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THE CANADIAN MANUFACTURER

DEVOTED TO THE MANUFACTURING & MINING INDUSTRIES OF THE DOMINION.

AND INDUSTRIAL WORLD.

Vol. 5.

TORONTO, NOVEMBER 19, 1886.

No. 22.

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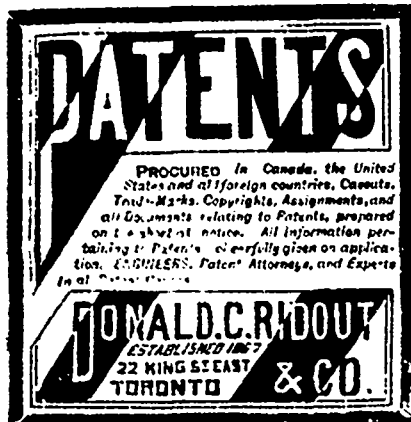
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VOL. V.

TORONTO, ONT., NOVEMBER 19, 1886.

No. 22.

THE ONTARIO ELECTIONS.

It is announced that the Ontario Assembly is dissolved, and the writs for the Provincial elections will be issued immediately. The day will be, over the whole of the Province, Wednesday, 29th December. The nominations will take place, except in those scattered constituencies as to which the law otherwise provides, on Wednesday, 22nd December. We are surely in for a lively Christmas time, as far as political agitation can make it so. In six weeks from the *Globe's* official announcement, the Provincial battle will have been lost and won.

In view of the Workmen's Injuries Act, in force July 1st, and the Factory Act, in force November 1st, Ontario manufacturers are particularly interested in the Provincial elections, we should say. They are also interested, or should feel interested, in figures and statements respecting labor, wages, and cost of living, as set forth by the Ontario Bureau of Industries. We therefore devote considerable space in this issue to extracts from a recent official report. This report, prepared by Mr. Blue, is substantially a review of the working of the National Policy in the Province of Ontario. Be it observed, however, that Mr. Blue's report throws no light on the actual operation of the local Acts above mentioned, which have only recently come into force. While, as for the operation of the N. P., it will help to make assurance doubly sure when the Ontario official statements as to labor and wages are supplemented with such further information as the manufacturers are able to give.

Now that Labor Legislation has begun in the Province, Ontario manufacturers had better realize the fact that they are interested in the Provincial as well as in the Dominion Statute Book. It will surely dawn upon them that the former as well as the latter is worth looking after. The time being short, they will be wise to know their own minds without delay, so that they may be able to speak plainly and directly to candidates. For, if they show themselves indifferent, they will have no reason to grumble should the public prove indifferent too. As Josh Billings or some similar authority remarks:—"He that bloweth not his own trumpet, the same shall not be blown." Carelessness does not command success; and does not deserve it either, we will add. A word to the wise ought to be enough.

MR. BLAKE ON COMMERCIAL POLICY.

NEITHER in Canada nor the United States is there to be found a single candidate for election who, being really a Protectionist, pretends to be a Free Trader. But in both countries respectively there are candidates, not a few, who pretend to be Protectionists, while they are Free Traders at heart. Most remarkable, is it not, that the hypocrisy and the pretence are *always* on one side, and *never* by any means on the other. Positively we challenge contradiction of the fact that a Protectionist never pretends to be a Free Trader, whereas Free Traders do very frequently pretend to be Protectionists, in order to catch the popular vote. No one in Canada proposes absolute Free Trade, they say. But there should be a reduction of the tariff all round, and in particular the odious coal-tax and the bread-tax ought to be abolished altogether. In other words, they merely want the key-stone of the N.P. arch removed, after which the fabric may be left to tumble down when it gets ready. Over the border, again, the same class of politicians are all for "horizontal reduction" of the tariff, which means killing Protection by inches—slowly, but surely enough, provided they get their way. Now, what is wanted is some means of dragging these men of unknown and indefinite policy out to the light of day, so that the whole country may see exactly what they would do were they in power. Let any man be a Free Trader if so he pleases: but at least let him be honest about it, and let him make his policy so plain to everybody that there can be no mistake about it.

On this subject Mr. Frank Hiscock, a prominent York State Republican, has been interviewed by the *Tribune*. And he makes this important statement, that, in his view, the time is near at hand when the Democratic party will have to drop its present doubtful and deceptive attitude, and say squarely before the country whether it is for continuing Protection or destroying it. The necessity that will compel a square issue must arise in this way. The debt is being paid off so rapidly that very soon the revenue will have to be greatly reduced, and this may be done in three ways: First, by abolishing in a lump the internal revenue taxes—those on spirits, beer, and tobacco included. Second, by making those customs duties which at present are most productive, so high that they will become prohibitory, and will cease to produce. Or, third—by abolishing protective duties altogether. Mr. Hiscock believes that the Democratic Executive now in power at Washington, and the party in Congress as well, will be compelled ere long to face the issue squarely, and before the country to elect whether they are for Protection or for Free Trade.

It is evident that the short session yet remaining to the Forty ninth Congress to continue during December, January, and February will afford no time for revision of the tariff. That will remain for the Fiftieth Congress, which in the usual course of events will not meet until December, 1887. Then the problem of how to cut down the surplus revenue will have to be faced, and the Democrats, being in power, will have to face it. It is to this rapidly approaching necessity that Mr. Hiscock mainly draws attention. He wants the issue to come, fairly and squarely, and the sooner the better; but in his opinion it cannot in any way be evaded beyond the first long session of the Fiftieth Congress.

We wish we were equally sure of some potent, all-compelling necessity, which would do for Free Traders on this side of the border what Mr. Hiscock expects soon to see done for them on the other. We do not reproach them for their opinions—in this free country let both thought and speech be unfettered—but we do make this demand upon them, that they cease disguising themselves as half-and-half Protectionists, or something of that kind; and that they speak plainly, as honest men should, on the main question. We would meantime invite their attention to the fact that on our side there is positively no disguise whatever, not the first semblance. Men who are Protectionists glory in the fact, they proclaim it on the streets, and at public meetings everywhere. Instead of concealing their opinions on the tariff question they blazon the same forth in the light of day. Would that our Canadian Free Traders were equally honest and equally open in proclaiming theirs!

With the views of Sir Richard Cartwright, Hon. Mr. Mills, Mr. Patterson, of Brant, and Mr. Charlton of North Norfolk, the public are tolerably familiar. And as for these prominent organs of the party supporting these gentlemen, to wit—the *Montreal Witness*, the *Toronto Globe*, the *Hamilton Times*, and the *London Advertiser*—it would not be much of an exaggeration to say that they hate Protection “as the devil does holy water.” In season and out of season they denounce it as a fraud, as a villainous system by which the many are robbed in order to enrich the few. It is a relic of the dark ages, and wholly out of place amid the enlightenment of the nineteenth century. Further, it is antiquated, and barbarous, and opposed to the progress of the race, and it must disappear as the world becomes more enlightened. In the United States, in particular, where it did obtain a foothold about a quarter of a century ago it is now rapidly losing its grip, and Free Trade is destined ere long to have its most glorious triumph of all in the Great Republic. To be sure, there are before our eyes certain hard facts which flatly contradict these assumptions. France, Germany, and the United States are, next after Great Britain, the foremost three nations in the world in commercial importance, and their standing as *enlightened* nations is not to be disputed. Well, these three nations, instead of approximating towards Free Trade during recent years, have been going further away from it; and the duties they levy on British goods to-day are higher than their duties of forty years ago, when Cobden prophesied that Free Trade would shortly sweep the whole civilized world. The truth appears to be that along with progress comes keener competition between nations, as well as between individuals; and so keen does this international competition become that no nation has much of its custom to

spare for any other, but requires the whole for itself. Alike in France, Germany, and the United States the very spirit and purpose of the tariff may be expressed in these words:—“Our own home markets for our own home producers.” In not one of these great and enlightened countries is Protection established as a mere incidental, or “for revenue only,” but for its own sake. And, latest of all, we see the Democratic party, which two or three years ago gained a certain measure of success by keeping its Free Trade tendencies in the background, suffering a stinging defeat in the Congressional elections, and why? Simply in this way, we answer. Having a fair majority in the House, and having a Democratic Executive in power at Washington, they became bold, and played all sorts of tricks and antics in the way of tinkering the tariff, or attempting to do so. All the time the record of their hostile acts against Protection went on accumulating, it was not lost sight of by the people. And the result was a slap in the face to them from the constituencies, the most prominent enemies of Protection among them suffering the most. The Canadian journals above mentioned know these facts, but the veil is over their eyes, and over the eyes of the political leaders named, too. All the same they keep on denouncing Protection, and prophesying the speedy triumph of Free Trade.

Meantime, during the seven years and more since the National Policy was established, the general-in-chief of the Canadian Free Trade party—the Hon. Edward Blake—has said very little on the question. Now let us turn to what he did say at the recent demonstration of his friends in Toronto, on the subject in hand. We quote from the *Globe's* full report, which is of course the only authorized version:—

“I desire to refer very briefly to the attitude of the Liberal party upon the question of the tariff. It has been grossly misrepresented. In 1882 I stated my views upon that subject in the most formal manner, by means of the address I issued to the electors of West Durham as a manifesto to the country by the principles then laid down I still abide. I said:—

“You know well that I do not approve of needless restrictions on our liberty of exchanging what we have for what we want, and do not see that any substantial application of the restrictive principle has been or can be, made in favor of the great interests of the mechanic, the laborer, the farmer, the lumberman, the shipbuilder, or the fisherman. But you know also that I have fully recognized the fact that we are obliged to raise yearly a great sum, made greater by the obligations imposed on us by this Government; and that we must continue to provide this yearly sum mainly by import duties, laid to a great extent on goods similar to those which can be manufactured here; and that it results as a necessary incident of our so-called fiscal system, that there must be a large, and, as I believe, in the view of moderate protectionists, an ample advantage to the home manufacturer.

“Our adversaries wish to present to you an issue as between the present tariff and absolute Free Trade.

“That is not the true issue.

“Free Trade is, as I have repeatedly explained, for us impossible; and the issue is whether the present tariff is perfect, or defective and unjust.

“I believe it to be in some important respects defective and unjust.

“We expressed our views last session in four motions, which declare that articles of such prime necessity as fuel and breadstuffs should be free; that the sugar duties should be so adjusted as to relieve the consumer from some part of the enormous extra price he is now liable to pay to a few refiners; that the exorbitant and unequal duties on the lower grades of

cottons and woollens should be so changed as to make them fairer to the masses, who now pay on the cheapest goods taxes about twice as great in proportion as those which the rich pay on the finest goods; and that the duties on such materials as iron, which is in universal use, should be reduced, so as to enable the home manufacturer, to whom it is a raw material, to produce a cheaper article for the benefit of his home consumer and the encouragement of his foreign trade.

"I believe that by changes of the character I have indicated monopoly and extravagant prices would be checked, a greater measure of fair pay and justice to all classes would be secured, and the burden of taxation would be better adjusted to the capacity of the people who are to pay. Depend upon it, a day will come when by sharp and bitter experience we shall learn the truth; and many who even now applaud will then condemn these particular ingredients of the tariff."

We invite the friends of Protection and National Policy to study closely the *four motions* above referred to, and in substance repeated by Mr. Blake. In our next issue we shall endeavor to extract as much plain English as possible out of this rather vague and indefinite statement of what the Free Trade party would do were they in power, with a working majority to sustain them in making the changes they are "hankering after." Fortunately the twists and turns of the same party in the United States, on the tariff question, make an exhibit that should materially help us towards penetrating the truth as regards Free Trade designs in Canada.

A REVOLUTION IN HEATING AND LIGHTING.

SOME short time ago it appeared as if gas men on both sides of the Atlantic were taking on a considerable-sized scare at the portentous appearance of the electric light. Just of late, however, they have been rather getting over it, and now the fact is coming out that gas dividends have been quite flourishing of late, the electric light to the contrary notwithstanding. And now the *American Manufacturer* (Pittsburg) comes to the front with permanent consolation for the gas men, in the shape of an assurance which should make them comfortable for life, which is to this effect, namely that the electric light is as certainly the illuminant of the future as gas is the fuel of the future. Pittsburg being pre-eminently *the* gas city of the world, this opinion ought to be received with becoming respect. And, joking aside, we verily believe that the Pittsburg experts have got hold of the right end of the string; and that their reasons advanced for the opinion aforesaid are practical and conclusive.

Already, says our Pittsburg contemporary, gas companies organized for supplying coal gas for illumination realize this, or at least the shrewdest and most far-sighted men connected with their management do. How rapidly the displacement of gas-lighting by electricity is to go on no one can tell, but there is a shrewd suspicion abroad that go on it must.

But now for the Pittsburg idea, which seems to be an eminently practical one, having fit birthplace in that city of coal, and iron, and gas, and furnace-blasts. The gas companies are to sell gas to the public, not so much for *lighting* as for *heating*, and no part of their plant will be lost, for the distribution pipes will be wanted to deliver gas for heating, while the heat produced at the works will make steam to drive the electric light dynamos. The mains and service pipes of the

illuminating gas can be used to distribute the fuel gas. All ready heating by gas is a wonderful success in Pittsburg, and this with *natural gas*, be it noted. Water gas, which is what we use in Toronto, is pronounced dangerous to health, if it escapes through the house. But natural gas, now used in Pittsburg for fuel—in the cook stove, in the parlor stove, and in the iron furnace, is found perfectly harmless, though it is really more dangerous than anything artificially made in any gas works. The fact appears to be that the danger all goes up the chimney.

Gas for heating, electricity for lighting. Fix your eye upon that combination of contingencies, and watch well if it be not sustained by the cold, hard facts of both science and finance.

LOW WAGES IN EUROPE.

