3,000,000 bushels of rye. Rye is the great bread grain of Eastern and Central Europe, and Russia alone produces more of this article than the United States.

The receipts of European countries requiring maize do not make a sum half as large as the product of Illinois, or Iowa, or Missouri. Great Britain takes nearly three-fourths of the total, or 62,000,000 bushels, and this country exports 68,000,000 bushels. The deficiency of France could be supplied by McLean County, Illinois, and Germany requires still less. Russia and Roumania have a surplus, and Southern Europe grows enough for home consumption. Europe imports over 1,000,000,000 pounds of rice, but none of it comes from the United States. O: potatoes Europe grows more than she needs, while the United States supplies her deficiency from Canada and Germany. Only Great Britain, Belgium and Portugal, of all European nations do not produce enough butter and to spare. To make up the defi

ciency—25,000,000 pounds—the United States exports 24,000,000. It requires 140,000,000 pounds of cheese to supply the European deficiency, of which 118,000,000 are furnished by the United States.

Of course, Europe has to import all her cotton, the average annual imports being 2,636,000,000 pounds. The United States sends her 1,850,000,000 pounds. Mr. Dodge says: "This country is only exceeded by Great Britain in cotton manufacture, and should, ere many decades pass, attain the first rank. There has been a greater relative advance in consumption of cotton in continental countries during the past ten years than in Great Britain." Europe gets from South America, Asia, Africa, and Australia two or three times as much wool as she imports from the United States. The net deficiency of Europe is 780,000,000 pounds, slightly more than is produced there. The United States produces four fifths of the wool manufactured at home. The aim of the wool grower of that country is to supply the home manufacturer, if possible; never to export raw wool. If there ever shall be a surplus it will bring more money to the wool grower if sent abroad in the manufactured form. The United States imports 69,000,000 pounds of wool every year.

Discussing the question, Mr. Dodge says:—

"About one-tenth of our agricultural products is exported. No other nation exports so large a proportion. Yet the articles shipped abroad are few. They are cotton, tobacco, meats, breadstuffs and cheese. All other articles together are but three per cent. of the exports. Enlargement of the surplus must inevitably reduce the price at home and abroad. What other products can be exported? It is folly to look to foreign nations for a market of any of the bulky products of agriculture which are common to the agriculture of every nation. The more concentrated products may be profitably exported. More cheese could be sold if its reputation for quality should be kept up, and there were more disposition to cater to fastidious or peculiar foreign tastes. Butter exports could be enlarged if they were of better quality. Evaporated or preserved fruits, oranges of the Southern or Pacific coasts, wines from California, may seek a profitable market as surplus stocks as a safety-valve to the home market.

"What agricultural products are now imported that our country and climate are capable of producing? In response to this inquiry, sugar is the first to be suggested. Our wheat and flour sold will scarcely pay for the sugar bought in the present and immediate future, and the home demand would not be uncertain, but peremptory and insatiate. Flax and hemp should be more extensively grown, displacing foreign fibres costing millions of money, and furnishing material for bagging of cotton, wool and hops. Other fibres of sub-tropical regions should be produced along the Gulf coast. The imported fibres, with their manufacture, altogether amount to a value more than two-thirds as much as the munificent and boasted cotton exportation of the United States. There is an importation of fruits of the value of \$20,000,000, half of which at least should be produced in this country. The subject is too large for treatment in a few paragraphs or pages, but these suggestions mark the lines on which production in this country should be extended, with reference first to the wants of a population growing beyond all foreign precedent, and next to incidental exportation, mainly of extended or manufactured products, as a source of additional revenue, and as a regulator and upholder of home prices."

This matter is of vast importance to Canada as well as to the United States, and shows that the true interests of those employed in agricultural pursuits lie in the direction of the fullest encouragement of that condition of affairs wherein the

home market is enlarged to the capacity of absorbing all the agricultural products of the country.

PERNICIOUS TEACHINGS.

AN American Protectionist journal complains because Free Trade is taught at Michigan University. The Tories have just as much cause to complain here. There are many public schools where common sense and honesty are openly taught, and thus the pupils are led to look with distaste upon boodling of all sorts, the spending of money upon railways and steamboat lines which are of no public benefit, and the passing of Franchise Acts which disfranchise. Education is the sworn foe of Toryism everywhere—*Toronto Globe*.

Prof Henry C. Adams, of the Michigan University, recently caused to be printed for the use of the students under him a series of "outlines of lectures," the tendency of which was to inculcate Free Trade ideas; and it is surprising how deeply Canada is interested in the matter. Mr. Adams suggests that the period from 1860 to the present time is characterized by the rise of a war tariff, and the maintenance of war taxes during twenty years of peace; that neither the laborer nor the holder of uninvested capital are benefited by the maintenance of the protective tariff; that Protection benefits the owners of real estate, who maintain a monopoly of the home market, the rental upon mines, forests, etc., being increased by protective duties, and that Protection benefits those who, granted monopoly of the home market by the tariff, are secured against competition at home by patents, or secure themselves against competition by means of trade combinations. He says that the mass of the American people lie outside these classes. To the question, "What would be the probable results of a reform of the tariff according to revenue principles?" he suggests, having first learned in what tariff reform or revenue principles consist, that the free list should be extended so as to embrace all raw material of manufacture; and that the maximum revenue rate on other imports should be determined, and the actual rate charged should be adjusted with reference to this rate, so that probable income should conform to estimated demand. Such a fiscal reform, Prof. Adams says would bring about the following results: The purchasing power of wages, salaries, incomes from fixed investments, and self-supporting industries, would be greatly increased; and the United States would take her proper place among the nations of the world as a great commercial nation. This would lead to the demonstration of the fact that American industry could no longer plead the privileges of "infancy."

The meaning of this is that the United States must abandon the control of its home market, where about ninety per cent. of all its industrial products are consumed for the sake of acquiring a foreign market in unrestricted competition with the cheaper labor of other nations.

We presume the *Globe* has reference to the *Detroit Tribune* when speaking of "an American Protectionist journal" that "complains because Free Trade is taught at Michigan University." The *Tribune* recently formulated a syllabus of Prof. Adams' "outlines of lectures," and submitted it to the Governor and members of the Michigan Legislature, and the replies received from them indicate that the Free Trade views of Prof. Adams are widely at variance with theirs regarding the propriety of such teachings in the University of a State which is

so pronounced in Protection sentiments. Governor Luce expressed himself as being "not at all pleased with the idea of being taxed to pay a professor who is educating our boys away from America to England. Prof. Adams is wrong. The world is large enough to carry us down—we are not large enough to carry it up." Senator Fox said: "The voters of this State have emphatically declared in favor of Protection. The teachings of Prof. Adams are poisoning the minds of our youths." Representative Hoaglin said: "New text books should be adopted in the University which will teach some thing nearer the American idea." Some of the legislators thought that the Legislature should instruct the regents of the University by making the appropriations for it conditional that Free Trade teachings should cease; and many of them concurred in holding Mr. Adams' stuff to be meretricious, and the management of the University to be at fault in teaching as truth that which is not only absolutely but very evidently false.

The *Globe* taunts Canadian Protectionists with the fact that there are many public schools here where "common sense and honesty are openly taught," meaning that Free Trade doctrines are taught in them. Canadian Protectionists should throttle and strangle all such teachings.

THE LINOTYPE.

THE linotype, or type-setting and casting machine, has now become practically successful, as many as 130 of these machines now being in use in newspaper offices in New York and other cities in the United States. The linotype was invented in Baltimore, Maryland, in 1884, by Mr. Ottmar Mergenthaler, of Wurtemberg, Germany, since which time a great deal of money has been spent in perfecting it. For book work the advantages of the machine are said to be especially marked, since it produces with ordinary effort the superior quality of work which involves extra care and extra expense when done by hand. In appearance the linotype resembles an upright piano. About five feet long, five feet high and three feet broad, it is a complicated mass of rods, tubes, wheels, levers, etc., the working of which puzzles any one but a specially instructed machinist. In front is a type writer keyboard, marked with the letters of the alphabet and the various stops and marks with which the writer divides his matter. The operator sets up a line at a time by touching the proper keys, the effect being to assemble the matrices from which, on the completion of the line, the type to print that line are cast in one piece. These line pieces are placed by the machine in their proper position to form a column, to be printed from in the ordinary way. The headings are set up by hand or in another machine. After having been used, the line pieces, or types, are thrown back into the melting pot, which is an essential part of the machine, to be used again and again. There are automatic arrangements for trimming the line types square and restoring the matrices to their proper magazines. The *New York Tribune* has forty-two linotypes in use, and with this outfit composes all its editorials, news despatches, city articles, market reports, literary matter and advertisements. But four ordinary compositors are employed, whose work is to set up the heavy display type of advertisements, large head lines, the court calendar and stock and bond tables. For the

ordinary purposes of the paper from twenty eight to thirty four machines are sufficient. With an operator for each machine, a machinist, a foreman and the four men at the case, the *Tribune* says it accomplishes what under other conditions would require over one hundred men. The capacity of each machine is from 3,000 to 5,000 ems an hour. The average cost per 1,000 ems early in 1888 was 21c.; in 1889, 18.5c. In one week thirty-three operators in forty eight hours produced 4,557,300 ems of corrected matter, or an average of 138,100 ems each. In other words, the work of one man in 1,584 hours on the linotype equalled the work of one man 3,039½ hours at the case, and that too at a cost for actual composition of but 15.4c. Including the time required for distribution, it is found that a man working 1,584 hours at the machine does the work of a man working 4,052 hours at the case, so that the machine increases the man's capacity over two and a half times, and reduces the cost of the product to less than one third of the usual sum. The wage of an operator who composed 152,000 ems per week was \$26 per week, and the average cost per 1,000 ems was 17.1c. Some operators produce at a cost as low as 9.3c. per 1,000.

EDITORIAL NOTES.

If labor strikes are so desirable and productive of such good results to operatives, how is it that there is such a dearth of them at the present time? for there is just as much cause for them now as at any previous time in our manufacturing history.—*Wade's Fibre and Fabric.*

THE National Policy is to Canadian millers what strength was to Sampson. Will they listen to the Delilahs of the Philistine opponents of that policy, and quietly lay their heads down to be shorn of their locks? If they do they will find themselves in blind bondage to their enemies.

VEXATION at not having received the attention they think should have been accorded them at the hands of the Dominion Government in not increasing the duty on flour, should not induce Canadian millers, whose interests cannot flourish without the National Policy, to lend themselves to their political enemies in an attempt to destroy the bulwark of their prosperity.

THE Pennsylvania Railroad Company are making experiments to mitigate the horrors of burning trains. It is proposed to place on the engines a connection with the steam-pump, by which a hose can be attached and used to quench fire. A trial was made the other day in West Philadelphia, and the pump threw a stream over the highest buildings. If further experiments prove successful a number of passenger engines will be equipped and the train crews exercised in the fire drill.

LAST year a firm in London, Ont., inserted in the papers an advertisement of a stove-polish, manufactured by them, to which they gave the name "Nonsuch," and which they recommended in a card headed "Hello! Nonsuch." A gentleman who desired to write to the firm forgot their name entirely, but remembered distinctly the "Hello! Nonsuch." So he risked the consequences and addressed his communication to

"Hello! Nonsuch, London, Ont.," and the fame of the article, combined with the quick intelligence of the postal authorities, triumphed over every obstacle, and the letter reached its destination.

LORD SALISBURY reminds Britons that the invasion of their kingdom by a hostile army would be a far more terrible thing than for any other country in the world—that the progress of a hostile army through it "would shatter its prosperity with a ruin which centuries would not repair." War is terrible, of course, for war means desolation; but it will be remembered that Sherman's "march to the sea," from Atlanta to Savannah, cutting the Confederacy in twain, was like a simoon that destroyed everything in its path; and yet to-day the country through which Sherman passed is probably the most prosperous portion of the South.

ANENT the binder twine problem that is now exercising the minds of the farmers, we take pleasure in noticing the fact that an enterprising company in Halifax, N.S., have just completed and put in operation a \$60,000 plant for the manufacture of a composite binder twine, the process of which is patented, which, while possessing the good qualities of a superior twine, can be sold at a large reduction in price. This is a quick response to an urgent demand, and demonstrates that Canadian manufacturers are keenly alive to the requirements of the country. Canadian farmers should avail themselves of the products of this factory if they desire cheap twine.

A machine for producing fogs has been invented. Pshaw! That sort of contrivance has been used by Protectionist orators and editors for years—so long that the patent on it has expired.—*Nashville American.*

Certainly. Unlike feeding upon Free Trade east wind, the United States, which introduced it in all its glory twenty-eight years ago, has grown fat upon its Protection; and Canada, a little later in the race, but none the less enamored with its N.P., is becoming quite robust therefrom. And then all the more advanced nations of Europe are doing the same thing, and seem to like it; the more they have of it the closer they cling to it; and even Britain is watering at the mouth for Protection. The fog machine is a benison.

DURING the recent civic and military processions in New York, the music of bands, the ringing of church bells and the whistles of steamboats were heard in Philadelphia. A lady in the latter city who takes press news over the long distance telephone, in order to facilitate matters and aid her in hearing distinctly the dictation of the news sender at the other end, wears a metal cap, attached to which is a receiver that passes close to her left ear. During the naval pageant on Monday that welcomed the arrival of the President, she distinctly heard the whistles of the steam craft, the roar of the artillery, and the chime of Trinity's bells. During the progress of the military procession on Tuesday, strains of music from the various bands and the shouts and hurrahs of the crowds were plainly borne to her ears.

