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THE CANADIAN MANUFACTURER

DEVOTED TO * THE MANUFACTURING & MINING INDUSTRIES, OF THE DOMINION. * AND THE INDUSTRIAL WORLD.

Vol. 13.

TORONTO, AUGUST 5, 1887.

No. 3.

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VOL. XIII.

TORONTO, ONT., AUGUST 5, 1887.

No. 3.

A GOOD BUSINESS OPENING—VAPOR STOVES.

WHEN it is remembered that the use of gasoline vapor stoves for domestic purposes is practically universal throughout the United States, where they almost entirely supplant coal and wood cook stoves during the warmer months of the year, it is strange that the article should be unknown in Canada. The refined gasoline used in vapor stoves is a by-product of petroleum produced in the process of manufacturing illuminating oil. It is inexpensive, and the cleanliness and convenience of it has placed it very high in favor where it is used. Although the vapor stove won its way into common use in families because cooking could be done in warm weather without annoyance from the heat, incident to the use of the coal or wood stove, it is not now removed from the kitchen when cold weather comes on, for it is found to be a valuable and convenient adjunct to the other stove at all times, and particularly when a quick, fierce heat is desired for only a short time, and when it is not convenient to re-kindle the coal or wood fire. The climate of Canada is very similar to that of northern portions of the United States, and there are several months in the year when the heat in Canadian kitchens, where coal and wood stoves are used, is quite as oppressive and disagreeable as it would be in the United States under similar circumstances. But all American kitchens are now equipped with vapor stoves, while none are to be found in Canadian kitchens.

We are not aware that any refined gasoline is made in Canada, although large quantities of crude petroleum, from which it is made, is produced here. We presume, however, that should the demand for gasoline become sufficiently large and imperative, its manufacture would be begun, and that the supply would soon equal the demand.

It was but a few years ago that vapor stoves were first brought into use in the United States. For a while the manufacture of them was confined principally to St. Louis, Cleveland and some other localities in Western States. With characteristic shrewdness Yankee enterprise was quick to observe that the article was bound to increase in favor, and Yankee ingenuity was quick to invent and embody improvements that have rendered vapor stoves perfectly safe in the hands of the average housekeeper, and competition in their manufacture has brought the cost of them down to where they are within the reach of all. Instead of their being a luxury that might be dispensed with, they have become a necessity that all families must have. The manufacture of vapor stoves in the United States has grown to be a vast and widespread industry in which unlimited capital is invested and thousands of

skilled workmen employed, and it is a noticeable fact that in addition to the many establishments started for the exclusive purpose of manufacturing vapor stoves, a large portion of the old regular stove founders there have embodied the production of vapor stoves as special features of their works.

At the same time the petroleum refineries instead of finding this by-product a nuisance and its disposition an important and vexing question, now engage extensively in its refinement, and are reaping large pecuniary benefits therefrom.

The growth of the manufacture of vapor stoves, and of the production of refined gasoline for fuel for them, has gone on hand in hand, and now such stoves may be bought at retail anywhere in the United States for from five to fifteen dollars each, and the gasoline for about ten cents a gallon.

Why should there not be a corresponding demand and supply in Canada for vapor stoves and gasoline? Shrewd men are constantly on the *qui vires* for profitable investments, and we suggest that some of them act on this hint and engage in the manufacture of vapor stoves and the production of refined gasoline. It will pay.

THE CUSTOMS SEIZURE CASES.

ON June 24th last, in Montreal, in the Exchequer Court, the cases of the Crown vs. J. C. Ayer & Co., of Lowell, Mass., were brought to a hearing, one action being to confiscate \$79,000 worth of goods which had been previously seized by the Customs authorities, and the other to recover fines and penalties aggregating \$379,000 for violations of the revenue laws growing out of the above mentioned seizures. Briefly stated, it was charged that Ayer & Co. had, for a number of years, imported goods into Canada upon fraudulently undervalued invoices, thus defrauding the Government of a large amount of duties that should have been paid.

Upon the hearing of the cases it was shown that one of the witnesses for the Government had previously been in the employ of Ayer & Co., that he was familiar with their methods of doing business, and that he was aware, as he alleged, that the frauds were being perpetrated. This witness, who had been discharged from the employ of Ayer & Co., became an "informer" for the Government, and as such was entitled by law to a certain proportion of whatever fines might be collected for violations of the revenue law. From the testimony it does not appear that the statements made by this witness were successfully controverted, or that Ayer & Co. were not guilty of the offences charged, but a great and unreasonable hue and cry has been raised not only against the witness because he was an "informer," but also against the Government because

it encourages and rewards persons supplying such information ; and it is sought to make it appear that this system of rewarding informers is new and peculiar to the Canadian Government, and that it should be abolished.

The question of the respectability of those who become informers is a social one, and concerns only those who become such. All governments make use of informers for the detection and punishment of crime and violations of law, and without such it would be impossible to prevent or suppress such violations. If there were no violations of law, informers as such would be without remunerative occupation, but as long as law is violated, and the customs defrauded, just so long will it be necessary for the Government to employ informers, and reward them when they have made their "case." As in all other cases, when a case, brought on such information, is being tried in a court, the judge and jury are at liberty to give just such credence as they may see proper to such testimony, and if the informer's testimony is supported by other evidence, it is entitled to full weight, whether the social standing of the witness is enviable or not. If the witness proves the truth of his charges—if it is proven that violation of law has been committed, the defendant should be convicted, and the question of compensation to the witness, or his "respectability" has nothing whatever to do with the case.

We express no opinion as to the guilt or innocence of Ayer & Co., nor regarding the "respectability" of the witness whose testimony is relied upon to convict, but we are emphatic in defending the Government in their efforts to suppress violations of the laws, and to punish offenders. We have taken occasion frequently to speak of the injustice done both to the Government and to honest importers by the persistent undervaluation of merchandise brought into the country. The whole community are affected by such transactions, in that the public treasury is robbed, and honest men cannot successfully compete in business with those who are enabled to undersell them by having their goods passed through the Custom House at fraudulently low undervaluations. Honest men have no occasion to complain because the officers of the law faithfully and fairly enforce the law, but—

"No rogue o'er felt the halter draw
With good opinion of the law."

If the law works oppression on any, amend it ; if thieves and dishonest persons can be detected and punished by other methods than those now observed, and which can be made free from objections, adopt them ; but until such methods are discovered, enforce the existing laws.

BONUSING BUSINESS.

FOR a long time past the local newspapers of a great many Canadian towns have alluded to the fact that the local municipal authorities were being appealed to by parties who proposed establishing industrial enterprises in such towns, asking that bonuses be granted them to enable them to carry out their designs. These requests have varied from the extreme of bashful modesty, where but some slight concession in the way of taxes or something of the sort was asked for, to arrogant demands where it would seem that nothing less than a large section of God's earth would answer the purpose. And, strange as it may appear, these requests for bonuses have almost always

been responded to favorably. Under some circumstances bonusing may be a good thing, but there may be such a thing as too much of a good thing, and it would seem that this bonusing business in a great many instances has reached that point. It is true that an increase of the population of a town by the introduction of large numbers of skilled artisans and workmen, brought there by the establishment of factories and similar industries, means prosperity generally, in which all classes participate ; and if there is a valuable water power unutilized, or any other natural advantage that might be made available, being in its present condition of but little value, there is no reason why it should not be turned over to any manufacturer who would extract the most benefit from it, at the same time benefitting the community also. It is not desirable at any time to practise a dog-in-the-manger policy. But it is very different when the requirement is not only for land, which may be very valuable, and for natural advantages, but also for large and long exemption from taxation, for peculiar privileges not usually accorded to private parties, such as having railroad switches extended into the proposed works at the municipal expense, or in lieu thereof to have large annual allowances of money made to cover the cost of drayage, etc. ; free and unrestricted use of water from the water mains, and probably an amount in cash sufficiently large to ensure the operation of the works even though the bank account of the applicant should run very low. It has come under our observation where the proposition was to remove from one town where buildings, machinery, etc., were all in good condition, and ample facilities existing for carrying on business, but where the applicant was treated just as all other business men were treated—as regards the payment of taxes, etc., to another town where a large and valuable premium could be had as a reward for the removal.

Canadian manufacturers are not a class of paupers, and it is not creditable to Canadian manufacturers, or to the country, that paupers should be thus allowed and encouraged to go into business. It is exceedingly unfair to those who invest their money in manufacturing, asking no favor except the protection afforded by the tariff against foreign competition, that they should be compelled to compete with those who have but scant and insufficient capital, and who are enabled to continue in business only through the charity of the municipalities in which they may elect to locate.

If this indiscriminate bonusing business is to be continued, legitimate manufacturers and tax-ridden communities may feel compelled to seek superior legislative action for their protection.

THE MANUFACTURERS' "LITTLE INTEREST."

THE following letter, which appeared first in the *Toronto Mail*, needs no editorial comment:—

To the Editor of the *Mail*:

SIR,—Your readers will perhaps remember that I commenced my letter which appeared in your issue of 5th inst. with a quotation from a speech delivered before the Wentworth Farmers' Institute, wherein I was personally subjected to an unwarranted attack and which I attributed to Mr. Shaw. As that gentleman denied responsibility for the statement, I have secured a copy of the *Hamilton Times*, a paper which strongly favors Commercial Union and which devotes several of its columns to an almost *verbatim* account of the meeting, and I

find that my wording of the quotation is identical with the published report in the *Times*, although I have erred in so far as I attributed the remarks to the Secretary, Mr. Shaw, instead of to the President of the Institute, Mr. Valancey Fuller. This being the case, I cheerfully absolve Mr. Shaw in this particular instance, as it is his chief, Mr. Fuller, who turns out to be the disseminator of the calumny complained of. The fact remains, however, that the objectionable statement was made by a duly accredited officer at an official meeting of the Wentworth Farmers' Institute, the difference being that it was made by the president and not by the secretary, to whom it was incorrectly attributed.

Having made the above explanation, I turn to Mr. Shaw's recent letter, which commences with a vain-glorious boast of the fact that up to the date on which my first communication appeared his misstatements had been exempt from criticism. I do not know if such is the case, but, if so it may probably be accounted for by Mr. Shaw's propensity for indulging in redundant platitudes; his labored attempts to cultivate the picturesque in language detracting from whatever argumentative force his letters might otherwise possess. Another reason why which one might well be excused for ignoring Mr. Shaw's letters is that so many of his statements are unsupported by material evidence, and that many of his assumptions are entirely problematical; but as Mr. Shaw writes officially as secretary of a farmers' organization, it is from courtesy to its membership that he is not again ignored.

Mr. Shaw says that in estimating the numbers relatively engaged in the agricultural and manufacturing industries the workmen employed by the manufacturers are no more to be taken into account than those employed by the farmers, in which case the numbers relatively of employers and employed will stand several to one in favor of the farmer.

Here Mr. Shaw demonstrates his contempt of statistics by declining to quote them in place of advancing a broad and questionable assertion. I do not accept his statement that the farmers employ more work-people than the manufacturers. I prefer, even at the expense of a little trouble, to find out the truth. The census reports of 1881 tell me that, apart from the manufacturers themselves, the total number of hands employed in industrial establishments for that year were 254,935, but that, on the other hand, the total number of employees of occupiers of land amounted to only 3,289. Rather a wide margin from Mr. Shaw's statement, but perhaps he considers that the end justifies the means, when bearing the cross of the Commercial Union crusade, and therefore finds it also convenient to ignore the fact that during the decade 1871-81 the population in the cities and towns increased 30 per cent., whilst during the same term of years the rural population increased but 15.6 per cent.

Mr. Shaw further says, "As the investment of the farmers is over \$900,000,000 and that of the manufacturers \$100,000,000, and according to Mr. Nicholls' statement the total product arising from this capital is greater than the total product arising from the former, it follows that the \$1 invested by the manufacturer produces more than every \$10 invested by the farmer." This flimsy argument seems to Mr. Shaw to be unanswerable, and moves him to compose the following silly effusion:—"Hear it ye 200,000 farmers of Ontario, and make the very land to tremble with the wave of righteous indignation that will arise consequent upon a demand we shall not say is offensive, but insolent."

Mr. Shaw, as usual, is incorrect in his figures, as the census of 1881 shows that the total amount invested in manufacturing industries in that year was not \$100,000, but \$165,000, an amount probably doubled by this time, but of course Mr. Shaw is disdainfully superior to a trifling inaccuracy of 65 per cent. But accepting his guess as correct, every business man will readily understand why the manufactured output is so large in comparison with the amount of capital invested. Mr. Shaw is guilelessly oblivious of the existence of banking facilities which

enable a merchant or manufacturer to transact an annual volume of trade which in its aggregate may be several times larger than the amount of capital he has actually invested. The credit and exchange systems apply to those doing business in the cities, whilst it does not materially affect the farming community, who as a rule conduct their business, or at least their sales, on a cash basis. They produce a certain quantity of natural products which they sell for cash, and they raise a certain amount of live stock, but the return from these alone cannot be considered as the only interest the farmer receives on his capital, as all permanent improvements to his farm, etc., must be looked upon in the light of a rest account. If otherwise, how did the farming interest become possessed of \$900,000,000 in this "hopeless and helpless" country? As was pertinently asked by one of the speakers at the recent meeting of the Board of Trade, Did they bring it over in emigrant ships and buy the land at its present valuation? I think not, and I question if Mr. Shaw, fearless in exaggeration though he may be, will go this length, and therefore the conclusion arrived at is that the annual increase in value should be added to interest account. In brief, the manufacturer's surplus capital is, under normal conditions, directed towards constantly increasing the volume of his finished products. This is also true in regard to the farmer but to a much less extent, as on a farm of a given number of acres only a given average production can be ensured; a farm is not as expansive as a factory, consequently the surplus invested in improvements and facilities is certainly an earned increment.

Mr. Shaw's next attempted criticism of my letter reads thus: "He speaks of the duty at present collected on horses and barley going to the United States as though it were the whole amount lost to the Ontario farmer through the restrictive tariff on exports," and in a very involved sentence of thirty-seven lines in length, altogether too long to quote in full, he reiterates the old, old story learnt from Mr. Wiman of a prospective trade under Commercial Union of "the millions of bushels of potatoes unproduced, the millions of fowls unshipped and the thousands upon thousands of lambs not sent across on account of the restrictive duties," and then with refreshing naiveté asks me if this is not sufficiently "tangible." No, Mr. Shaw, I would prefer a few solid facts to an avalanche of unsupported theories, and I will even tell you why I do not take your assertions at par value, and I will also tell you how the Canadian farmers have progressed during the National Policy period as against the revenue tariff period immediately preceding. During the period of 1873-'79, the imports of grain of all kinds and flour from the United States to Canada amounted to \$65,000,000, but during the first seven years of the high tariff period the imports of similar products amounted only to \$30,000,000, which means a saving to the farmers in the seven years of \$35,000,000, less the cost of milling a certain percentage of the wheat. I hope my example of advancing facts may be copied by my critic, and I regard him with sufficient kindly interest to endeavor to familiarize him with these necessary adjuncts to argumentative debate by quoting a few more. In the fiscal year ending June 13th, 1876 (during the low tariff period), we exported over 8,000,000 of bushels of wheat and flour out of a total estimated yield of 24,000,000 bushels. In 1886 (during the high tariff period) we exported only 2,900,000 bushels out of a similar estimated yield, which in other words means that in 1886, largely owing to the increased home consumption created by the growth of the manufacturing industries, we exported only one bushel of wheat for every eight bushels raised; but that previous to the adoption of the (to Canada) beneficent policy of protection to home industries we, lacking domestic demand, had to export one bushel out of every three raised in the country.