It is important that factory workers on this side the Atlantic should be kept in mind of the shamefully low wages paid to their fellow workers in the Old World, so that they may be able to see what Free Trade would do for them if we had it. Here are the regular wages in the woollen mills of Great Britain, in Germany:—Wool sorting—overseer, \$5.95; sorters, \$3.80. Wool carding—overseer, \$10.71; second hand, \$4.76; card-grinders, \$3.33; common hands, \$2.86. Spinning—overseer, \$5.95; mule "fixers," \$3.80; spinners, \$3.80; common hands, \$2.86. Weaving—overseer, \$10.71; section hand, \$4.76; weavers, \$3.56. Finishing—overseer, \$14.28; second hand, \$5.95; scourers and fullers, \$3.57; shearers, \$2.86; pressers, \$2.86. Wool and cloth dyers—overseer, \$14.28; second hand, \$4.76; common hands, \$2.86. Repair hands—overseer, \$9.52; machinist, \$5.24; carpenter, \$3.57; firemen, \$3.09; watchmen, \$2.86. And at the International Trades Union Congress, held in Paris recently, Mr. Aulsebrook gave the following particulars as to the condition of workmen in Belgium. He declared that in no country was the workman so poor. The miners worked for thirty-eight cents a day. Some had even worked 500 yards below the surface of the earth for twenty cents a day. A few miles over the frontier the French miners earned fifty to seventy-five cents a day. Near Charleroi he had known some young women descend into a pit at four in the morning, remain there until eleven at night, and only receive thirty-eight cents. In the quarries, in spite of the arduous nature of the labor, fifty cents was the ordinary pay. In the weaving industries, full-grown men earned but \$2 a week, though at Ghent, by organization and strikes, costing some \$15,000, they had succeeded in getting the wages raised to \$3 a week. The last strike was that of some young girls who protested against the discharge of a married woman because she had not returned to the factory six days after her confinement.

LABOR ORGANIZATIONS.

THE *Boston Manufacturers' Gazette* thus draws a distinction, with an important difference attached:—"Recognizing the fact that labor organizations have come to stay, we cannot fail to note points of superiority in some over others. Thus the Brotherhood of Locomotive Engineers seems one of the most sensible organizations of the kind in the country. It seems to

be guided by men of brains, and not given to foolish exhibitions of temporary power. At the last meeting at Scranton it supported Chief Arthur and denounced Martin Irons as a 'labor demagogue.' The brotherhood has 20,000 members and has paid \$2,000,000 to widows and \$500,000 to the needy and destitute. The men are on good terms with their employers. They do not strike nor do they indulge in boycotts. They recognize that fundamental economic truth that the interests of capital and labor are identical. This leads them to realize that capital has rights as well as labor, and therefore they proceed to the adjustment of differences with fair minds. The result is that the engineers find their interests preserved and unendangered by wrangling and demonstrations, which usually have their origin in misunderstandings and prejudices."

THE COTTON CROP OF 1886.

THE report of the National Cotton Exchange, just issued at New Orleans, says that the weather during the past month has been uniformly and exceptionally fine for picking, and it is generally estimated that nearly three-fourths of the crop has been already gathered. Killing frost during the last week in October has been reported pretty much throughout the cotton belt. In the majority of the States the expectations foreshadowed in the last report have been fairly realized, but in Mississippi, Alabama and the two Carolinas, the yield has been disappointing. The crop estimate for the year foots up to 6,414,400 bales. For the year 1879 the production was 5,737,257 bales. In the old slavery days, before the war, a total of four million bales was considered a good crop.

THE GREAT STRIKE IN THE KNIT-GOODS TRADE.

THE New York *Evening Post* of a recent date says that while great prominence has been given by the press throughout the country to the labor troubles in Chicago, comparatively little attention has been paid by the public at large to a struggle now going on in York State, which involves as many people, as much capital, and a principle of vital importance. This is the contest in progress between the knit-goods manufacturers and Knights of Labor, which has now become an open war upon the latter as an organization. Though the conspicuous facts in the warfare have been noted from time to time, but few persons have a clear idea of the nature of the controversy or realize that nearly 20,000 men, women, and children were employed in the knit-goods mills throughout New York State, which owners have closed against all Knights of Labor.

A POPULAR LITERARY WORK.

THE third volume of Alden's "Cyclopedia of Universal Literature," now ready (cloth binding 60 cents, half Morocco 75 cents), contains 496 pages, and represents eighty-six of the most famous authors of the world, of all nations and languages, including among others: Bossuet, Boswell, Bronte, Brougham, Browning, Bryant, Buffon, Buckle, Burke, Burns, Burroughs, closing with Byron. There are nearly three hundred choice literary selections representing these authors—a truly wonder-

ful amount of entertaining literature for a little money. The following are representative opinions of this work by competent literary critics:

"The third volume strengthens the good opinion formed by its predecessors. The articles, though brief, are remarkably comprehensive, presenting in a few pithy paragraphs the very facts the reader most wishes to know, while the extracts from the writings of the authors described, are selected with discriminating taste. We are much pleased with the work. It bids fair to be, when completed, the best cyclopaedia of literature in the language." *The Interior*, Chicago.

"Mr. Alden's idea and enterprise in the execution of it should be encouraged generously. He places within the reach of all who read a good knowledge of the world's literature and of those who have made it, and helps them to form a good literary taste, and to desire literary culture. To know what it is for him to read, is the first difficulty of the self-instructor. This cyclopaedia tells him, with illustrative quotations. To all it is a complete and reliable guide to the best reading." *Commercial Advertiser*, Detroit, Mich.

"The articles are remarkably comprehensive, presenting in a few pithy paragraphs the very facts the reader most wishes to know, while the extracts from the writings of the authors described are selected with discriminating taste. We are much pleased with the work."—*Standard of the Cross*, Cleveland, Ohio.

The work is designed to be completed in fifteen volumes. The publisher offers a sample volume, post-paid, for the nominal price of 35 cents, on condition that within three days after receipt you will either remit the remainder of the price or return the book, in which case your money will be refunded—half Morocco binding, 50 cents, on the same conditions. Descriptive catalogue of the publisher's very large list of standard books, sent free. John B. Alden, Publisher, 393 Pearl St., New York.

OUR CARD BASKET.

THE following is a list of those who have favored us with a call since the date of our last issue:

J. B. Armstrong, of the J. B. Armstrong Manufacturing Co., Guelph; Wm. Bell, of Messrs. Wm. Bell & Co., organ manufacturers, Guelph; Mr. B. Rosmond, Almonte; Oliver Wilby, of the Weston Woollen Mills Co., Weston; James Goldie, of Messrs. Goldie and McCulloch, safe manufacturers, Galt; Chas. Clathe, manufacturer of trusses, Toronto; R. R. Pringle, Cobourg; C. F. Cleveland, of Messrs. J. L. Goodhue, leather belt manufacturers, Danville, Que.; P. Freyesing, cork manufacturer, Toronto; Jno. Livingston, Trustee of the Oshawa Malleable Iron Co., Oshawa; A. H. Leith, Toronto; E. Copeland, of the Weston Woollen Mills Co., Weston; J. E. Keenleyside, of the Dominion Baby Carriage Co., London, Ont.

THE problem, says a scientific writer, has interested many, why two pieces of wood, sawn from the same section of tree, should possess very varied characteristics when used in different positions, as, for example, a gate post being found to decay much faster if the butt end of the tree is uppermost than would be the case if the top was placed in this position, the reason being that the moisture of the atmosphere will permeate the pores of the wood much more rapidly the way the tree grew than it would in the opposite direction. Microscopical examination proves that the pores invite the ascent of moisture while they repel its descent. The familiar case of a wooden bucket is in point, that is, some of the staves appear to be entirely saturated, while others are apparently quite dry. This also arises from the same cause, viz., the dry staves are in the position in which the tree grew, while the saturated ones are reversed.

THE
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AND INDUSTRIAL WORLD.

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This Journal has won for itself an acknowledged position amongst Trade Journals and is recognized as the representative industrial paper of Canada. All the various industries of the country are represented in its columns, and it has been for years the fearless and consistent advocate of those reforms which were indispensable to the success of the Manufacturers. It now reaches nearly every mill and factory in the Dominion, and its influence is constantly increasing.

As a medium for advertisements of machinery, steam appliances, mill and factory supplies, etc., it is unequalled, and on rates will be furnished on application. Communications from Manufacturers, Exporters, and others, are respectfully invited.

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All Manufacturers are invited to become members of this Association. Full particulars will be furnished on application to the Secretary.

Editorial Notes.

HERE is something to startle the oil speculators. A Russian engineer says that he has discovered a process of reducing petroleum to the form of crystals, which may be easily and safely transported to any distance, and then reconverted into liquid form.

On other pages of this issue we copy freely from Mr. Blue's statements regarding labor, wages, and cost of living in Ontario. These statements may be worth keeping for future reference and, this being a free country, we may all draw what inferences we please from the facts.

Mr. EDWARD ATKINSON's figures show that wages have declined 6 per cent. within the past four years, but that the rates of living have declined 13 per cent, that is, in the United States. Our impression is that prices of the necessaries of life have declined a good deal more than the 13 per cent. estimate.

Quite recently Mr. Chaplin, a prominent English Conservative leader, made a speech at Lincoln, in which he advocated an import tax on foreign manufactured articles. He said that of all the Chancellors of the Exchequer England had had for many years, Lord Randolph Churchill was the most likely to pay attention to this subject, and to take the necessary steps if public opinion should be favorable to the scheme.

Suppose, says an American paper, that steel rails can be bought at \$33 per ton and the tariff is \$17 a ton, is it a fact that the manufacturers can make the rails for \$16 per ton and add on the \$17 for profit? If they can, how much over four-fifths of a cent is the price of steel rails per pound, and what is the difference between steel rails per pound and old stoves delivered at a foundry? Yet that is about the way all the Free Trade orators make their arguments come out.

JOHN JARRETT, says the *American Manufacturer*, mentions the following incident as an illustration of the change of sentiment in the South on the tariff question:—"I met an old farmer in Tennessee who told me that before the iron mills were started in his vicinity he could not get \$10 an acre for his land. He was then a Free Trader. Since then he can get \$150 per acre, and now he is a tariff man." Mr. Jarrett says he found this change to be general in all the parts of the South he visited some two months ago.

SAYS the *St. Louis Age of Steel*:—"We have heard a good deal about the solid financial condition of New England cotton mills in connection with Southern competition. The survival and extension of cotton manufacture in New England is dependent principally, if not entirely, on money, experience and skill, as against the growing industries of the South. Of the three, money is the chief dependence. What must we think then, of the heavy defalcations among New England mills--defalcations only possible when laxity and stupidity in business affairs are common.

The *Midland Industrial Gazette* (St. Louis) says that the problem of electrical propulsion of street cars seems to have been solved in Brussels, where an electric tram car, destined for service in New York City, has been doing successful and economical service during the month of October. The car, which affords accommodation for seventy passengers, was constructed by the Julien Electric Co., and is worked by accumulators. Its operation in the United States will be watched with great interest, as one of the great requirements of the times is cheaper and better street railway service.

It has become quite common, says the *Manufacturer's Gazette*, for towns that have positively refused to supply themselves with any defence against fire, when a fire does happen with them, to telegraph their more provident neighbors to come to their relief with their fire apparatus. People who will not help themselves do not deserve assistance from others. Besides this, it is wrong for a fire-department to leave its own home, even to assist others. There is no moment in which there is not a liability to fire in its own town, and, having been organized for its defence, they ought to remain with it.

A LONDON cable despatch says that the Colonial Exhibition, which succeeded the "Inventories," closed on the 9th of November last year, was closed on November 10th without any special ceremony. The Queen and Princess Louise each purchased a Canadian piano. Hon. Edward Stanhope, the colonial secretary, purchased a Canadian harmonium, and several harmoniums were also purchased by the Governor of Madras. At the close of the exhibition the spirited Canadian national air, composed some time since by Sir Arthur Sullivan, was played. The total number of visitors since the opening was 5,550,749, an average of 83,846 a day.

WATER gas, says the *Globe*, is becoming increasingly popular in some American cities. In Troy, N.Y., for instance, the company who manufacture gas for that purpose find the demand so great that they have been necessitated to put in new apparatus capable of making 1,000,000 cubic feet per day, and this again will be followed by yet larger apparatus with capacity of 5,000,000 cubic feet per day. In Lynn (Mass.), also, such an enterprise is being vigorously pushed. In that city hitherto a good many people have been using the lighting gas as fuel, paying the usual price of 50 cents per 1,000 feet. There is no good reason why gas should be much dearer in Toronto.

SAYS the *Winnipeg Commercial*:—"A farmer has been complaining through the columns of a city paper, that he could get but 9c. for good Leicester wool in Winnipeg. The quotations in the *Commercial* show that from 14 to 16c is paid here for choice washed wool of the variety mentioned. Winnipeg prices for wool are the same as Toronto, less the freight from here to that place, which is the very best that could be expected in the absence of woollen mills in Manitoba. In time these will be established, greatly to the benefit of the wool market. Wool, like wheat and other commodities, has ruled exceptionally low at outside markets for some time past, but this should not discourage farmers from growing wool any more than from growing wheat."

A CHICAGO paper supplies some interesting information respecting shipments of gold from New York. The gold is generally obtained from the Bank of America. This bank is the depository of the associated banks, and has frequently on hand gold amounting to \$40,000,000. Gold crosses the ocean very much as does other kind of freight, without any special looking after. The average rate of insurance is about \$2,000 on a shipment of \$1,000,000. There are shippers who do not insure. Having to ship \$1,000,000, they will give it in equal parts to half a dozen different vessels. It is a strict rule with some firms never to trust more than \$250,000 at a time on any one ship. A certain party furnishes all the kegs for gold and packs them. The man who does this is a monopolist in his way. Shippers of large amounts always lose a few dollars by abrasion, but not exceeding 16 ounces on a million-dollar shipment. The only protection to be found against abrasion lies in the shipment of gold in bars instead of coin. Gold bars are not readily obtained.