THE steel industry of the United States boasts of the largest plant in the world. The Illinois Steel Company, which was recently formed by the consolidation of three other companies,

has now, it is said, the largest facilities for steel production in the world. The works will employ 10,000 hands, and although the Krupp works, at Essen, Germany, employ more men, their aggregate production is not so large. The new company can turn out annually 850,000 tons of pig-iron, 975,000 tons of steel ingots, 900,000 tons of steel rails, 50,000 tons of structural shapes, 50,000 tons of wire rods, 60,000 tons of merchant bars, 40,000 tons of railway splices, and 15,000 tons of nails. The company will also take up the manufacture of tin plate. This concern, in addition to its iron plants, controls some of the richest of the Bessemer ore mines of the Lake Superior district, and large coke-fields and ovens in Western Pennsylvania.

IN a speech recently made to British workingmen, Mr. Pettifer, himself a workingman, said: "A sovereign (\$5) will buy more tea, coffee, oil, flour, meat and butter in America than in England. It will buy as much cotton, sheeting, shirting calico and boots. The boots I have on cost me \$3 in Boston. The average wages of my trade are \$3 a day in Boston and \$1.50 in London; so that it takes two days' wages in London to buy my boots, and only one day's in Boston." This is a matter in which Canadian workingmen are vitally interested. Wages in the United States and in Canada are substantially the same, and the question presents itself: "Why should Canadian workingmen desire Free Trade, as the anti-Protectionists urge they should do, while our N.P. enables them to buy as much or more tea, coffee, flour, meat, butter, cottons, boots, etc., with one day's wages here, as can be bought with more money in Britain?"

THE reports of British commerce and navigation for the year 1888 contain a tabulated statement showing the quantities of wheat and wheat flour imported into the United Kingdom from all countries during each year from 1840 to 1887 inclusive, a study of which demonstrates that the contention of Free Traders that other countries will not buy of us if we do not buy from them, is fallacious. One of the lowest tariffs the United States ever had was that of 1857, which made important reductions in duties on foreign imports. While that tariff was in operation—from 1857 to 1860—Great Britain bought of all countries 94,161,100 cwt. of wheat and wheat flour, of which but 18,953,432 cwt. was purchased of the United States—about 20 per cent. During a similar term of four years ending with 1887, under what Free Traders call the war tariff, the United States supplied to Britain 155,964,193 cwt of wheat and wheat flour, out of a total of 283,457,318 cwt imported, or over 55 per cent. The Free Trade theory is wrong.

THE *Mail* has a correspondent in Greenwich, England, who has a little niece in Canada to whom he is desirous of sending a 10-cent doll, but finds that dolls entering Canada have to pay a duty of 30 per cent. The dear, generous uncle writes all the way from England to the *Mail* to say that he is unwilling that the little girl should be called upon to pay this duty out of her money box, and that he can't pay the duty in England, "as there is no machinery provided for the purpose." He enquires why it is that he, being a British tax-payer, whose money helps to keep up "our fleets and army," partly for the benefit of Canada, can't send a 10-cent doll to his relative without making a customs declaration, and "having the baby

dunned for three cents duty." The impecunious grumbler might have sent "the baby" a sixpence in a letter and allowed her to make her own selection of a doll in a Canada toy shop; or he might have sent the three cents duty money by mail, which could have been paid at the post office without any other expense. The *Mail* seems to be badly put to it to produce objections against the tariff.

At the annual convention of the Association of Chambers of Commerce of the United Kingdom, held in London in March, the president of the Association in his address said:

"It is somewhat disappointing to find that there is so little disposition on the part of foreign nations to follow our example in the direction of Free Trade; and at present they do not appear inclined to do so. We are rather powerless to put pressure upon them; we can only use arguments to induce them to believe that it is in their interest to follow our lead in this matter. There is something we can do, and that is, when a tariff is under revision, we can send over competent authorities, and endeavor to make the conditions as beneficial, or as little injurious to our trade, as may be."

In view of the fact that in Canada the tariff is always under discussion, and that many so-called Canadian papers and orators are constantly endeavoring to make the conditions of it as little injurious to the trade of the members of the Association of Chambers of Commerce of the United Kingdom as may be, the inference may be fairly drawn that "arguments" of a material sort have been freely sent over to induce the belief that it is Canadian interest to follow Britain's lead in this matter.

THERE was a meeting of Ontario flour millers held at Listowel, Ont., on May 21st, to consult as to the means whereby the difficulties under which the trade in Ontario are laboring could be relieved. The leading idea, advanced by Mr. David Plews, of Brantford, and formulated into a resolution which was unanimously passed, was that all the millers of the Province be invited to associate themselves together for the purpose of forcing down the price of wheat, hoping thereby to raise a howl amongst the farmers, who would then unite with the millers in demanding of the Government to either decrease the duty on wheat or increase the duty on flour. The following resolution was also unanimously adopted:—

"That in view of the fact that the people of the Maritime Provinces of Canada have declared against granting an adequate measure of protection to the manufacturers of breadstuffs in Ontario, and that whereas the duty on soft coal has been retained as a set-off against the duty on breadstuffs, be it resolved, that we, the millers assembled in this meeting, humbly petition her Majesty's Government at Ottawa to abrogate the duty on soft coal, and that the boards of trade, manufacturers' associations and farmers' institutes be asked to cooperate with this association with a view to forcing the Maritime Provinces to grant us justice."

In the addition to the improvements being made at Queen Victoria Niagara Falls Park, is a work which, when completed, will become one of the many wonders to be found there, and one that will undoubtedly prove a great attraction. The improvement referred to is the Canadian tunnel under the great falls. The tunnel commences at the end of the present walk that runs from the elevator, ending underneath the edge of the falls, and from this point runs inwards into the mass of rock;

then turning parallel with the falls, will run to and under their edge at a point above the boiling foam and below the centre of the great mass of green-lined water which, at a depth of twelve feet, breaks over the precipice. The tunnel will be about 300 feet long, 7 feet high, and 5 feet wide, being blasted out of a seam of shale or slate rock. Immediately above this strata is the well-known 30-foot solid seam of Queenston grey rock, giving untold strength overhead. At the further end of the tunnel, under the falls, it is intended to cut out a sufficient space so that large parties of visitors can stand and view the immense volume of water as it thunders downward into the river below. When completed the work will without doubt result in drawing large numbers of intrepid tourists in search of novelty and adventure.

RECENTLY at Bristol, England, Lord Salisbury in a speech showing the necessity of putting the kingdom in a good state of defence, said:

"Armies can now be directed upon a single point with very small notice indeed, and if the sea is not ours—if our power of defending ourselves upon what we may call our native element is either neglected or for a moment interrupted—we run the greatest danger in case we have any enemy abroad. And remember that the possibility of invasion is a far more terrible thing for this island than for any other country in the world. The fabric of our country is so artificial—we have raised such a vast edifice of industry and manufacture and wealth within so narrow an area—that the progress of a hostile army through our country would shatter our prosperity with a ruin which centuries would not repair. In proportion to the danger must be our precaution. We have to protect ourselves."

Under existing circumstances, in the event of a war with any strong European maritime power, the mercantile marine trade of Britain might be seriously interrupted, which means that if such interruption should continue for even a few weeks, great distress would arise there through failure to receive full supplies of breadstuffs. If the United States should become involved and be in hostility to Britain, the situation would become painfully accentuated, seeing how largely Britain is dependent upon the United States for her supply of food products. In such an event Britain's best and most useful friend and ally would be Canada. Canada is capable of supplying to Britain all the food products that she cannot herself produce, and the contiguity of the two countries, the rapidity of communication possible between them, and the possibility of quick and safe transit from the Atlantic to the Pacific under the shadow of the British flag, are factors in the defence of the mother country that cannot be overestimated. These factors must be encouraged and enlarged and perpetuated. Canada is of vital importance to Britain.

WE do not think that the Ontario millers at their Listowel convention, on May 21, showed any large amount of wisdom in passing a resolution to petition the Dominion Government to remove the duty on soft coal, as a means of forcing the Maritime Provinces to consent to an increase of the duty on flour. Two wrongs cannot make a right. If it is right that the coal industry of the Maritime Provinces should be protected by a duty, that industry should be thus protected. If the duty on flour is not sufficiently high it should be raised, and the millers should urge their claim on this ground. Canadian millers should be very slow in entering into any movement looking to

the breaking down of the National Policy. They have always claimed, and claim now, that the maintenance of the National Policy is essential to their existence; and they ought to know that the policy of the opponents of Protection is to attack it in detail and to weaken it in every possible manner. Do the millers want to lend themselves to such efforts? Viewing Protection as essential to their interests, do they desire to ally themselves with the enemies of Protection, and help drive the entering wedge which would eventually destroy Protection, in retaliation upon the Government, who do not see their way clear to accede to their demands for a higher duty upon flour, and upon a great interest in neighboring provinces because the representatives in Parliament from those provinces oppose the higher duty on flour? Such action as the resolution suggests is not wise. The ground upon which the millers propose to do this fighting is not sufficiently elevated. They should stand upon the higher ground of right, and demand that their interests should receive due attention.

THE city of Belleville, Ont., offers substantial assistance to parties desiring to establish manufacturing industries there, the inducements being graduated according to the number of men to be employed, detailed information regarding which will be furnished on application to Mr. D. B. Robertson, City Clerk of that city. Belleville is one of the most beautifully located cities in Canada, being on the River Moira, at its confluence with the Bay of Quinte, in the County of Hastings, of which it is the county seat. As a place of residence, Belleville is most attractive. It is charmingly situated in the valley through which the Moira flows, and on the hills which rise abruptly on either side of the stream, whilst to the south is the Bay of Quinte—a paradise for the angler, the yachtsman and the oarsman. The streets are all bordered with shade trees, which in summer give them a cool and pleasant appearance, whilst the many handsome buildings and the well-kept lawns show to great advantage. During the season of navigation, Belleville has steamboat connection with Montreal to the East and also with all Western ports on the Great Lakes. By the completion of the Murray Canal on the 1st July, 1889, shipments by water westward will be greatly facilitated. Belleville is situated in the centre of one of the richest agricultural districts in Canada. The Bay of Quinte barley has an established reputation, and large quantities are annually shipped to the United States and Europe. There are also mines of iron, gold, lithographic stone and asbestos existing a few miles north of the city, adjacent to the line of railway, some of which are being worked. Excellent lime stone quarries are conveniently near to the eastern suburbs of the city, and the superiority of the stone is so marked that shipments of it are made to all parts of the Dominion.

THE United States Senate Committee have been in session in San Francisco, enquiring into question of the coast trade and Canada, and several prominent business men of that city have testified. Mr. Edward M. Herrick, a prominent lumber dealer, said there was an over production of lumber. All of the American demand could be supplied within a year by the British Columbia mills. The capacity of these mills amounts to 200,000,000 feet yearly. Lumber could be cut cheaper there, as Chinese labor was chiefly employed. He believed combined

action would be necessary on the part of American lumbermen if the duty on Canadian lumber was abolished. Mr. E. B. Breck, who is interested in canneries on the Columbia River, said he did not believe that any advantage would accrue to American canneries under a policy of reciprocity with Canada. The American canneries during the past five years had packed 4,200,000 cases of salmon, while the British Columbia canneries had turned out only 300,000 cases during that period. Mr. W. C. Linde testified that the San Francisco market was flooded with fish from the North Atlantic fishing grounds. There was very little but cod fish caught and packed on the Pacific coast. The supply from the northern fishing banks of this fish was inexhaustible. The demand for it is chiefly local. Some was shipped to Australia. He asserted that if the eastern competitors were shut off, the cod fisheries of the Pacific coast would supply not only the western market, but the world. Mr. John Howard, of the Oregon Improvement Company, testified with regard to anthracite coal. He said the United States could hold its own with Canada, regardless of duties. The quality of other coals was the main basis of competition. Australian ships, coming to America for wheat cargoes, brought coal from the former country for less than it cost to bring coal from Washington Territory to San Francisco. The British Columbia and Australian coal was of a better quality than any that could be found in the Western States or on the Pacific. President Jacobs, of the Canned Goods Association, said the association found it cheaper to ship goods by the Canadian Pacific than by the home roads. Only 500,000 cases of fish had been packed for this year, owing to the exorbitant transcontinental freight rates. The workings of the inter state commerce bill were so injurious to the canneries that some would not be operated at all. He declared that the bill was very disadvantageous to the interests of the Pacific coast.

SPECIAL ADVERTISEMENTS.

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

KNITTING CREELMAN BROS., Georgetown, Ont MACHINES.