In reference to my former compilation, which set forth the large amount of farm produce our farmers export to England, as compared with the United States, Mr. Shaw says that Mr. Nicholls does not say it, but it means that by unrestricted

trade with the United States our farmers would still retain the market for \$18,000,000 of their products sent to Britain, and in addition would get the \$10,000,000 market of the United States free. What is your authority for this statement, Mr. Shaw? I do not for a moment admit that in the event of unrestricted trade that our farmers whilst retaining the English market would still retain that of the United States. No doubt they would increase their exports of certain products, but in the absence of any proof to the contrary, it is at least equally reasonable to suppose that they would lose more than they would gain by free trade with our neighbors. I have not in this controversy advanced the loyalty cry as Mr. Shaw insinuates, although I certainly consider it an important factor in the final settlement of the question, but apart from sentiment the movement of trade does not bear out Mr. Shaw in his superficial declaration. In endeavoring to get at the truth of the matter I find that our average yearly imports of food and drink during the revenue tariff period were higher by over \$20,000,000 annually than they have been during the last few years, and that the reduction in the value of imports of vegetables alone amounts to an average of \$3,000,000. This showing should certainly be satisfactory to anyone having the true interests of the farmers at heart.

The next point raised by Mr. Shaw is, "remove the restrictions and how immensely this trade must increase notwithstanding that the United States will continue to be an exporting country of live stock and other agricultural products." How does Mr. Shaw know that it is going to increase immensely, and what a pity he is too selfish to give us the benefit of a little of his exclusive information! Under free trade in eggs the exports of them have decreased. In 1883 we exported 13,413,744 dozens, valued at \$2,251,304, equal to 17 cents per dozen. In 1886 our exports declined to 12,708,883 dozens, valued at \$1,728,082, equal to 13½ cents per dozen. This is only one illustration and does not warrant Mr. Shaw's contention that under free trade our farmers would get better prices for what they now send, equal to the amount of the duty imposed by the United States. But even if this were the case, would the extra exports of "broilers," lamb and green peas, horses and barley, etc., make up for the American competition in wheat and flour, corn, hog products, early fruits and vegetables, etc.? I arrive at a contrary conclusion in two ways: First, the average annual balance of trade in favor of the United States as against Canada for a period embracing years 1854-'66, during which the reciprocity treaty was in force, amounted to \$7,351,766. During the subsequent period 1867-'79 it amounted to \$8,645,770, whilst during the protection period, 1880-'86, it has only been \$5,561,000. Second, our imports of the following cereals from the United States under a revenue tariff and under a protective ariff are contrasted as follows:—

	1878.	1886.
	Bushels.	Bushels.
Barley.....	26,204	8,134
Oats.....	2,071,513	98,382
Rye.....	110,228	18
Corn.....	3,400,562	1,825,383
Wheat.....	1,519,703	66,061
Peas.....	9,584	4,024
	7,137,794	2,002,002

From the above it will be seen that the National Policy has been of some little value to the farmer after all, and that under unrestricted competition our farmers would not have their bread buttered on both sides as Mr. Shaw infers. But although we have reduced our imports from the United States of grain, bread-stuffs and provisions as a result of the protective tariff, our friends across the lines have been making hay while the sun shines in those countries which do not protect and foster the farming industry, as their exports of these commodities have increased from \$40,000,000 in 1866 to \$500,000,000 in 1886, and there is little doubt that were our market an open

one a great deal of this immense surplus would immediately move in this direction.

I can easily cite many more reasons why Commercial Union is neither a practical nor possible issue at the present time, but I fear I have encroached sufficiently on your space for one letter.

Yours, etc.,

TORONTO, July 13th.

FREDERIC NICHOLLS.

AN IRATE LABOR REFORMER.

In our issue of July 1st, we mentioned that Mr. James R. Brown, chairman of the Legislative Committee of the Oshawa Trades and Labor Council, in a report which he had recently published adversely criticizing the bill which had been introduced by the Minister of Justice in the Dominion Parliament regarding threats, etc., in relation to persons employed in or about vessels, had said that "The contention of those opposed to labor organizations, and which is voiced by the judiciary, is that a man has a right to be allowed to work under any conditions, however degrading, if he so desires. But as the law of the country at present states, 'no person shall be in the condition of a slave,' any person working under conditions which tend to slavery should be prevented from doing so. And were the Minister of Justice, instead of introducing such a bill, doing his duty in protecting the rights of the people, labor organizations would be relieved from the responsibility of doing so."

In commenting on this remarkable language, our contention was that laboring men, being free, had a right to be allowed to work under any conditions meeting their approbation; that they were the proper and sole judges of the fitness of the circumstances under which they should work; that self-constituted trades and labor councils should never exercise such judgements against the will of laboring men, and that any such assumption of power should not be tolerated.

A labor paper published in the Dominion, commenting upon this article, says that we accuse the Oshawa Council and Mr. Brown of a design "to set the law at defiance; to prevent men who do not belong to labor organizations from working; to deny the right to any man to work when organized labor decides to strike, or for less wages than those which labor organizations consider as constituting the conditions of a slave." Our language can be thus construed, and we so intended it to be, for Mr. Brown distinctly stated that "any person working under conditions which tend to slavery (i.e., exercising his own judgment as to the fitness of the circumstances) should be prevented from doing so," and that if the Minister of Justice did not interfere to prevent a man thus working, the responsibility of preventing him would rest with the labor organizations. There was no word in our entire article which commented upon the merits or demerits of the bill then before the Parliament. Our intention was to direct attention to the utterances of an official of a labor organization, leaving our readers to draw their own conclusions.

In a subsequent issue we quoted from the same contemporary the following: "Nothing short of absolute governmental ownership of railways will cure the evil (reference being had to the Inter-State Commerce bill and the action being had under it), and attempts to patch up the present system will only result in making confusion worse confounded." Our objection was to "absolute governmental ownership of railways," and our argument was that government should not become railway owners; that whatever wrongs and oppressions might exist, growing out of corporations or private ownership of railroads or from railroad monopolies, could and should be corrected by legislative enactments, and that the proposition to vest the ownership of railroads, telegraph lines and similar institutions in the government was but a phase of Henry Georgeism and should be discountenanced. The twaddle in the labor paper alluded to, supposed to be a discussion of the question under consideration based on what we said, is supremely ridiculous and is not worth replying to. Epithets and abuse are not arguments.

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MR. FREDERIC NICHOLLS is Secretary of
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His Office is at the Publication Office of
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6 Wellington Street West, Toronto.

Any association of manufacturers who may desire to hold meetings for organization or other purposes, are invited to avail themselves of the meeting room adjoining the office of the CANADIAN MANUFACTURER.

His Excellency, Governor-General Lansdowne, has consented to be present and make the formal opening of the Dominion and Industrial Exposition in Toronto in September.

THE United States Treasury Department has called the attention of the Department of State to the report of a special agent of the Treasury Department relative to the undervaluation of steel slabs exported from Charleroi, Belgium, and the certification of the same by the consular agent at that place. In his report the special agent says: "The customs officers can place no confidence in his certificates, and the invoice might as well be a blank piece of paper so far as giving any information of market values is concerned."

A TALE with a moral comes to us over the wires from Brooklyn, N.Y. A few days ago the office of the Brooklyn elevated railroad was crowded with engineers and firemen, anxious to regain their old positions on the road. They were old employees who quit work at the time of the general strike a week before. Many of them begged for work, saying they had been misled, that their families were in want, and that they did not know where to get work. All the applicants were told that there were no vacancies, and most of them were dismissed without any promise that in the future they could expect to secure employment on the road. The men admit they made a very serious mistake when they quit work.

IMMEDIATELY upon the inauguration of the new postal reciprocity treaty between the United States and Mexico, Saint Louis merchants and manufacturers began sending large numbers of samples of their goods to the latter country, among which were agricultural implements, surgical implements, candy, confectionery, stationery, hardware, etc. Among the articles sent was a shovel. Mexico is developing into a large and valuable market for American manufactured products, the traffic being over the railroad at El Paso. This trade is having a very perceptibly damaging effect on the trade that England, Germany and France have heretofore almost exclusively had with Mexico, that trade being by sea principally through the city of Vera Cruz.

THE London Times of a recent date announces that a copy of one of its issues has made the circuit of the globe in 69 days. Its journey was made *via* the Suez Canal route to Yokohama, and thence to London *via* the Canadian Pacific line and Atlantic connections. This is the shortest time in which the circuit has been made under the British flag. Influential metropolitan and provincial journals continue to urge the importance of the recognition of the Canadian route to the East. The press is practically unanimous in favor of a subsidy to the

Canadian service. The silly talk that Canada was to be punished by withholding a subsidy to the Canadian Pacific railroad, because she makes a tariff to suit her necessities, has died out. The *Times* has demonstrated the value to Britain of the trans-continental American route, and its importance cannot be ignored.

A MODEST nail manufacturing company in Ohio have proposed to the authorities of the town of London, Ont., that they will remove their nail works to that place, provided they are bonused to the extent of free water, exemption from all taxation for twenty years, and \$10,000 in cash. The fact is, the manufacture of nails in the United States is greatly overdone, the production being greatly in excess of the demand; and even with the great excess of production the work being done is not sufficient to keep more than half of the machines in operation all the time. There are nail factories already in operation in Canada which fairly well supply the current demand, and prices are well maintained, and if the Ohio concern desires to enjoy the boom, and get the benefit of the protective duty on nails, let it come along and join the procession. But its modest request for "bonus" is ridiculous.

THE *Toronto Globe* gives publication to the following: "A Brantford business man visiting the city to-day states that the factories, which are the backbone of that place, are all working full time, some of them being rushed to death." The admission is as frank as it is startling. Perhaps it will interest the leading Grit organ somewhat to learn that a majority of these self-same factories could barely drag out an existence prior to 1878; that Mr. Paterson, member for South Brant, among the majority of others, has since that time doubled his business; that additions to existing works are of almost yearly occurrence, and that every establishment is running full time and full handed. It would be interesting to learn how the *Globe* accounts for these things despite the "blighting" influence of the N.P. It would also be entertaining to ascertain just wherein Brantford would benefit by Commercial Union when her full manufacturing capacity is already taxed to its utmost, and there is nowhere in Canada a more prosperous farming community than in the surrounding county of Brant.—*Brantford Courier*.

THE present carpenters' strike in Toronto has developed a fine point of law which will probably be investigated before the courts. According to the city papers some days ago some fifteen employees of Messrs. J. P. Wagner & Co., who were receiving full wages, and had nothing to complain of, were called out on strike by the executive committee in the hope that such action would hasten a satisfactory termination of the difficulty. A few days later Mr. Wagner sent the men a note informing them that they were discharged from his employment. On Saturday they presented themselves for their wages, and were astounded at receiving in some cases less than half what they expected. One man who had earned \$14.65 received an envelope containing twenty-five cents, and a contra account for the remainder, which was charged up as the loss entailed by desertion of employment. This man was employed on a machine, the stoppage of which is calculated at the rate of \$1.50 per day. Others were deducted \$2, \$4, and \$6, according to the work they were engaged on. Mr. Wagner claims to

have good ground for his action. The men were receiving all the wages they asked for, and on June 11th an agreement was signed by both parties for one year.

THE movement in the direction of a strict enforcement of tariffs imposed by various countries, in order to obtain the fullest possible protection to home interests and larger receipts to the treasury, seems to be a quite general one, judging from the agitation in regard to the matter going on at present in various European countries and in the United States. Discussing this matter *Bradstreet's* says: The complaints of undervaluation of merchandise at New York and the remedies proposed are one feature of this movement. In France the tendency to make foreign importers bear the full weight of the tariff laws is shown by a recent proclamation of the Minister of Finance of that country. He has issued a circular to the customs officers, insisting upon the strictest possible enforcement of existing laws. The officers are assured that they will be protected in their efforts to collect full duties. In cases of fraud on the revenue the prosecution must be of the most vigorous character. In the same direction is the recent vote by the French Chambers of a large increase of the import duty on alcohol as a measure of protection against the operation of German export bounties, and the vote of urgency by the Chamber of Deputies for a bill authorizing the government during the parliamentary recess to take protective measures to prevent an excessive import into France of German spirits.

THE *Bulletin* of the American Iron and Steel Association publishes complete statistics received from the manufacturers, of the production of pig iron and Bessemer and open hearth steel, and of steel rails, in the United States, in the first six months of 1887. The total production of pig iron amounted to 3,417,903 net tons of 2,000 pounds, the production in the last six months of 1886 being 3,411,119 net tons. The production of Bessemer steel ingots in the first half of 1887 amounted to 1,637,572 net tons, against 1,467,830 tons in the last half of 1886, and 1,073,663 tons in the first half of 1886. The production of Bessemer steel rails in the first half of 1887 amounted to 1,154,193 net tons, against 1,042,452 net tons in the last half of 1886, and 707,447 net tons in the first half of 1886. The production in the first half of 1887 indicates a total production of 2,100,000 gross tons for the whole year. It can not materially exceed these figures. The production of 1886 was 1,574,703 gross tons, including steel rails rolled in iron rolling mills. The production of open-hearth steel ingots in the first half of 1887 amounted to 174,400 net tons, against 152,710 tons in the second half of 1886, and 92,540 tons in the first half of 1886. In the first half of 1887 the United States made 12,396 net tons of open-hearth steel rails.

In discussing the Ayer Customs case the *Toronto Globe*, showing that cherry pectoral and similar preparations cost the makers about \$1.20 a gallon and who sell it to consumers at \$1 a bottle, says that the proposition of the Customs authorities to tax this value is "indefensible and scarcely conceivable." Common New England rum, according to the testimony given in the case, is the basis, and constitutes a large proportion of the mixture known as "cherry pectoral," and the Canadian

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tariff levies a duty of \$1.90 a gallon on such spirits, and it was to recover the difference between this duty and the amount actually paid on a compound which was entered as "syrup," but manufactured of rum, that the Customs authorities brought suit against Ayer & Co. The *Globe* thinks that this effort is a dreadful blow to the farmers and other consumers of patent medicines, and that it also has "particular interest for publishers of newspapers," who make a living by publishing patent medicine advertisements. But why should farmers or anybody else who pay a dollar a bottle for Yankee nostrums—sixteen or twenty bottles being required to make a gallon—object to seeing the Yankee nostrum manufacturer forced to pay \$1.90 a gallon duty on the rum contained therein, when the law demands it, and when Canadian manufacturers of similar medicines have to pay that duty? And why should Canadian newspapers become disgruntled over the event? Ayer & Co. could well afford to subsidize the *Globe*, considering that they were making \$10 to \$15 a gallon on their nostrums sold in Canada. Honest Canadian manufacturers might not be able to spend so much money in advertising, but then they honestly pay all the duties demanded by the Government.

THAT was a cute trick by which the Knights of Labor stove moulders of St. Louis endeavored to create the impression that the stove manufacturers there, or at least some of them, had yielded to their demands for a fifteen per cent. advance of wages. A few days ago it was published in the daily papers of that city that one of the stove foundries there, that had been closed on account of the strike, had agreed to start up, paying the moulders the demanded advance on board prices. Upon the publication of the report the president of the local stove manufacturers' association addressed a note to the proprietor of the works alluded to, requesting to be informed if the report was correct; replying to which the statement was made that no agreement had been made to pay any advance over last year's prices. The proprietor stated, in further explanation of the matter, that he had offered to start up his works, paying the same prices as were paid last year. The moulders asked if they would be permitted to arrange the "board" schedule to suit themselves, to which assent was given, with the understanding that the net results were not to be changed. They then arranged a schedule which was so much lower than the old prices that they had to add fifteen per cent. to bring it up to the prices offered by the proprietor. And this is the explanation of the "advance" which the moulders claim was forced from this manufacturer. Like many other silly things that they have done and are constantly doing, these valiant Knights of Labor, who have struck for an advance, could not consent to return to work until their demand had been acceded to, and this is the method they adopted to secure it. But it seems that their arithmetic was at fault, for, we understand, to accomplish their object the way they figured was to deduct fifteen per cent. from the old prices, making the remainder the basis of the new schedule, and then adding fifteen per cent. thereto, so that they might claim they had obtained the advance. But the present prices are a shade lower than before.