We are indebted to *Kuhlow's German Trade Review* (English translation) for much information that is of interest even in Canada. For instance, we learn that in Chemnitz and the neighborhood the production of carpets, furniture stuffs, curtains, etc., out of jute yarn has increased to a very considerable extent. Manufactories, therefore, which use this yarn have long wished to supply their demands in fine numbers at home, instead of having to go abroad as it has been necessary to do. A fine jute yarn spinning concern has now been established at Bradenburg, having provisionally some 6,000 spindles, this spinning up to No. 16 and even No. 20. Hitherto Nos. 1 to 10 have alone been spun in German works. There can be no doubt that as a result of this new establishment beginning operations jute yarns will be more used than ever. Which means, what do you think, my simple Free Trade friend? Why, this, namely—that German jute will be in competition with genuine Canadian wool, if we do not put a heavy duty on it, *by the pound*. Duties according to value are of no use whatever against jute and shoddy. They must be levied *by weight* to be of any account. Again we read: "The textile industries of Silesia comprise:—(1) The woollen goods industry; (2) the cloth industry; (3) the shoddy and mungo spinning industry; and (4) the hat industry so far as spinning and felting come into consideration. When next you hear of cheap imported cloths and carpets, think of the mungo, and the shoddy, and the jute. And remember that it was by the use of jute, instead of honest wool, that Yorkshire blanket makers closed the Cornwall factory soon after that backward blunder of ours in 1886."

The Saunders and McPherson saw mill at Burk's Falls is running from daylight to dark on the Ontario Lumber Company contract, and cannot as yet cut for the local trade. This firm has been making important improvements—having cribbed along the edge of the mill pond to the Government Road, and are filling and levelling up, thereby adding a large extent of piling ground. They are paying out from \$20 to \$25 per day for labor, and this is expected to last until the close of the season.

F. E. DIXON & Co.

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Leather Belting

SOLE AGENTS FOR

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IT will make the leather more durable.

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It makes the leather perfectly water-proof. Belts dressed with this oil can be and are run in places where the temperature reaches 160 to 175 degrees, while in the other extreme, we have endorsements from owners who run their belts in ice houses. Indoors or out, in any kind of weather, wet or dry, hot or cold; belts thoroughly dressed with Phoenix Oil will always run satisfactorily.

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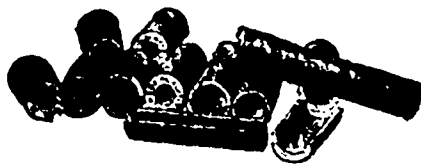
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70 PER CENT. LIGHTER THAN CAST IRON

And 50 per cent. Lighter than Wrought Iron or Steel Pulleys.



READ THE FOLLOWING.

NORTHWESTERN MANUFACTURING & CAR COMPANY, 1 SHATTO & DENNIS, MINNEAPOLIS, MINN. STILLWATER, MINN., AUGUST 15, 1885.
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., 1 HATAVIA, ILL., Feb. 17, 1885.
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. & S. J. R. P. 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.
SHATTO & DENNIS, MINNEAPOLIS, MINN.

THE WORLD'S INDUSTRIAL AND COTTON CENTENNIAL EXPOSITION, NEW ORLEANS, March 19, 1885.
Dear Sir: I have a number of your Patent Wood Split Pulley, in use here at the Worlds Fair and Cotton Centennial Exposition, driving Dynamos for Electric Lighting. They are doing heavy work, and are held upon the shaft by the compression of wood on iron. They hold firmly, and do not slip. I have watched with a great deal of interest the many Pulleys of your make running at this Exposition, and I think them the best Pulley I have ever seen. I believe them to possess the following points of merit over any other Pulley: All Pulleys being split or in halves; best belt surface; best shaft fastening; best method of uniting Pulleys to shafts of different sizes; best balance; lightest on the shaft; strong, and I believe durable. I heartily recommend them.
Yours very truly,
S. H. GILMAN,
Chief Consulting Engineer.

Waste of Power.

According to the best scientific authority it costs one horse power to keep in motion one ton of metal or weight; thus for every unnecessary 2,000 pounds weight on your line shaft, cost you one horse power. To maintain a horse power costs from \$5 to \$125 per year. Any manufacturer who will take the pains to investigate the unnecessary weight by Heavy Iron Pulleys, too tight belts, etc., will be surprised to find the enormous waste of power consumed in this manner. 60,000 Dodge Patent Wood Split Pulleys now in use. Our capacity being now equal to 100 Pulleys per day, we shall hereafter keep in stock for immediate shipment all sizes.

Send for Illustrated Circular and Reference List.

THE DODGE WOOD SPLIT PULLEY CO.,

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TAKE NOTICE:--Our List of Prices for the DODGE PATENT WOOD SPLIT PULLEYS is for ALL SPLIT-PULLEYS.

We beg you will note this fact when comparing our List with others which are for SOLID RIM, and NOT for Pulleys in HALVES.

Business Notes.

MISS M. E. VALLIER, a Picton milliner, owes \$1,200 and has a stock of \$800 to pay it with.

W. J. TROCKE & Co., Port Perry, whom we recently announced in difficulties, has assigned in trust.

AN extension has been granted H. E. Hughes, restaurant keeper of this city. The liabilities are principally secured.

THE bailiff has possession of the business of S. G. Best, of Courbourg, and the stock is to be sold on the 23rd inst.

R. W. CROSKERY, shoe dealer at Perth, is offering 60c. on the dollar, spreading over eighteen months. Beardmore & Co. are the principal creditors.

A COMPROMISE at 25c. on the dollar has been agreed to by the creditors of A. W. Hettger, fancy goods dealer at Lindsay. The liabilities amount to \$3,000.

FRAID BROS., clothing dealers of Lindsay, offer creditors 25c. on the dollar. The liabilities are \$4,800 and assets \$3,000. The stock is chattle mortgaged for \$1,400 to a Montreal firm.

THE estate of Adam Darling of Montreal, is valued at \$25,000. The direct liabilities amount to about \$30,000 and the indirect \$40,000. The liabilities are due to three or four creditors.

J. R. DAVEY, shoe dealer of Cornwall, who assigned in Sept., 1886, has settled with creditors at 75c. on the dollar in 3, 6, 9 and 12 months secured. The liabilities amount to \$2,100 and the assets nominally amount to \$3,000.

D. M. KINSKY, store keeper, doing business at Berlin and Doon, held a meeting of his creditors on the 13th inst. Those present agreed to accept 60c. on the dollar in 2, 4, 6 and 8 months secured. The liabilities are \$5,400 and assets \$4,300.

CREDITORS of W. R. Anderson & Co., of Collingwood, have consented to a compromise at 50c. on the dollar, provided security is given, assets amount to \$5,300 and liabilities \$7,300. A local hotel keeper and a contractor are offered as security.

R. A OWENS, general dealer, Aulrim, has assigned in trust for benefit of his creditors. The sheriff of Carleton County holds the assignment and has called a meeting of creditors. Creditors examined into his affairs in March last and his surplus at that time was \$3,500, a considerable portion of which was in farm property.

For the third time in a few years W. R. Anderson, of Collingwood, is in financial difficulties. He was of firm Cleveland, Anderson & Co. who assigned, and purchased the estate at 40c. on the dollar. In December 1885, he compromised at 75c. on the dollar, at which time he owed \$6,100 and had assets nominally the same. A meeting of creditors is now called for the 12th inst.

THE committee appointed to investigate into the affairs of Charlesworth & Co. of Toronto, have agreed to recommend to the creditors that the offer of 45c. on the dollar be accepted, providing James Watson allows other creditors to be satisfied, before his claiming the the \$25,000 he contemplates leaving in the concern—that is in the event of the firm not working through their difficulties.

R. SMARDON, an extensive shoe manufacturer in Montreal, who suspended recently expects to manage a settlement with creditors in a few days. The liabilities amount to nearly \$100,000 and largely to Montreal houses. Goyer & Co. are creditors for \$9,000, McDougal & Vaughan, \$7,200; A. Keruack, \$8,000; Mullarkey & Co., \$3,800; A. Seath & Co., \$3,900; E. F. Mosley & Co., \$1,500; R. H. Buchanan & Co., \$3,500.

THE leather trade in Montreal appears to be in a somewhat similar position to what it was a few years ago, and rumors affecting the standing of several well-known dealers have been current. George Barry who is a creditor of Sharpe & McKinnon for \$7,900 has had to contend with some unfavorable reports, and expresses a doubt as

to his being able to go on in business owing to his credit having been seriously impaired by these rumors.

CREDITORS recently forced Donald Dodd, grocer, London, to prepare a statement of his affairs. The account had been so unsatisfactory that some anxiety was felt, which was confirmed by the figures furnished. The assets amount to \$8,500 and liabilities \$11,000. In the latter is \$2,000 for rent and \$2,000 borrowed money. He offered 40c. on the dollar which has been refused, and the sheriff has advertised the business for sale by auction.

At a meeting of the creditors of D. A. McLeod of Woodstock, the creditors received the first intimation of his having sold his shoe stock to one Mills, on such favorable terms to the purchaser as to present rather a shady appearance. The stock was sold at 60c. on the dollar and the accounts at 40c. on the dollar, the payments spreading over two years. The liabilities amount to \$9,000 and the assets about \$4,000. The creditors are likely to contest the sale.

THE direct liabilities of Charlesworth & Co. are about \$55,000 to the trade and \$48,063 to James Watson, besides which Watson has secured creditors to the extent of \$18,421. As security for his claim he holds notes amounting to \$5,000, Dunspough's residence worth \$9,000, Toronto Lime Co's stock \$7,500, Trader's Bank stock \$7,000 and other securities to the extent of \$12,000. He also secured the indirect liabilities amounting to \$68,788, the Merchant's Bank, however, holding a margin of \$3,000 over advances. The assets amount nominally to \$95,000, composed of stock, \$46,000, factory, \$24,640; furniture, \$1,200; machinery, \$11,612; open accounts, \$4,000; doubtful accounts, \$4,700. An offer of 40c. on the dollar was made, but, finally, creditors agreed to accept 45c. on the dollar in 3, 6, 9 and 12 months, providing satisfactory security was given.

THE SCARCITY OF GOOD INVESTMENTS.

(From the Toronto Globe of Monday, Financial Column.)

THE high prices at which many of our securities are selling is sufficient evidence of the scarcity of good investments. Any ordinary bond, or stock in an enterprise that has the appearance of being sound, placed on the market, is subscribed for readily. When all good investments are absorbed, the bad and indifferent are taken up, the outcome of which is a collapse. During the past few weeks there has been a scramble for the "wild-cat" species of security on the New York Stock Exchange, and shares that were then not selling at more than twenty or thirty, now bring forty and sixty per cent. It is not that these securities are worth any more now than then, but the future is being discounted. The following on the situation is from the London Statist, which apparently does not look for any serious trouble for some time to come:

"Only the other day comparatively good investments were offered to the public in vain; no one cared to subscribe, no one being ready to enter into new risks, but now there is an eager desire to find good investments and a readiness to support anything that is offered on the authority of good names. Trade has improved all over the world, and is still further improving. This improvement, which is world-wide, has restored courage to investors, and in the meanwhile the scarcity of good investments, to which we have so often directed attention is daily becoming more and more apparent. The world every year is adding to its savings, and yet the number of good investments is not materially increasing. On the contrary, the great industrial enterprises which absorbed so much capital in the middle of the century, and for a long time afterwards, have been almost completed. While depression in trade lasted, while confidence was destroyed—no one knowing in whose solvency to trust—the pressure of this vast unemployed capital was not felt. People preferred to place their money at unremunerative rates rather than to run any risk; but now that suspicion has passed away, that credit is once more good, and that trade is improving, the accumulation of capital awaiting investment forces up prices in every direction, and hurries people into demands for allotments in every enterprise that looks sound."

CURRENT NOTES.

(Boston Manufacturers' Gazette.)

CHIEF ARTHUR, of the Locomotive Brotherhood, enunciates a fact and a principle of profound importance when he says that "there is room enough for every man in a country like this, and every man disposed to work must be allowed to find the chance." Organization is a good thing, but it must not be allowed to destroy individual freedom.

THE other day a steamer sailed from New York loaded with agricultural implements, hardware, machinery, nails, cutlery and manufacturing iron for Buenos Ayres. This is the first extensive shipment to that country. The demand for North American manufactured products in Central and South America could be largely developed if our manufacturers and mechanics had a capital to trust long enough, and the time to go there and see exactly what was wanted.

THIRTY years ago 150,000 people in England were employed in the silk industry; now the number is not more than 60,000. An investigation was recently made by the British Parliament, and the replies received from the silk-manufacturing towns were that the withdrawal of protection and the free importation of French and German goods had caused the decline in the industry. The withdrawal of protection is what our so-called American tariff reformers are constantly demanding.

THE purchasing power of the community is greater now than for several years, from the effect of the enforced economy of the past few years. If 50,000,000 people should save but \$20 a year apiece, the aggregate would be a round billion of dollars. This economy, continued for several years, adds to the power of the individual, and hence of the whole mass, to increase his outlays. Of course that enforced economy which is the result of lack of employment does not subserve the same good purpose. But it is always noticeable in days of depression that those people practice the most economy who need it the least.

THE result of the Fall elections will have a wonderfully stimulating effect upon general manufacturing business. When such tariff reformers as Speaker Carlisle, Mr. Morrison and Mr. Hurd are defeated for Congress, it is reasonably certain that Free Trade theories have received a check that will relieve our vast manufacturing interests of the uncertainty in the policy of Congress in matters of the tariff. New enterprises will be inaugurated and present facilities enlarged, with a reasonable certainty that our own manufacturers may enjoy the trade of the United States without that competition from the pauper labor of Europe which the adoption of a Free Trade policy would invite.

THE most foolish as well as the most defenceless of all the strikes this year is that in eastern New York, under which 25,000 spinners in cotton mills are now out of work at the beginning of winter. The employers in one mill had promoted a young man, who had shown unusual capacity. The spinners' union struck against the promotion. The Knights of Labor endorsed the strike and ordered the young man back to his old place under penalty of expulsion from their order. The young man naturally resented this tyrannical edict, and as his employers stood by him the Knights ordered all their members to stop work. All the spinning factories suspended, but some have resumed with a full complement of non-union men. All the factories will be kept closed until the right of employers to manage their own business in hiring or discharging men is fully established. Present appearances indicate that the Knights must back down.

