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THE CANADIAN MANUFACTURER

DEVOTED TO
THE
MANUFACTURING & MINING INDUSTRIES,
OF THE
DOMINION.

INDUSTRIAL WORLD.

Vol. 13.

TORONTO, SEPTEMBER 2, 1887.

No. 5.

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VOL. XIII.

TORONTO, ONT., SEPTEMBER 2, 1887.

No. 5.

A GOOD BUSINESS OPENING MINING MACHINERY.

A FOUNDRY concern in Cornwall, England, manufacturing stamps, engines and other mining machinery, are making enquiries regarding the present or prospective trade in Canada for that line of goods, the object being to discover the feasibility of either establishing agencies here for the sale of their products, or of transferring a portion of their plant and workmen to this country, and manufacture such machinery here.

The mining industries of Canada are of great and growing importance, and they call for the use of large quantities of mining machinery. An imaginary line dividing Canada from the United States, in crossing the Rocky Mountains and the West Coast ranges, does not affect the deposits of precious metals in those regions, and it is known that such rich deposits as are being and have been so successfully worked in California, Colorado, Nevada and other Mountain States on that side of the line, are not confined to those localities, but exist in equal richness in the mountains of Canada. Of course reduction machinery is absolutely necessary in extracting the precious metals from their enclosing gangue, and while there are numerous establishments in the United States which make a specialty of manufacturing such machinery, we are not aware that there are any such in Canada. Therefore, we think Canada offers a good field for the sale of such machinery, whether it be made in the country or elsewhere. The duty on such machinery when imported into the Dominion, is 35 per cent. *ad valorem*.

The opening is a good one for the establishment of such a concern in this country. Already the mining industry of Canada, as developed in the far western mountains and elsewhere, is large, valuable and important, and the demand for such mining machinery as is here alluded to is correspondingly large. Such machinery could be manufactured here so as to afford a gratifying profit, and we would be glad to learn that such an enterprise was soon to be established.

REGARDING THE STRIKE OF THE STOVE MOULDERS.

A FEW days ago the telegraphic despatches announced that the International Stove Moulders' Union had determined to demand an advance in moulders' wages varying from ten to fifteen per cent., to affect all stove foundries in Canada as well as in the United States. Mr. Fitzpatrick, president of the Union, and the General Board are said to have submitted a proposition to all the local unions affiliating with the International Union concerning the advance, to be voted upon by them, the results of which have not, of course, developed as yet. But

the Cincinnati Union, to which Mr. Fitzpatrick belongs, has already voted upon the proposition, and it was negatived by a large majority, the Union preferring to continue at work at the rates agreed upon last spring rather than make a demand which would not likely be complied with, and which would result in either a strike, lockout or back-down "retreat," as it is called by the Toronto striking carpenters.

Regarding the feeling of the stove manufacturers in the United States in the matter, the *American Artisan* reports a prominent manufacturer of Chicago as saying that he hoped a strike would be avoided. "We tried to raise prices this season so we could make at least interest on our capital, but the retailers would not let us do it. Prices for stoves rule lower this year than last, and we are paying a great deal more for iron. There is no stove manufacturer in the United States who made any money last year, and I shall be glad if we come out even at present prices at the end of the year. What I am telling is honest, candid truth, and there is no use of denying it. We have to make a show of business, but capital invested in stove-making made no money last year, and cannot this year." Another Chicago manufacturer, upon being asked what answer his firm would make if a demand for an advance were made, replied: "We should be obliged to refuse any demand for an increase in wages. The crop of stoves is large and the wheat crop is light. Although we were closed down by a strike last spring for nearly two months, we are in a position to shut down again for ninety days. The other manufacturers are in the same condition. I am inclined to believe that the men will be foolish enough to strike. With the men now at the head of their organization they are liable to do almost anything. The trouble seems to have started at Cincinnati. Now, when the recent strike was declared off, the moulders there made a contract with the manufacturers that was to stand for one year. They now propose to strike for an increase in wages—an action that is a flagrant violation of their agreement. That is to be expected, however, for the same thing has been done several times in the last three years."

In view of the recent adjustment of the trouble between the stove manufacturers and stove moulders in Canada, it is to be presumed that the question of any further advance will not be discussed at present.

ANOTHER MARE'S NEST.