Mr. JOHN BRIGHT has written a letter to the *Toronto Mail*, in which he opposes any tariff discriminating against England. In speaking of the effects of tariffs Mr. Bright says: "The

great enemies of mankind are war and the tariff. War and its expenditure and waste give an excuse for tariffs or render them necessary, and tariffs separate nations and make war more probable and more frequent. It is a deplorable thing that, in your great and free continent (meaning America), the only thing not free is the industry of your (the American) people, and that you, in this respect, follow the pernicious example of the old and blind nations of Europe." If Mr. Bright would consult the common school books used in America (and he is certainly familiar with American history) he would learn that the only wars in which the United States were ever engaged were at times when they had no protective tariffs, and that since the United States adopted a protective tariff policy they have been at peace with all the world, and have enjoyed a season of prosperity truly phenomenal. Therefore when Mr. Bright classes a tariff as one of the "great enemies of mankind," and denounces it as an incentive to war, he is greatly mistaken, if we may judge by the events of recent occurrence in American history. All of the unpleasantnesses that have ever existed between the United States and Great Britain occurred when the former nation indulged in as close an approximation to free trade as circumstances would permit, and there never was such close relationship and mutual respect and friendship between them as that now existing, although the United States has a higher tariff than probably any other nation of the globe. If the inauguration of protective tariffs by Canada and the United States means the following of "the pernicious example of the old and blind nations of Europe," it is well that such example should be followed, for although the "industry" of the people may not be free, as Mr. Bright alleges, they do not seem to be in any very "deplorable" condition, and are not posing as martyrs and sufferers.

LABOR organizations can do much to make the Factories Act beneficial by furnishing the inspectors with information regarding any sanitary defects in the factories in which their members are engaged, and by keeping them informed regarding any failure on the part of employers to comply with those provisions of the law intended to secure the safety of employees. The best way would be to furnish the information to the recording secretaries of assemblies and unions, who could forward it to the inspectors. Or any information which may be sent to this office will be promptly placed in the hands of the inspectors without the names of the informants being made known.—*Labor Reformer*.

Pimps and informers will take notice:—If any sanitary defects exist in any factories in which honorable Knights of Labor may happen to work, according to the advice above given, the matter should not be brought to the attention of employers in a straightforward, manly way, so that the provisions of the law may be complied with. A better way, we are told, is for the honorable Knights to make detailed reports to their assemblies and unions, which would probably send committees to the secretary of the Trade and Labor Council at Oshawa, who would take due notice thereof and govern himself accordingly. Or, better still, the honorable Knights aforesaid might write anonymous letters to the inspectors, sending them to and through the *Labor Reformer*, the official paper of the order, which would in turn vouch for the honorable standing in the order of the honorable pimps and informers who are afraid to subscribe their own proper names. We are not inclined to believe that the rank and file of the Knights of Labor embrace, to any considerable extent, workmen who are willing to become pimps and informers such as they are urged to be, even at the suggestion of the paper from which the above quotation is taken. We should prefer to think that they can't do it, "because they ain't built that way." We have not garbled or changed the quotation in any way, but give it in its entirety. As a teacher of morality (!) the *Labor Reformer* is despicable.

At a recent meeting of the Napance, Ont., Board of Trade, called to discuss Commercial Union, only two persons were present.

THE New York *Commercial Advertiser* asserts that the membership of the order of the Knights of Labor has fallen from 1,000,000 to less than 600,000, within the last 14 months.

THE English public is feeling rather queer just now over the fact that a Yankee speculator made six thousand dollars out of their Jubilee by making raised seats along the line of the show and hiring them out to spectators.

GRIEVE orators and newspapers were never tired of claiming that the high price of coal was due to the duty, and that if it was taken off down the price would come. It is, therefore, puzzling people a good deal to know why coal is 25 cents a ton dearer this year with the duty off than it was last year with the duty on.

SIR CHARLES TUPPER'S Budget speech has been printed in pamphlet form for distribution among the members of Parliament. The arrangement is an improvement on former issues, inasmuch as it contains the revised and complete tariff resolutions, and a set of diagrams illustrating the fluctuating condition of trade and commerce during the twenty years of our national existence. A complete index is, no means an inconvenient feature of the compilation.

THE *Canadian Traveler*, a journal "published in the interest of the commercial travelers of Canada," at Toronto, has just made its appearance. Mr. John Goss, an experienced newspaper man, stands at the helm, and he promises that he will devote his energies to promoting and fostering everything that will be to the interest of the community it sets out to represent. It starts out as a monthly, but it is proposed to publish the *Traveler* fortnightly at an early date, and, should the support warrant, weekly.

THE Maverick National Bank, of Boston, Mass., has sent us the "Maverick National Bank Manual," bearing date July 1, 1887, in which is given an historical sketch of the national debt of the United States from the early Government loans made in 1803 to the debt statement of June 1, 1887; a chapter on "The Credit of Nations"; a state and municipal indebtedness of the several States and their political sub-divisions and of certain principal foreign cities, and a large variety of miscellaneous statistics of great value.

It begins to look as though Canadian iron properties are to receive a benefit from the boom which is now raging in the iron regions of this country. A syndicate composed of Milwaukee and Chicago capitalists, of whom Hustis, Coughlin and Ray are the representatives, recently purchased a tract of 200 acres of mineral land in the township of South Crosby, Leeds county, Ontario. They have been doing some prospecting and some samples of ore were received in Chicago this week, and the company at once received an order for 1,000 tons at \$6 per ton from a Chicago steel company.—*Milwaukee Miner and Manufacturer*.

An interesting experiment in co-operative industry is now being made in Minnesota, where a colony of a half-dozen families from Minneapolis have settled in Crow Wing county on a tract of land of 250 acres, bought for the purpose by the Minneapolis Knights of Labor. These families were not prospering in the city, and were too poor to have undertaken farming independently. On so small a scale did they begin, and so poor were they, that it was months before they could provide themselves with a single team of horses. But, after a year's trial, the *Minneapolis Tribune* states that they have done well, have found health and a sufficient though frugal living on the land, and have a start that will render them eventually prosperous.

THE managing directors and owners of the Moss Bay Hematite Iron and Steel Company, of Workington, England, manufacturers of the well-known brand "Moss Bay" pig iron, steel rails and general merchant iron, with auxiliary bolt, nut, spike and rivet works, are projecting the duplication of their extensive works and manufacturing in Washington Territory. Mr. Peter Kirk, active practical manager and partner, who visited Pittsburgh last summer in the interests of his firm, has lately been laboriously engaged in perfecting arrangements for an early commencement of operations, erecting blast furnaces, iron and steel mills, opening mines and mineral royalties and building workmen's houses. It is believed that several advantageous purchases have been concluded for this purpose.—*Cleveland Iron Trade Review*.

THE Birmingham (Eng.) correspondent of the *American Manufacturer*, speaking of the effects of the Canadian tariff upon British manufacturers, says: "Already English manufacturers are considering the advisability of establishing works in Canada. One of the

most important markets for wood screws of Nettlefolds (limited) has hitherto been found in Canada, and the new duties have created something like a panic among Nettlefolds' directors. They freely admit that unless they can now work that market differently it must be lost, and the question which is now engaging their serious attention is, what are the best steps to be taken. The new tariff is practically prohibitive; but considering the immense importance of the market it is not to be expected that Nettlefolds will relinquish the trade without an effort. Nettlefolds' directors are now considering whether they shall avail themselves of the protection of the Dominion by opening a branch factory there. Canada would of course derive some benefit from the employment of her own artisans, but large profits would accrue to Nettlefolds and find their way to this country. Nettlefolds are thoroughly advised of the position, and know that they would have to meet the competition of the American screw factory already at work in the Dominion, but they seem quite in the mind to try a tilt with it."

A WORD TO WORKMEN. The tariff is simply a kind of a barrier, something like a sluice-gate, which keeps the flood of foreign goods from pouring in here in a rush, without restraint or control. When a sluice-gate is raised more water comes in. When you enlarge the hole in the tariff more goods come in. The hole in the tariff may be enlarged in two ways: Prices in Europe may decline, or prices here may advance. Prices here are advanced whenever wages are increased and whenever a strike causes a stoppage of machinery. The effect, therefore, of every labor agitation is to lift the sluice-gate a little. The effect of every decrease of the home-supply, is to create a place into which the foreign supply quickly flows. These results are beyond control, when the causes are in operation. When there is a water pressure against the sluice-gate, the water will push through an aperture. When there is a pressure of European fabrics against our tariff the goods will come in at the openings. There is a hole in the worsted clause, put there by carelessness in 1883, and the imports of worsted yarns have increased since that time almost four hundred per cent. Every ounce of goods brought in displaces in the market an ounce once made by American workmen. Shall American workmen, then, never ask for larger wages? Yes, but not until they help to reduce the flood of importations by insisting upon higher duties. Congress can regulate the height of the sluice-gate, but the man who pays wages is inexorably controlled in that function by the policy that Congress chooses to pursue.—*Trade Record*.

AN official statement of the gross produce of revenue of the United Kingdom for the year ended June 30, 1887, shows an increase for the year over that preceding of over a million pounds. The following table shows the sources of income and the respective amounts produced, compared with the same statistics of 1886.

	Year ended June 30, '87.	Year ended June 30, '86.
Customs.....	£19,949,000	£19,350,000
Excise.....	25,295,000	25,330,000
Stamps.....	12,030,000	11,535,000
Land tax.....	1,055,000	1,030,000
House duty.....	1,895,000	1,880,000
Property and income tax....	15,810,000	15,780,000
Post office.....	8,480,000	8,250,000
Telegraph service.....	1,870,000	1,720,000
Crown Lands.....	370,000	360,000
Interest on advances.....	1,122,917	1,418,475
Miscellaneous.....	2,771,903	2,956,837
Totals.....	£90,648,820	£89,630,312
Net increase.....		£1,018,508

THE Society for the Suppression of Poverty, which has gained some prominence in New York through the leadership of Henry George and others, attributes most of the ills of society to the alleged lack of opportunities for acquiring land. Whatever truth there may be in this, as regards European countries, the United States has not reached a condition where land cannot be had almost for the asking. Not only is there a large quantity of Government land open to settlement, but there are in nearly every section of the country private lands which may be purchased at a very low price. In New England there are hundreds of farms which can be had for a mere trifle as compared with their value twenty-five years ago, and we observe that 1,000 acres in Oneida and Herkimer counties, New York, were recently sold by auction at from one to nine cents per acre. We do not learn that any of the members of the anti-poverty organization were bidders at the sale—a fact which clearly shows the inconsistency of their position on the land question.—*San Francisco Grocer*.

Manufacturing.

THE CANADIAN MANUFACTURER.

Sent \$2.00 and receive it twice a month, postage paid, for one year.

MR. JAMES JERNYN, of Minnedosa, Man., is changing his flouring mill at that place to be operated on the roller system.

MESSRS. PILLOW, HERSEY & Co., Montreal, are preparing to have their rolling mills and iron works illuminated with electric light.

MR. JOHN MCGUIRE, of the Brookfield mine, took a bar of gold to Halifax on Monday last weighing 180 ounces.—*Liverpool, N.S., Times.*

It is rumored that a company is being formed in Toronto for the purpose of acquiring and operating the Joseph Hall Machine Works at Oshawa, Ont.

THE Iron Bay Manufacturing Co., of Marquette, Mich., are building a mining plant for the Rabbit Mountain Silver Co., whose mines are near Port Arthur, Ont.

MR. A. MCINNES, formerly of Galt, has leased the works of the Waverly Knitting Company, at Preston, Ont., which are being managed by W. E. Channel.

MESSRS. RICE LEWIS & SON, Toronto, have fitted up an annex to their place on King street, in which to display their extensive assortment of art tiles, fire grates, mantels, etc.

MESSRS. WM. BELL & Co., organ manufacturers of Guelph, Ont., have recently been making some large shipments of organs to London, England, and to Australia and Japan.

THE Merriton Hosiery Mills, at Merriton, Ont., near St. Catharines, of which Messrs. Beatty & Henderson are proprietors, are full of orders and are being operated day and night.

MESSRS. HENRY CARR & Co, Berlin, Ont., manufacturers of Cardigan jackets, scarfs, hosiery, mitts, Jersey suits, etc., are operating their works full time, anticipating a heavy fall trade.

MR. JOHN PERKINS, manufacturer of steam engines, boilers, etc., is placing one of his celebrated Brown engines in the oatmeal mills of Messrs. Barclay & Co., on King street east, this city.

MESSRS. LAUTENSCHLAGER & WEAVER, proprietors of the Maple Leaf Button Works, Berlin, Ont., are running full time in the exclusive manufacture of all kinds of vegetable ivory buttons.

MR. PH. HOHMEIER, Waterloo, Ont., is about bringing out a hot-air furnace for heating residences, etc., for which he claims great merits. He anticipates a large local trade the coming season.

THE town of Oshawa, Ont., has passed a by-law granting a loan of \$15,000 for ten years to E. H. Heaps, of Toronto, to enable him to operate the factory of the late Oshawa Cabinet Company in that town.

MESSRS. CLARRY & ROBINSON, whose mill at Orangeville was recently destroyed by fire, are reported to have bought the mills of the Thorold Woolen and Cotton Manufacturing Company at Thorold.

MESSRS. LINTON & NICHOLSON, proprietors of the Guelph Soap Works, Guelph, Ont., in addition to manufacturing a desirable article of laundry soap, are busy making fuller's soap for woolen mills, for which they have a large demand.

MESSRS. BRICKER & Co., Waterloo, Ont., proprietors of the Waterloo Foundry, are busy manufacturing their well-known Waterloo folding cord binder, self-rake reaper and mower, the Champion thresher, hay loader, chopping mill, etc.

MESSRS. LINDNER BROS., Berlin, Ont., are busy manufacturing toys, etc., running principally at present on hobby horses. This is a comparatively new concern, but the character and styles of their products ensure them a prosperous and growing business.

THE Central Bridge Works at Peterborough, Ont., have contracted to build a bridge at Logan, and another over the Speed river at Preston. The big bridge to be erected at Banff, N.W.T., by this company, is now ready at the works and will be shipped in a few days.

MR. RICHARD ROSCHMAN, Waterloo, Ont., patentee and sole manufacturer of ivory buttons inlaid with velvet, silk, worsted,

tweed, etc., informs us that his factory is being run to its full capacity manufacturing the lines of goods above indicated, in anticipation of a large fall trade.

THE intense heat in Lancashire, Eng., recently, led to the twisting of some of the London & Northwestern Road's rails. The trains had to be shunted and worked on one set of rails, causing a considerable delay to the traffic.

THE Knowles Steam Pump Works, 113 Federal street, Boston, and 93 Liberty street, New York, have just issued a new catalogue, in which are many new and improved forms of pumping machinery of the single and duplex steam and power type. This catalogue will be mailed free on application.

MESSRS. WAGNER, ZEIDLER & Co., Toronto, manufacturers of key-boards and other wood materials for pianos and organs, and importers of and dealers in piano and organ supplies, inform us that they are full of work, the demand for their lines of goods being exceedingly brisk.

A VALUABLE discovery has been made by two men in the Crows' Nest Pass, west of here and a short distance this side of the summit. The discovery consists of two veins of coal, one 11 feet thick and another 7 feet thick. It is said to be genuine hard coal.—*Macleod (Alberta) Gazette.*

THE Berlin Felt Boot Company, Berlin, Ont., of which Mr. Geo. Rumpel is proprietor, are operating with a large force manufacturing seamless felt boots, shoes and slippers, for which, they inform us, they enjoy a very large demand. They are accumulating a large stock of goods in anticipation of a heavy fall trade.

THE Manganese mine on White's Mountain, N.B., is showing up in magnificent style. It is confidently said this is the best deposit of the kind in Canada. There is probably \$2,000 worth of ore on the dumps, and good judges say \$10,000 worth is in sight. This is known as the Stockton mine.—*Halifax, N.S., Critic.*

MESSRS. JACOB Y. SHANTZ & SON, button manufacturers, Berlin, Ont., are now operating nearly two hundred hands in their button factory, which force will be considerably increased a little later in the season. Their specialty is the manufacture of buttons of vegetable ivory, although other sorts of goods are also made.

THE stove moulders strike at Hamilton, Ont., has at last been settled. An immediate advance of five per cent. will be granted on piece work and twenty-five cents per day on day wages, with a further advance of five per cent. on March 1 next, the agreement being that there shall be no further changes before March 1, 1887.