Wide Awake for June abounds with readable articles. "Relics o Torture," by Mrs. F. A. Humphrey, describes various curious "machines" for punishment in old times, which she saw in England; Mrs. Clafin's "Letter from Daisy" on behavior, is excellent; Miss Poulsson's "Two Sermons" is exquisite; Sallie Joy White's "Volunteer Reading in School" is of great suggestive value; "Little People in the Studio," with its eleven pictures, is charming reading for everybody. "Men and Things," the new department, is filled with enjoyable anecdotes and talks, notably "The Footsteps of Genius," "Lord Tennyson's Chalk Pits," and "Fish-Catching on the Potomac." The poems of the number are by Clinton Scollard, Mrs. Whiton-Stone, Marian Douglas, H. R. Hudson, Kate Putnam Osgood, Alice Wellington Rollins and Elizabeth L. Gould. There are also five true stories: "A Plain Case," by Miss Wilkins; "The Naughtiest Boy I Ever Met," by Miss Seward; "The House that Jack Built," by Mrs. General Fremont; "The French Member of Company B," by Mrs. Sawyer-Downs, and "Overboard in the Java Sea," by Sara Trainer Smith. The serials are excellent: Margaret Sidney's "Five Little Peppers Further On," has a tremendous surprise for readers; "Sibyl Fair's Fairness," by Talbot, will be enjoyed by *Wide Awake's* grown-up audience. *Wide Awake* is \$2.40 a year. D. Lothrop Company, Publishers, Boston.

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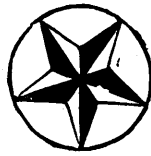
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Manufacturing.

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

MESSRS. T. PEPPER & Co., Guelph, Ont., will make important additions to their axle works.

THE Deseronto Car Works, Deseronto, Ont., will build fifty freight cars for the Canada Atlantic Railway.

MR. GEORGE HOLLINGER's tannery at Hanover, Ont., was destroyed by fire May 13th; loss about \$6,000.

MR. JOHN LONGEWAY's saw mill near Mitchell, Ont., was destroyed by fire May 14th. Loss about \$3,000.

MR. A. MCCALL's Lynn Valley grist mills, near Simcoe, Ont., were destroyed by fire May 31; loss, about \$8,000.

PARIS, Ont., offers an excellent opportunity just now for competent mechanics to start a foundry and machine shop.

MR. JOHN SHELLINGTON's lumber mill at Hinchinbrook, near Kingston, Ont., was destroyed by fire May 27th; loss about \$4,000.

MESSRS. MACGREGOR, GOURLAY & Co., Galt, Ont., have recently shipped twenty of their looms to the Brodie Mills in Hespeler, Ont.

MR. A. DEVITT, formerly of Messrs. Elliott & Co., Almonte, Ont., has assumed the managership of Gemmel's mill at Pike Falls.

It was the Galt Axle Works, not the "Axe" works, which Messrs. Linton & Co. took over from the estate of Messrs. Detwiler & Son.

THE Westminster Woolen Mills Company, New Westminster, B. C., have placed a new blanket loom and a new fancy work loom in their mills.

THE Corticelli Silk Company, St. John, Que., are erecting a new wing to their premises, which will include a capacious dye house and store room.

THE Almonte Knitting Co., of Almonte, Ont., are turning out a splendid line of all-wool striped hosiery, which is meeting with deserved success.

MR. T. J. CLAXTON, President of the Globe Woolen Mills, Montreal, has recently returned from a trip to the Rockies, greatly improved in health.

THE Ontario Worsted Company of Elora, Ont., are adding more power looms to their already extensive plant, which speaks well for the new management.

THE Trent Valley Mills of Campbellford, Ont., have had an electrical watchman put in their mill, which is a model of ingenuity and well worthy of inspection.

MESSRS. COOK & MCINTYRE, Gananoque, Ont., have commenced manufacturing blankets, and judging from samples they are showing, they ought to meet with a ready sale.

FIRE destroyed the Royal Soap Works at St. Boniface, near Winnipeg, Man., May 25th; loss \$20,000. The company will immediately locate their works in Winnipeg.

A FIRE at Roxton Falls, Que., on May 18th, destroyed the tanneries of Messrs. Shaw Bros. & Cassil, the Roxton tannery and the Beaver tannery; loss estimated at about \$100,000.

MESSRS. E. FRANK MOSELEY & Co., St. Hyacinthe, Que., contemplate making an addition to their tannery for the manufacture of fine leather for the upholstery and book-binding trade.

THE Victoria Lumbering Co. have closed their mill at Chemainus, B. C., for the purpose of making some important changes. It is the intention to largely increase the capacity of their mill.

MESSRS. LUKE BROS., Oshawa, Ont., manufacturers of furniture, etc., have recently erected a new three-story brick store-room, 60 x 36 feet, in connection with their new factory, which is 70 x 40 feet.

MR. J. A. TESKEY is about to build a large extension to the Mississippi Woolen Mills at Appleton, Ont. The new building is to be very substantial, of stone, with iron roof, and as near fireproof as can be made.

THERE has been quite a revolution in shades and patterns in the knit goods trade; the old standard scarlet shirt promises soon to become an obsolete article. The tendency is to quiet shades with cloudy effects.

THE Ontario Terra Cotta Brick Company, of Toronto, have recently purchased an outfit of suitable machinery, and are about commencing the manufacture of bricks and terra cotta at their works, near Milton, Ont.

WORK on the McLaren-Ross Mills, at McInnes farm, Fraser River, B. C., will be gone on with at once. The *Columbian* says the mills will be 455 feet long by 72 wide, and fitted with the most modern machinery.

At the recent meeting of the Amherst Boot & Shoe Company, of Amherst, N. S., it was shown that the sales for the past year aggregated about \$375,000—about \$50,000 more than the previous year. The works employ 180 hands.

MR. H. W. PETRIE, Brantford, Ont., manufacturer and dealer in machinery, recently made a large shipment of iron working machinery to a large iron working establishment in Detroit, Mich. This is carrying the war into Africa.

MESSRS. FROST & WOOD, of Smith's Falls, Ont., are doing a rushing business in agricultural implements in the lower provinces. Their trade has so increased this season that they have made Truro, N. S., a distributing centre for their goods.

THE Globe Woolen Mills Co., Montreal, have recently put in another set of cards, making it a seven-set mill. They will also add another fulling mill. There are twenty-eight looms in all, running on light cassimeres, stripes and checks.

THE authorities of Three Rivers, Que., have resolved to grant a bonus of \$20,000, fifteen acres of land, and exemption from taxation, to a Belgian concern for the manufacture of iron water pipes, in which a large number of hands is to be employed.

MR. W. D. ROBINSON, whose elevator was recently burned at Carberry, Man., is making arrangements to start a saw-mill at Ottertail, in the Rocky Mountains, with a capacity of 20,000 feet per day. He will also rebuild his elevator at Carberry.

THE foundry of Messrs. Noxon & Barker, at Picton, Ont., is 200x30 feet, with a two-story wing 175x90 feet. They manufacture cooking and box stoves, agricultural implements, plows, cultivators, sulky plows, spring-tooth harrows, straw-cutters, etc.

THE Toronto Radiator Manufacturing Company have abandoned their original location on Niagara street, and removed to the factory recently occupied by the Toronto Stove Manufacturing Company. The Radiator Company now employ about 100 hands.

MR. W. J. HARE, manufacturer of plows, etc., Oshawa, Ont., whose works were destroyed by fire several months ago, has become established in his new factory. The building is of brick, 90 x 50 feet. At present he gives employment to twenty hands.

MR. ROBERT WEDDELL, Trenton, Ont., is proprietor of the Trenton Bridge and Engine Works, which give employment to over fifty hands. They manufacture steel and iron bridges of every description, also turn tables, iron piers and roofs, boilers, etc.

A CORRUGATED steel hoop has been invented, which is said to be elastic and firm, hugging a package tightly. Four steel hoops will take the place of ten wooden hoops on a flour-barrel. They are cheaply produced by the aid of electricity, a hoop being welded in two seconds.

THE Rapid Manufacturing Company, Montreal, has been incorporated with \$150,000 capital stock, for the purpose of manufacturing type-writing machines, sewing machines, and for like manufacturing purposes, and generally for the manufacture of any article for domestic or business uses.

THE Kemp Manufacturing Company, Toronto, which is the outgrowth and enlargement of the recent Dominion Tin and Stamping Works, inform us that they have increased their facilities by putting into their works one of the largest improved drawing presses made, the weight of which is about 50,000 pounds.

MESSRS. BEATTY & SONS, Welland, Ont., have recently sent to Cornwall two derricks and a dredge constructed for Messrs. Davis & Sons, nine cars being necessary for the transportation. The firm has also made a contract for another dredge for the same parties, which will be completed in a couple of months.

THE A. S. Whiting Manufacturing Company, Oshawa, Ont., manufacturers of scythes, hoes, rakes, forks, etc., is one of the most successful concerns in Canada. The main building of their factory is 300x60 feet, and there are numerous supplementary buildings. These works give employment to about 100 hands.

MR. S. L. MULLETT has established himself in business at Orillia, Ont., where he will pay special attention to the repairs of saws for lumber mills. Mr. Mullett was for a considerable time connected with Messrs Shurley & Dietrich, saw manufacturers, of Galt, Ont., and will act as agent for the sale of that firm's goods.

THE proprietors of a broom factory at Duluth, Minn., have decided to discharge all men in their employ who are not married by the end of the month. This may seem a little harsh, but there is nothing like matrimony to increase the demand for brooms. The Duluth manufacturers do well to encourage marriage.

ALLUSION is made elsewhere to the lumber mill now being built at McInnes' Farm, on the Fraser River, B.C. The mill building will be 455 feet long and seventy-two feet wide, and will be furnished with the most modern machinery. A second mill will be built by this concern, but the location has not yet been chosen.

THE town of Revelstoke, B. C., will soon be a place of some importance. A company of English capitalists have selected it as the most central point to build their smelter, which will cost when completed \$250,000. The company are also interested in a brick yard and large saw mill that are to be established there this season.

THE Chatham Wagon Works, Chatham, Ont., are turning out regularly seventy-two wagons per week, and still cannot keep pace with orders. One-half the product of the works go to Manitoba and the North-west, one-fourth to British Columbia and the Lower Provinces, and the remainder in Ontario; 120 hands are employed.

THERE seems to be a good opening here for a woolen mill, and for the manufacture of woolen cloth. There are almost 6,000 sheep in the united counties, and the mill ought to be a success from the beginning. This district is an excellent grazing one, and sheep could be made a profitable portion of the farmer's income.—Birtle, Man., *Observer*.

THE Polson Iron Works Company are pushing the construction of the steamer they are building at Owen Sound, Ont., for the Parry Sound Lumber Company. She will be 210 feet long, 34 feet beam, and 14 feet deep; will have a capacity of 1,050,000 feet of lumber, or 44,000 bushels of grain, and will be one of the finest steam barges afloat.

MESSRS. JAMES HARRIS & Co., St. John, N.B., have eight first-class cars in course of construction at their shops. Six of these are for the I.C.R. and two for the New Brunswick Railroad. The cars will be finished both inside and outside in cherry and mahogany, no paint whatever being used. They will be valuable additions to the rolling stock of these roads.

THE British American Dyeing Co., of Montreal, have erected a magnificent dye-works on the Lower Lachine road, just outside of Montreal. The factory is modelled on a similar plan to the famous English works at Perth. Mr. Allen is deservedly proud of his place, and can justly boast of having one of the best equipped works of its kind in America.

THE Montmorenci Cotton Manufacturing Company, with \$200,000 subscribed capital stock, have applied for incorporation, with headquarters at Montreal. This is the concern recently alluded to in these pages, who propose erecting what will probably be the largest cotton mill in Canada, for the purpose of manufacturing cotton goods for the China and Japan markets.

THE Martin Manufacturing Company, manufacturers of saddlery hardware, etc., who removed their works from Toronto to Whitby, Ont., a little over a year ago, in their first annual statement regarding the number of their employees, amount of wages paid, etc., show that the average number was over fifty, and the aggregate wages paid, exclusive of salaries, \$12,300.

THE new Montreal Rolling Mills Company have begun the erection of their building near the Merchants' Cotton Mills, at St. Henri, Que. This company has acquired there 140,000 feet of land, and their buildings, which will be 200x120 feet, will cost between \$25,000 and \$30,000. They have been granted twenty years' exemption from taxation. Wrought iron pipe will be a specialty.

MESSRS. EDWARDS & BARNES, of Birmingham, England, have placed upon the market a "patent darning weaver," by the aid of which the work of darning can be performed quicker and better than by hand. It does not darn, but weaves pieces into the fabric, so that the patches nearly become integral parts of the cloth. The makers state that it is also applicable to fancy work of many kinds.

ELECTRICITY is now supplied to cigar-lighters. On ordinary gas cigar-lighters down town one now finds a button or a lever, which, on being pressed, throws an electric wire against another wire on the burner, turning on the gas at the same time. When a cigar

has been lighted, the lever is thrown up and the gas is turned off. The thing amuses the public and saves gas bills for the store-keepers.

MESSRS. D. A. GRANT & Co., Woodstock, N.B., who are leading carriage manufacturers, wrote the J. B. Armstrong Manufacturing Company, Guelph, Ont.:—"We have been using the Armstrong steel gears and springs for twelve years, and we have no hesitation in saying that we consider them superior to any we have tried. We have sold them for all kinds of driving, and they have given general satisfaction."

THE principal industry of Stonewall, Man., at present is the roller flour mill of Rutherford & Co. The mill has a capacity of fifty barrels daily, but there is ample room in the building for a grinding capacity of 125 barrels. The proprietors contemplate enlarging the mill to this capacity at some future time. The mill was originally a stone system mill, the roller plant having been put in two years ago.