THE anti-Canadian newspapers of Canada are indulging in an excessive amount of cackling over another mare's nest, the egg contained therein this time being denominated "The Sugar Combination." The cackling grows out of the fact that the owners of the sugar refineries in Canada have advanced the price

of refined sugar, and that a mercantile firm in Montreal had imported similar sugar from Scotland which they are offering to the trade at a shade less than the price charged by the Canadian refiners. It is asserted that these refiners have formed a combination to advance the price of sugar, and have advanced it to the utmost possible limit of tariff protection, in disregard of the cost of the raw material and of refining, and of the right of the community to expect that their product should be sold at a reasonable advance above the cost of production. Opprobrious epithets and distorted facts are used instead of arguments, the whole aim and tendency being to break down and bring into bad repute that National Policy of protection which is fast making Canada a self-reliant and self-sustaining nation.

If the masses of the people regard this question at all, or look upon it in the light that these papers would have them view it, it should be remembered that they have for a long time been buying sugar from their corner grocery at about the precise price that their retail groceryman paid to the wholesale house for it, and that the wholesaler paid to the refiner. All retailers and small dealers, for the sake of attracting custom and to advertise themselves as selling goods "cheap," make specially low prices on sugars, and the system has beaten down the price of sugar to the point where even the refiners could not sell it at retail at a profit at the price retailers sell it at. To save themselves as much as possible the retailers have beaten down the wholesalers until there is no money in the business for them; and they in turn have brought heavy pressure to bear on the refiners, who have from time to time made concessions until now they find that if they are to make any money out of their business they must advance prices.

There is no just reason why retail grocers should sell sugar at less than its actual value, and thereby disorganize trade generally, merely for the sake of advertising their business. Consumers are generally willing to pay fair prices for what they buy, and they do not object to paying a fair price for sugar. But while it may be all right for the retailer to advertise his business, it is not fair to do so at the expense of the wholesale merchant from whom he buys his goods, or of the refiner who manufactures them. The same facts apply to certain other lines of merchandise, notably cotton goods, the fact being that proprietors of retail stores systematically make "runs" on certain articles, selling them at and frequently below cost, as inducements to customers to patronize their establishments. It may be a very advantageous arrangement for them, but the system demoralizes trade, and works to the evident injustice of the wholesale merchant, the jobber and the manufacturer.

That some reform was necessary so far as the sugar question was concerned, is evident, and the initiatory was begun, not by the refiners but by wholesale merchants; and although the refiners are charged with having formed a combination for the purpose alluded to, the accusation is false and unfounded as we are informed and believe. The public are aware that the Wholesale Grocers' Guild, in which is included about all of the wholesale grocers in the Dominion, has been in existence for a considerable time, and that they take such steps from time to time as may seem proper to them, to protect their general interests. The resistance to the system of selling sugar below

cost originated with them, and with them rests whatever responsibility there may exist for having initiated the move. They are able and no doubt ready and willing to shoulder such responsibility.

Anent the importation of Scotch sugar which is said to be offering at less prices than those prevailing for Canadian made sugar, the anti-Canadian papers indulge in statements that are unjust, unfair and misleading, if not absolutely false. One of these papers quotes the value of American granulated sugar in London at 16s. 3d. @ 16s. 6d. per cwt. of 112 pounds a little over 3½ cents a pound, "while we poor monopoly-ridden wretches have to pay 7¼ cents a pound" for Canadian sugar. The charlatanism of this is apparent in the fact that American granulated sugar cannot be bought in the United States at 3½ cents a pound, and if it could, the duty on it being only 1½ cents a pound, and 35 per cent. *ad valorem*, the cost, excluding transportation charges, would increase it to only 54 cents a pound, or \$10.80 for a barrel containing 200 pounds. Car lots of sugar in barrels can be brought from New York to Toronto or Montreal for not exceeding 50 cents a barrel, or ¼ cents a pound, making the cost of American sugar laid down in Canada duty paid considerably less than 6 cents a pound. A margin of more than \$3 a barrel would certainly be an inducement to tempt not only wholesale dealers but refiners also to import such sugar. Another deception used is in suppressing the fact that while the duty on refined sugar is 1½ cents a pound and 35 per cent. *ad valorem*, the duty on unrefined sugar, brought into the country for refining purposes, and not exceeding 70 degrees by the polariscope test, is 1 cent a pound, and 3½ cents per hundred pounds for each degree above 70.