(St. Louis Age of Steel.)

THE returns from last Tuesday's general election point significantly to the co-operative tendencies of labor in politics as well as industry. But, despite this fact, we have an abiding faith in the permanence of American institutions, political and otherwise.

COL. MORRISON, ex-Congressman from Illinois, does himself no credit in calling John Jarrett "the triple emissary of Pennsylvania," and ascribing his defeat to "the hiring and bribing of voters" by that gentleman. Those who know Mr. Jarrett will only laugh at the angry and unwarranted aspersions of a badly discomfited politician, smarting under the rebuke of his fellow citizens.

IT is evident from the result of the recent election that there is greater hostility to tariff reduction in 1886 than in 1884. The defeat of Morrison in Illinois, Hurd in Ohio, and the narrow escape of Carlisle in Kentucky, will not be without its lessons to other politicians who insist upon disturbing the business conditions of the entire country for the sake of a little cheap personal notoriety.

As showing the progress of Protection in England, a vote taken in the Manchester Chamber of Commerce last week is pregnant with meaning. On a resolution declaring for Protection, a majority of only one was thrown against it. And yet our English contemporaries would persuade us that Protection is really a bad thing for us.

AMERICAN PATENTS TO CANADIAN INVENTORS.

THE following patents were granted to citizens of the Dominion of Canada, bearing date November 9th, 1886. Reported expressly for this paper by Louis Bagger & Co., Mechanical Experts and Solicitors of Patents, Washington, D.C.:-

Davidson, George, and W. W. Clay, Paris, Ont., needle-cylinder for circular-knitting machines...	352,399
Gerhardt, John, Montreal, Que., compensation pendulum	352,461
Huttemeyer, G. C., Toronto, Ont., manufacturing a confection to contain medicine	352,466
Marcheter, Henry, Wallaceburg, Ont., self-acting safety gate for swing-bridges	352,251
Reed, W. T., Winnipeg, Manitoba, spark arrester..	352,353
Robertson, W. H., Toronto, Ont., adjustable head- rest	352,354
Rowe, J. T., Aylmer, Ont., adjustable organ pedal..	352,267

TRADE MARK DECISION.

A MANUFACTURER of blacklead in England put up his blacklead in a dome shape and had registered as his trade mark a picture or representation of the peculiar shape in which the blacklead was put up for sale. In an action in which he sought an injunction against an infringement of the trade mark, Mr. Justice Pearson decided that a picture of the object sold could not be a trade mark. This decision has just been overruled by the English Court of Appeal, which has held (Re James' trade mark) that the plaintiff was entitled to have the shape of a dome registered as his trade mark in whatever shape he might make up his blacklead. The court held that such a picture was a "mark," and was "distinctive" within the meaning of the act of 1883. The plaintiff, the court said, could have no monopoly in the actual shape of his blacklead, but the mark selected by him was none the less a "distinctive mark," because the article was sold in the shape of the mark itself, and it might equally be used for articles sold in any other shape.

GENERAL NOTES ON LABOR AND WAGES.

The following "General Notes" are taken from pages 30, 31, and 32 of Mr. Secretary Blue's Official Report on "Labor, Wages, and Cost of Living, and Minerals and Mining in the Province of Ontario," recently issued:

ALMONTE.—The shops and factories have been running steadily on full time during the past year, with the exception of the Almonte Knitting Company's mills, which was closed for about two months during the early part of last winter, the cause said to be for necessary repairs. Factory hands, with the above exception, have had steady employment during the past year. Although the woollen manufacturing business has been unprofitable during the year, yet the mills have been kept running at full time, giving steady employment to the operatives, and notwithstanding the unfavorable state of trade, wages were maintained at the same rate as for some years previous. Building operations were usually brisk during the year, which caused outside labor to be prosperous during the summer months. There are no reading rooms nor libraries maintained in connection with any trade, factories or workshops, but there is a Mechanics' Institute with a large library connected, which is available to all who desire to become members.

BRANTFORD.—In the closing months of 1884 reductions in wages and short time were general throughout the workshops of the city, and it was not until late in the spring of 1885 that the manufacturing establishments, particularly agricultural implement shops, resumed full time. The cause assigned for this dulness was the troubles in the North-west. About the middle of May, however, a gradual increase took place in the number of workers; all of the various establishments began running full time and they have been busy since with the exception of the cotton and wincey mills, which were running on irregular and short time during the summer months. It is difficult to arrive at any accurate estimate of wages earned by those who work by the piece and on irregular time. If workmen would endeavor to keep an account of their wages and cost of living it would tend in a great measure to habits of economy. Accidents are numerous in all factories where machinery is used, as every kind of work is done by machinery dangerous to employes, if not well understood. Many sustain injuries on account of their own carelessness, but sometimes an accident occurs which brings into prominence the question of supervision of all factories and workshops. A Factory Act, with inspection of all manufacturing establishments, would meet the wishes of a large and growing constituency, particularly those artisans who come here from the old country, where legislation of this kind is in force, and who feel that here the Government should exercise some sort of supervision where so many are engaged in the manufacturing industries of the country. Any action of the employers of labor that would tend to the comfort and convenience of those workmen who all the year round eat their noonday meal on the workbench or forge would be appreciated by a large number of workers in every large factory and workshop. The only library in connection with any of the establishments here is at the Grand Trunk works, where also is a reading room in which the leading newspapers may be seen on the tables. It is managed by the men, and is well sustained. There is also a life insurance and direct benefit fund in cases of sickness or accidents; it is managed by the company and gives good satisfaction. Among workmen there are direct benefit funds to relieve distress in case of sickness or otherwise. These are managed by the different unions and do a great amount of good. The very best of good feeling exists between the employers and their men here, as kindly acts of most of them amply prove.

CORNWALL. The wage earning population of Cornwall has as a general thing done very well the past year. The factories have been running very steady. Though there is not much

change in the rate of wages, it still has been a large increase to the worker's earnings, as little time has been lost compared to last year. The sash and door factories have been running full time. Carpenters, bricklayers and masons have done very well, as many houses were built this summer and some of them were substantial ones. About the holidays every one expects a dulness for out door workers, and as a general thing the winter season is dull here; but there are always a few employed during the winter finishing up work commenced in the last of the season. The different factories have gone to large expense providing precautionary measures in case of fire. They have force pumps in use which will, with the good supply of hose kept on hand, drown out a fire in a few minutes in any part of the buildings. At certain distances all around the mill hydrants are placed, and a squad are usually drilled to act as firemen.

GANANOQUE. The majority of men say the last year has been better for them than the two previous years. The time employed depends largely on the water supply, and last summer the Water Power Co improved their property at the south of Charleston lake thereby draining the whole area of the lake and several smaller ones emptying into it. One important business change was made—the carriage works' property was bought by a party of capitalists from Cincinnati, who greatly enlarged their business, turning out eight hundred cutters and sleighs for the winter. The clothes wringer and corset steel works of Cowan & Atkinson were destroyed by fire in March, but they have been rebuilt on a different site and will shortly be in working order. The axle works closed for about a month on account of overstock, and the shovel, spade and fork works for about the same time on account of small demands for that class of goods.

HAMILTON.—During the fall months of 1884 the building trades were active, completing nearly all work then under construction, before winter fairly set in, thus throwing upon the market nearly all those engaged in these trades until spring. The spring opened with favorable prospects and assisted to a very great extent by the reduction of the hours of labor from sixty to fifty-five hours per week, agreed upon by these Trades Unions and the Builders' Associations, regulated the work so equitable that many who opposed the reduction of the hours of labor very soon acknowledged their approval, and friendly relations existed throughout the season, notwithstanding the predictions of many that there would be trouble over the reduction. Summer opened with no change except a slight weakening on the part of the carpenters and painters, who experienced a dull spell, but as the summer advanced all were steadily employed. The fall opened with nearly all employed and work continued brisk until a scarcity of brick occurred, owing to large shipments being made to Toronto, Woodstock and other places. This created a dulness which continued throughout the season, with no change. But altogether a fair season is acknowledged by all. Pay-days are fortnightly, and on Saturday, with one day's pay kept back, and workmen always paid in cash.

The tobacco industry is a very important one to the workers of the city, employing a large number of male and female labor in the manufacture of cigars and plug tobacco. The latter business was active throughout the season, with apparently friendly relations existing between employer and employe. In the cigar trade occurred the only important strike of the year, which resulted in about 200 workers being thrown out of employment for about six months. A difference arose between the cigar-makers' union and the manufacturers, which resulted in a combination of manufacturers being formed under \$500 bonds to resist the union, who were apparently locked out unless they acceded to the terms of the combination. Arbitration was resorted to by the workers, but without any good result. Non-union cigar makers were brought into the city, and at one time grave fears of trouble were prevalent throughout the city. A break was made in the ranks of the manu-

facturers by the united efforts of organized labor, after which a gradual weakening of the combination was perceptible until the early fall, when a majority of the shops were employing union labor again. So determined was the combination in this case that a suit was entered in the courts to recover the amount of bond from the manufacturer who withdrew from the Association.

In the cotton mills no change has taken place. The mills are running nearly full time. Wages are very low, however, many at times being unable to procure enough to exist upon, and are hoping for an increase of wages, or other employment. No strikes have occurred, but murmurs of discontent have been heard on several occasions.

The clothing industry, especially the wholesale manufacturing business, has been more or less affected by the late North-west troubles. During the summer months the trade was dull, but the fall brought a change for the better, and it has continued fair. Day workers in the sweat shops (principally females) have been steadily employed, but wages are very low, and such shops as a rule have poor ventilation.

The shirt-makers are about the worst paid class of female workers to be found in the city. Fortnightly pay-days are the rule, but many, after working steadily for two weeks, will have earned only three or four dollars—few making more than six dollars per fortnight. Good ventilation and excellent water in these shops.

The printing trade experienced a very dull winter and summer. Spring entered with fair prospects, but gradually became dull as summer advanced. As fall approached business braced up a little, and as the winter set in all were fairly employed. Pay-days are weekly as a rule in the printing trade, and payments are made in cash.

Labor has experienced a very quiet year, particularly those who generally follow municipal works, owing to the large importations of Italian laborers brought to work upon the cedar block pavement; of which there has been a considerable amount done. Numerous complaints were made to those in authority at the great injustice done this class, a large proportion of whom have been ratepayers for years, and have been unable to secure employment even at the small pittance paid by the contractors. That class of laborers engaged in brickmaking, while their season was very short owing to late spring frosts, yet had a brisk summer, and very fair wages were made.

Teamsters were busy all season. The increased amount of block-paving done, in addition to general work, made quite a demand for teams and teamsters; in fact the months of August and September were the busiest season ever experienced.

On the whole the past season has been favorable to all branches of industry. With no extra demand for labor, all have been fairly employed, and with but one or two exceptions harmony prevailed throughout the city between the two great elements, Capital and Labor.

KINGSTON.—Trade and business in this city for the past year have been very dull. Building work, however, has been very good, men with money taking advantage of the low wages to have it done cheaply. The locomotive works, which formerly employed five hundred men, have been closed for nearly two years. The car works are also closed, throwing 150 more out of employment. With so many men out of regular work, wages are greatly reduced, laborers working for as low as eighty cents per day. The cotton mill hands were on short time for a period during the summer, and the knitting mill alone made full time during the year. The piano factory was closed for three months during the summer, but is now running with greatly reduced number of hands. The Kingston foundry has been on short time for a period, and with reduced force. In former years there were shipping from this port to the United States thousands of tons of iron ore brought down from the back country, which was opened up by the Kingston and Pembroke railway, but owing to the great depression in the iron trade the mines have been closed during the past year and not one pound has

been shipped. The forwarding and transportation companies also have done very little, vessels not coming this way with grain, owing, it is said, to the high canal tolls. There have been no strikes in the city. Men who have employment are very glad to take whatever wages are offered them, for if anyone refuses there are a great many glad to take his place.

OSHAWA.—Owing to so many of the works in town having been closed down last winter, great suffering occurred amongst the wage workers, which continued until the spring. The benevolent societies and labor organizations formed a relief committee and solicited subscriptions from the citizens, who contributed liberally, by which means many of the most needy were enabled to tide over the severe winter. The tanneries and carriage works have run steadily during the year, with good prospects for the coming one.

OTTAWA.—Owing to the large number of public works and building operations which have been carried on in and around Ottawa, the demand for laboring men and such mechanics as carpenters, bricklayers, etc., was greater than the supply, and wages, as a rule, were a shade higher than in 1884. But of course the greater portion of these works, together with the saw-mills, were obliged to cease operations with the advent of cold weather. This caused a slight reaction in the labor market, but they can invariably find employment around the city during winter, or by going to the woods. Of course there are some cases of destitution but they are almost invariably the result of sickness, laziness, or drink, and necessarily the result of lack of work.

PETERBOROUGH.—Owing to the large building operations of a number of the leading property owners here the demand for labor of all kinds has been brisk during the last two or three years. In the season of 1884 about a quarter of a million of dollars was expended on the erection of new buildings, and a like amount in 1885, consisting of stores, dwellings and factories. Among the latter is included the Powel & Jones stove works, removed here from Smith's Falls, and the lock factory, a new industry. There are three woollen mills—the Auburn employing 150 hands, Brodie's 75, and Melson's, 10; a stove factory, 55; a lock factory, 45 to 50; bridge works, 30; a pork packing factory, 12; a foundry, 65 to 90; agricultural implement works, 70 to 80; two canoe factories, about 25; five flouring mills, about 25; three furniture factories, about 50; two planing mills, about 20; biscuit factory, 12; brewery, 12; five saw-mills, manufacturing about forty million feet of lumber annually, and a number of other factories manufacturing articles for local consumption. Owing to the general depression in trade many of these have reduced the number of their employes, and the figures above given represent the reduced numbers. Taking everything into consideration the condition of the working classes is very fair.