WE understand that the Messrs. Linton have purchased the axle works from the creditors at thirty-five cents on the dollar, and operations will be resumed at once. The Messrs. Linton were connected with the works from their inception, until they passed into the hands of Mr. Detwiler, and, having regained possession under advantageous terms, we trust that they may meet with that success which they deserve.—*Galt Reformer*.

THE Oshawa Malleable Iron Company, Oshawa, Ont., manufacturers of malleable iron and iron castings for all kinds of agricultural implements and miscellaneous purposes, established their works in 1872, and have been continually extended until they now cover about five acres of ground. The business has increased from an output of 300 tons per annum at the beginning, to 3,000 tons. The works give employment to 300 hands.

THE main building of the McLaughlin Gear and Carriage Works, Oshawa, Ont., is three story, solid brick, 75x31 feet. The blacksmith shop and wood shop is attached by platforms to main building, and the size of each flat is 25x90. Back of this is the engine room, also of brick, and there are numerous other buildings necessary for carrying on the works and for storage. These works give employment to about forty-five hands.

THE J. B. Armstrong Manufacturing Company, Guelph, Ont., call attention to the "Daisy" gig manufactured by them, and which they describe as being a light, stylish, low-setting and neat appearing vehicle particularly adapted for ladies, physicians and general use. With it the company's three-bow Royal City top should always be used, which admits of handy entrance when left up. Descriptive circulars sent on application.

MR. R. G. LECKIE, late manager of the Springhill, N.B., coal mines, is negotiating for the purchase of the Joggins mines, in Cumberland County, N.S., which, with the Joggins railway and the neighboring Prospect mines, are mainly owned in St. John. The price suggested for the principal mine is \$200,000, and for the Prospect mine \$40,000, while the offer said to have been made for the railway is \$140,000. The railway is twelve miles long.

OWING to the death of Mr. Henry Bickford, the business previously carried on under the name of S. Lennard, Sons & Bickford, at Dundas, Ont., is dissolved. The business will be continued as heretofore under the name of S. Lennard & Sons, the partners being Messrs. S. Lennard, S. J. Lennard and H. Lennard. This concern are manufacturers of plain and fancy hosiery, and are the patentees and proprietors of the "Elysian" seamless hosiery.

MESSRS. THEO. H. EATON & SON, Windsor, Ont., and Detroit, Mich., whose business card appears on our front cover, call attention to the dye stuffs which they offer for sale. Among these they mention dyewoods, dyeing drugs, chemicals, acids, high grade logwood, domestic and imported extracts of logwood, fustic and indigo, French archil and cudbear, etc. They are sole agents for the United States and Canada for the "Crown" aniline dyes.

THE Blythe Woolen Mfg. Co., Peterborough, Ont., have four sets of cards, 1,200 spindles, and ten looms, and are adding to the present capacity of their spinning room a new mule with 320 spindles, built by Davis & Furber, North Andover, Mass. This company manufacture fine fancy flannels, and are preparing to go to fancy cassimeres. Their machinery is such that they are enabled to provide the market with all styles and grades of woolen textiles.

THE Massey Manufacturing Company, Toronto, claim to have the largest works under the British flag devoted exclusively to the manufacture of harvesting machines. The floor space of the works aggregates 271,000 square feet—very nearly 6½ acres—and they give employment to over 600 hands. They cut up an average of 300,000

feet of lumber per month; and this season they will consume about 800 tons of malleable iron, 600 tons of steel, and over 40 tons of paint.

THE Standard Needle Company, Paris, Ont., met last week and elected the following directors:—John Allan, president; George L. Scott, vice-president; David Brown, secretary-treasurer; Richard A. Dixon and George Davidson. The works are running on sewing machine needles, with a full complement of hands, and the company are putting in machines to manufacture needles for knitting factories.

THE Canadian Pacific Railway car shops at Perth, Ont., have a large force of men at work building about 2,000 doors for grain cars and five derrick cars. These cars are worked by hand power, by windlass, but the mechanism is very powerful, being capable of lifting fifteen tons, so that with one of them a freight car could be easily lifted on or off the track and a wreck cleared up in short order. The one already built and sent to Montreal has given great satisfaction.

THE Auburn Woolen Mills, Peterborough, Ont., has ten sets of cards, 3,200 spindles, and twenty-six Crompton looms. The company manufacture all-wool fine cassimeres and silk mixes, also a very nice line of Scotch goods. They consume 6,000 lbs. of wool per week, and find business first-rate; in fact, they have orders far ahead. The stocks they use are Cape and Australian wools. They have lately added to their well-arranged mill new and improved automatic sprinklers.

THE success of the Corticelli Silk Company of St. Johns, Que., has been so marked as to demand an immediate enlargement of their factory. Mr. Demock, of Florence, Mass., one of the principal proprietors, spent several days in St. Johns recently, and decided to double the capacity of their establishment by building in rear of their present factory. The foundation of the success of the Corticelli Company is its intelligent management and the excellent quality of silk turned out.

THE supply of Canadian anthracite is commencing to make itself felt in the markets. Dealers in America are early in their announcements for the next season, as the following paragraph shows: "Coal dealers are already in a position to promise a reduction of fifty cents per ton on American anthracite coal for next season, on last winter's prices." The inevitable is not far away. American coal in the Northwest will soon be a thing of the past.—*Winnipeg Commercial.*

THE municipal authorities of Thorold, Ont., will submit a by-law to the ratepayers of that town, looking to the bonusing of a factory there for the manufacture of burial caskets, etc., to the extent of about \$12,000. Messrs. Fraser & Ripson are the promoters of the scheme. These gentlemen own three patents on this specialty, and if they obtain the desired bonus, they will organize a stock company and manufacture about \$120,000 worth of goods a year, giving employment to about sixty hands.

THE Globe File Manufacturing Company, Port Hope, Ont., established themselves in business there last year. Their factory buildings are all new, and two stories high. The main building, of brick, is 157x50 feet; another brick building is 50x30 feet, and one of stone is 50x50 feet. The works are driven by three water wheels, which give a power equal to about 120 horse; fifty-five hands are employed. Files of every kind and shape are made, and the output is about 200 dozen files a day.

A PROJECT is on foot to establish another iron rolling mill for the production of bar iron at Kingsville, Ont., and to utilize natural gas for that purpose. It is proposed to erect a plant which will turn out twenty tons finished iron per day to start with. A thoroughly practical man who has had long experience in the business, is ready to take his quota of stock and aid the enterprise. At present prices the profits are said to be over \$12 per ton. Is there not a possibility of making pig iron from the sand said to be present in that section of the province?

MESSRS. ROBERT WOOD & Co., Oshawa, Ont., are successors to the Joseph Hall Manufacturing Company, and manufacture agricultural and general machinery, engines, water-wheels, leather splitters, knife grinders, Gordon and Washington printing presses, shaftings, hangers, saw mills and the improved Champion mower. They have all the patterns formerly owned by the Joseph Hall works, and can furnish repairs for any machine or machinery made by them. This season the company are building a large number of the Oshawa Champion mower.

THE premises of the Cobourg Woolen Company, Cobourg, Ont., cover an area of five acres of land. The main building is 160 x 50

feet, four stories, and the boiler and engine rooms, wool storage, dye house and picker rooms are separate buildings. The premises throughout are supplied with automatic sprinklers connected with two steam fire pumps, which connect with a reserved supply of water. There are seven sets of cards and forty-three looms, and the product is tweeds, of which the output is about 500,000 yards per annum. About 175 hands are employed.

THE Cumberland Coal Company, of Springhill, Nova Scotia, has bonded a quantity of coal land on Queen Charlotte Island, B.C., and a party of prospectors have gone there. On the property bonded there is already a 400 feet tunnel, which was run by a former company. The Nova Scotia company will run the tunnel 400 feet further, and then sink a shaft. It is their intention to institute a thorough search for coal, and the party will probably be absent about a year or a year and a half. The coal found on these islands is said to be of a true anthracite quality.

Two very fine specimens of roofing slate have recently been shown in Calgary, Alberta. The one is a deep blue color, and the other is a rich grey cast, the pieces shown being much larger than plates usually used for house roofing, and are of a fine texture quite free from flaws or spots. The mine from which they were taken is close to Golden Station, B.C., on the C.P.R., about 160 miles west of Calgary, and within 100 yards of the C.P.R. main line. It is stated that sheets of almost any size, especially of the blue slate, can be taken out, and the quantity is apparently unlimited.

THE Hibbard Electric Manufacturing and Supply Company, Montreal, are offering an electric alarm mat for the protection of residences, stores, etc., which should command the special attention of housekeepers. The system consists of an invisible electric matting placed under the carpet or other floor covering, which, when trod upon or touched by the foot, sounds an alarm in any desired place in or out of the building. A few of these mats concealed under the carpets in different parts of the house would baffle the most expert thieves. They are easily applied, are not expensive, and, being portable, are readily transferred to other houses when desired.

FRENCH engineers have lately been testing boiler tubes, with ribs or flanges on the inside, the invention of M. Jean Serve. A larger surface for absorbing the fire's heat is presented, and a saving of fuel ranging from one-third to one-seventh has been indicated. In experiments on a Rhone steamboat it was found that with ordinary copper tubes the combustion of one pound of coal evaporated seven pounds of water, and the smoke issued from the boiler at a temperature of 680° F.; but when the tubes were taken out and the flanged ones inserted, the evaporation immediately rose to nine and a third pounds of water per pound of coal, and the heat of the escaping gases fell to 460°.

WARNOCK'S Galt Edge Tool and Carriage Spring Works, Galt, Ont., now rapidly being completed, will be, it is claimed, the most commodious and convenient of their kind in Canada. These works cover an area of about 6,500 square feet, and are divided into forging, spring-fitting, grinding, finishing, wood-working, gear-fitting and shipping departments, which will give employment to about eighty hands. The gear industry is comparatively new to this establishment, but since its inception has developed into an enormous business, they turning out over 2,000 gears a year, consisting of the elliptical end gear, platform wagon, French platform coach and other makes of gears.

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PATENTEES OF THE "ELYSIAN" SEAMLESS HOSIERY,
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In Western Ontario by

S. LENNARD, Senior Member of the Firm.

MR. JACOB MICKLER, superintendent for Messrs. Stahlschmidt & Co., furniture manufacturers, Preston, Ont., has lately invented two machines that promise to be a great convenience to wood and iron workers. One is for drilling castings for school desks, or any other small castings where one or more holes are required. Three holes can be bored and countersunk at the one operation, which formerly took six handlings to complete. The holes can be drilled at any angle or at any distance apart up to eight inches. The other machine is of the same design, only to be used in boring wood instead of castings. Both these inventions are being patented by Mr. Mickler in Canada and the United States.

MR. ROBERT CARROLL, the well known contractor of Toronto, has succeeded to the unfinished contract to erect the Parliament buildings in the Queen's Park, this city. It will be remembered that Mr. Lionel Yorke, lately deceased, had this contract, and Mr. Carroll was one of the sureties on his bond for the faithful performance of it. Mr. Carroll has associated with him Mr. J. Gaylord, who was Government Inspector at the buildings, who will now be superintendent of construction, and Mr. J. B. Vick, who will superintend the stone cutting. Mr. Carroll says that every effort will be made to have the west wing and the centre part of the building ready for the wall plates by the end of the year.

MCMILLAN, KITTRIDGE & Co., refiners, of this town, have, without doubt, discovered the secret of thoroughly removing all the sulphur and impurities from our crude necessary for the production of a first-class water-white illuminant, equal, if not superior, to the best American article imported into this country. Since our last issue we have made a personal practical test of this brand, petroleum, and find it to be really all that is claimed for it. We burned it in an ordinary lamp for twenty-four hours, and found it perfectly free from any objectionable odor, incrustation on the wick, or cloud on the chimney. We bear this testimony, knowing the important effects of the discovery on the petroleum trade of Canada.—Petrolea, Ont., *Advertiser*.

THOSE of our readers desirous of seeing a beautiful piece of mechanism should inspect the new Wheelock engine introduced by Mr. Geo. Cassidy into his factory on False Creek. This engine is the manufacture of Messrs. Goldie & McCulloch, Galt, Ont., and is of seventy-five horse-power; the boilers are of 100-horse-power

and the make of the same firm. The engine is a perfect piece of mechanism. It is of the latest design, and embraces all the modern approved principles known in the "cut-off" engines. The reputation of its makers is a guarantee of its great excellence, for no firm in Canada, or for that matter on the continent, enjoys a higher reputation than does Goldie & McCulloch, who have helped to make Galt the Birmingham of Canada.—Vancouver, B.C., *World*.

IT may not be generally known that Canadians have taken the leading part in the practical work of developing the petroleum fields in Galicia, in Austria, Beloochistan and Burmah. The names of Rubighini, McGarvey and Anderson will be remembered by people who were familiar with the oil business about Petrolea and Wyoming, Ont. And it is also a curious circumstance that much of the drilling machinery also has been sent from Western Ontario. Think of boilers from Petrolea being transported across the mountains of Beloochistan, or conveyed in coasting vessels to the shores of Farther India, rolled out into the shallow water, and lifted by hundreds of coolies by means of bamboo poles, at the ebb of the tide, and conveyed inland. But such are the facts, and Canadian operators have been superintending and doing this work from the beginning.