These anti-Canadian papers always discover mare's nests whenever it is possible to depreciate Canadian industries in the eyes of the people, and it really looks as though they were subsidized in the interests of that class of importers whose business is interfered with by domestic manufacturers. The effort is constantly being made to make the people believe that they are "hopeless and helpless" as against a National Policy that makes it possible for Canada to be a self-sustaining nation. It was but recently that they were making unstinted denunciations of the "Cotton Lords of Canada," meaning the proprietors of Canadian cotton mills, because they had advanced the prices of certain lines of their products, but they never had the honesty to tell that the advance was caused by a heavy advance in the price of raw cotton in New York and Liverpool, those markets being in the control of brokers who had formed a ring and captured the situation. The advance in cotton was so sharp in England that some of the mills there were forced to shut down, and the general average output of all the mills in the country reduced about 15 per cent. During the time when there was an import duty upon anthracite coal, these papers never ceased telling how the people would get their coal 50 cents a ton cheaper if the duty was removed, but now that it is removed, and coal is brought in free, they seem oblivious to the fact that coal is as high now as it was before.

The cause of these continual outcries against the tariff is obviously traceable to an anxiety to forward the interests of importers of foreign-made goods who find similar goods of Canadian manufacture rather in their way. They want to remove the obstacle.

HAS THE POOR MAN ANY FRIENDS?

A BURNING question now agitating the city authorities and the honorable (?) Knights of Labor of Hamilton, Ont., is whether Buscombe must go or not. Buscombe is but an humble bricklayer who earns an honest living in Hamilton engaged in the construction of sewers, and it is admitted that he can handle a trowel and lay up his courses of brick and cement quite as well as any other bricklayer on the work. But Buscombe is not in good standing with the honorable (?) Knights of Labor, and that honorable (?) body has determined that Buscombe must go, his offence being that he is not a Knight of Labor. This humble bricklayer has been working at his trade in Hamilton all summer, and desires to support himself and family by his personal exertions, and although this fact has been known to the honorable (?) Knights of Labor there, they have endured the insult offered to their organization, by the Hamilton authorities, hoping that something would turn up by which they might force his discharge. And now their time has come. Hamilton requires considerable brick work to be done before cold weather comes, a part of which is the construction of a new city hall, and the honorable (?) Knights of Labor seem determined that either Buscombe must go, or bricklaying on city work must cease. At a meeting of the Sewer Committee of the Board of Aldermen, held this week to consider this crisis, Mr. D. R. Gibson, representing the Bricklayers' Union, intimated to the Committee that unless the city came to the terms of the Union and discharged Buscombe, all union bricklayers employed on city work would be called out. He said that the feeling in the Union against Buscombe was so strong that no union bricklayers would be allowed to work on the new city hall if he was continued in the city's employ. He said also that the advisability of taking this latter position had been fully considered by the Union. It developed that Buscombe had once belonged to the honorable (?) Knights of Labor, and it was stated by Mr. Gibson that the offender could get back into his Union if he would pay the fine, costs, assessments, etc., charged up against him, together with back dues, to the amount of \$125. Buscombe does not wish to go back to the Union, and the inference is that the Union want to force the city authorities to squeeze \$125 out of him, and force him back into the Union, or else set him adrift. Mr. Gibson explained that the reason why the Union had delayed taking decisive action in this matter for several months was that no good opportunity had presented itself until the present time, when the large amount of work to be done by the city seemed to afford the long-wished-for opportunity.

The question is not yet settled, and Buscombe is still at work laying brick in the Hamilton sewers. The case is one of cruel, unjustifiable and outrageous boycotting, and it remains to be seen if the city authorities dare discharge this humble laboring man at the insolent dictation of the honorable (?) Knights of Labor for the reasons above recited. A natural query is: Has this poor man no rights which the honorable (?) Knights of Labor of Hamilton, and the city authorities of Hamilton are bound to respect?

The public is interested in knowing whether the municipal governments of the country are conducted in the interests of the people generally, or on the dictation of insolent and overbearing trades unions.

MENDACIOUS MISREPRESENTATION.

American made granulated, which is at least as good as any Canadian monopoly sugar, can be purchased in England for a little over 3½ cents a pound; while we poor monopoly-ridden wretches have to pay 7½ cents a pound.—*Toronto Globe*, August 25.