St. THOMAS.—Representative men in all departments on the Grand Trunk and Canada Southern railways here urge the following reforms: That laws be framed and enforced prohibiting the use of outside valve oilers on any locomotive. That railway companies be compelled to erect semaphores with signal lights at proper distances on both sides of all stations and switches, and red order boards with red and white lights, and red and green lights on all switches, with red and white target gates. That all head lamps be provided with red and green shades. That the best improved car coupler be used and all dangerous dead woods abolished. That caboose tracks be provided at all terminal points. That a stated number of cars comprise a freight train, under control of five as crew, grades and engine power considered. That no railway company have the power to fine an employe for being garrulous, as many have suffered by this persecution owing to low wages. That companies be disallowed the power to reduce their employes' wages without at least one month's notice thereof. That the same notice of dismissal be given employes as is required of employes seeking their resignation. That equal pay be allowed

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A lofty, well-lit basement, having large doors opening on a lane at back, at such a level as to facilitate the handling of heavy weights; the ground or main floor a few steps above the level of Front street, with a height of ceiling under the galleries of 14ft., while the central portion, up to base of dome skylight, will be 29ft. high. On this floor, in the north-east corner, immediately adjoining the entrance vestibule, will be the general and private offices of the management, and adjoining them a number of small private offices or consulting rooms for the use of exhibitors, besides comfortable lavatory and sanitary appliances. A gallery floor 23ft. wide will extend around the four sides of the building, and will be used for exhibiting the lighter classes of manufactures. A special feature of the building will be the good lighting, for in addition to the rows of large windows in front and rear, there will be a large dome skylight in the centre. Access to the various floors will be by ample stair cases, and by a large elevator. The building will be heated by steam.

It will be located on Front street (nearly opposite the Queen's Hotel), convenient for both boats and railways, for shipping and for visitors.

Some of the advantages likely to accrue to manufacturers exhibiting may be briefly summed up as follows.

1. The Exhibition will be free to all and open throughout the year.
2. It will afford all the advantages of a Toronto branch establishment at a very moderate cost.
3. Exhibits will be seen by large numbers of business men who would not be apt to visit a private branch office unless on special business.
4. The Exhibition will be extensively advertised and made very attractive, and as almost every variety of machinery and manufactured goods will be on view under the same roof, it will certainly become an important mercantile exchange.
5. Competent salesmen will be in charge for the purpose of explaining the merits of each exhibit to interested visitors.
6. Exhibitors can have printed on their office stationery "When in Toronto call and see sample of our goods at PERMANENT EXHIBITION OF MANUFACTURES." This may afford prospective purchasers an opportunity of personally inspecting goods, who would not be apt to visit outside towns for that purpose.
7. Exhibitors can appoint us selling agents, or can have their own representatives in charge. In the former case, every endeavor will be made to establish profitable trade.
8. Machinery can be shown in motion, as shafting and power will be provided.
9. Office accommodation will be provided for the convenience of exhibitors and their agents.

Further information will be promptly furnished.



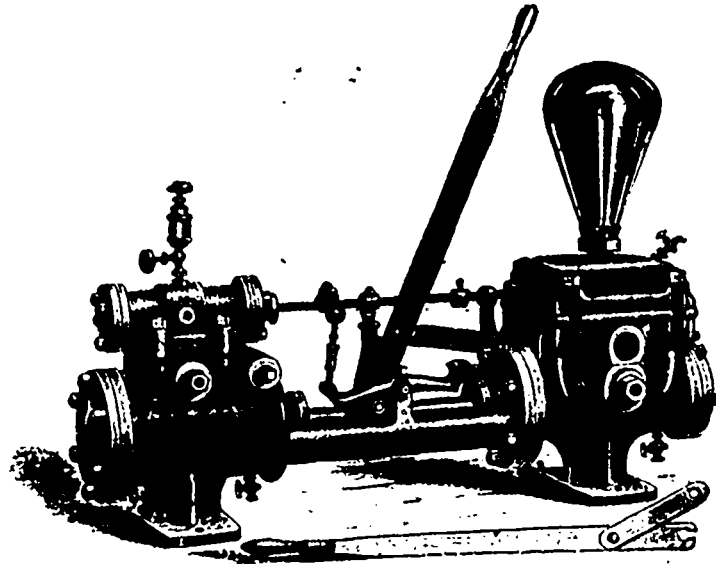
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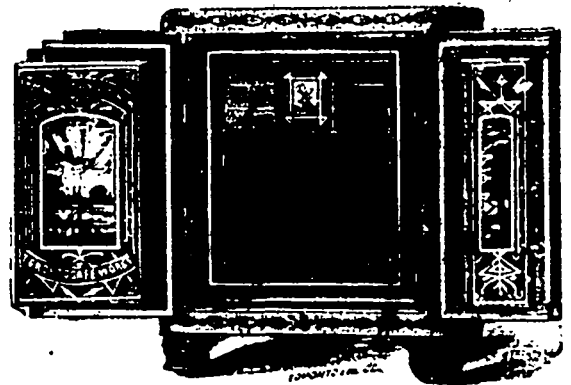
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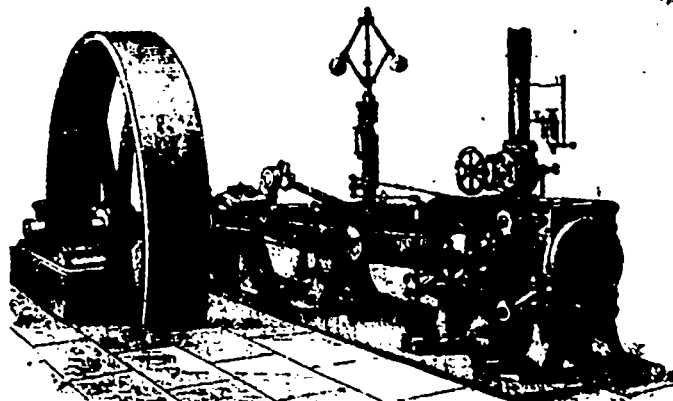
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for equal work, regardless of length of service. That no company shall black-list their employes for any offense, fancied or real. That a board of arbitrators be selected, composed of men in the interest of the company and a like number in the interest of the employes (elected by themselves), with power to settle all differences. That railway employes be under the immediate control of their superintendent, with power to refer unfair decisions to the board of arbitrators for finality. That Government, at its earliest convenience, appoint a railway commission to make a rigid investigation into the true state of affairs existing between employers and employes. Stationary engineers urge that engineers should pass an examination before a competent board, or not be allowed to run an engine and endanger the lives and property of the public.

STRATFORD. During the latter part of 1884 and the forepart of 1885 some of the works were running short time, but during the summer and fall all the shops, with one exception, were running full time, and in some cases overtime. The city built a new stone bridge across the river Avon, giving occupation for over three months to a large number of stone-masons and laborers. The Water Supply Co. extended their water mains largely during the summer, and gave employment to many laboring men. The county of Perth has in course of erection a new court house and gaol, which will not be finished, however, until near the close of 1886. These public works going on in the city have made times pretty good for laborers, masons and stone-cutters during the summer months, but a great many men were idle during the late fall and winter months. Two new industries have been started, viz., Bates' Cardigan Overshoe and Knitting Factory, and the J. A. Kirke Wool Stock Mills. These have started on a comparatively small scale, but it is intended to about double their capacity the coming season; they give employment, chiefly to females. Wages as a rule have not been as high the past two years as in the two years previous, a state of affairs which a great number of wage-earners ascribe to assisted immigration. Up to this summer there has been no labor organization here, but in the latter part of the summer the Knights of Labor instituted an assembly, which has been taken hold of most energetically by the workmen of the city. The first assembly soon becoming unwieldy, owing to the large numbers joining, another has been instituted which promises soon to become as strong as the first. No strikes have occurred during the year except in one of the printing offices, and this only lasted for a day or two. The payment of wages in general appears to be very satisfactory, the practice in almost all the shops and factories being to pay in cash weekly or monthly. In some shops employes are paid in full every week, but in others one week's pay is held back. The relations between employers and employes generally appear to be of a very amicable nature. The general health of the workers is reported good. Factories and shops in general are well ventilated, and so arranged as to afford an easy means of exit in case of fire, the doors of none of the shops being locked or bolted during working hours.

TORONTO. The winter of 1884-5 was no improvement on that of 1883-4, whether considered as to its temperature or in furnishing employment to workmen. The large number who found relief throughout the cold months at the doors and through the hands of the various city charitable and benevolent societies bear ample testimony to the fact. A rather long and unusually raw spring retarded building operations until well into the season, so that the temporary boom which followed was due rather to this than to any increase in the volume of business in the building lines over that of previous seasons. All through the season the labor market furnished many more seeking employment in all callings than could be accommodated. As an offset to this, however, the fine fall weather enabled many, and especially those engaged in any out-door vocation, to make up in some degree for the lost time of the spring, as well as to that extent shortening the length of the coming winter.

Iron and Machinery.

AMERICAN IRON CENTRES.

PHILADELPHIA is usually referred to as a leading iron centre, and so it is, if its immediate surroundings are to be considered, but it does not itself produce much iron or steel. Its iron and steel industries have made no headway whatever in the last fifteen years. Nor does Cincinnati make any progress as an iron centre. It is conspicuously lacking in a single steel plant of any description whatever. Upon the other hand, Pittsburg and Chicago are making rapid progress in producing iron and steel, and to-day they are the great iron and steel cities of the country. Cleveland and Wheeling more than hold their own as producers of iron and steel, and San Francisco is also making steady progress; but Milwaukee, Detroit, St. Louis, Boston and Baltimore are not so active as they have been, while Buffalo, once active, has almost ceased to be regarded as an iron city. This list embraces all of our large cities which have been prominent in the manufacture of iron or steel. *American Paper.*

A COMBINATION of English lock manufacturers has been formed to imitate the German locks and the system of making them, in order to arrest, if possible, the flooding of English markets with German locks.

WE recently heard it mentioned as an instance of good business capacity, that a man who five years ago was engaged in selling water wheels, was at the present time busy in selling steam engines to run them. There is nothing like adapting one-self to altered circumstances. *American Machinist.*

THE interesting German process of coating iron with aluminum is said to be having a large introduction, a Bunsen burner with a blast or muffle being employed for the operation. It is found possible by this means to manufacture various articles of the durable metal for daily use, the coating of aluminum giving them of course a silver-white lustre. This metal does not oxidize under normal conditions, stands ordinary heat and takes a high polish.

IN a paper on steam boilers, read before the Scotch Institution of Engineers the writer makes the statement that all qualities of iron get hard and brittle after the boilers have been at work more than a dozen years, more especially where exposed to the action of the fire; and that in the furnaces even Lowmoor iron becomes as brittle as common iron in that time, so that great care has to be taken in making repairs to prevent the plates from cracking. For this reason sixteen to seventeen years constitute a period long enough for a boiler to be in use at a pressure of forty to forty-five pounds, and if used longer the pressure ought to be lowered.

THERE is no such engine as the "best for all purposes." I doubt very much whether the maker of any engine seriously claims it. It all depends on the amount and class of work, the kind of boiler the kind of engineer and lots of things. It would be perfect folly for any one to put in a high-grade, automatic, cut-off engine for a plantation saw mill, where the engine would be started and stopped by whoever happened to be the handiest to the throttle, and where repairs would be made with wire and lath and ignorance. *Grimshar.*

IN Montreal recently, Mr. F. L. Wanklyn, of the Grand Trunk Railway, gave a lecture before the students of the Faculty of Applied Science, McGill University. He took for his subject the differences in design and construction between British and American locomotive engines. He gave a full description of the particular points of each style of engine, and showed in what particulars each was superior to the other, closing by showing the design of a new freight engine built by the Grand Trunk, combining the best points of both. The American engine had greater adhesion and traction power and had to draw heavier trains, while in England they were built more for speed. The workmanship of the English engine was far ahead of the American, every part being neatly finished. At the close of the lecture, which was illustrated by diagrams, photographs, etc., the lecturer was called upon to answer a running fire of questions as to cost, durability, etc., to all of which he gave a ready reply.

Textiles.

WOOL DUTIES.

WASHINGTON Nov. 10. —The collector of customs at New York has made a report to the department in regard to the complaint of Messrs. Wood, Payson & Co. against the action of the United States appraiser at New York in returning as scoured Donskoi wools, wool which they claim is only washed, and also in making additions to the entered values of such wools where the entered values, without any additions, carry the highest rates of duty imposed on wool by the statutes. Assistant Secretary Fairchild, in a letter to the collector on the subject, says: "As intimated in the department's letter to you of September 15th, the question as to whether such wools are washed or scoured is one of fact, which must be determined by you from the report of the appraiser, who is required to make careful examination and report thereof. In forming his judgment as to whether any particular importation of wool is scoured or not, the appraiser may have recourse to chemical analysis, commercial designation, and to any other process of information or mode of determination. With regard to the question of value the department concurs with you in the opinion, that in cases where such wool is entered at a value so as to render it liable to the highest rate of duty under the statute, the return of the appraiser increasing the entered value more than 10 per cent need not carry with it the imposition of the additional (penal) duty within the meaning of section 2,900 of the Revised Statutes."

It is reported that fall Texas wool is short in quantity. The entire clip will not exceed 5,300,000 pounds. Scarcity must tell and domestic wool is very short all over the country.

The great demand for Australian wool at the two last London auction sales advanced wool of the Merino kinds from fifty to eighty per cent., also resulting in an advance of dress goods and woollens of twenty-five to forty per cent. over prices in France and England one year ago.

ARBITRATION is to be resorted to in an effort to avert the lockout of 100,000 textile workers in Philadelphia. It is to be hoped that it will succeed. Such a lockout, with the winter season close at hand, would be most unfortunate for the workmen. There is no good reason why all such difficulties should not be settled by arbitration.

AMERICAN employers generally are developing more of a combative disposition with regard to the dictations of labor. The Philadelphia textile manufacturers' attitude is a case in point. The Amsterdam knitting goods employers' is another, and still another is the Augusta cotton goods manufacturers'. There is an increasing unwillingness among manufacturers to submit to what they consider unjust dictation.