THE Royal Electric Company of Montreal are applying to the municipal authorities of Three Rivers, Que., for certain concessions, offering to supply electric light for the city's street lighting, the number of arc lights required, and for two to three thousand incandescent lights for citizens' wants; also to furnish electric power for the running of the water-works and motive power for manufacturers, etc. This would be supplied by electricity, transmitted from sixteen miles from the city, where an immense water power capable of furnishing 10,000 to 15,000 horse power or more, if necessary, exists on the St. Maurice river. The circuits, including the town circuits, would average thirty-six to forty miles. When this great scheme is carried out it will be a marvel in the world of electricity, and will reflect great credit on the city of Three Rivers and its promoters.

INFORMATION from Detroit, Mich., states that the Michigan Central Railway, after a thorough test, has adopted the Woodward storage battery for lighting its entire train service. The trains run between Detroit and Chicago and return without re-storage. A street car recently ran 100 miles without being recharged, and was

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not then exhausted. The Woodward plate, prepared by a salt process, is said to be the only one which resists chemical action and withstands a high pressure current of electricity. Two factories are to be started in Canada for the manufacture of the battery, the Woodward and Thompson patents having been secured by a Canadian company. Doctor Woodward leaves shortly for England, where, in conjunction with the celebrated firm of Shippey Bros., he will conduct various experimental tests in connection with the use of electricity in propelling steamboats, omnibuses and express wagons.

The steel steamer *Modjeska*, which has just arrived in Toronto, and intended to ply upon the route between this city and Hamilton, Ont., was launched only a month ago from the shipyard of Messrs. Napier, Shanks & Bell, Glasgow, Scotland, the machinery having been built by Messrs. Dunsmuir & Jackson, also of Glasgow. The *Modjeska* is a twin-screw steamer, of the following dimensions: Length, over all, 185 feet; breadth, 30 feet; moulded depth, 13 feet; gross tonnage, about 500 tons. The engines are triple expansion, of the most improved type. The general arrangements are of the American type, and all the furnishings and fittings of elaborate and beautiful designs: She is equipped with electric lights throughout, there being 100 of these placed in various parts of the vessel. On her trial trip she went over the measured mile at the rate of 16½ knots; and her passage across the Atlantic was satisfactory in every respect.

The contract for erecting the mill building for the new shingle mill at Revelstoke, B.C., has been awarded. The main building will be 32x32 feet, two stories high, with an addition for an engine room. Two shingle machines will be put in at the start and a thirty horse-power engine. It is the intention to kiln dry all shingles turned out, and for this purpose two dry houses will be erected. The capacity of the mill will be 75,000 to 100,000 a day, the shingles being of two grades, first and second. Thirteen men will find employment at the mill, and a number more in taking out shingle bolts. The owners are from Portland, Oregon, and one of them, J. Valentine, will be the resident manager. They expect to find a ready market in the North-west Territories and Manitoba for their product, as they have got a better freight rate from the C.P.R. than allowed coast manufacturers, the difference being about \$18 a carload.—Donald, B.C., *Truth*.

The Hibbard Electric Manufacturing and Supply Company, Montreal, have favored us with a copy of their first annual catalogue of electric and other goods manufactured by them, including electric light wire; aerial, submarine and underground cables for telegraph, telephone and electric light; rubber-covered wire, magnet wire, office and annunciator wire, lead-encased wires and cables, telephone and incandescent lamp cords, electric cordage, telephones, annunciators, electric bells; fire alarm, burglar alarm and gas-lighting apparatus, and electrical supplies of every description. The company informs us that in order to adequately cope with the increased volume of their business, they have recently erected a new and commodious factory, completely fitted up with machinery and tools of the latest and most improved designs. They claim to be the oldest established concern in Canada engaged exclusively in the manufacture of electrical supplies.

The Cobourg Car Works, Cobourg, Ont., of which Mr. James Crossen is proprietor, were established in 1870, and have developed into a most important industry. The premises cover fifteen acres of land, and the works are completely equipped with the latest and most improved machinery and tools. They are supplied with the Edison system of electric lighting and are heated with steam. They contain five steam engines aggregating about 300 horse power. In them are manufactured all kinds and classes of railway cars, including sleeping, dining, passenger, mail, baggage, express, colonist sleepers, horse cars, cattle cars, box, platform, coal cars, hand cars, etc. They are now engaged on a large order for the Northern Pacific and Manitoba Railway. In 1888 the output of these works was seventy passenger cars, including sleeping and dining cars, and over 1000 freight cars of all kinds. During the same year they used 10,000,000 feet of lumber, 5,000 tons of iron, and employed on an average 400 hands.

The Masson Manufacturing Company, Oshawa, Ont., are manufacturers of agricultural implements and farm machinery—one of the largest establishments of the sort in Canada. Their main works comprise a handsome two-story brick building 300 x 60 feet, and a foundry, blacksmith's and machine shop in a building 200 x 80 feet, employment being given to about 100 hands. They make a specialty of the "Beaver" combined drill and seeder, which has double gear and front hoist, claimed to be the only machine manu-

4 CUPOLAS FOR SALE 4

ONE HERBERTZ PATENT.

Melts with Steam Jet. No Engine and Blower required. Melts two tons per hour.

THREE ORDINARY CUPOLAS,
Duty, five tons per hour.

ST. LAWRENCE FOUNDRY CO.
TORONTO.

G. & J. BROWN M'F'G CO.

(LIMITED),

BELLEVILLE, ONT.

Engineers, Machinists, Boiler Makers,

Foundrymen and Bridge Builders.

RAILWAY and CONTRACTORS' SUPPLIES A SPECIALTY.

Frogs, Diamond Crossings, Switches, Hand Cars, Lorries, Velocipede Cars, Jim Crows, Track Drills, Semaphores, Rail Cars, Double and Single Drum Hoists, etc., etc.

To Manufacturers! - TO RENT -

The Flats and Basement of that centrally situated property on Bay Street, below Front Street, being the BEST BUSINESS PREMISES and location in the City of Toronto, WITH POWER (guaranteed steady), Steam Heating, W. C., Wash-rooms, etc., on each floor. Heavy Weight Steam Hoist; good light on three sides; Lowest Insurance Rates; entrance from front or rear to each flat. Specially adapted for Factory, Warehouse and Office purposes.

The building has a depth of 100 feet, with a frontage of 54 feet on the west side of Bay Street and 34 feet on lane in rear; four stories high and basement. RENT CHEAP.

We have also in the same locality, Lot 70 feet front by 100 feet deep to a lane, on which we will erect factory buildings specially to suit a good tenant. For further particulars apply to

DICK, RIDOUT & CO.,
11 & 13 FRONT ST. EAST

"The Princess" Baby Carriage Rugs

MANUFACTURED BY

NEWLANDS & CO.

Registered and Patented in Canada and the United States.

Are light, elegant and warm; and every Child's Carriage and Perambulator should have one.

WRITE TO **W. H. STOREY & SON,**

ACTON, ONTARIO,

For CIRCULARS and PRICE LISTS.

factured in Canada using a gear on both ends of a seeding machine. By this means all bunching and uneven sowing of grain is avoided, and it also renders the machine particularly handy in finishing up fields or turning around stumps, as half the machinery can be stopped and the sowing with the other half go on without stopping the horses. On the same machine is a very ingenious device by which the change from drill to broadcast seeder can be made without removing a bolt, spring or nut.

The Columbia River Lumber Company intend building a saw mill at the Beaver, B.C., with a capacity of 80,000 feet a day. The company has put in a boom across the Columbia river, driven piling for a flume to convey water across the railroad track, and erected the frame work of the mill building. Part of the machinery is on the ground, and some fifty odd men are now employed by the company. The main mill building will be 147 feet long by 42 feet wide, and two stories high. It will contain two circulars and a gang saw, besides other machinery. The motive power will be furnished by three 30 inch water wheels, each having a capacity of 142 horsepower, the wheels being driven by a 40-foot head of water. Its capacity when completed will be from 125,000 to 250,000 feet of lumber or dimension stuff a day. The company own timber limits on the Columbia and its tributaries, from which it is estimated 300,000,000 feet of lumber can be cut; the last limit acquired being one of twenty-four square miles on the Blackwater. The company expect to fill a contract for 300,000 sawed ties, and will put in three tie machines, each having a capacity of 1,500 a day.

A WAGON has been invented which is capable of being navigated from place to place where the land is tolerably level, the propelling power being the wind, acting upon sails erected on the wagon, and by which a speed of fifteen miles an hour has been attained. It is described as follows:—Across the wide forward end of the triangular frame extends an axle, to which wheels are journaled. The short axle of the rear wheels is pivoted by a kingbolt to the narrow end of the frame. To the short axle is attached a gear wheel, into which meshes a smaller wheel secured to the lower end of a vertical shaft journaled in bearings fastened to the frame. Upon the upper end of this shaft is a hand wheel or tiller, by means of which the wagon may be guided. The speed of the wagon is regulated by brakes upon the front wheels, connected with an upright

lever pivoted in the middle part of the frame, and provided at its upper end with a crosshead, so that it can be operated either with the hands or feet. A mast fastened to the middle forward part of the frame is provided with a sail and appliances for raising, lowering and controlling the sail in the same manner as an ordinary sail boat. With this construction the wagon can be driven at great speed by the wind, and can be driven with, on, or against the wind, where the beach or road is hard, with as much effect as can a sail boat on the water.

A NEW textile has been introduced in London, Eng., which, during its few months' trial, has met with much scientific and popular approbation. As implied by its descriptive title, cellular cloth is of netted or cellular structure, or rather thick but open texture, and is made in all fabrics: cotton, merino, silk and wool. The construction is based upon the theory of perfect ventilation, combined with due retention of the warmth of the body. The purpose of clothing is to prevent the escape of the animal heat radiated from the body. Those articles which are the poorest conductors of heat best serve this purpose. Garments of spongy texture, which enclose much air in their fibres, are warmest because the air they enclose is a most efficient non-conductor. Upon this physical fact rests the theory of the cellular cloth. A construction that shall retain heat in winter and exclude it in summer, and that shall at the same time permit free evaporation, is a model construction for garments. This the construction of the cellular cloth does, by reason of its open texture, which, while it retains a non-conducting body of air next the skin, at the same time permits constant and steady evaporation, the moisture-laden carbonic acid gas exhaled by the body passing freely through the interstices of the fabric instead of condensing upon the body as ordinarily, and thence being absorbed slowly into the clothing, to maintain a moist and therefore sensitive condition of the skin. It is this quality of free ventilation that gives this invention its sanitary value, which is strongly attested by medical journals of the highest standing. It is made up at present mainly in undergarments and athletic garments, for which latter purpose it is admirably adapted, remaining entirely dry even during the most violent exertion, thus obviating the danger of catching cold. The shirtings are made of silk, merino, and cotton and silk mixtures in a variety of handsome plain and striped patterns.

Fenwick & Sclater,

43 and 44 Foundling St., Montreal.

MANUFACTURERS OF

Cast Steel Files and Rasps, Anchor Brand.
Cotton Waste, white and colored.

Asbestos Cement for covering Steam Pipes and Boilers

Asbestos Piston and Joint Packing. Asbestos and Rubber
Piston and Joint Packing. Plumbago Packing.

HOSE—Rubber, Canvas and Linen.

HOSE—Cotton, Rubber-Lined for Fire Brigades.

SELLING AGENTS FOR

Asbestos Packing Co., Boston; Boston and Lockport Black Co., Boston;
American Cotton Waste Co.; Montreal Tent and Awning Co.;
"Household" Fire Extinguisher Co.

A. C. LESLIE & CO.

MONTREAL and TORONTO,

MANUFACTURERS' AGENTS FOR

Iron, Steel, Wire, Tinplate,
GALVANIZED IRON.

Special value in STEEL BARS, ANGLES,
SHEETS, PLATES.

BUYERS ARE INVITED TO OBTAIN PRICES.

"JESSOP'S" STANDARD TOOL STEEL IN STORE.

TO LET.

TO MANUFACTURERS.

FACTORY, with water privilege, near Black's Bridge Montreal. Building 60 x 60, five flats, extra well lighted and very strong; rare opportunity for party wanting cheap power. Apply

WM. JOHNSON & CO.

14 St. John St., Montreal.

The Standard Drain Pipe Co.

ST. JOHN'S, P.Q.

INVERT BLOCKS

FOR BOTTOMS OF BRICK SEWERS.

These Blocks are made of Fire Clay, SALT GLAZED and VITRIFIED, and form the most perfect Invert known. Amongst their special advantages, they are indestructible perfectly smooth, affording the minimum of friction to flow.

Easily and cheaply laid on ANY BOTTOM.

Made in lengths of 18 inches, or to suit buyers.

The Standard Drain Pipe Company, St. John's, P.Q.

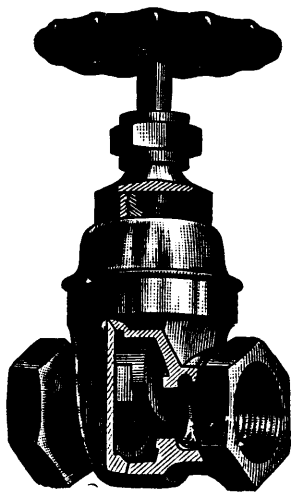
ROBT. CARROLL, Agent for Toronto.