SPEAKING of the recent receipt in New York, of 10,000 tons of raw Hawaiian sugar, sent there by San Francisco importers who were overstocked, the *New York Herald*, of August 4, says:

It remains to be seen whether these shipments of raws will be a financial success. Their cost in San Francisco was about 4.65 cents, the refineries there paying ½ cent off the Cuban basis. But to this must be added freight to New York, insurance, commissions, loss in weight and polarization, lighterage, cartage, sampling, etc., which would make a cost of over ½ cent more, giving the net cost laid down in New York at 5.45 cents a pound.

It will be borne in mind that raw sugar is here spoken off, that coming into the United States from the Hawaiian Islands under the reciprocity treaty between those nations no duty is imposed, and that it costs money to refine raw sugar and convert it into granulated.

Considering the facts in the case there is a wonderful difference between what the *Globe* says American refined sugar can be bought for 3½ cents a pound, and what raw sugar, duty free, costs the American refiners in New York—nearly 5½ cents a pound. It is very evident that American refined sugar cannot be bought at 3½ cents a pound from the American refiners, the assertion of the *Globe* to the contrary notwithstanding, for refiners cannot sell their product at that price when the raw material, duty free, costs them nearly two cents a pound more.

But the introduction of 10,000 tons of duty-free Hawaiian raw sugar into the New York market is but a bagatelle compared with the quantity handled there by the refiners; for with the exception of the Louisiana made sugar, the consumption in the United States other than that coming from the San Francisco refiners, which is grown in the Hawaiian Islands, is produced in Cuba and elsewhere, and has to pay a duty of about 2½ cents a pound. The importations of raw Hawaiian sugar into the United States, at San Francisco, last year, amounted to about 115,000 tons, and the San Francisco refiners control and supply the Pacific Coast markets and as far eastward as Denver, Colorado. A considerable quantity of this sugar—more than 32,000 tons—found its way to more eastern markets in the United States during the first half of the present year, 6,000 tons coming via the Canadian Pacific railroad. All the balance of the sugar consumed in the United States, excepting that raised in Louisiana, pays duty, which quantity is many times that of free sugar.

If the National Policy of Canada, which imposes a duty on both raw and refined sugar, is objectionable, and should be abandoned for free trade, whatever arguments that may be used against the policy should in fairness be based on facts, and any argument which is so entirely devoid of truth as that of the *Globe*, in stating that American refined sugar can be bought at 3½ cents a pound, when the duty-free raw sugar, of which it is made, costs 5½ cents a pound, should be dismissed without further consideration. Such misrepresentations taint and make suspicious all other views to which it may give utterance.

OUR TRANS-CONTINENTAL TRADE.

ADVICES from the Pacific coast state that the Canadian Pacific Railway Company will, within the next thirty days, put on a line of new and powerful steamships to run between Portland, Oregon, and Vancouver, British Columbia, thus opening a new route between the Columbia River and the East. This route will afford the shippers from Portland, Astoria and Oregon all the facilities of a direct ocean port both to and from New York, Boston and Chicago, and will benefit the city of Portland as a distributing centre very materially. It is learned that the wool crop of Oregon is rapidly growing to very large proportions, and that the canned goods trade from San Francisco to Chicago, and from Astoria and Alaska, will also be very largely promoted by the opening up of improved connections by the ocean to Vancouver. The old trans-continental lines will now have an additional competitor, one that will require ceaseless attention, and a reduction in rates will be an important result. Low rates are looked for from San Francisco and the Columbia River to Chicago and more eastern points, and it is believed that the Canadian Pacific Railway will be the first to inaugurate them, and that at an early day.

The importance of this Canadian trans-continental railroad route is becoming more and more appreciated every day. Just at the time that the above alluded to information was developing, it is learned by way of London that the opening of the route, and the establishment of the company's line of steamers from Vancouver to Yokohama and Hong Kong is creating extraordinary interest in Japanese political and commercial circles. The native journals are actively discussing the probable effects of the development of the new route on the commercial position of Japan, which, they think, may be completely revolutionized by it. If, they say, goods for China and other countries in the east are conveyed by this route, Japan would have in the east a position corresponding to that of Great Britain in the west as a commercial and banking centre. At present, while the Suez Canal is the main route, Japan stands alone at the extreme end of the chain of communications. With the Canadian Pacific steamship and railway lines in active operation, Japan should be the centre of the eastern trade, and accordingly Japanese merchants are urged to be up and doing. It is suggested that the native steamship companies connect Hong Kong and Singapore with Yokohama, and possibly extend the line to Australia later, thus increasing the number of feeders of the Canadian Pacific. Whatever the result may be, the officials of the Canadian Pacific have succeeded in arousing to a very high degree Japanese commercial energy and ambition.