ONE evening a June bug flew into the carding room of a cotton mill which was in operation day and night. The leg of the insect caught a piece of roving, and it flew into a gaslight; the roving caught fire, and, dropping into a can of cotton silver, ignited that, and started a blaze which would have been serious had it not been for the presence of mind of an operative, who smothered the fire by covering the top of the can with his coat.

WRITS have been served on the Riverside Oswego Mills, Providence, R.I., one of the largest woollen corporations in the country, to recover the sum of \$1,000 each on forty eight cases of imported foreign labor, chiefly girls, this being the penalty incurred by importing foreign labor, under Chapter 164 of the United States Statutes at large. In July last, several English girls, employed as sewers and burlers in the mills, sought counsel to prevent the corporation from violating the contract under which they came to this country from England. The contract stipulated that they were to receive sums varying from \$7 to \$10 per week. The lawyer in investigating the case was convinced that the corporation had been guilty of a breach of the statute before named,

Milling.

NOTES ON MILLING AND THE GRAIN TRADE.

(American Miller for November.)

MARK LANE, in London, the home of the English grain trade and mill furnishing industry, was originally called Mart Lane.

TOLEDO received more wheat in September than Chicago. Since January 1st Duluth has led all other ports in the amount of wheat received, it being 11,899,867 bushels.

It is said that the bread in Minneapolis hotels is not of the best; in fact that it is poor. The old proverb comes to mind about the cobbler's wife and the blacksmith's horse going unshod.

The Hessian fly that has made its appearance in Hertfordshire, Eng., has been traced to grain imported from Southern Russia. At least that is the conclusion of an entomologist who has investigated the matter.

A SAN FRANCISCO paper of October 14th states that the receipts of wheat at that port since harvest have been seventy per cent. in excess of the receipts for the corresponding time last year. This corroborates the views of those who contend that this year's crop in California is the largest ever known.

We are not certain how much is truth and how much embellishment in the statements widely published in regard to the formation of a syndicate of Eastern and Scotch millers for the purpose of buying wheat in the North-West. Of course it is a move which the natural competition of business might be expected to bring about; though of course the statement is absurd that they will buy all the No. 1 hard wheat raised in the Red River Valley. Monopolies are not easily established in the face of monopolies.

The *Mark Lane Express* says, "The flour trade is very much depressed by the large arrivals of American brands, which have been sold at unprecedentedly low rates, and it has been stated that not a few country millers have shut down rather than persist in the hopeless attempt to make flour which can compete with the produce of the United States. The future of the British country milling trade is a problem which appears likely to be solved by the American millers simply crushing our native milling industry out of existence. And that is not all, for the entire agricultural interests of this country are being degraded, demoralized and destroyed, by an overwhelming foreign competition."

EDWARD ATKINSON writes an article in a late number of *Bradstreet's*, in which he discusses the question of water versus steam power in connection with the gigantic enterprise at Niagara Falls, whereby it is expected to utilize the vast power of Niagara for industrial purposes. Mr. Atkinson boldly asserts that no water power has ever paid for its development on a large scale, and he instances Holyoke, Lewiston, and other places where the original capital was all sunk and the enterprises lapsed into other hands to pay their debts. He thinks that steam power is now too cheap ever to permit the profitable development of water power on a large scale. Mr. Atkinson may be right; but we confidently believe that Niagara Falls is the best place in the United States to-day for the erection of flour mills,

Lumber.

LUMBER NOTES.

(From the Canada Lumberman and other exchanges.)

AN exchange asks: "What has become of the straw lumber which three or four years ago we were told would revolutionize the lumber business?"

A CORRESPONDENT to the Bobcaygeon *Independent*, writing from Haliburton, says: "There is more lumbering this year than last. A firm has started shanties out eastward in Harcourt, and all supplies come this way by railway, and are sent in by team. We shall do a good business this season in lumber, and there will be plenty of market for farm produce."

PREPARATIONS are in progress for the erection of a large building in connection with the car works and shipyard department of the Rathbun Company, Deseronto. The new structure will be 110x36 feet, and 14 feet post. It will contain a large dimension planer for dressing car sills and long plank and timber; also a circular edger for cutting up refuse and edging long stuff. The ship-frame saw will also be transferred to it, and a railway track will run through its whole length to carry stuff to and from the shops. The machinery in the old shipyard shed will be regulated to suit the new machinery. The old shed will be used for mortising, tenoning, cutting off and fitting up the material for car and shipbuilding. In fine the new establishment will be quite an acquisition to Deseronto.

FORT WILLIAM *Echo*: Fort William is the centre from which radiate all the great lumbering enterprises of Algoma West. Each winter camps are established in every direction, and from the almost boundless timber limits which surround it, the products of the forest are culled and prepared for their voyage to the Fort in the spring. Most of the timber employed by the C.P.R. Company in their many and vast enterprises is procured by companies having their headquarters here. From the mills of Messrs. Carpenter and Graham, and Horne & Co., it is an almost daily occurrence to see carloads of timber and lumber of all descriptions and dimensions proceeding east and west, intended either for the repair of old works, or the construction of new ones. Customers for the manufactured material are found as far west as Calgary, and as far east as Sudbury.

CANADIAN LUMBERMEN.

THEY FORM A SYNDICATE TO GET POSSESSION OF MINNESOTA LIMITS.

MINNEAPOLIS, Nov. 11.—Colonel Platt B. Walker, a prominent lumberman, says that a syndicate of Canadian lumbermen, with partners in this State, have acquired the title to about five hundred million feet of pine timber in Northwestern Minnesota and are arranging to gobble up the rest of the vast timber belt on the Northern slope, an area including about one half of the entire State. He charges that the clause in the Sundry Civil Bill providing for a commission to treat with the Indians now occupying these lands for their removal to the White Earth Agency was secured directly in the interest of this Canadian syndicate. Col. Walker adds that if these treaties should be confirmed \$10,000,000 worth of Indian pine will certainly go into the hands of a foreign syndicate, and \$15,000,000 worth of lumber that Dakota and Minnesota will shortly need will be owned by the same pool.

PARTIES one day last week set fire to a hollow tree near Keene, N.H., for the purpose of smoking out a coon. The fire spread rapidly and burned over about 1,000 acres of woodland in the vicinity.

Mining.

THE improved French method of preserving wood by the application of lime is found to work well. The plan is to pile the planks in a tank, and to put over all a layer of quicklime, which is gradually slaked with water. Timber for mines requires about a week to be thoroughly impregnated, and other wood more or less time according to its thickness. The material acquires remarkable consistency and hardness, it is stated, on being subjected to this simple process, and the assertion is made that it will never rot. Beech wood prepared in this way for hammers and other tools for ironwork is found to acquire the hardness of oak, without parting with any of its well known elasticity or toughness, and it also lasts longer.

FROM one ton of ordinary gas coal may be produced 1,500 pounds of coke, 20 gallons of ammonia water and 140 pounds of coal tar. By destructive distillation the coal tar will yield 69.6 pounds of pitch, 17 pounds of creosote, 14 pounds heavy oils, 9.5 pounds of naphtha yellow, 6.3 pounds naphthaline, 4.75 pounds naphthol, 2.25 pounds alizarin, 2.4 pounds solvent naphtha, 1.5 pounds phenol, 1.2 pounds uric acid, 1.1 pounds benzene, 1.1 pounds aniline, 0.77 of a pound toluidine, 0.46 of a pound anthracene and 0.9 of a pound toluene. From the latter is obtained the new substance known as saccharine, which is 230 times as sweet as the best cane sugar, one part of it giving a very sweet taste to a thousand parts of water.—*Science*.

A NEW theory of coal formation has been advanced by M. De Grand Eury, which, a French journal points out, is opposed to the idea that large trees and shrubs produced coal. A calculation he maintains of the accumulation of trees, etc., necessary for the conversion into even a thin coal bed, of a forest suddenly buried under water, or gradually letting its residue gather on the ground, leads to an evidently erroneous result, so greatly is it necessary to exaggerate either the mass of vegetable matter or the duration of the process of coal formation. He considers that the coal beds were formerly beds of naphtha and bituminous petroleum, produced by the decomposition of inferior aquatic vegetation under the influence of heat and dampness. This theory also, he thinks, will serve to explain the formation of petroleum, asphalt and other bituminous springs.

Important to Iron Manufacturers.

I wish to correspond with some party engaged in the foundry and machine shop business, using large lathes and planers; must have planer at least 40x40 inches, 10 or 12 ft. bed; and lathes with 30 to 38 inch swing. With such a party I will place the manufacture of the now well known

"Johnson Gang Punch, Shear and Cold Metal Forming Machines,"

This machine has been patented in the Dominion of Canada within the last two weeks, and in the United States less than one year ago. Over fifty of them are now in use in the United States in the largest chain manufactories, car manufactories, implement factories, wagon makers, plow makers, sleigh manufactories, iron hardware specialty manufactories, and in all cases are highly endorsed, and are saving in labor from two to ten dollars per day.

The following is a partial list of those now using the machine and to whom we would refer, in the United States:—

Oliver Bros. & Platts, Pittsburgh, Pa., on chain links, 1 in. to 2 1/2 in. diameter.
 Billinger & Small, York, Pa., largest car works in the United States.
 Wilkesbarre Iron Screen and Fence Co., Wilkesbarre, Pa., largest in Pennsylvania.
 J. I. Case Threshing Machine Co., Racine, Wis., largest in the United States.
 Mitchell & Lewis Co., Wagon Manufacturers, Racine, Wis., largest in the Northwest.
 LaBelle Wagon Works, Fond du Lac, Wis.
 Cooper Wagon Works, Dubuque, Ia., largest in the State.
 Union Wagon Works, Winona, Minn., largest in the State.
 Spangler Manufacturing Co., Agricultural Implements, York, Pa.
 Janesville Machine Works, Janesville, Wis., Reapers and Mowers.
 Ashcraft Manufacturing Co., Bridgeport, Conn., Heavy Pipe Wrenches.
 Wilcox Manufacturing Co., Aurora, Ill., Hardware Specialties.
 Jensen Manufacturing Co., Racine, Wis., Wagon Hardware.

Inquiries are coming in from the Dominion of Canada, and I am anxious to place the manufacture of these machines with some responsible manufacturer on a royalty; will furnish patterns, drawings, etc., or will sell it out at a nominal sum.

Correspondence from responsible parties solicited. Address,

W. H. JOHNSON, 734 Grand Ave., Racine, Wis.

Steam Pumps
AND
Hydraulic
Machinery
OF

NORTHEY & COMPANY

HYDRAULIC ENGINEERS.

SPECIALTY:
Northey's
PATENT
STEAM
PUMPS.

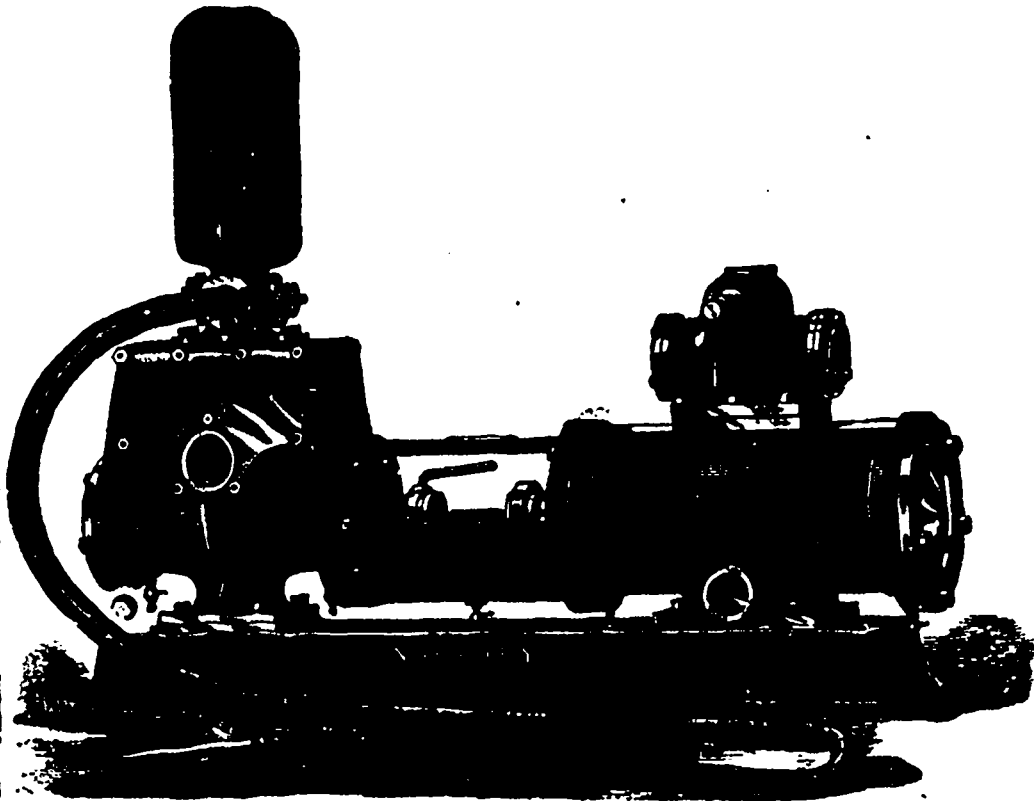
All Descriptions. Works and Office: Corner Front and Parliament Streets, Toronto, Ont.

The NORTHEY PUMP

—IS THE—

Simplest and Most Durable Pump in the Market!

PUMPS FOR ALL DUTIES OF LATEST AND BEST DESIGN



Ordinary Pattern Boiler Feed or Fire Pump. For Pumping Water against Heavy Pressure. Simple—Compact—Powerful.

Complete Waterworks Plant for Towns, Villages, &c.,

—A SPECIALTY.—

CORRESPONDENCE INVITED.

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Catalogue and
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ALL
WORK
Solely
GUARANTEED

\$50

If you think of expending fifty or one hundred dollars in advertising, send us a copy of your advertisement and we will tell you (free of charge) what will be the best possible investment for you to make. Send 10 cts. for our 176 page pamphlet. Address,

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QUALITY AND SIZES GUARANTEED.