THE Dominion Show Case Manufacturing Company, of Toronto, are erecting a four-story substantial brick factory, 168 feet by 54 feet, at Toronto Junction, near this city, which they expect to occupy about October 1. Their present quarters on Adelaide street are too contracted for their rapidly increasing business.

THE Joseph Hall Machine Works, of Oshawa, of which Mr. John Livingstone is trustee, are offering for immediate shipment a large variety of seasonable agricultural implements, among which are included the Oshawa mowers, new model threshers, portable engines, Hall threshing machines, Champion reapers, horse-powers, etc.

THE Crompton Corset Company are now giving employment to about 200 girls at their new works at Berlin, Ont. Their new factory building there is one of the largest and best arranged for such purposes in the Dominion. We learn that much of the machinery in the company's factory in Toronto will be removed to Berlin.

MESSRS. J. & A. ARMSTRONG & Co., carpet manufacturers, Guelph, Ont., are placing in their mills a number of looms for the manufacture of three-ply carpet, which, they say, will be probably the only three-ply carpet machinery in Canada. They are operating their other looms on two-ply grades, anticipating a heavy demand later in the season.

MESSRS. SHEARER, PATRICK & WILSON, Galt, Ont., are manufacturing a Paragon automatic clothes press which is adapted for all fabrics such as tweeds, doeskins, worsteds, full cloths, flannels, felts, etc. It occupies very little space, requires but very little power and steam; is economical, durable and simple, and is not liable to get out of order.

J. STEELE, of Steele & Son, Greensville, Ontario, is in correspondence with Mr. Tweed with a view to starting a two-set woolen factory at Medicine Hat, N.W.T. Mr. Steele has been offered a bonus to establish the factory at New Westminster, B.C., but he would prefer Medicine Hat, provided satisfactory arrangements can be made.—*Medicine Hat Times.*

THE Canadian Pacific Railway Company carried out of Ottawa, last year, 75,000,000 feet of lumber, and the Canada Atlantic Railway about a similar amount, making the amount carried out of Ottawa by rail last year about 150,000,000 feet out of a total of somewhat over 350,000,000 feet. Two-thirds of this amount shipped by rail went to the United States.

THE Dartmouth Ropework Company, Halifax, N.S., are offering the trade their excellent binder twine for the current harvest. Experience has proved that the best is the cheapest, and that a good twine must possess strength and evenness. These are claimed for the goods offered by this company, who have a branch office in Toronto at 12 Wellington street west.

THE Gale Sulky Harrow Manufacturing Co., of Windsor, Ont., are sending out an illustrated circular regarding the sulky harrow manufactured by them. The implement is designed to fill the place of a harrow, cultivator and seeder, and for the latter work can be adjusted with exactness so as to sow the seed evenly and at a depth best adapted to insure its rapid growth.

THE Guelph Novelty Works, Guelph, Ont., during the current season have shipped about 1,800 lawn mowers of their manufacture to foreign countries, among the destinations enumerated being Australia, New Zealand, London (England), Aberdeen and Edinburgh (Scotland), and the islands of Jamaica and Trinidad (West Indies). Their home trade has been correspondingly large.

THE London Rolling Mill Company, of London, Ont., have a large force of men at work preparatory to starting up their rolling mill in that place. The works are being put in complete working order, and large quantities of scrap iron are being received. The works will turn out from fifteen to eighteen tons of finished iron per day, and will furnish employment to nearly a hundred men.

MESSRS. T. PEPPER & Co., Guelph, Ont., proprietors of the Guelph Axle Works, inform us that they are operating their works to their full capacity, manufacturing carriage and wagon axles. They enjoy fine facilities for carrying on their business. They have recently placed a new large cushioned steam hammer, built by themselves, and which is giving them excellent satisfaction.

MESSRS. NELSON & FORSYTHE, proprietors of the Berlin Foundry and Machine Works, Berlin, Ont., are about introducing a hot-air furnace for residences, etc., of their manufacture, for which they claim superior advantages. They say that their experience is that such heating appliances are fast supplanting stoves, and that they are more desirable, both as regards economy of fuel and cleanliness.

THE personnel of the Servis Railroad Tie-plate Company of Canada, of Moncton, N.B., recently incorporated with \$100,000 capital, embraces Messrs. E. L. Burpee, of St. John, N.B.; Graham Fraser, of New Glasgow, N.S.; Vernon Smith, C.E., of Ottawa; J. L. Harris and C. P. Harris, of Moncton; Perry C. Woodworth, of Kentville, N.S., and several other parties in Truro, N.S., and elsewhere.

THE Massey Manufacturing Company are arranging for the construction of a large warehouse, at the corner of King and Sutherland streets, near the C.P.R. track. The building will be a substantial brick structure, 65x140 in size. A switch from the railway will run through the centre of the building, to allow of the loading and unloading of machinery in all sorts of weather. — *Winnipeg Commercial*.

THE John Doty Engine Company, Toronto, are manufacturing a large quantity of heating apparatus recently contracted for, to be placed in some of the public schools in this city. This company make a specialty of manufacturing the Doty vertical engine and boiler in sizes from three to ten horse-power that are simple, safe and durable, and are particularly desirable where light power is to be used.

MR. CHARLES RAYMOND, manufacturer of the Raymond sewing machine, Guelph, Ont., informs us that his two extensive establishments are being operated to their fullest capacity, and that he is working overtime in filling orders. The Raymond machine is in high favor not only in Great Britain, but in France and Germany, to which countries Mr. Raymond has recently been making some large shipments.

MR. S. J. TAYLOR, Guelph, Ont., who but recently established a works in that place for the manufacture of green tow for upholstering purposes, and for making flax seed meal, informs us that his business is fast reaching large proportions. When he began this business no flax was grown in the neighborhood of Guelph, but under his encouragement the crop in that vicinity amounted last to more than 300 tons.

THE Guelph Novelty Works, Guelph, Ont., previously known as the Wm. Russell Novelty Works, have changed hands, Messrs Charles Auld, jr., and A. R. Woodyatt having become the purchasers, and who were to have taken possession August 1. The name "Guelph Novelty Works" will be retained. Their lines of manufactures will continue to embrace lawn mowers, tree pruners, pruning shears, apple parers, sad irons, etc.

MESSRS. CHARLES SMITH & Co., Toronto, manufacturers of steam engines, pumps, hydrant valves and general water-works supplies who recently removed their works from Adelaide street to 59 Richmond street, inform us that they are very full of work—enough probably to keep them fully busy, at least until the end of the year. They recently placed the pumping engines and machinery in the water-works at Parkdale, which are giving entire satisfaction.

MR. I. D. DEWAR, metallurgist, Toronto, is having erected at his laboratory on Pearl street a mill for pulverizing ores, etc., from which precious and valuable metals are to be extracted. The mill will be driven by a suitable steam engine now being built by the John Doty Engine Company, of this city. Mr. Dewar informs us that he has a large and constant demand for the anti-friction metal manufactured by him, intended for high-speed machinery bearings.

THE uses of electricity are continually multiplying, and in directions which would hardly be thought of. Experiments have been made in extracting the saccharine matter from the sugar cane by electricity, and a battery has just been made by order of the United States Government for this purpose. The process is said to be much more effective than the old roller method, as it is claimed that 88 per cent. of sugar can be obtained by electricity against 25 per cent. by crushing.

THE Toronto Steel Wire Mat Co. inform us that since their removal into their new quarters at 33 Wellington street east, their business has increased very rapidly, and that they are pushed to fill orders. The wire door mats manufactured by this company are reversible, weather proof, self-cleaning, require no shaking, and are adapted for any place where a mat is needed. They are made of galvanized steel wire with japanned iron frame and are made of any size or shape desired.

S. CRANDALL, of Moncton, and G. T. Martin, W. E. Danner, W. T. Galey and Crawford Spear, of Philadelphia, are applying for letters patent for the incorporation of the Belleisle Antimony Company, the object of the company being "mining, reduction, preparation and sale of antimony and antimony ore, the felling of timber and lumber, with such other things as are incident thereto." The capital stock is \$50,000, to be divided into ten thousand shares of five dollars each. — *St. John (N.B.) Sun*.

THE Royal Manufacturing Company, Guelph, Ont., of which Mr. W. G. Stephenson is manager, are manufacturing a very superior family and laundry washing machine, with wringer attached, for which special merits are claimed. It is not necessary to remove the wringer when the washer is being operated—a feature which those interested will readily appreciate. They are also making a two-roller and a three-roller mangle, with and without clothes rack attached, the use of which obviates the necessity of ironing a large variety of garments and bed and table linen.

THE Galt coal mines at Lethbridge have been closed down owing, it is claimed, to the arbitrary action of the miners. An association was formed by the miners some time ago, and owing to the distance of the mines from any centres of population, and the difficulty of obtaining men, the employees have had things practically their own way. Their action at last became so unbearable that the company decided to close the mines until new men could be procured from the East. A sufficient supply of coal is on hand to fill requirements until work can again be started. — *Winnipeg Commercial*.

MESSRS. SAMUEL MAY & Co., Toronto, manufacturers of billiard and pool tables, and importers and dealers in all kinds of billiard materials, have issued a circular, in which they announce that they are making a few decisive reductions in their present price list, bringing some of the articles named to about cost price. Among the articles embraced in the reduction are billiard chalk, assorted cue tips, pocket netting, fringe and leather, French polished and ebonyed cues, the latest improved Hyatt pool balls, etc. Those interested should govern themselves by this information.

THE Creamery Supply Co., Guelph, Ont., of which Messrs. D. E. Rudd and W. J. Armstrong are proprietors, have recently supplied the Ontario Agricultural Farm near that place, with a new test churn by which the butter value of all cream taken to the farm creamery can be quickly and accurately determined. A few

minutes is all the time necessary to ascertain the exact percentage of butter contained in any sample of cream tested. This concern is doing a large and rapidly increasing business in the manufacture of butter-workers, churns, vats, gathering cans, prints and other factory supplies.

MESSRS. ANTHES & GROFF, late of J. S. Anthes, Berlin, Ont., have sent us their new catalogue having reference to the children's carriages, sleighs, dolls' carriages, patent slat chairs and settees, roed chairs, etc., manufactured by them. The "carriage sleigh" made by this firm is a departure in children's vehicles. All that is necessary to convert the carriage into a perfectly comfortable sleigh is to take off the wheels and substitute the runners to the spindles of the axles. They are manufacturing the Kennedy patent improved earth closet and commode, a most essential article of furniture for the sick room.

In our last issue it was stated that the Beaver Saw Works, at Hamilton, Ont., formerly owned and operated by Messrs. S. H. Pocock & Co., had changed hands, and that Messrs. J. P. Haynes and J. W. Thurston were the new proprietors. We are in receipt of a letter from Mr. H. Carpenter, Secretary of the Beaver Saw Works Company, in which it is stated that Mr. C. Carpenter, of Messrs. C. Carpenter & Co., and Mr. W. J. Copp, of Messrs. Copp Bros., are the principal shareholders, and that Messrs. Thurston and Haynes are employees of the company. We are glad to make the correction in justice to all concerned.

MESSRS. LOUIS BREITHAUP & Co., Berlin, Ont., inform us that their immense tannery at that place, also that at Penetang, Ont., are being operated to their fullest capacity, manufacturing sole, harness, upper, veal kip and calf leathers, etc. Their tannery at Penetang, one of the largest in the Dominion, was established at that place because of the immense quantities of tanning barks abounding in that region. It is located close to the navigable waters of Georgian Bay, a wharf affording easy access from the water to the works, while a switch from the railroad entering the works, affords the best shipping facilities.

THE Waterloo Woolen Manufacturing Company, Waterloo, Ont., of which Messrs. John Shuh is president, Geo. Davidson, secretary, and J. F. Morley, manager, are just completing some extensive alterations, additions and improvements to their mills. The large building just being completed will be used for picking, dusting, sorting and preparing wool, etc., affording needed space elsewhere for new machinery. The company have recently acquired a riparian right and erected a new dam, by which they have a sufficient head and quantity of water available for use in case of fire, and they have equipped all their buildings throughout with automatic sprinkling apparatus.

MR. JAMES MORRISON, proprietor of Morrison's Brass Works, Toronto, finding his present accommodations too contracted, is about erecting a five-storey brick building at the rear of his present factory on Adelaide street, which will extend through to Pearl street. Mr. Morrison is bringing into the market for the fall trade the Stafford extension heating boiler and radiator, for heating residences, halls, churches, etc., for which exceptional merits are claimed. This apparatus has acquired much celebrity in the United States, where it is well and favorably known, and it will no doubt prove a valuable acquisition to the best methods of heating in vogue in Canada.

ABOUT a week since Mr. R. T. Wilson, proprietor of the Dundas A&O Factory, received an offer to purchase the concern. He favorably considered the same, although it was not sought, and negotiations are now in progress. A transfer is likely to be made, although in any event Mr. Wilson will retain control long enough to finish this season's business. It is satisfactory to know that in the event of a sale Mr. Wilson's successors will be men who will push the business to its fullest capacity, and from the well-known character of Mr. Wilson for enterprise, the chances are good that other industries will be added to those already in existence here. —*Dundas Standard*.

MESSRS. MERNER, KILLER & Co., proprietors of the Union Agricultural Works and the Oliver Chilled Plow Works, Waterloo, Ont., have the exclusive right to manufacture and sell in Canada the Oliver and other chill, combination, sulky and all other styles of plows built by the Oliver Plow Works, of South Bend, Indiana, the firm using nothing but the genuine Oliver chill and steel mould boards, imported from the Indiana works. They also manufacture mowers, twine binders, horse-powers, feed cutters, etc., and the Waterloo Chief grain thresher, of which they make a specialty. This machine is claimed to effect great saving of all kinds of seeds, such as timothy, etc., separating them from the market grain.

MESSRS. A. MURCHEY & Co., of the Guelph Malleable Iron Works, Guelph, Ont., are making a special feature of their business in the

manufacture of the Ney's patent reversible hay carrier for double-angle steel track, and Murchey's double-pipe track. The carrier is made entirely of malleable iron. It is reversible at any point, so that hay may be carried to either end of the barn without changing a single pulley. It is automatic in its movements, and has neither springs, clutches or lugs to break or wear out. The travelers and rope pulley revolve on turned iron bushings. The track on which it operates is guaranteed to carry thirty hundredweight on a four-foot span. This concern are engaged largely in the manufacture of hay- and other farming tools.

So satisfactory have the tests made of a large Peterboro' roller mill been, that a company has purchased Mr. Cochrane's patents of the machinery which is in use at Peterboro', and which he invented. The company, which is to be known as the Cochrane Manufacturing Company, is applying for a charter, and as soon as granted work will begin. In the meantime, specifications for new tools, iron and woodworking, special for this work, have been gone on with, and a new boiler, engine and water-wheels have been ordered. The old Dundas foundry property is being put into shape, and large additions are to be made thereto for the accommodation of the Cochrane Manufacturing Company. Dundas is flourishing and the screw factory loss is about made up. —*Dundas Standard*.

THE Exhibition Show Case Company, of Erie, Pa., who possess the exclusive right to manufacture Henrich's patent upright swinging sectional show cases and cabinets, have started a branch factory in Guelph, Ont., where they have already accumulated a large stock of goods, from which they are constantly filling orders, and where they are manufacturing cases of special shapes and sizes as required. These cases are made with reference to the wants of dealers in dry goods, notions, umbrellas, millinery, boots and shoes, hats, toys, jewelry, smokers' goods, etc., the advantages of which are that they are constructed upright in sections, which swing out and divide the contents, thereby forming several distinct apartments, affording easy access to all goods within, and utilizing the room to the best possible advantage.

AN entirely new and novel method of heating cars from the locomotive is announced to be tried on a Pennsylvania road. It is thus explained: "Heated air is absolutely safe, and can be generated from the locomotive at a trifling expense. The principle is similar to the air brake principle and just as practicable. An air pump forces the air along the cars for the brake system. Why should a pump not force heated air also? Plenty of air could be had from the fire box of the engine. There is always plenty to spare, and in fact large quantities wasted. The hot air method would cause no danger, because if any break occurred there would be no possible chance of fire or explosion. Of course, if this plan is adopted all locomotives will be equipped with suitable appliances to carry it out. I mean both freight and passenger engines, because the former are sometimes used on passenger trains."