THE Dartmouth Ropework Company, Halifax, N.S., have just completed and put in operation a new factory for the manufacture of Lyall's patent composite silver binder twine, of which they control the Canadian patent. The new factory adjoins their present works, and has been equipped with entirely new and most approved machinery, all at a cost of about \$60,000. The company have increased this large outlay with a view to meet the popular demand for a cheaper binder twine than any now on the market, the Lyall twine being sold at about 25 per cent. less than other twine. It is of composite materials, but claimed to be quite as strong and easily handled as other sorts. This twine was first put on the American market last season, and successfully stood the practical test of harvesting work. The manufacture of this cheaper article in Canada successfully solves the binder twine question. We understand that the output of this new factory this year will be about 300 tons of twine, and that hereafter the output from year to year will be sufficient to meet all the requirements of the country.

WM. BELL & CO.

MESSRS. WM. BELL & Co., Guelph, Ont., manufacturers of organs and pianos, have sent us copies of three new catalogues recently issued by them, having reference to their business. One of them is devoted to the piano department, another to the organ department, and the third, an English edition, to their general trade in Great Britain, Australasia and foreign countries. In the domestic piano edition an accurate detailed illustrated description is given of the peculiarities of construction of the pianos manufactured by the concern, the diagrams fully elucidating the methods by which the instruments are rendered first class and absolutely perfect in all respects; the peculiarities of the different styles; descriptions of the various fine and expensive woods of which they are constructed; the various attachments and ornamentations, sizes, shapes, etc. The book also contains useful hints regarding the preservation of pianos; how to unpack and remove the instruments from the packing cases, etc.; a large number of testimonials which Messrs. Bell have received from prominent scientific musicians in Canada and elsewhere, and an article extracted from the CANADIAN MANUFACTURER, giving an accurate description of the extensive factories of the firm at Guelph, Ont. The domestic organ edition is very simi-

lar in style and character to the one above alluded to, the reference being to organs, of course. This organ edition contains more pages than that devoted to pianos, for the sizes and styles of the organs manufactured by Messrs. Bell are exceedingly numerous, and embrace about every imaginable variety from a low priced instrument specially adapted to use in the cottages of the lowly, to the pretentious and elegant affair that is gladly given position of prominence in the mansions of royalty and wealth. Both these catalogues are really beautiful specimens of the printer's and book-maker's art, and compare favorably with the best work done anywhere else in the world. The covers are excellent chromo-lithographs—alike in both catalogues. The front cover includes a suggestive glimpse of Canadian scenery—Halifax, the easternmost seaport of the Dominion on one side, and Victoria, B.C., with the Pacific ocean beyond, on the other, with intermediate mountains, plains, fertile fields and the great trans-continental Canadian Pacific Railway between; while a series of medallions contain excellent likenesses of some of Canada's most celebrated musical artists—Torrington, the Fishers, Labelle, D'Auria, Aldous and Verrinder. The back cover displays an excellent view of the Guelph factories and lumber yards, reproduced from a photograph and appropriately colored, which gives a comprehensive idea of the extent and capacity of the concern. These two catalogues are the production of Canadian printing establishments—that of pianos having been gotten up by Mr. James Hough, jr., of Guelph, and that of organs by Messrs. Bingham & Webber, of Toronto. The paper is heavy cardboard; the printing is done in five or six colors, and the "phantom" work, specially designed and engraved for the purpose, is very beautiful. The foreign edition bears the imprint of a London publishing house, and is first class in every respect—very beautiful, and in strong contrast in style and make up with the Canada work. It contains a great deal of interesting information regarding Messrs. Bell & Co. and their business, illustrated descriptions of their various styles of instruments, price lists, etc. A page of the book is filled with the names of some of the eminent personages who have been supplied with "Bell" instruments, among which are the Royal Family, H.R.H. the Princess Louise, the Marquis of Lorne, the King of Holland, the Mikado of Japan, the Marquis of Lonsdale, Earl Dufferin, the Governor of Madras, India, many of the public and semi-public institutions of Britain and elsewhere, etc.



WEBER'S PATENT
Straightway Valves

FOR
STEAM, WATER AND GAS,
Best Value in the Market.

KERR BROS
Walkerville, Ont.

Sole right to manufacture in the Dominion
Send for Price Lists.

Also manufacturers of COMPOUND MARINE
AND STATIONARY ENGINES.

FIRE PROTECTION.

BUILDINGS EQUIPPED

WITH

AUTOMATIC
SPRINKLERS

BY

ROBERT MITCHELL & CO.

MONTREAL BRASS WORKS.

Write for estimates

MONTREAL

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



THE HAMILTON AND TORONTO

SEWER PIPE CO'Y,

(LIMITED,)

HAMILTON, CANADA.

SUCCESSORS TO

*The Campbell Sewer Pipe Co. and
The Hamilton Sewer Pipe Co.*

—MANUFACTURERS OF—

STEAM-PRESSED, SALT-GLAZED
VITRIFIED
SEWER PIPE,

**FLUE PIPES, CHIMNEY TOPS and
SMOKE PREVENTIVES.**

Established 1860



COWAN & BRITTON,

GANANOQUE, ONT.

MANUFACTURERS OF

**Strap and T. Hinges, Screw Hooks and Hinges,
Wrought Steel Butts for Builders and Cabinet
Makers, Washers, Staples, Hooks, Hasps, Hay
Carrier Hooks, Patent Hasp Locks, Bed
Fasteners, Steel and Iron Cut Nails,
Clout, Truck and Finishing Nails,
Brads, Tacks and Shoe Nails.**

We are also prepared to make special Nails or Hinges, or other articles made from iron from samples. The quality of our goods is always A. 1, and our facilities for making them are unequalled.

THE WELLINGTON MILLS

LONDON, ENGLAND,

GENUINE EMERY

**Oakey's Flexible Twilled Emery Cloth.
Oakey's Flint Paper and Glass Paper.
Oakey's Emery Paper, Black Lead, etc.**

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

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

Enquiries should be addressed to

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

Bonuses !

TO

MANUFACTURERS

The City of Belleville offers special inducements to Manufacturers seeking a location.

Besides its situation on the Bay of Quinte, in the centre of one of the wealthiest Agricultural districts in Ontario, possessing superior facilities for shipping by water, it is the principal terminus of the Midland Railway System, which extends its branches to several points on the Georgian Bay, and through the lumber country in and beyond the Muskoka district. It is also the most important station between Montreal and Toronto, on the main line of the Grand Trunk.

Besides the natural advantages for Manufacturing Operations, the city offers inducements to parties seeking location, Exemption from Taxes, Free Site for Building, and Money Aid on certain conditions. Communications received by the undersigned.

D. B. ROBERTSON,

CITY CLERK.



TENDERS.

SEALED TENDERS, marked "For Mounted Police Provisions and Light Supplies," and addressed to the Honourable the President of the Privy Council, Ottawa, will be received up to noon on Tuesday, 18th June, 1889.

Printed forms of tender, containing full information as to the articles and approximate quantities required, may be had on application at any of the Mounted Police Posts in the North-West, or at the office of the undersigned.

No tender will be received unless made on such printed forms.

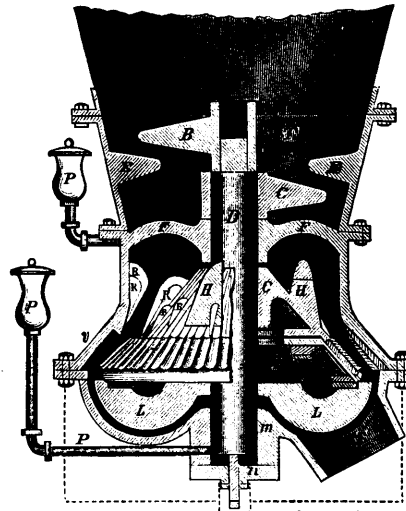
The lowest or any tender not necessarily accepted.

Each tender must be accompanied by an accepted Canadian bank cheque for an amount equal to ten per cent. of the total value of the articles tendered for, which will be forfeited if the party declines to enter into a contract when called upon to do so, or if he fails to complete the service contracted for. If the tender be not accepted the cheque will be returned.

No payment will be made to newspapers inserting this advertisement without authority having been first obtained.

Ottawa, May 10th, 1889.

FRED. WHITE,
Comptroller, N. W. M. Police.



Important to Tanners. SEGMENT BARK MILL.

For Grinding any hard substance
SUCH AS

Cement, Plaster, Bones, Bats,
Ores, Paint, etc. It is also
used to grind Liquorice
and Sarsaparilla roots.

Also as a Corn
Breaker.

The Segments will retain
their cutting edges longer than
those of any other Mill, and
when dull can be quickly and
cheaply renewed.

It has the following good
qualities, viz.:—Fast grinding;
evenly prepared bark; is easily
erected and small power re-
quired to drive it.

It works with ease in damp
or frozen bark, and break-
ages are prevented by safety
coupling.

PAXTON, TATE & CO.,
PORT PERRY, ONT.

ESTABLISHED - - 1828.

J. HARRIS & CO.

(Formerly HARRIS & ALLAN),

NEW BRUNSWICK FOUNDRY.

RAILWAY CAR WORKS,
PARADISE ROW.

PORTLAND ROLLING MILLS,
STRAIT SHORE.

PORTLAND, ST. JOHN, N.B.

Railway Cars of all descriptions. Chilled Car Wheels, "Washburn Peerless" Steel Car
Wheels. Car. Machine, Mill, Ship, and all kinds of Castings. Steam Engines, Mill
and other Machinery. Nail-Plate, Bar Iron, Street and Mine Rails, Ships' Iron
Knees, Hammered Car Axles, Shafting and Shapes.

Barnum Wire & Iron Works

WALKERVILLE, ONT.

Bank and Office Railing, in Brass, Iron, Steel, Bronze or Plated.
Church Metal Work, Altar and Pulpit Rails, Lecterns, etc.
Architectural Iron Work of all kinds. Stairs, Gates,
Fences, Stable Fixtures, Elevator Cabs and En-
closures, Grates, Fire Places, Andirons,
Fenders, Fire Screens, Hall and Newel
Lights. Fine Brass Castings, Fine
Forging, Nickle, Brass and Copper
Plating, Spinning, Artistic
Metal Work.

DESIGNS AND ESTIMATES SUBMITTED. SEND FOR CATALOGUES.

TORONTO AGENT:

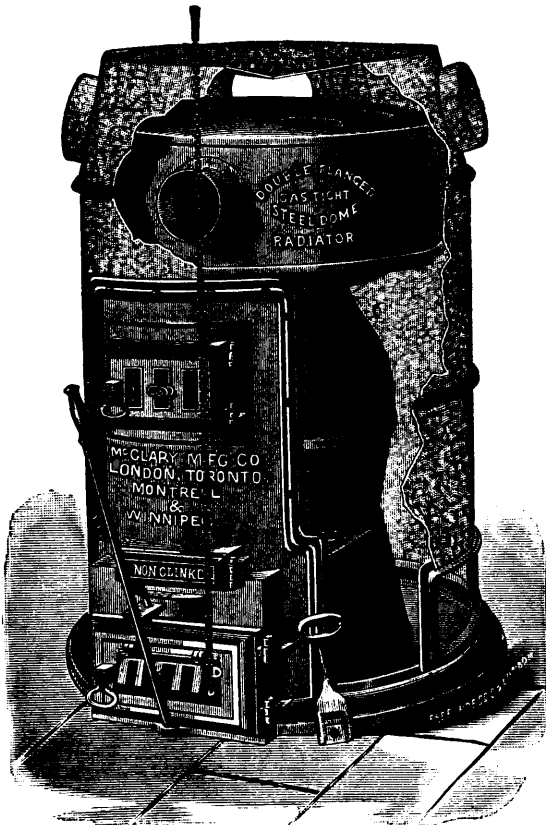
H. W. BOOTH, - 65 Front St. West

For Specimen of Work, see Bank of Montreal, Toronto.

**FAMOUS TOP
RETURN FLUE FURNACE.**

**NEW GEM
WOOD FURNACE**

IN THREE SIZES, FOR BRICK OR PORTABLE SETTING.



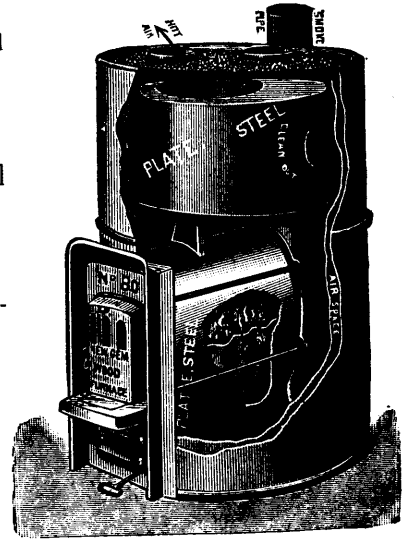
WITH EITHER CAST IRON OR STEEL RADIATOR.

Entirely new and of novel design.

A Powerful and Economical Heater.

Thoroughly tested. Specially adapted for medium sized dwellings.

SURE TO SELL



Any dealer who has not received our price list for 1888 will please advise us.

McClary Mf'g Co.

London, Toronto, Montreal and Winnipeg.

Unequalled for economy of fuel, simplicity of construction, ease of management and heating capacity.

EVERY REPUTABLE DEALER KEEPS THEM.