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FACTORY:

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ARMSTRONG'S BUGGY AND CARRIAGE GEAR.

The "Defiance"

THIS GEAR meets the demand of the Driving Public for low-riding Buggies, and combines with this, lightness, durability, and great ease of motion. By the use of improved machinery and manufacturing in large quantities, we are enabled to make prices MODERATE. Send for our descriptive circular.

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THOMPSON & CO.,

SHERBROOKE, QUE.,

MANUFACTURERS OF

BOBBINS AND SPOOLS

OF EVERY DESCRIPTION,

For Woolen, Cotton and Rope Mills.

Extra facilities for supplying new mills and filling large orders.

CORRESPONDENCE SOLICITED.

ORDERS PROMPTLY FILLED.

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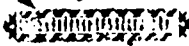


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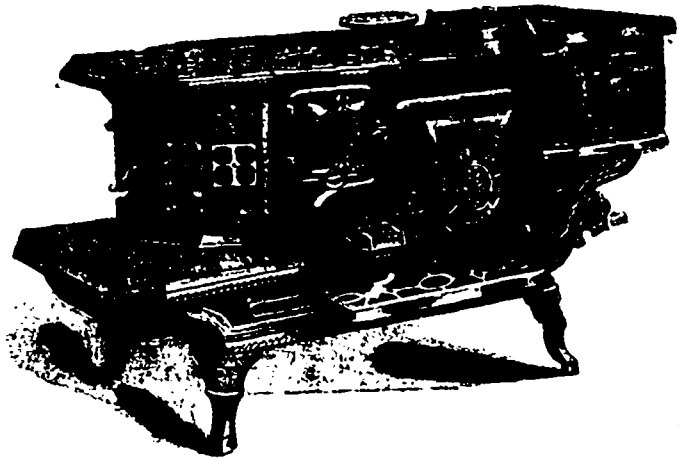
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Handsomest,
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Best Made.

NEW COMBINATION

FOR COAL OR WOOD.



WINNIPEG, MAN., MARCH 9th, 1886.

McCLARY MANFG. CO.,

DEAR SIRS, I have used your Combination Cook Stove for nearly two years, and am very much pleased with it. It has given entire satisfaction both as a coal and wood stove, and I find it can be changed from coal to wood or vice versa without trouble. Used as a coal stove, the fire can be kept in all night as readily as a self-feed hall stove. It is just the stove for this climate.

Yours truly,

J. H. BROCK (of CARRUTHERS & BROCK).

THREE SIZES PARLOR.

No. 30, No. 40, No. 50.

TWO SIZES WITH OVEN.

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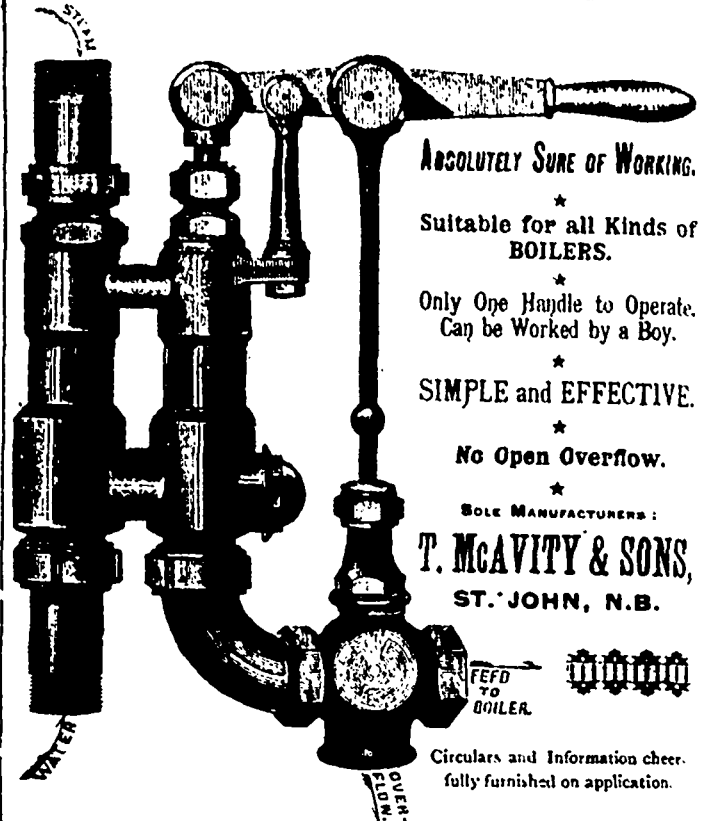
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ABSOLUTELY SURE OF WORKING.

Suitable for all kinds of BOILERS.

Only One Handle to Operate. Can be Worked by a Boy.

SIMPLE and EFFECTIVE.

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Oakey's Flexible Twilled Emery Cloth.
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For Superiority of Quality, Skillful Manufacture, Sharpness, Durability, and Uniformity of Grain.

Manufacturers: **JOHN Oakey & Sons,** Wellington Mills, Westminster Bridge Road, London, England.

Enquiries should be addressed to **JOHN FORMAN, 467, ST. PAUL ST., MONTREAL.**

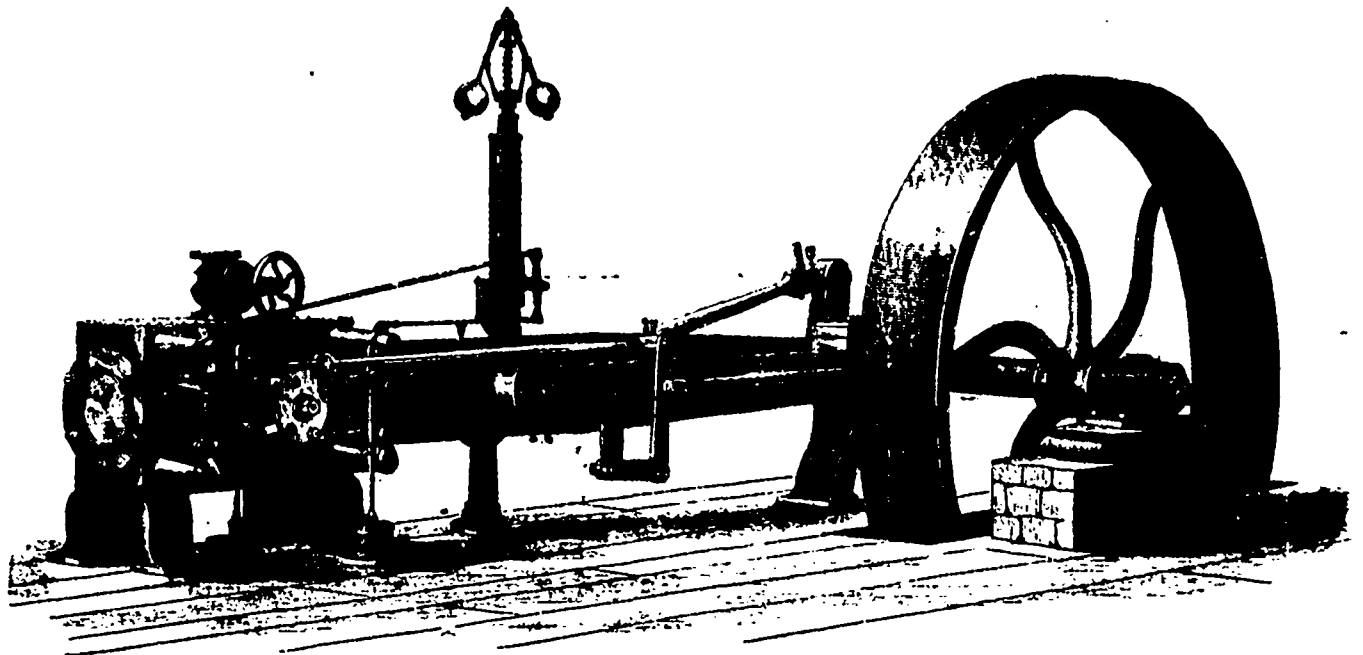
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While many Engines of the same class have been invented, built, tried and abandoned, the Harris-Corliss has steadily gained in public favor, and is now

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

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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.

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ROMAN Cement, Fire Bricks, Fire Clay, Scotch Sewer Pipes, Tiles, Enamelled Fire Clay Sinks; Enamelled, Majolica, Artistic Flooring and Wall Tiles.

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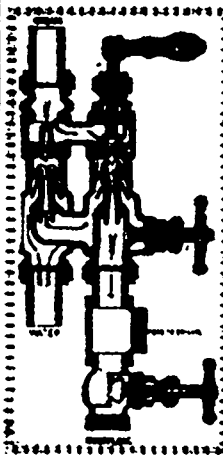
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- 1 IRON FRAME 50 SPINDLE "BRIDESBURG" TWISTER, has been run only 6 months and as good as new.
- 1 SET 30" CUSTOM ROLL CARDS, in good condition
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Will sell at a bargain. Address,

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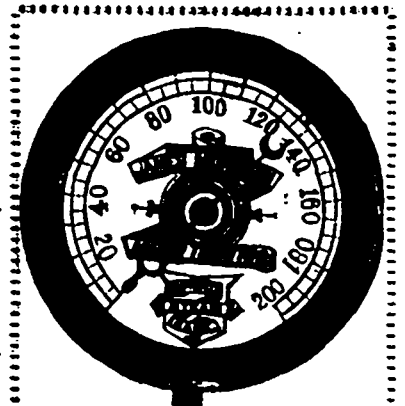
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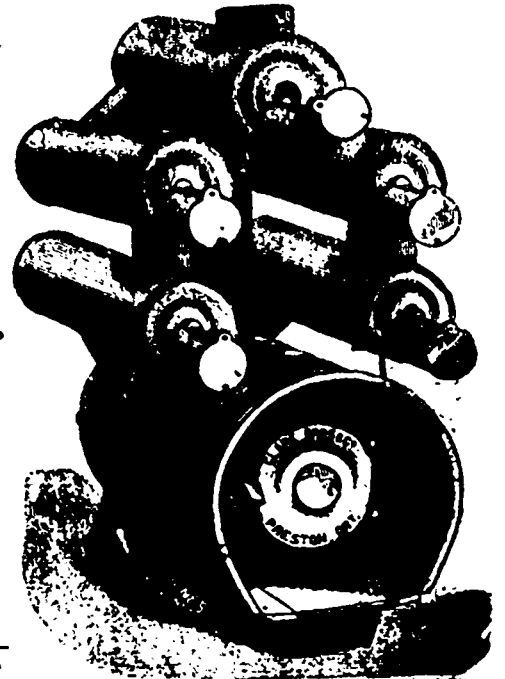
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*Write for Illustrated Catalogue
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Years in advance of all others. The most economical, durable and powerful gas-tight Furnace made. Can be operated as self-feeding or fed through the front door. Is fitted with New Dock-Ash Gear Grate, the best grate known—a simple turning of the lever absolutely clearing the fire surface of all ashes and clinkers. Has large Ash-Pan, Sectional Fire Pot, a deep sand joint at the hottest part, allowing for expansion, renders this the most durable pot made. The Radiator presents five times as much surface to the action of the fire as ordinary furnaces, and can be more easily cleaned. This Furnace is fitted up in the best manner, with bronze hinge pins and knobs, dust flue, etc., and is undoubtedly the most economical furnace made.

This Furnace, made in six sizes, is unequalled for efficiency, economy, ease of management, durability. Is corrugated and made very heavy. The Drums are of heavy sheet steel (with cast iron ends and collar connections), well riveted together, so as to prevent the leakage of gas and smoke from unequal expansion and contraction. It has been largely in use for several years, and has never failed to give the most perfect satisfaction to purchasers, thus differing and entirely superseding all other wood-burning Furnaces heretofore made. Farmers who have a surplus of wood unfit for the market will find them a great relief from the vexation and annoyance of pulling down and setting up ordinary heating stoves and pipes, wood boxes, etc. We furnish the four larger sizes with either round doors, as shown on cut, or with extra large square doors.

Nova Scotia Steel Co., Limited,

NEW GLASGOW, NOVA SCOTIA,

(Only Steel Works in Canada),

MANUFACTURERS OF

Hammered and Rolled Steel

MADE BY THE

SIEMENS-MARTIN (OPEN HEARTH) PROCESS.