MESSRS. GRIFFIN & GRUNDY, proprietors of the Union Foundry, Guelph, Ont., have sent us their new illustrated catalogue of wood cook and heating stoves manufactured by them. The goods illustrated embrace the Wood Cook, a 4-hole number 9, plain, and the same with iron-clad reservoir and warming closet, which are fully finished with beveled medallions and knobs, teapot stand and towel rack, illuminated front, stationary oven shelf, etc.; the Wellington, similarly trimmed and finished, one style plain, one with reservoir and warming closet, both with four holes, and one with an extended front, and having five 9-inch cook holes. The heaters shown are the Jewel, made from new and original patterns, of pleasing outlines, and combining extreme elegance and beauty of design with great durability, the Star, and the Brandon. In their circular to the trade they say that being outside the stove manufacturer's combination they are in good position to deal with great liberality with their customers.

MR. JOSEPH PHILLIPS, Toronto, is running his works full-time manufacturing his Canadian air gas machine, designed especially for factories, mills, hotels, churches, etc., situated in places beyond the reach of the gas mains of cities. These machines are represented as being simple of construction, not liable to get out of order, require no skill to manage, occupy but little space, and are well adapted for the purposes indicated. In a circular describing the construction and operation of this gas machine Mr. Phillips publishes testimonials from a number of persons who have the machine in use, among which we notice the name of Mr. Collingwood Schreiber, chief engineer of the Canadian Government Railway; Mr. W. Leck, of Oshawa; Mr. Wm. Thoburn, of Almonte, who has been using the machine in his woolen mill for several years; the Almonte Knitting Company; Messrs. Moorehouse, Doods & Co., at Glentay, Ont.; Mr. W. Mulock, M.P., Aurora; Messrs. W. H. Wylie & Co., Carleton Place, and many others.

THE Dodge Wood Split Pulley Company, of Toronto, have just issued an illustrated circular descriptive of the method of transmission of power by ropes and the Dodge pulleys manufactured by them. Reference is made to the great advantage claimed of wood over iron as a material for belt pulleys, or drums, to transmit power economically; of the introduction of grooved hardwood pulleys for the special purpose of transmitting power by Manila ropes, and the patented Dodge system of applying the ropes, adjusting the pulleys and taking up the slack, diagrams being given explanatory of the system as in use in a number of industrial works in various parts of the country. The circular contains testimonials regarding this rope transmission of power from a number of parties in Toronto, who have it in use, among whom we observe the names of Messrs. A. R. Clarke & Co., W. H. Banfield, R. & T. Watson, John Taylor & Co., J. B. McKay & Co., James Massie, warden of the Central Prison, the Standard Woolen Mills Co., American Rattan Co., the E. & C. Gurney Co., and others.

THERE are millions of corkscrews made each year, but it isn't generally known that the corkscrew is made in largest quantities in Newark, N.J. One firm there makes an ice pick and a cigar box opener with a corkscrew concealed in the steel tube handle. The tube can be slipped off and the ice pick forms the handle of the screw. Another novelty has a brush in the handle, so that the servant is not obliged to run his finger around the inside of the neck of a wine bottle to remove the particles of cork and dust. For champagne bottles a screw is made with a blade in one end of the handle to cut the twine around the cork. Another handle contains both the knife and brush on the handle. The power corkscrew is an ingenious arrangement which saves the knees and arms from a tussle with an obstinate and fractious cork. A cone of steel fits over the neck of the bottle, and the screw draws the cork while the cone presses on the bottle. The finest of all the corkscrews is a left-handed one. The first one was made for a lefthanded barkeeper, and it suited so well that they are kept constantly in stock. One Newark firm makes 300,000 pocket corkscrews a year, and another makes many millions of different patterns.

SPEAKING of the mining prospects of Newfoundland, the St. John's Mercury says:—"It is hopeful to note, amid prevailing depression, that our mining prospects are brightening. The lead and silver mines in Placentia Bay have been purchased by a company of mining capitalists at a high price, and active operations have commenced. The ore is said to be among the richest yet obtained in any country; and there are indications of extensive deposits; but of course only time will determine their extent and value. There must, however, be something very substantial when a company of cautious Scotchmen put their thousands into the undertaking. Over 300 miners are employed at Little Bay copper mine, the whole population there being over 1,800. Instead of exporting the ore as formerly, arrangements have been made for smelting; and the necessary furnaces, machinery, etc., have been erected. The able and energetic manager, Mr. White, anticipates very satisfactory results from the new departure now taken. The cost of export will be greatly reduced when only pure copper will be shipped. A report has been recently received of the discovery of an extensive deposit of copper ore about four miles from Little Bay mine. It is described as 25 feet wide and a quarter of a mile in extent."

THOSE who are interested in the working of fine motive power machinery should visit the John Abell Engine & Machine Works in this city, and observe the tandem two-cylinder condensing 200-h.-p. engine and its connections. This engine was designed and built by Mr. John Abell, and although it embodies many departures from many engines required to perform similar work, has proven itself to be remarkably economical in the consumption of steam, and a great producer of power. The boilers producing the steam for this engine are peculiar in their construction, and were also designed and constructed by Mr. Abell specially for the duty they are required to perform. A peculiarity of them is that the heat and products of combustion of the fuel pass through them three times before escaping into the smoke-stack. Along the length of the large flue, through which the heat last passes before reaching the smoke-stack, are a number of diagonally-arranged tubes by which a constant current is kept up within the boiler between the bottom and the top. Boilers made on this principle are rather more expensive than other boilers, but the economy of fuel thus obtained is very great, the consumption of coal to each boiler being but about a half ton per day. The utmost degree of economy in operating motive power and machinery seems to have been attained in these works.

THE new safety cartridge for use in coal mines, as a substitute for gunpowder, continues to be satisfactory in its operation in the German mines where it has been introduced. Its action, as now more definitely reported, depends upon the rapid liberation in the bore

hole of a large quantity of hydrogen gas, the pressure resulting from which forces the rock or coal asunder. The hydrogen is liberated by means of the action of sulphuric acid upon very finely divided metallic zinc, and for this purpose there is employed the bluish grey metallic that forms in the condensers of zinc distillation furnaces, and which consists of a metallic zinc, that has not been condensed to the liquid form, but results as a powder or as a more or less spongy mass; a small amount of oxide is mixed with it, but it is practically metallic zinc. The cartridge itself consists of a glass cylinder, narrowing to a neck, and contracted also at a point below the neck, so that the cylinder is divided into two portions, communicating through the contraction, the latter being so placed that the two parts of the cylinder are to one another in cubic capacity as one to four, the smaller part being near the neck. The lower or large division is filled with sulphuric acid of commerce with an equal volume of water; the contraction is then closed with a stopper of rubber or cork, and in this condition is taken by the miner. The hole being bored in the coal, and well clayed over internally, the upper part of the glass cylinder is charged with zinc powder, an iron rod is laid in, and this, when struck with a hammer, causes the acid to run in among the zinc powder with the desired result.

ALBERT County, New Brunswick, is one of the richest mining sections in the Maritime Provinces, and will yet take a front rank among the mineral producing belts on the Atlantic coast. Now that ship building and lumber no longer make adequate returns for the capital expended, the people are turning their attention to the development of the rich mineral resources which nature has so lavished upon them. Among the most recent is that of a deposit of pulverized manganese, which is estimated to contain at least five hundred thousand tons. The deposit is located in what has hitherto been regarded as a bog, and has evidently been washed from the adjoining hill; the manganese is mixed with decayed vegetable matter, which, it is thought, can be driven off by fire, without injury to the mineral. Several tests have been made, which prove that the deposit contains from forty-one to forty-three per cent. of pure manganese, and if this proves correct, the owners of the property, most of whom live in Hillsboro, N.B., must realize a handsome sum from their property. The cost of mining this deposit cannot be great, in fact a pick will seldom require to be used, as the material, which lies loosely on the bed rock, can easily be shovelled into carts and carried away. Tests have been made as to the depth of the deposit, which shows it to vary from twelve to eighteen feet, and, according to a calculation made by a competent authority, there cannot be less than a half a million tons on the property. The owners are not yet certain whether the manganese will have to be separated by the application of acids, or whether it can be secured by destroying the vegetable matter with which it is supposed to be associated.—*Halifax (N.S.) Critic.*

THE John Abell Engine and Machine Works, of Toronto, have sent us their revised illustrated catalogue of engines, machines, boilers, mill machinery, etc., manufactured by them. This concern was established at Woodbridge in 1845, but the founder, Mr. John Abell, found the premises there becoming inadequate to enable him to keep pace with his rapidly increasing business, and in 1886 the company built entirely new works in this city, Toronto being considered the most central place and the one best adapted both for customers and for the greater facilities for carrying on their business. Their new works occupy nearly seven acres of ground, lying within three minutes walk of Parkdale station, where all trains on the Grand Trunk, Canadian Pacific and Northern railways stop. Railway sidings run into the grounds, so that cars can be loaded at the works, avoiding unnecessary handling, transshipping, etc. The company manufacture steam boilers of every description and size, and have every facility for turning out work on the shortest notice. The riveting is done with a Tweedell patent hydraulic riveting machine, which produces a pressure of 60,000 pounds on each rivet, and making the joints like a solid plate. Special attention is given to the manufacture of portable and traction steam engines for farm work, among which are enumerated the Triumph, Twin-Cylinder Compound and Advance traction, the construction of which is so exceedingly simple as to render them perfectly safe in the hands of the average farm mechanic. The Abell patent straw burning engine is particularly adapted to the requirements of those sections where wood or coal fuel is scarce and expensive, and where straw is abundant. The Toronto Advance thresher, manufactured by this concern, seems to embody all that could be desired in such a machine, and is illustrated and described in full detail. Other machinery shown in the catalogue includes the steam "Paragon" separator, the "Woodbridge Champion" vibrator separator, "Little Giant" thresher and patent "Level Tread" horse-power, "Victor" double huller clover mill, etc.

THE H. S. SMITH LUMBER CUTTING MACHINE.

A few days ago the Canadian Lumber Cutting Machine Company of Toronto (whose offices are at Room 7 No. 49 King street east), made a public test of their new lumber cutting machine at the works of the John Abell Engine and Machine Works in this city. This machine consists of a large steel plate with knife-like edge, accompanied by a compressing roller and ingenious appliances to serve the log and remove the lumber when cut; all operated by steam power. The log is held in a stationary horizontal position, and the knife, which should be operated to make from forty to sixty strokes per minute, strikes the log at an angle of forty-five degrees, passing through the entire length of the log at each stroke, and cutting off a board or veneer of any desired thickness, of perfectly smooth surface and uniform throughout. It is capable of cutting veneers perfectly true and uniform, the hundredth of an inch thick, and it is claimed for them that they are superior in all respects to any made on rotary or other machines.

At the exhibition the cutter was operated on ash and elm logs, the lumber sliced off being perfectly smooth and solid. The power is applied to the knife directly from the cylinder of the machine, the knife being arranged to work between guides, and acts as a cross-head to the piston rod, the motion being steadied and regulated by a suitable balance wheel, and there is neither wheel, bolt, crank, nor pulley, nor any other contrivance intervening between the steam cylinder and the cutting knife, the simplicity and effectiveness of the arrangement being perfect.

For certain sorts of work, such as making barrel staves, etc., where curved forms are required, a dryer is used in connection with the cutting machine. This dryer consists of series of suitably shaped hollow castings, so arranged that the lumber can be introduced and subjected to a tremendous pressure, causing it to conform to the shape of the castings. Steam at a high pressure is then introduced into the hollow castings, the effect of which is to season the lumber, which, when removed, retains its shape and is ready to be made into barrels, saving the necessity of steaming, seasoning and firing, the dryer shown accommodating about three hundred staves at a time, and the operation consuming about fifteen minutes. The dryer can be enlarged and modified to meet any requirement as to capacity and shape.

Both the lumber cutter and dryer are the invention of Mr. H. S. Smith of Geneva, N. Y., who obtained patents on them only a few months ago. The Canada Lumber Cutting Machine Company have obtained the right to manufacture and operate these machines in Canada, the provisional directors being Messrs. Robert Hay, David Blain, Hon. J. B. Robinson, John Abell and J. W. Hughes. It is proposed that the Company manufacture staves, boxing, veneers and other material; also construct the machines and sell or lease them, subject to royalty.

The process of sawing and planing by the present method of manufacturing lumber, independent of the labor expended, entails a loss of material varying from 37½ per cent. in the production of half inch lumber, to 233½ per cent. in lumber one-sixteenth of an inch thick. This percentage of loss, as well as the labor involved in planing, is saved in the use of this lumber cutting machine, as no sawdust or other loss of material results from its operation, and planing is unnecessary, for boards cut with this machine are perfectly smooth.

In view of the enormous saving of material here alluded to, it is claimed that this lumber cutting machine will quickly supersede the use of saws and planing machines in the manufacture of such lumber as it is best calculated to produce; and as such lumber is estimated to comprise two-thirds of all that is manufactured, it would seem that those who control this machine will soon have a monopoly of this branch of the lumber cutting business.

The magnitude of such a monopoly cannot be overestimated. The manufacture of barrels for containing flour, sugar, oils and other liquids, and for all other purposes; of packing and other boxes, and of veneers for all purposes are a few of the industries which will be largely affected by the introduction of this far reaching invention. Successful competition by means of the present most improved machinery would seem practically hopeless. In the manufacture of barrel staves for instance, the best machinery now in use can produce but only about 2,000 staves of certain dimensions from each 1,000 feet of lumber, while with the Smith machine here alluded to the same quantity of lumber can be made to produce over 4,000 similar staves. Packing and other boxes can be produced by the use of the Smith machine for one-half the cost of similar boxes made in the ordinary way. In almost all other manufactures involved the relative cost of production will be about as here indicated.

A tabular statement has been prepared by which it is shown that

the average loss in material by saw kerf in sawing and in planing is as follows, the stuff being dressed on two sides: Half-inch stuff, 37½ per cent.; ¾ inch, 50 per cent.; 1 inch, 58½ per cent.; 3¼ inch, 77½ per cent.; ½ inch, 116½ per cent.; 1½ inch, 233½ per cent., all of which is saved in the use of the Smith lumber cutting machine, and there is also saved the cost of planing, which amounts to from \$1.50 to \$2 per thousand feet.

The vast saving in time, labor and material effected by the use of this machine will be more fully appreciated by observing the facts that a single machine adapted to cutting lumber of certain dimensions will cut in a working day of ten hours, 37,500 feet of inch boards or 60,000 feet of half-inch or 80,000 feet of quarter-inch boards.

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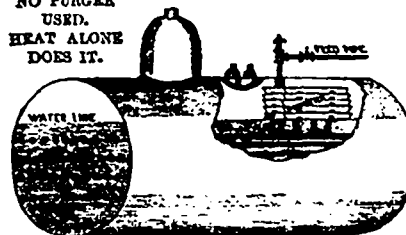
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OF WHOM ALL INFORMATION MAY BE OBTAINED.

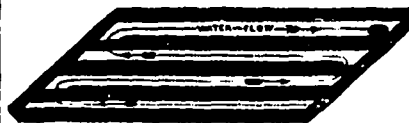
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THIS PURIFIER ENTIRELY PREVENTS THE FORMATION OF SCALE UPON SHELL AND FLUES OF ANY BOILER IN WHICH IT IS USED. ALL IMPURITIES ARE EXTRACTED FROM THE WATER BEFORE IT REACHES THE WATER LINE, AND ARE DEPOSITED IN THE PANS OF THE PURIFIER.