Insist on having the Genuine, and see that they bear our name.

W. H. STOREY & SON, ACTON, ONT.

NAPANEE CEMENT CO'Y

(LIMITED.)

NAPANEE MILLS, - ONTARIO.

MANUFACTURERS OF

HYDRAULIC CEMENT

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

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

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

JUTE, LINEN or COTTON BAGS

For FLOUR, OATS, POTATOES, FEED, etc.

Every Quality, Weight and Size kept. The largest and best assortment in Canada. Daily out-turn, THIRTY THOUSAND BAGS.

BAG PRINTING in COLORS a specialty.

HESSIANS, BURLAPS AND HOP SACKING,

A splendid stock kept. Plain and Striped. Every quality, width and weight.

TWINES—We keep the best stock in Canada.

CANADA JUTE CO'Y (Ltd.), **STARK BROS.,** Agts. MONTREAL. 62 FRONT ST. EAST, TORONTO.

To Prevent Boiler Explosions

And other accidents to Steam Boilers and to secure economy in their working, insure with

THE BOILER INSPECTION AND INSURANCE CO. OF CANADA

Consulting Engineers and Solicitors of Patents.

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GEO. C. ROBB, CHIEF ENGINEER. ALEX. FRASER, SEC'Y-TREAS.

Head Office: 2 Toronto St., TORONTO.

Every Instrument
Warranted.

BELL

ESTABLISHED
25 Years.

UPRIGHT PIANOS CABINET ORGANS

We have just commenced the manufacture of Pianos—which contain all the best known practical improvements. In quality, the best that can be produced with first-class material and skilled labor.

Have a universal reputation as being strictly first-class, and are recommended by Highest Musical Authorities. In tone, design and workmanship unsurpassed.

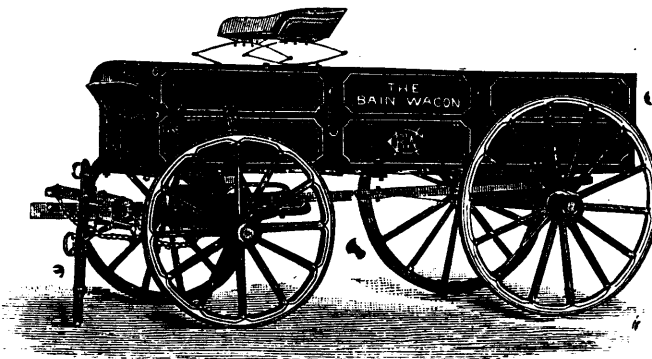
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W. BELL & CO. HEAD OFFICE AND FACTORIES, GUELPH, CANADA.

Branch Warerooms at Toronto, Hamilton, St. Thomas, Winnipeg, London, Eng. and Sydney, N.S.W.

Bain Wagon Co.

— MANUFACTURERS OF —



LIGHT RUNNING

FARM, SPRING AND FREIGHT WAGONS

Also Heavy Sleighs and Steel Skein Log Trucks.

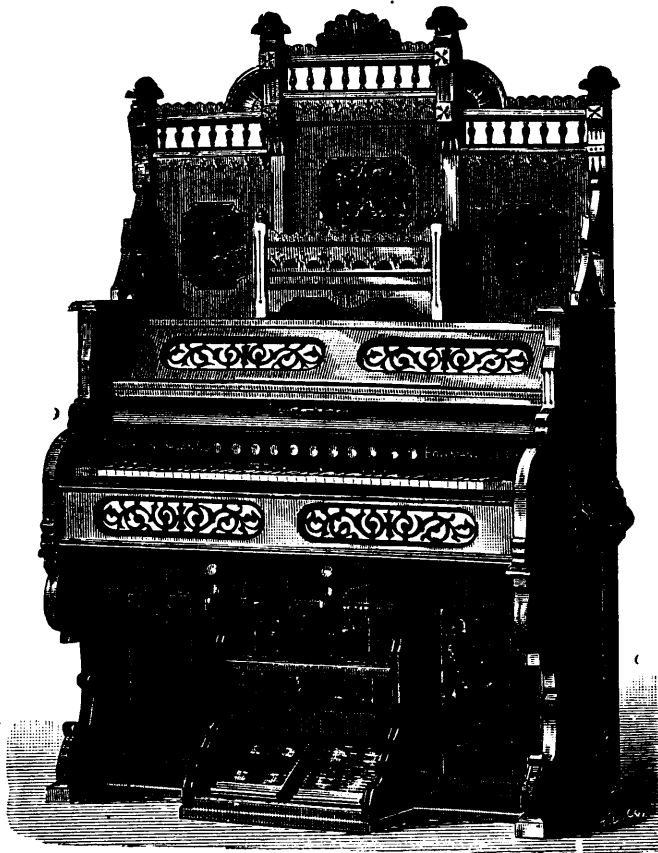
SEND FOR PRICES TO

BAIN WAGON CO.

Woodstock, Ont.

"DOMINION" PIANOS

Hold more Gold
Medals from the
World's Fairs than
all other Canadian
makes put together.



"DOMINION" ORGANS

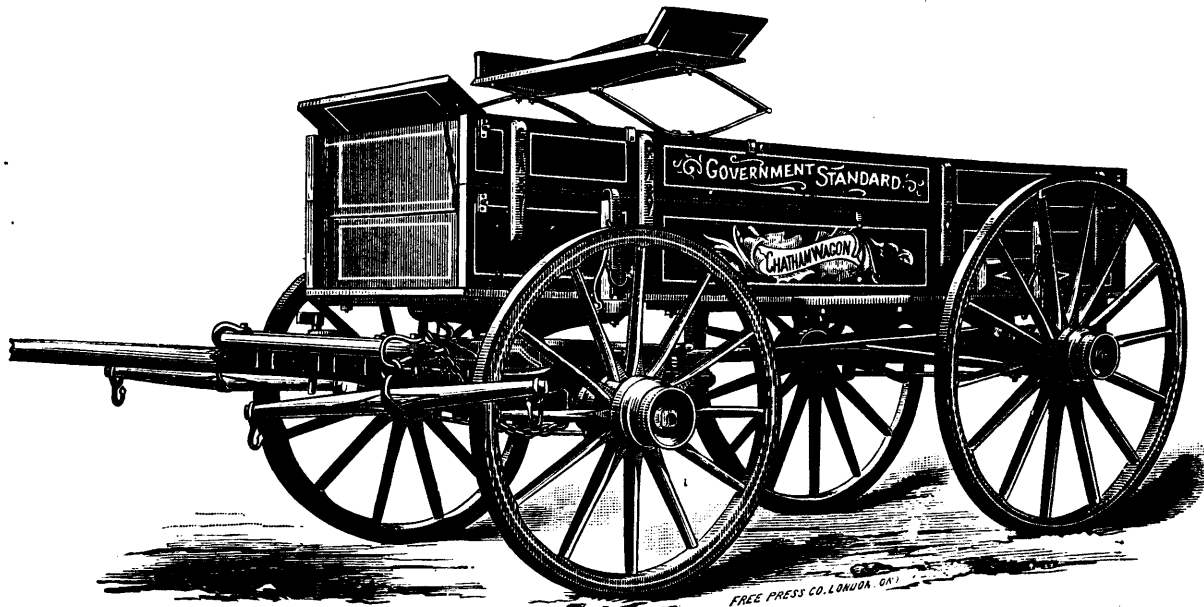
Large stock now on
hand at very low
prices at the

TORONTO
Temple Music
J. S. POWLEY & CO.
68 King Street.

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 imply 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)

HENRY PORTER,
 MANUFACTURER OF
LEATHER
BELTING

432 to 442 Visitation Street, Montreal, Que.

AND

36 FRONT STREET EAST, TORONTO.

Mill owners will do well to write for estimates before placing their orders.

Standard Drain Pipe

I am prepared to supply in any desired quantities first-class **CANADIAN SALT GLAZED VITRIFIED FIRE CLAY DRAIN PIPE**, manufactured by the Standard Drain Pipe Company, of St. John's, Que.

ROBT. CARROLL, 66 Adelaide St. West,

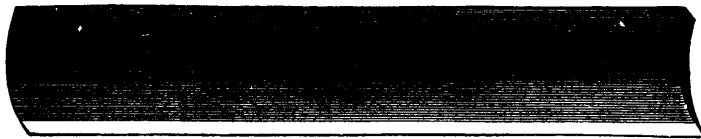
Telephone No. 208. **TORONTO.**

GALT MACHINE KNIFE WORKS.

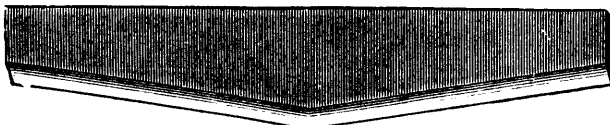
PLANING MACHINE
KNIVES.



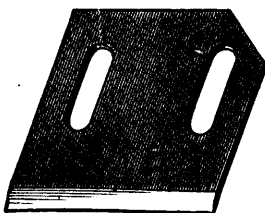
STAVE CUTTER KNIVES.



STAVE JOINTER KNIVES.



MOULDING, TENONING,
MITREING,
SHINGLE JOINTER,



And other irregular shapes.

Cheese-box and Veneer, Paper Cutting, Leather Splitting and any special knife made to order. SEND FOR PRICE LIST. ALL WORK WARRANTED.

PETER HAY, - - - GALT, ONT.

Canadian Rubber Co.

Cor. Front & Yonge Sts., Toronto.

MANUFACTURERS OF

RUBBER SHOES & FELT BOOTS,

Patent Pressed Double Strip Rubber Belting,

RUBBER
ENGINE,
HYDRANT,
SUCTION,
STEAM,
BREWERS'
and FIRE
HOSE.
HORSE
CLOTHING
STEAM
PACKING.



RUBBER
VALVES.
CAR
SPRINGS.
WRINGER
ROLLS.
CARRIAGE
CLOTHS
BLANKETS.
STOPPLES
etc., etc.

Mould Goods of Every Description.

LADIES' & GENTLEMEN'S TWEED and GOSSAMER CLOTHING

OUR RUBBER GARDEN HOSE IS THE
BEST IN THE MARKET.

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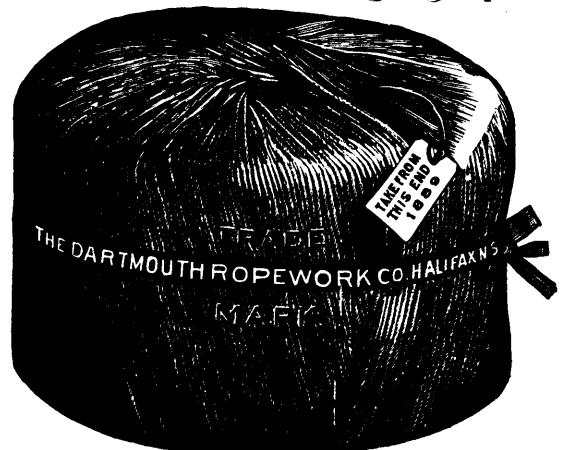
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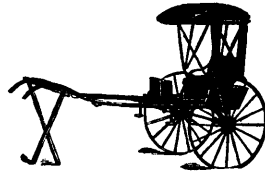
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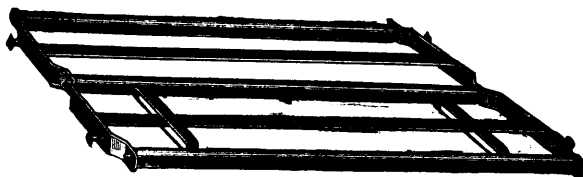
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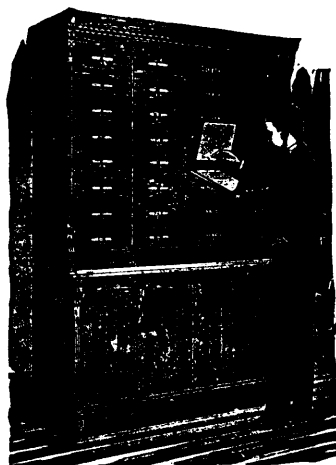


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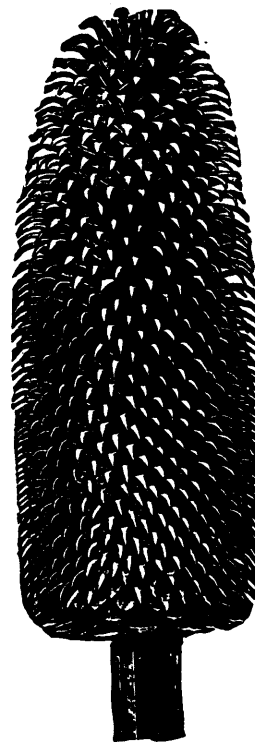
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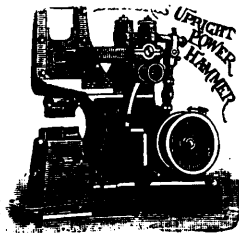
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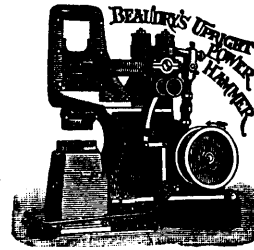
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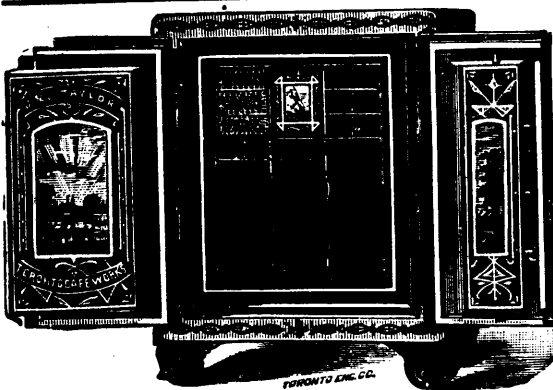