ROUND MACHINERY STEEL for Shafting, Spindles, etc. MILD STEEL for Rivets, Bolts
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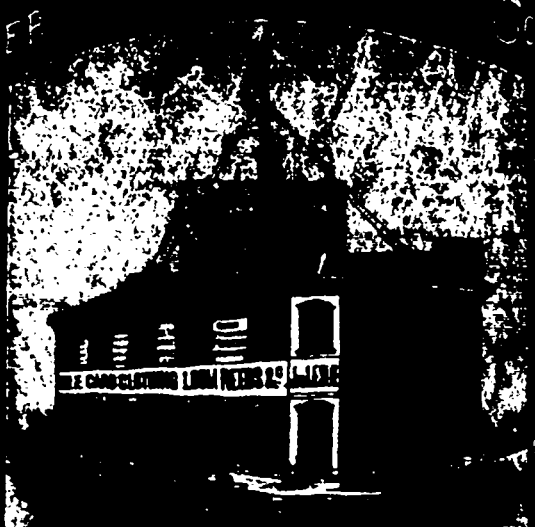
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 Foot and Power Presses,
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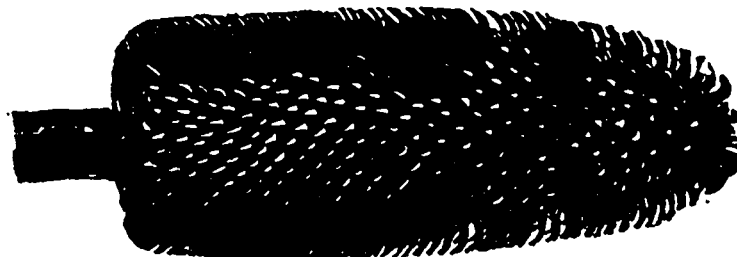
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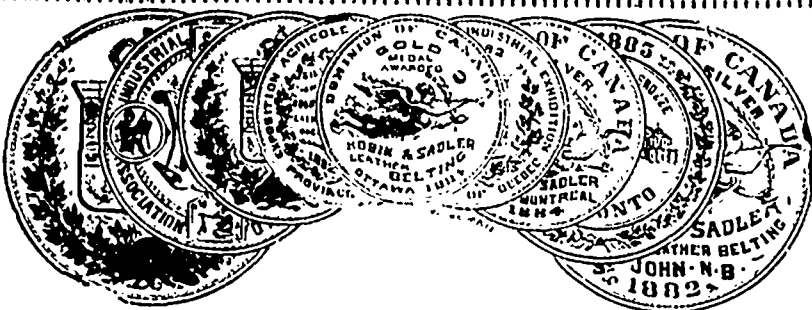
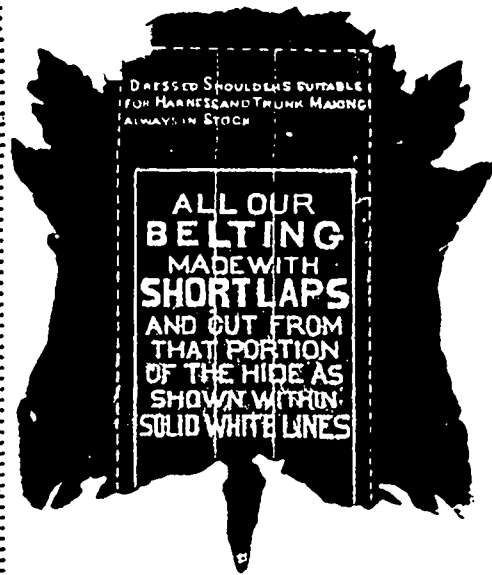


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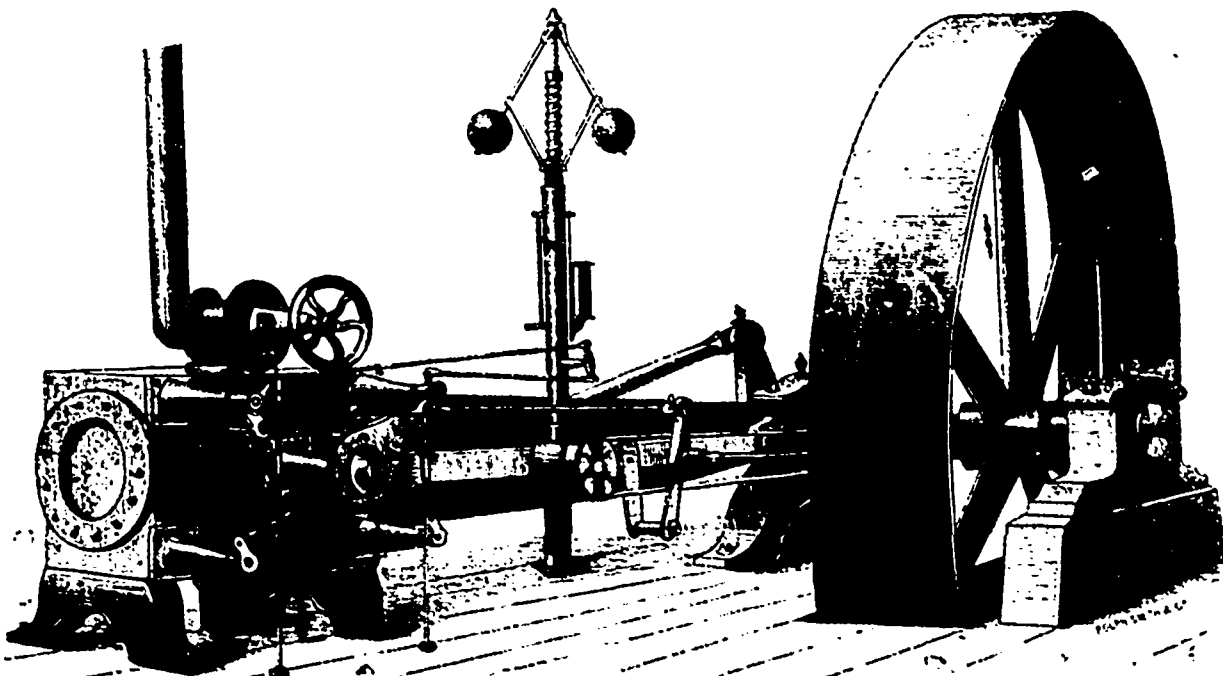
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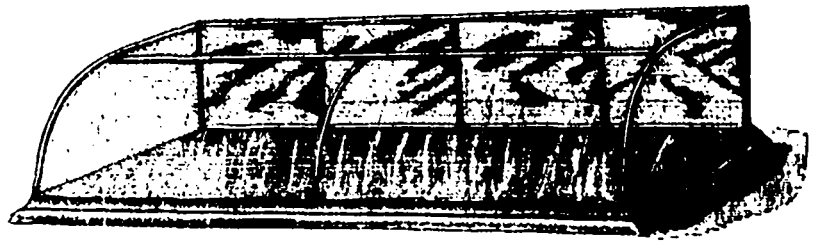
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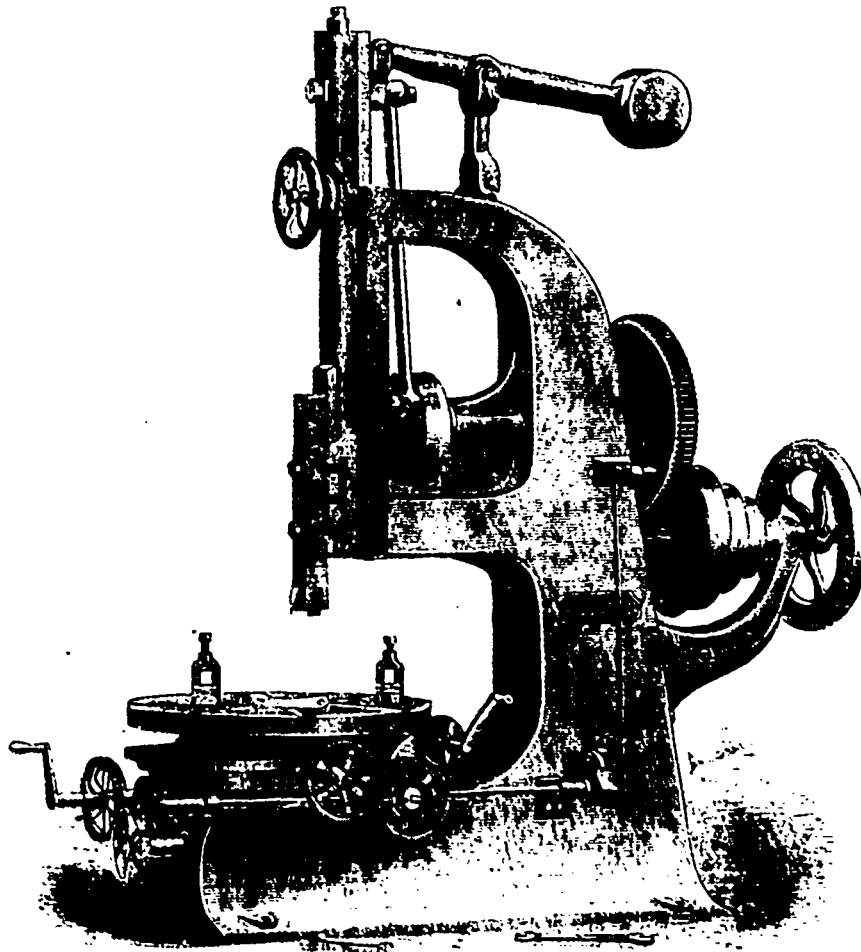
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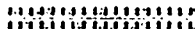
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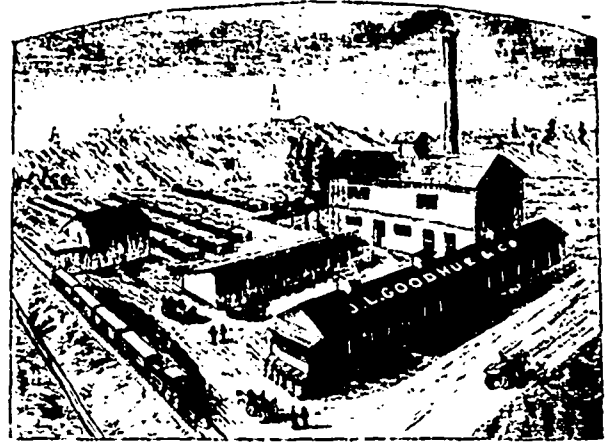
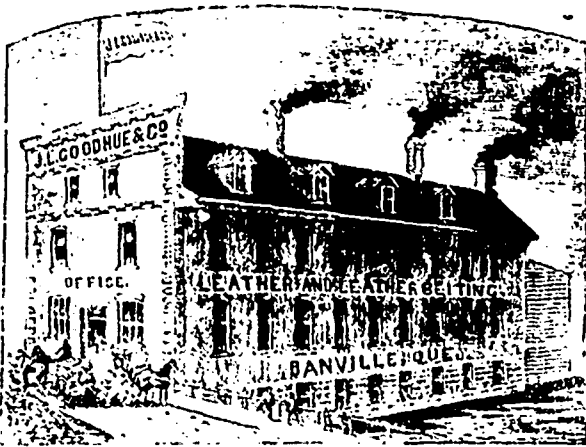
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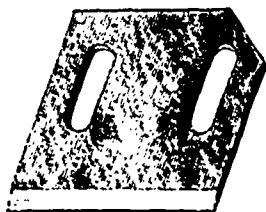
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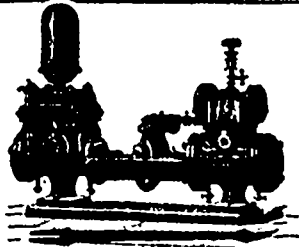
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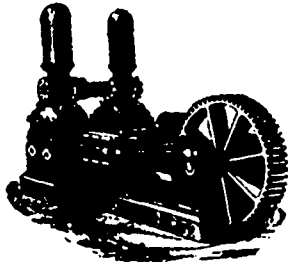
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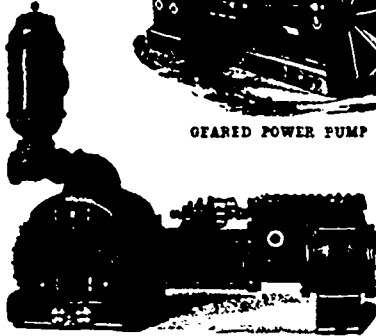
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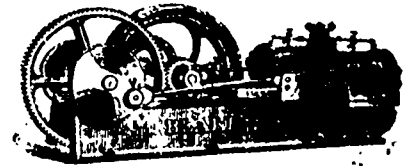
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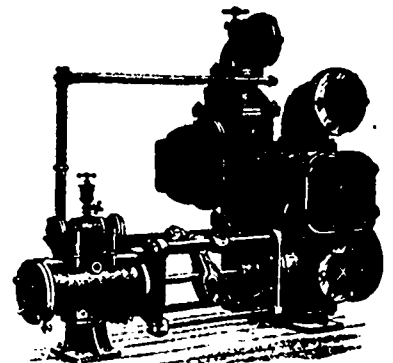
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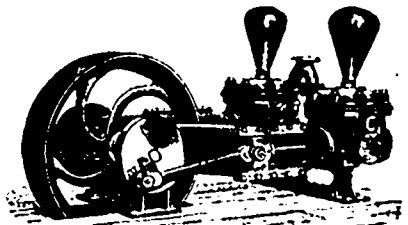
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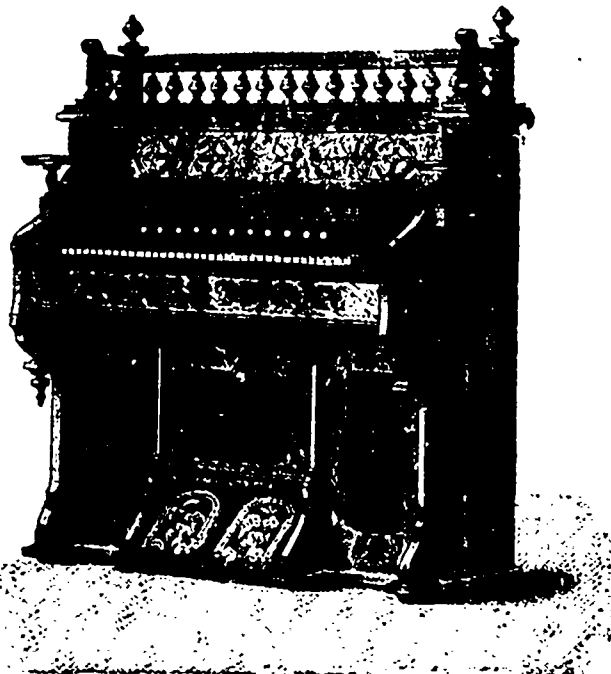
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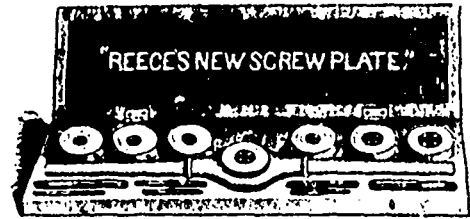
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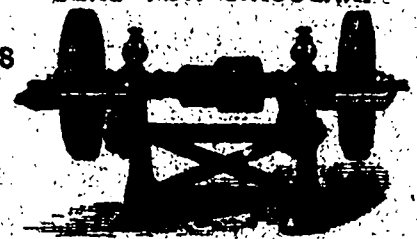


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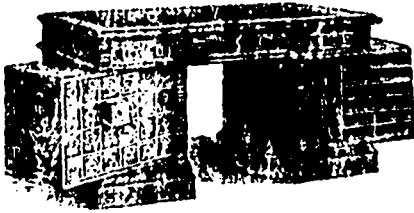
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