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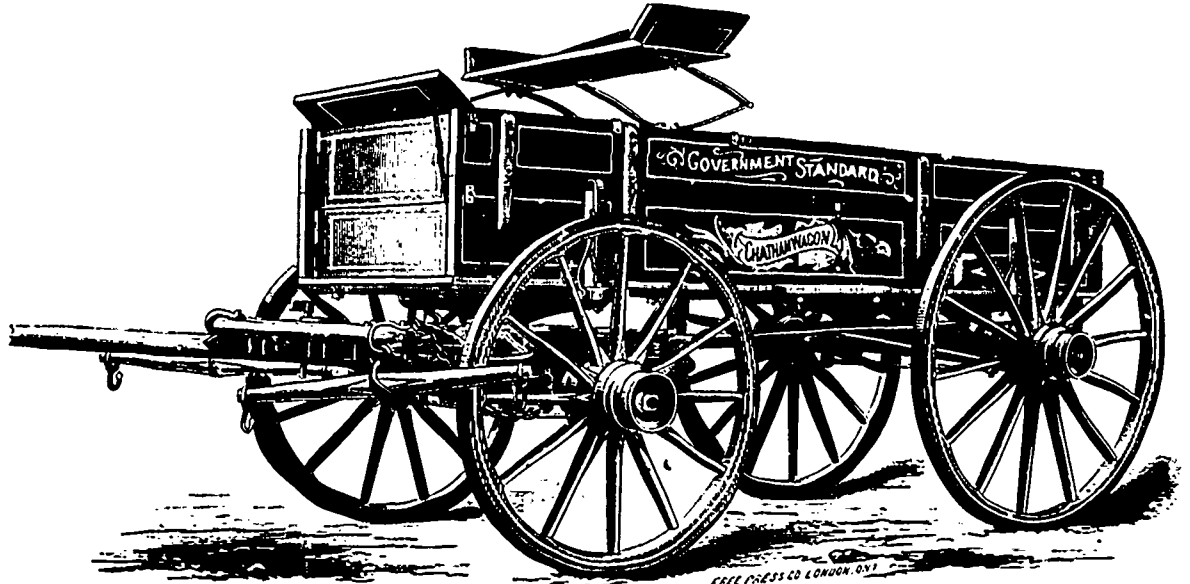
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CERTAIN lots and the timber thereon situate in the Townships of Allan, Assinick, Bidwell, Billings, Carnarvon, Campbell, Howland, Sheguandah, Tekkumnah and Mills on the Manitoulin Island, in the District of Algoma, in the Province of Ontario, will be offered for sale at Public Auction in blocks of 200 acres, more or less, on the 1st day of September next, at 10 o'clock a.m., at the Indian Land Office in the Village of Manitowaning.

TERMS OF SALE.— Bonus for timber payable in cash, price of land payable in cash, a license fee also payable in cash, and dues to be paid according to Tariff upon the timber when cut.

The land on which the timber grows to be sold with the timber without conditions of settlement.

At the same time and place the Merchantable timber of not less than two inches in diameter at the butt, on the Spanish River Reserve and French River lower Reserve will be offered for sale for a cash bonus and annual ground rent of \$1.00 per square mile, and dues to be paid on the timber as cut, according to Tariff of this Department.

For full particulars please apply to James C. Phipps, Esq., Indian Supt. Manitowaning, or to the undersigned.

No other paper to insert this advertisement without authority through the Queen's Printer.

Department of Indian Affairs,
Ottawa, 2nd June, 1887.

L. VAN KOUGHNET,
Deputy of the Supt. General of Indian Affairs.

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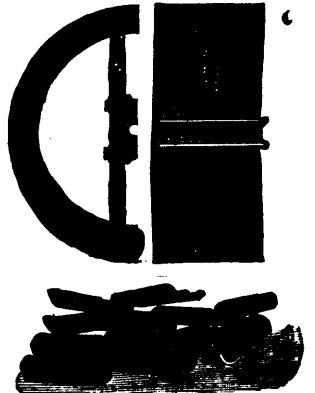
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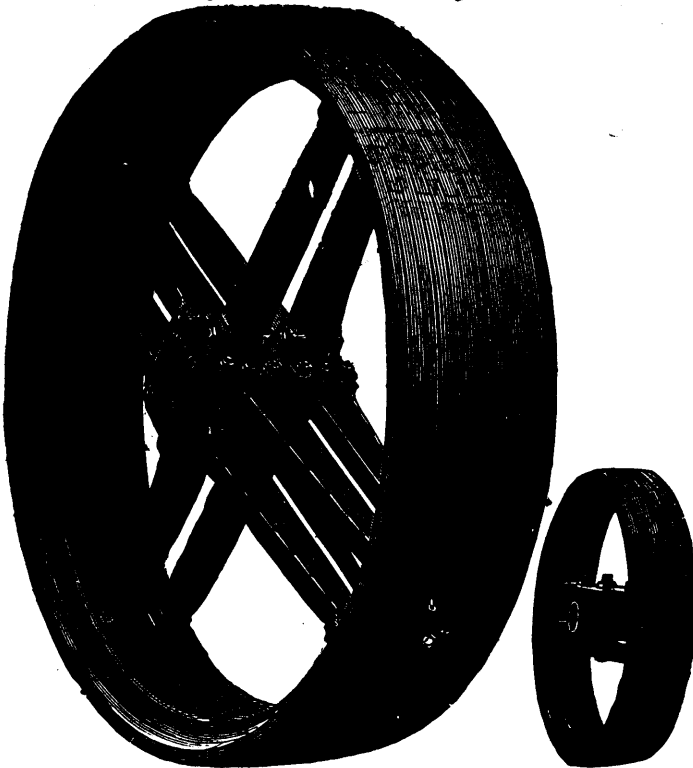
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NORTHWESTERN MANUFACTURING & CAR COMPANY, SHATTO & DENNIS, MINNEAPOLIS, MINN., STILLWATER, MINN., August 15, 1884.
Gentlemen: You ask why we use the Dodge Patent Pulley. I answer because we consider them the cheapest, most convenient and satisfactory in all particulars.
Yours truly, S. R. STIMSON, General Manager.

OFFICE OF NEWTON WAGON CO., BATAVIA, ILL., Feb. 17, 1885.
C. L. RICE, AGENT, CHICAGO, ILL.
Dear Sir: Replying to your favor, will say that after using the Dodge Wood Split Pulley for a year or more we are satisfied they are a good thing, if not the best Pulley made, and shall use them hereafter in preference to any other we know of.
Yours truly, NEWTON WAGON CO.

We have sold these pulleys for one year, and they have been put to every kind of service, and their popularity is wonderful. We refer to the following users for proof of the above statements: Pillsbury & Hulbert Elevator Co., Minneapolis; R. M. Pratt & Co., Elevators; Northern Pacific Elevator Co.; The Pacific Elevator Co.; Minneapolis Harvester Works; Minneapolis School Furniture Co.; M. & St. L. R. R. Co.; Willford & Northway; Washburn, Crosby & Co.; St. Paul Electric Light Co.; St. Paul Roller Mill Co.; Minneapolis Brick Co.; N. W. Mfg. & Car Co., Stillwater, Minn., and very many others.
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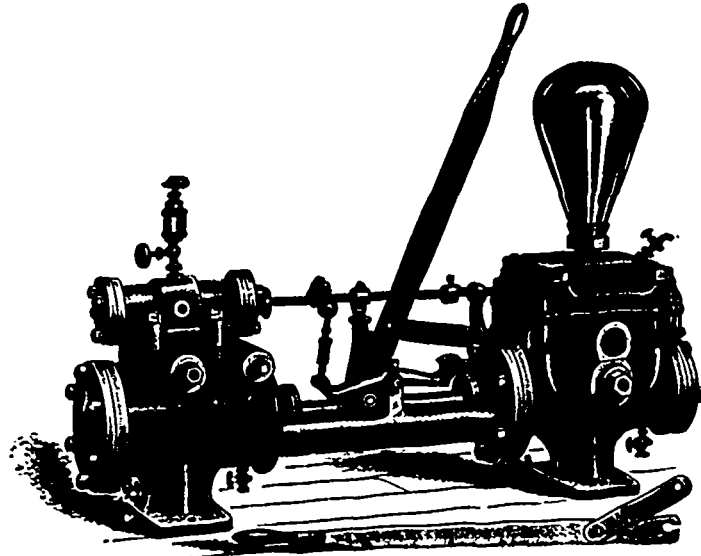
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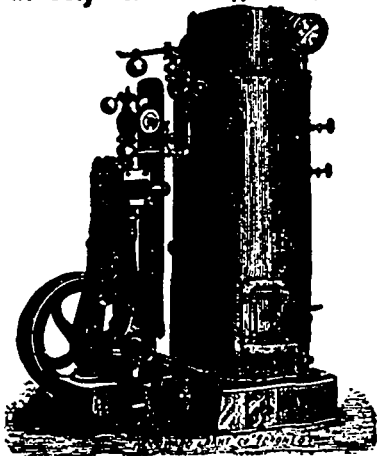
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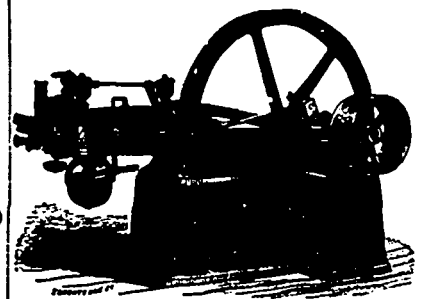
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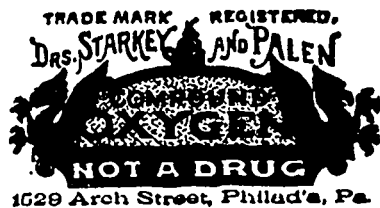
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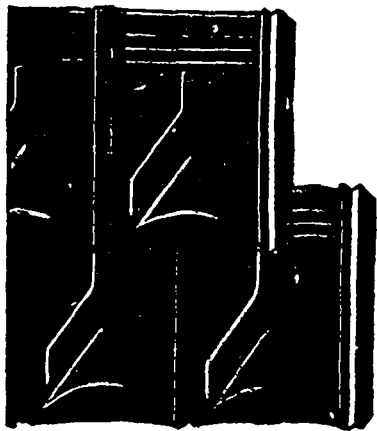


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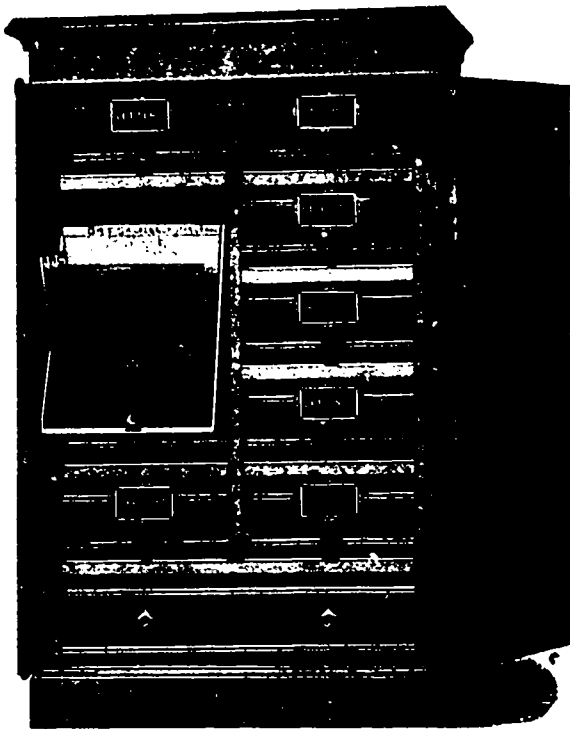


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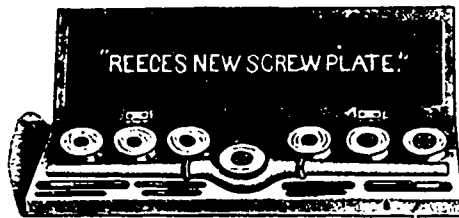
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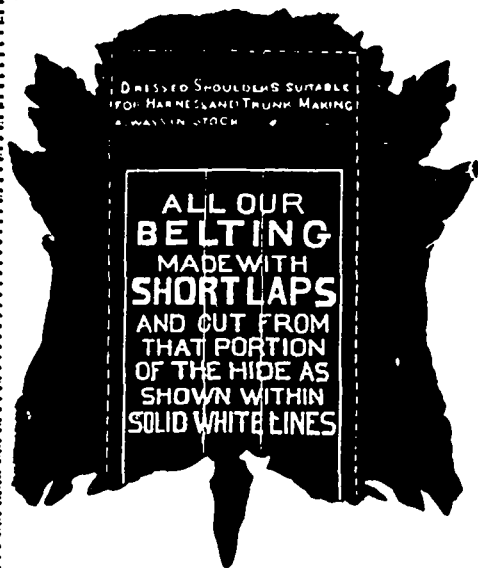
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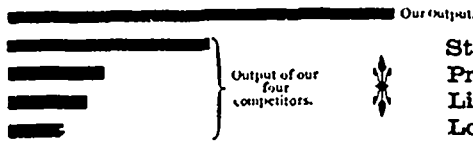
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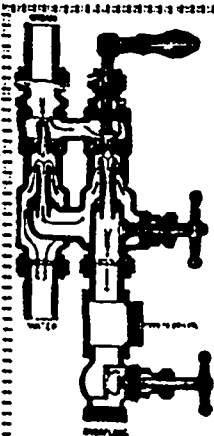
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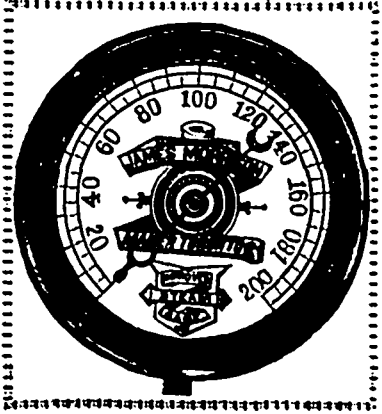
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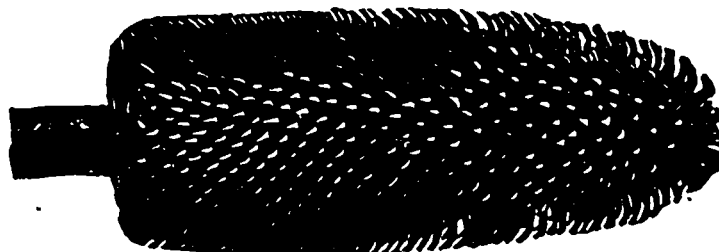
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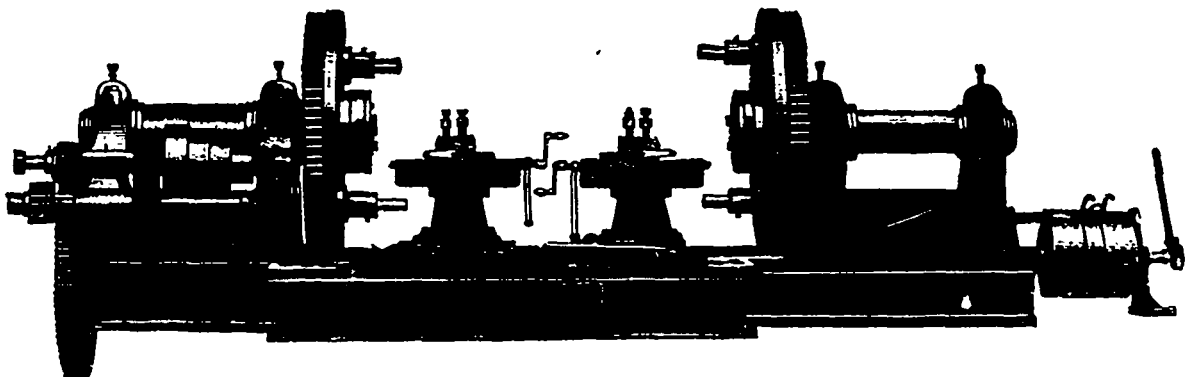
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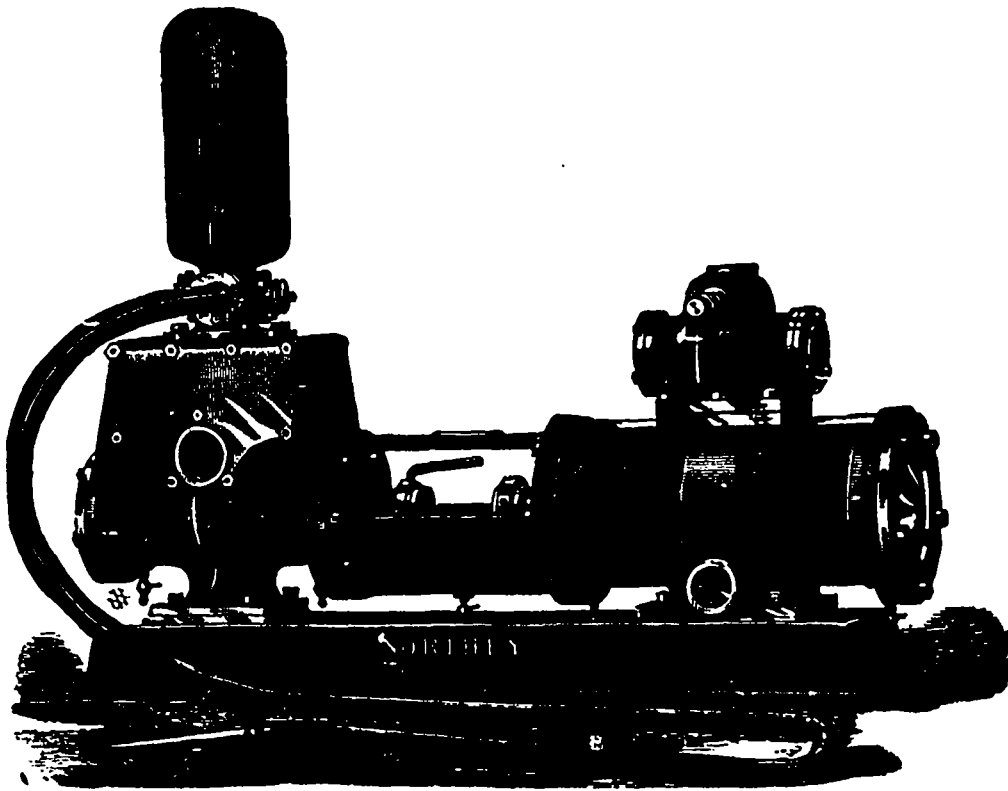
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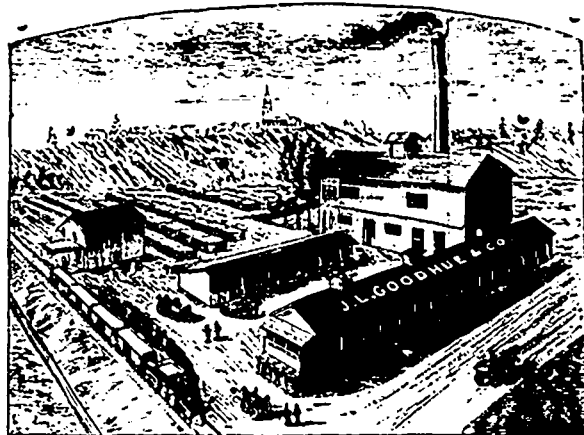
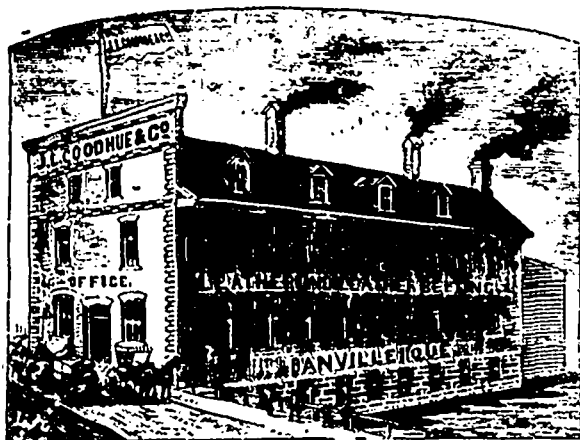
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KNIVES.