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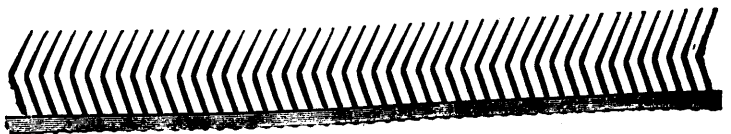
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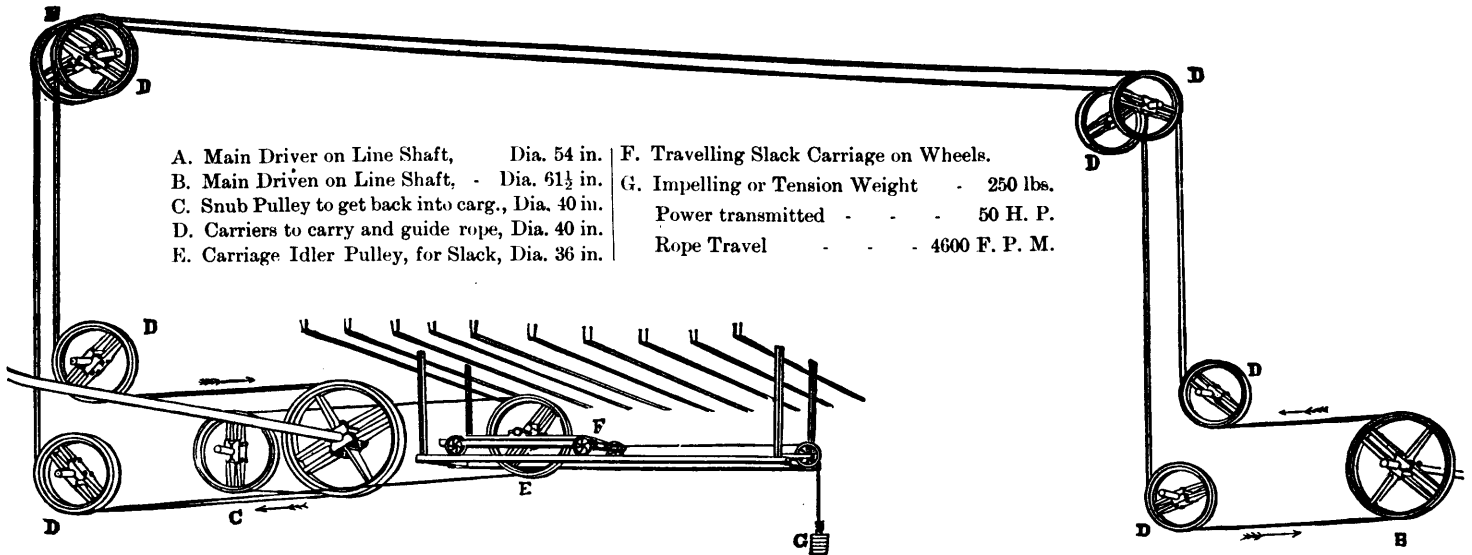
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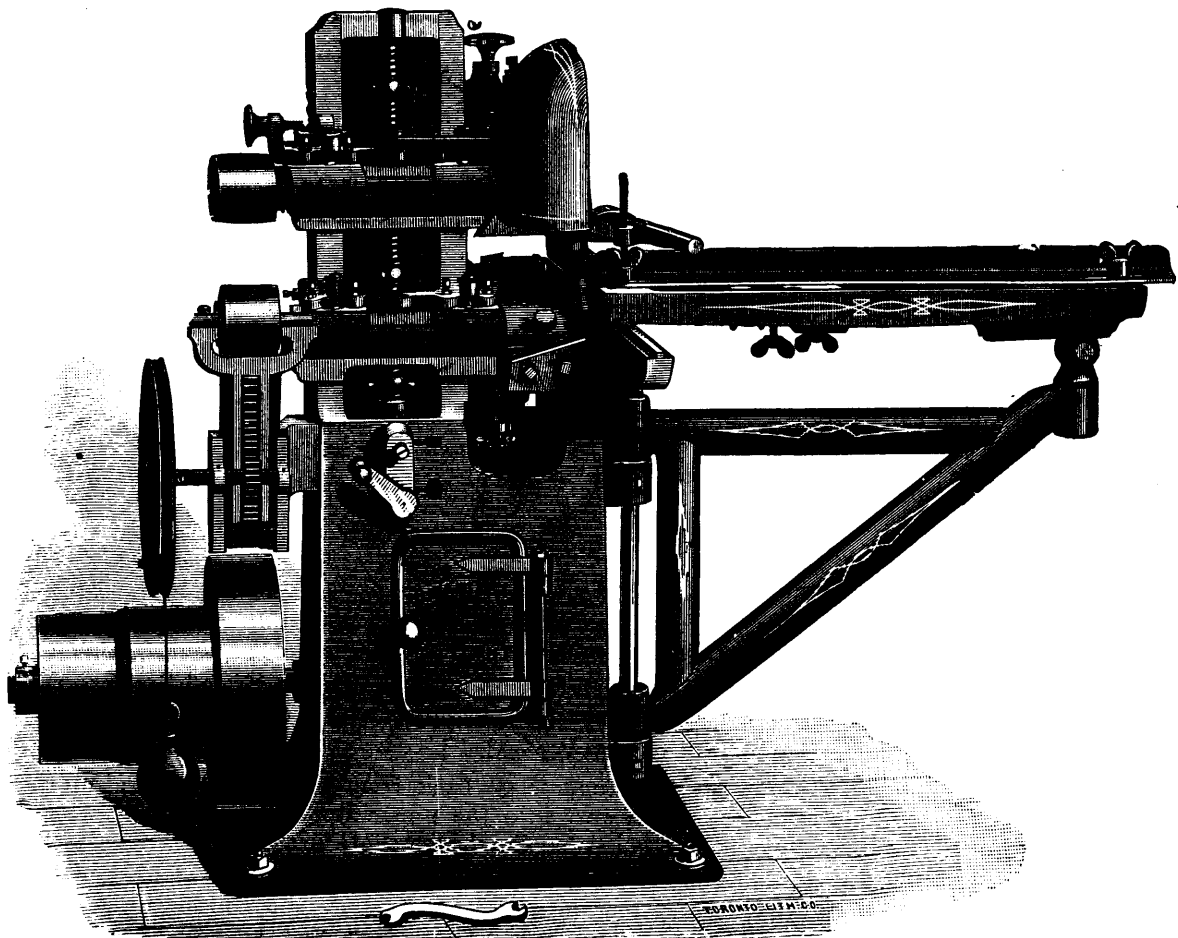
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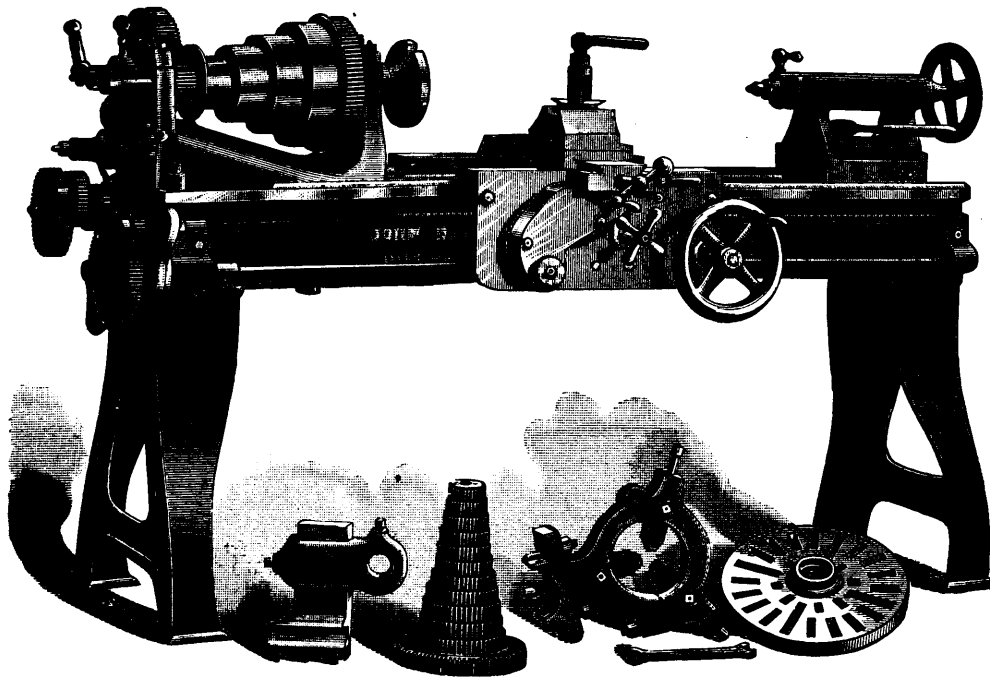
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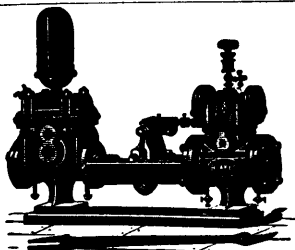
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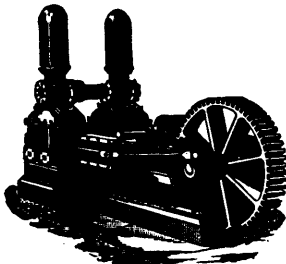
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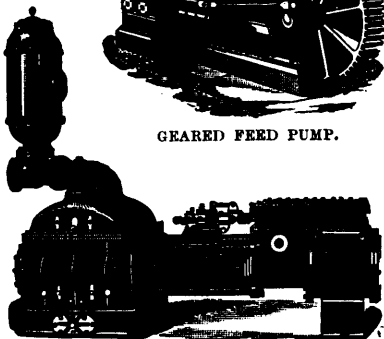
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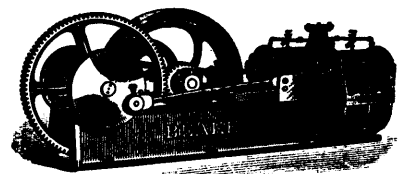
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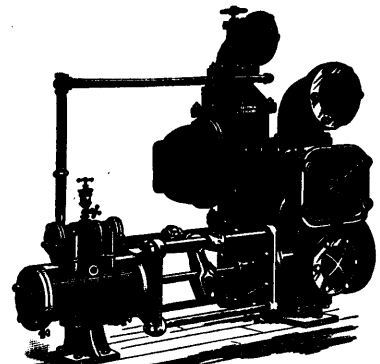
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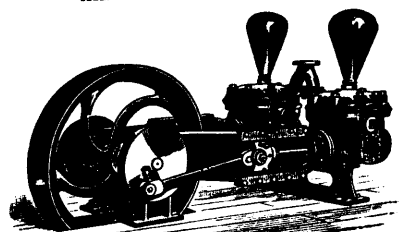
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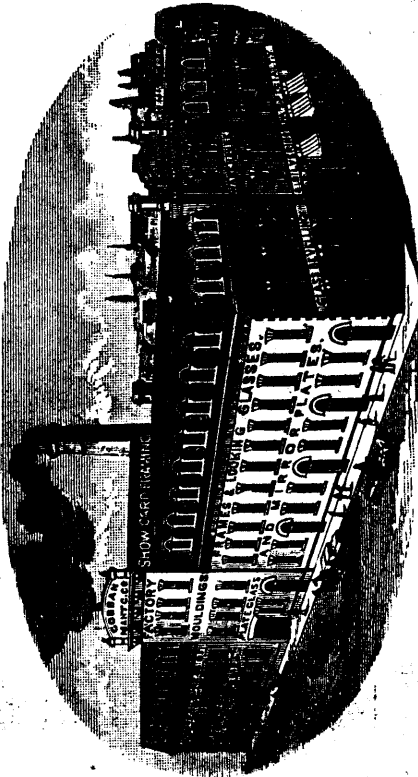
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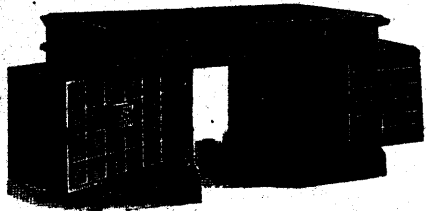
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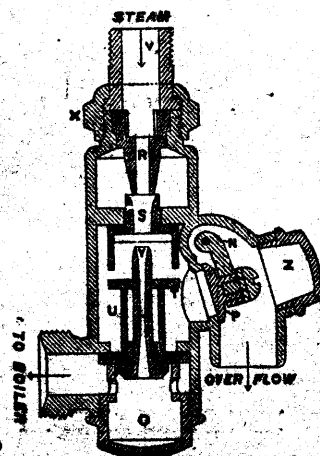
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