STAVE CUTTER KNIVES.



STAVE JOINTER KNIVES.

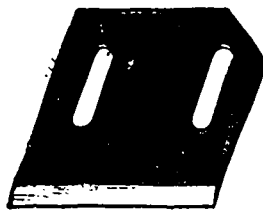


MOULDING, TENONING,

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.

Millers' and Manufacturers' INSURANCE COMPANY.

STOCK AND MUTUAL OBJECTS.

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

METHODS.

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

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

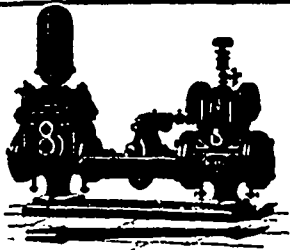
As no agents are employed and the company deals only with the principals of the establishments insured by it, conditions and exceptions which are so apt to mislead the insured and promote controversy and litigation in the settlement of losses will thus be avoided.

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

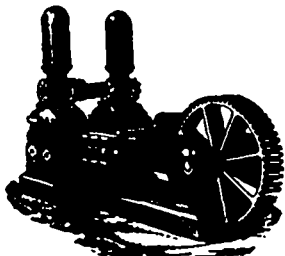
W. H. HOWLAND, Vice-President. **JAMES GOLDIE, President.**
HUGH SCOTT, Managing Director.

Applicants for Insurance and other information desired, please address 'MILLERS' AND MANUFACTURERS' INSURANCE COMPANY No. 24 Church Street, Toronto.

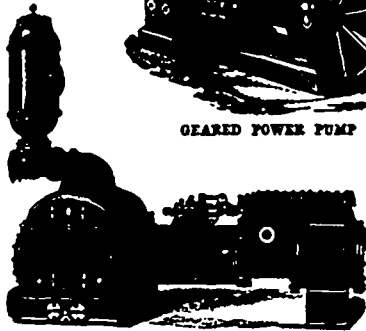
Geo. F. Blake Manufacturing Co.,



BOILER FEED PUMP



GEARED POWER PUMP



DUPLEX COMPOUND ENGINE

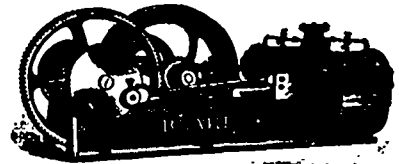
BUILDERS OF
SINGLE AND DUPLEX
Steam and Power
Pumping Machinery



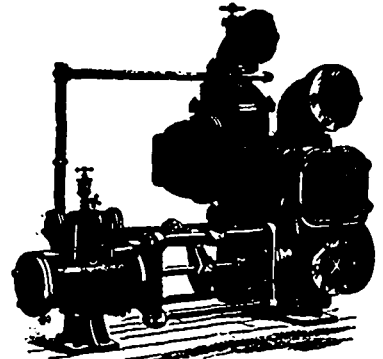
BOSTON,
44 WASHINGTON STREET.

NEW YORK,
93 LIBERTY STREET.

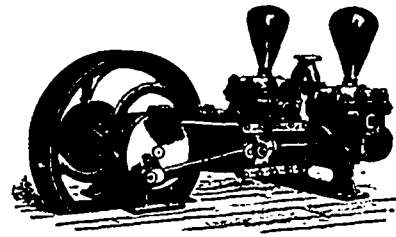
SEND FOR ILLUSTRATED CATALOGUE.



AIR COMPRESSOR



AIR PUMP AND CONDENSOR



BELT PUMP

BELL ORGANS

FOR
Chapel,
Church,
Lodge,
Parlor.

ARE THE BEST



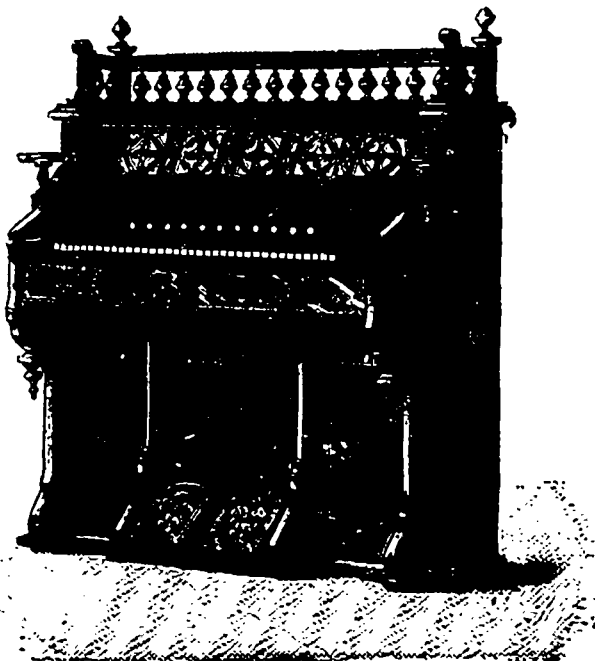
OUR Large Double and Single Manual Organs are the best in the Market, and Musicians should see them before buying elsewhere.

CATALOGUES
SENT ON APPLICATION



W. BELL & CO.,

GUELPH, CANADA.



Industrial and Trade DIRECTORY.

Acids and Aniline Dyes.

THEO. H. EATON & SON, Windsor, Ont.; Detroit, U.S.A.—Importers. Every Description **Pure Aniline Dyes** for Cotton and Woollen Manufacturers. **Dyed Samples** furnished on application. Address all correspondence to Head Office, Detroit, Mich.

Agricultural Implements.

A. S. WHITING MANUFACTURING CO., Cedar Dale, Ont.—Manufacturers of scythes, forks, hoes, etc.

WELLAND VALE MANUFACTURING CO.—Lock No. 2, St. Catharines, Ont., Canada—Manufacturers of axes, scythes, forks, hoes, rakes and edge tools.

Bobbins and Spools

THOMPSON & CO., Sherbrooke, P. Q.—Manufacturers of all kinds of Bobbins and Spools for Cotton and Woollen Mills—Special patterns made to order from sample.

Bridge Builders.

DOMINION BRIDGE CO. (Limited),—Shops at Toronto, Ontario, and Lachine, Quebec. Builders of Steel and Iron Railway and Highway Bridges.

Chemicals.

DOMINION DYEWOOD AND CHEMICAL CO., Toronto.—Importers and Manufacturers. Chemicals for Cotton, Woollen, Paper and Leather Manufacturers.

MCCARTHUR, CORNEILLE & CO. (successors to John McArthur & Son), Montreal.—Offer at closest figures chemicals required by soap-boilers, oil refiners, paper-makers, and by manufacturers of woollens, cottons, leather, &c.

Cotton Mills.

HAMILTON COTTON MILLS CO., Hamilton.—Denims, tickings and yarns.

Dyes, Dyeing Drugs and Extracts.

THEO. H. EATON & SON, Windsor, Ont.; Detroit, U. S. A.—Carry full line of Pure Dyeing Drugs, Dye Woods and Extracts adapted for the requirements of Woollen and Cotton Manufacturers. **Paper Makers' Anilines** and Chemicals. Address the Detroit Office.

Dye Stuffs.

MCCARTHUR, CORNEILLE & CO. (successors to John McArthur & Son), Montreal.—Supply of best quality at closest prices. Every description of coloring materials required by manufacturers of woollens, cottons, silks, paper, leather, &c. Are sole agents in Canada for the celebrated aniline dyes of A. Porrier, Paris.

LYMAN BROTHERS & CO., Nos. 71 and 73 Front Street East, Toronto—Dye Stuffs of all kinds for Woollen and Cotton Manufacturers; Warps, Shuttles, Bobbins, Card Clothing, etc., etc.

Dyewood and Dye Stuffs, Aniline Dyes.

DOMINION DYEWOOD AND CHEMICAL CO., Manufacturers.—Pure Dyewoods, Dyeing Drugs. Sole Agents. English, German, and French Aniline Dyes, for Woollen, Silk Paper, and Leather manufactures.

Edge Tools.

WELLAND VALE MANUFACTURING CO.—Lock No. 2, St. Catharines, Ontario, Canada.—Manufacturers of axes, scythes, forks, hoes, rakes and edge tools.

Emery Wheels.

HART EMERY WHEEL CO., Hamilton.—Manufacturers of every description of Emery Wheels and Emery Wheel machinery.

Gas Engines.

JOHN DOTY, Toronto.—Manufacturer in Canada of the new "Otto" silent gas engine, two, four, and seven horse power and larger.

Glove Manufacturers.

W. H. STOREY & SON, Acton, Ont.—Manufacturers of fine gloves and mitts in every variety and style.

Hoist and Elevator Manufacturers.

LEITCH & TURNBULL, Canada Elevator Works, cor. Queen and Peter Streets, Hamilton, Ont.—Patent Safety Hydraulic, Hand, and Power Elevators. Telephone connection.

Hubs, Spokes and Bent Goods.

F. W. HORE & SON, Hamilton, Ont.—Manufacturers of wheels, wheel material, shafts, poles, etc.

COWAN & CO., Galt.—Manufacturers of every description of wood working machinery.

H. R. IVES & CO., Montreal.—Hardware manufacturers and founders; iron railing and ornamental iron work a specialty.

JOHN BERTRAM & SONS, Dundas.—Machine tools and wood working machinery. Toronto wareroom, 58 Yonge St. Agents—The Polson Iron Works Co. Montreal wareroom, Craig St. Agents for Quebec—The Machinery Supply Association, Montreal.

THE OSHAWA MALLEABLE IRON CO., Oshawa, Ont.—Manufacturers of malleable iron castings, to order, for all kinds of Agricultural Implements and miscellaneous purposes.

SMITH'S FALLS MALLEABLE IRON WORKS, Smith's Falls, Ont.—Manufacturers to order of refined malleable iron castings from air furnace. Agricultural and other heavy castings a specialty. Carriage castings in stock.

Engines and Boilers.

JOHN DOTY, Toronto.—Engines and boilers of every description and capacity, also shafting, pulleys, and hangers for factories.

Knife Works.

THE WHITMAN & BARNES MANUFACTURING CO., St. Catharines, Ont.—Manufacturers of mowing and reaping machine knives, sections, guard plates, cutting apparatus complete, spring keys and cotters, etc.

Knitting Mills

S. LENNARD & SONS, Dundas.—Manufacturers of plain and fancy hosiery.

Manufacturers' Supplies.

E. JENCKES MANUFACTURING CO., Pawtucket, R. I.—Sole manufacturers of Hicks Improved U. S. Standard Ring Travellers. Belt hooks, gimlet pointed wire goods, spinning rings, cotton banding, twins, &c. Manufacturers' supplies. Leather belting and lace leather. Special agents for Jos. Noone's sons cloths.

Oils.

MCCARTHUR, CORNEILLE & Co (successors to John McArthur & Son), Montreal.—Afford best value in pure olive and lard oils, also in all other leading lines of vegetable, animal, and mineral oils for factory use. Invite special attention to their celebrated crown diamond "engine" and "machinery" oils.

Paper Manufacturers.

WM. BARBER & BROS., Georgetown—Manufacturer of book and fine papers.

THE TORONTO PAPER MANUFACTURING CO., Cornwall, Ont.—Manufacturers of engine sized superfine papers, white and tinted book papers, blue and cream laid and wove foolscaps, account book, envelope and lithographic papers, etc., etc.

Saw Manufacturers.

R. H. SMITH & CO., St. Catharines.—Manufacturers of all kinds of saws, plastering trowels, straw knives, etc. Sole manufacturers for the Dominion of Canada of the celebrated "Simond's Saw."

Scythe Snaths.

THE DOMINION SNATH COMPANY, Sherbrooke, Que.—Manufacturers of Patent Swing Socket, and every variety of Scythe snath.

Tanners' and Wool Pullers' Supplies.

THEO. H. EATON & SON, Windsor, Ont.; Detroit, U.S.A.—Supply at lowest prices all Chemicals used by Tanners and Wool Pullers. Special Anilines for Sheep Skin Dyers, Wool Mat Manufacturers, etc., etc. Address correspondence to Head Office, Detroit, Mich.

Taps and Dies.

BUTTERFIELD & CO., Rock Island, P.Q.—Manufacturers of Taps, Dies, and all Screw Cutting Tools.—Telegraph Office, Derby Line, Vt.

Wire Works.

R. GREENING & CO., Hamilton, Ont.—Manufacturers of wire ropes, cloth and general wire workers.

TIMOTHY GREENING & SONS, Dundas, Ont.—Manufacturers of the strongest description of steel wire cloth, malt kiln floors and general wire weavers. Telephone connection.

TO ADVERTISERS!

For a check for \$20 we will print a ten-line advertisement in One Million issues of leading American Newspapers and complete the work within ten days. This is at the rate of only one fifth of a cent a line, for 1,000 Circulation! The advertisement will appear in but a single issue of any paper, and consequently will be placed before One Million different newspaper purchasers—or FIVE MILLION READERS, if it is true, as is sometimes stated, that every newspaper is looked at by five persons on an average. Ten lines will accommodate about 75 words. Address with copy of Adv. and check, or send 30 cents for Book of 272 pages. **GEO. F. ROWELL & CO.**, 10 SPRUCE ST., NEW YORK.

We have just issued a new edition (the 15th) of our Book called "Newspaper Advertising." It has 272 pages, and among its contents may be named the following Lists and Catalogues of Newspapers—

DAILY NEWSPAPERS IN NEW YORK CITY, with their Advertising Rates.

DAILY NEWSPAPERS IN CITIES HAVING more than 100,000 population, omitting all but the best.

DAILY NEWSPAPERS IN CITIES HAVING more than 20,000 population, omitting all but the best.

A SMALL LIST OF NEWSPAPERS in which to advertise every section of the country, being a choice selection made up with great care, guided by long experience.

ONE NEWSPAPER IN A STATE. The best one for an advertiser to use if he will use but one.

BARGAINS IN ADVERTISING in DAILY Newspapers in many principal cities and towns, a List which offers peculiar inducements to some advertisers.

LARGEST CIRCULATIONS. A complete list of all American papers issuing regularly more than 25,000 copies.

THE BEST LIST OF LOCAL NEWSPAPERS, covering every town of over 5,000 population and every important county seat.

SELECT LIST OF LOCAL NEWSPAPERS, in which advertisements are inserted at half price.

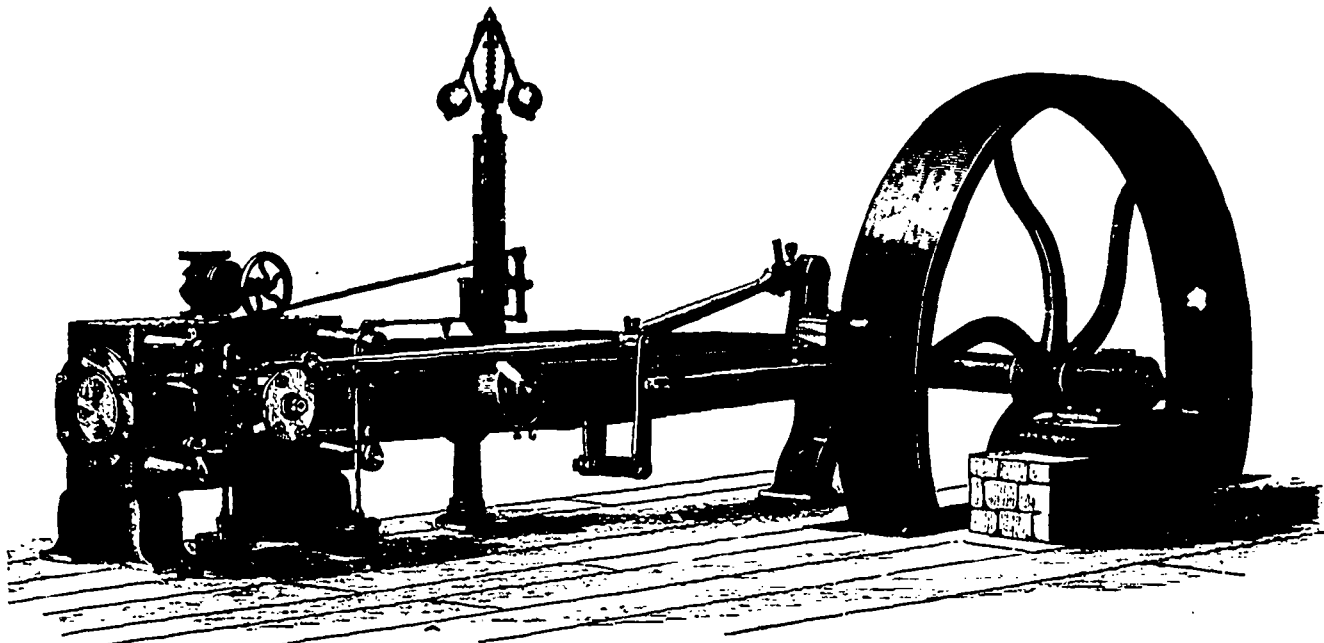
5,472 VILLAGE NEWSPAPERS in which advertisements are inserted for \$41.40 a line and appear in the whole lot—one-half of all the American Weeklies.

Sent to any address for **THIRTY CENTS**.



THE GALT FOUNDRY,

Engine and Machine Works.



THE HARRIS-CORLISS STEAM ENGINE

Is the most perfect Cut-off Engine made. For Economy of Fuel, Regulating of Speed, Accessibility of all its Parts, it has many Imitators, but no Equals, and is Unsurpassed.

While many Engines of the same class have been invented, built, tried and abandoned, the Harris-Corliss has steadily gained in public favor, and is now

Without a Successful Rival.

PLEASE NOTICE SOME OF THE ADVANTAGES OF THE HARRIS-CORLISS ENGINE:

1st—The Steam is admitted at Boiler pressure to the piston by the main valve and is cut off at the same point, the load determining through the regulator, when the supply of steam shall be cut off. This is the only Engine that thus admits steam at full boiler pressure.

2nd—The success of the Harris-Corliss Engine lies in the simplicity and precise action of the governing elements, the Governor is an independent mechanism, with no extraneous load, and free to instantly respond to all variations in the angular velocity of rotating parts.

3rd—No parts of the regulating medium enter the steam chest and thereby be out of sight of the engineer, and subject to the corrosive action of steam and the oil used for lubricating the valves and piston.

4th—Regularity of Speed under varying loads of steam pressure.

5th—Recessed Valve Seats which avoid the liability of wearing shoulders on them.

6th—Stop Motion on Regulator of Engine which effectually stops the Engine whenever the regulator by any means fails to perform its work, thus preventing the Engine from running away.

7th—Having four Valves either can be adjusted independently of the other with the greatest ease.

8th—The increased amount of power it develops.

We would draw special attention to our new and improved Adjustable Pillow Block, which is pronounced by all practical men who have seen it to be the very best in Canada.

COWAN & CO.,

Galt, Ont., Canada.

Manufacturers of Engines, Boilers and Wood-Working Machinery—all kinds, new Patterns, highly finished.

THE
Dartmouth Ropework Co.

HALIFAX, NOVA SCOTIA.

MANUFACTURERS OF

**MANILLA, SISAL AND
TARRED RUSSIAN CORDAGE.**

MARLINE, HOUSELINE,

HAMBROLINE, SPUN YARN AND OAKUM.

SPECIAL ATTENTION GIVEN TO

Binder Twine.

BEAVER LINE.

The Canada Shipping Co.'s Line of Steamers,
BETWEEN
MONTREAL AND LIVERPOOL.

Comprising the following First Class Clyde-built, Full-powered Iron Steamships.

LAKE ONTARIO, Capt. Wm. Bernson	Tons.
LAKE SUPERIOR, Capt. Wm. Stewart	5,300
LAKE HURON, Capt. H. Campbell	5,000
LAKE WINNIPEG, Capt. M. L. Traumar	4,100
LAKE NEPIGON, Capt. P. D. Murray	3,300
	2,300

SUMMER SAILINGS, 1887, WILL BE AS FOLLOWS:

FROM LIVERPOOL:

Lake Ontario	Friday, July 15
Lake Nepigon	" " 22
*Thanemore	" " 29
Lake Winnipeg	" Aug 5
Lake Superior	" " 12
Lake Ontario	" " 19

FROM MONTREAL:

Lake Winnipeg	Tuesday, July 19
Lake Superior	" " 26
Lake Ontario	" Aug. 2
Lake Nepigon	" " 9
*Thanemore	" " 16
Lake Winnipeg	" " 23
Lake Superior	" " 30

*SS. Thanemore does not carry passengers

The steamers connect at Montreal by direct rail for all points in Canada, Manitoba, North West Territories and United States, to which through tickets are issued

These steamers are built in water-tight compartments, and of special strength for the North Atlantic trade.

In the passenger departments the most perfect provision has been made to ensure the comfort and convenience of all. In the Cabin the State-rooms are large and airy. The Steerage is fitted with the most approved Patent Canvas Berths, and is fully ventilated and heated by steam

An experienced Surgeon is carried by each steamer, also Stewardesses to attend to the wants of females and children.

RATES OF PASSAGE:

Montreal to Liverpool - Saloon, \$40, \$50 and \$60. Round Trip Tickets, \$80, \$90 and \$110, according to steamers. Intermediate, \$30; Steerage, \$20.

For Freight and other particulars, apply: In Belfast, to A. A. WATT, 3 Custom House Square; in Queenstown, to N. G. SLYMOUR & Co., in Liverpool, to R. W. ROZARS, 21 Water St.; in Quebec, to H. H. SWELL, 125 Peter St.

H. E. MURRAY,
General Manager,
1 Custom House Square, Montreal.

**HAMILTON
COTTON COMPANY**

MANUFACTURERS OF

THE STAR BRAND

COTTONADES, DENIMS, TICKINGS.

Star Brand—BEAM WARP.
" HOSIERY YARN.
" BUNDLE YARN.
" CARPET WARP.
" BALLED KNITTING YARN.

First Prize, Silver Medals, for Beam Warps and Denims,
Toronto, 1881.

General Agents,—

F. McELDERY & CO.,

204 MCGILL STREET, MONTREAL.
22 & 24 COLBORNE ST., TORONTO.

ONTARIO BOLT CO., TORONTO,

MANUFACTURE

Threshing Machine Teeth,
Machine Bolts,

Bolt Ends and Blank Bolts,
Bridge Rods and Bridge Rivets,
Coach Screws and Skein Bolts,
The Superb Carriage Bolt,
The Prize Carriage Bolt,
The Eclipse Carriage Bolt,
The Prize Tire Bolt,
The Eclipse Sleigh Shoe Bolt,
The Prize Plough Bolt,
Best Whiffletree Bolts,
Best Shaft and Step Bolts,

Best Eccentric Head Spring Bolts,
Best Elevator Bolts,
Best Norway Shackle Bolts,
Best Railway Track Bolts,
Black Iron Rivets,
Boiler Rivets,
Railway Spikes,
Pressed Spikes,
Hot Pressed Nuts.
Bridge Bolts and Rag Bolts.

PLATE GLASS

136 Cases 1-4 inch O. G. Stock Sizes.
97 " " " " Silvering Quality.

We beg to advise having made very large purchases of **PLATE GLASS** before the recent extraordinary **ADVANCE** in prices.

Our Mr. PHILLIPS was fortunate enough to arrive in EUROPE and place large orders one week previous to the formation of the **EUROPEAN MANUFACTURERS' COMBINATION**.

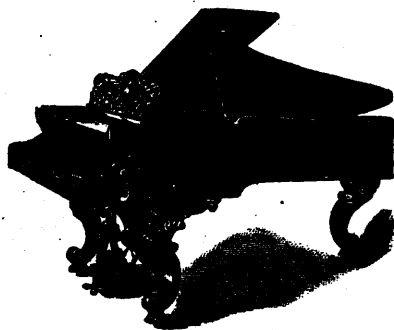
We are now receiving weekly shipments, and are well prepared to place **SHOP FRONTS** in any size at a slight advance **ON COST**.

Send Sizes and Get Quotations.

COBBAN MANUFACTURING CO.
TORONTO.

HEINTZMAN & CO.

MANUFACTURERS OF



**GRAND,
SQUARE,
AND UPRIGHT
PIANOFORTES.**

SEND FOR ILLUSTRATED CATALOGUE.

Warerooms, - 117 King St. West,
TORONTO.

MACHINERY.

**Steam Engines,
Steam Boilers,
Pumping Machinery.**

**Lathes, Planers,
Drilling Machines.
Machinists' Tools and Supplies.**

Shafting, Hangers, Pulleys.

**Machinery Supply Association,
Cor. BLEURY & CRAIG STS.
MONTREAL.**



**HART
Emery Wheel
COMPANY
(LIMITED),
Hamilton, Canada.**

MANUFACTURERS OF

EMERY WHEELS

FOR

**FOUNDRIES, MACHINE SHOPS,
SAW MILLS, & PLANING MILLS.
SEND FOR CIRCULAR.**

Also
MANUFACTURERS
OF

**EMERY WHEEL
MACHINERY.**

Illustrated Price List sent on Application.

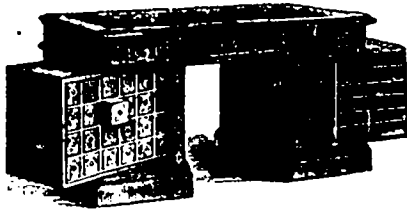


W. STAHLSCHMIDT & CO.

PRESTON, ONT.

MANUFACTURERS OF

School, Office, Church and Lodge
Furniture.



ROTARY DESK

No. 50.

Send for Circulars and Price List. Name this
paper.

S. Lennard, Sons, & Bickford,

DUNDAS, ONT.

PATENTEES OF THE "ELYSIAN" SEAMLESS HOSIERY,

Manufacturers of Plain and Fancy
Hosiery, Caps, Toggles, Sashes,
etc., etc., etc.

To the Wholesale Trade only.

Represented in Eastern Ontario, Que-
bec, Nova Scotia and New Brunswick,
by

F. W. NEWMAN & CO.,
21 Lemoine St., Montreal.

In Manitoba by
PEDDIE & CO.,
WINNIPEG, MANITOBA.

In Western Ontario by
S. LENNARD,
Senior Member of the Firm.

ESTABLISHED 1820.

EAGLE FOUNDRY.

GEORGE BRUSH,

14 TO 84 KING AND QUEEN STREETS, MONTREAL,

Maker of

STEAM ENGINES,
STEAM BOILERS,
HOISTING ENGINES,
STEAM PUMPS,
CIRCULAR SAW MILLS,
BARK MILLS,
SHINGLE MILLS,
ORE CRUSHERS,
MILL GEARING,
SHAFTING,
HANGERS AND
PULLEYS,

HAND AND POWER HOISTS FOR
WAREHOUSES, &c., &c.,

and Agent for

"Water's" Perfect Steam Engine Governor, and
"Heald & Sisco's" Centrifugal Pumps.

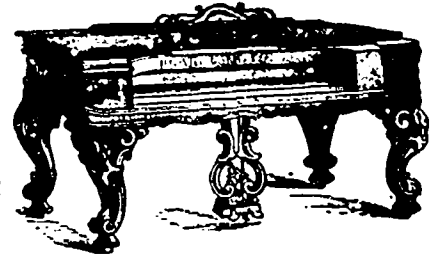


EVERY REPUTABLE DEALER KEEPS
THEM.

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

LANSDOWNE PIANO CO.

UPRIGHTS
- AND -
SQUARES



The Leading Canadian Pianos

STRICTLY FIRST CLASS. Correspondence Solicited.

86 York St., Toronto.

Established 1872.

THE ACCIDENT

INSURANCE CO. OF NORTH AMERICA.

NEW FEATURE,

JOINT INSURANCE

FOR PARTNERSHIPS

IMPORTANT TO MANUFACTURING FIRMS.

MEDLAND & JONES,

GENERAL AGENTS,

Corner Adelaide and Victoria Streets,

TORONTO.

J.M. LAUGHLIN'S SONS.

GROWERS
MERCHANTS,
AND EXPORTERS OF

SPRINGFIELD FALLS
N.Y.

AMERICAN TEASELS.