SUGAR.

FOR the better information of those who may desire a fuller understanding of the matter regarding the cost of sugars in Canada, we give the situation as it existed in New York and London a few days ago, according to *Bradstreet's* market report of August 27. That paper says: "The continued reduction in the visible supply of sugar, accompanied by bullish advices from Europe, and an improved demand for refined sorts, exercised an appreciable influence upon prices at New York. Raws advanced slightly, the most strength being in Muscovados. All

grades show a tendency towards a further improvement. The business done has been the largest for many weeks. In the face of large purchases and heavy receipts to refiners, the stocks held by them show a further heavy decrease. From surface indications the syndicate operating in beet sugar seems to possess the key to the situation. The advance noted last week in contracts at London has been thrown in the shade by the course of prices this week. August delivery has been effectually cornered, and prices showed a gain on the week of 2s. 1½d. per cwt. up to Thursday. All reports from producing countries appear to be favorable to the bulls. Refined goods show a relatively better movement than raws. Prices are up from ¼ to ½ cents per pound. The total stock (of raw) in all countries at latest dates is 816,374 tons, against 849,310 tons last week, and 1,023,396 tons this week last year."

An itemized account of the sales of raw sugars at New York up to Thursday night (Aug. 25th) is given, the sales footing up a total of 7,318 hogsheads, 72,678 bags and 3 cargoes. Two of these cargoes were from the Hawaiian Islands—alluded to in another article in this paper—and which were sold at 5½ cents per pound for 96 degrees, and 4½ cents for 89 degrees, these prices indicating the average market value.

The closing wholesale prices at New York on Aug. 26th were 6 cents for granulated and 5½ cents for Standard A, but on the next day prices were advanced in sympathy with London. The exports of refined sugar from New York during the year to Aug. 25th were 39,446 tons, against 48,386 tons for the corresponding period last year.

The London market was active and higher, with values advancing, fair refining being quoted at 12s. and Java No. 15 at 14s. 3d. per cwt. The total stock on hand at the four ports of the United Kingdom on August 20th was 205,366 tons, against 296,285 tons the same date last year, a decrease of 90,919 tons. Taking the week as a whole, the gain in price of sugar at London was 2s. 6d. per cwt.

We have given this comprehensive review of the situation as regards sugar, both in the United States and Great Britain, to show, first, that the stocks and supplies of the article are much less than they were a year ago, and that prices are advancing; and, second, that the representations made by the anti-tariff Canadian newspapers that refined sugars are worth only about 3½ cents a pound, is absolutely false and misleading. It is impossible for refiners to pay over 5 cents for raw sugar and sell for less than 6 cents; and the furor recently created, by which Canadian refiners are represented as being monopolists who are making a hundred per cent. profit in their business, is done, first, in the interest of the free-trade anti-Canadian policy, and second, in that of a few importers who desire to control the market.

THE establishment of a decimal system of coinage, which was strongly urged in England thirty-five years ago, is again under discussion in that country. The project finds much encouragement among English merchants who have extensive foreign dealings. A deputation from the London Chamber of Commerce and other similar bodies recently waited on the Chancellor of the Exchequer to urge upon him the desirability of the proposed reform. Mr. Goschen did not give the deputation much encouragement. He suggested that the question be further agitated, so as to make it, as far as possible, a public one. He evidently believes that in the present state of the public mind it would be impossible to bring the House of Commons to a serious consideration of the question.

◇ THE ◇

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MR. FREDERIC NICHOLLS is Secretary of
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His Office at the Publication Office of
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Any association of manufacturers who may desire to hold meetings for organization or other purposes, are invited to avail themselves of the meeting room adjoining the office of the CANADIAN MANUFACTURER.

THE CANADIAN MANUFACTURER has been assigned one of the best and most convenient rooms in the Press Bureau building, on the Exposition Grounds, and during the continuance of the exhibition will maintain its office and headquarters there. The door of the office is arranged to open automatically and quickly to all friends, and exhibiting and all other manufacturers attending the exposition are invited to report at our office and avail themselves of its comforts and conveniences.

THE publishers of the CANADIAN MANUFACTURER will take pleasure in sending specimen copies of this paper to any address upon request. Persons receiving these specimens are requested to examine them, and send \$2 for one year's subscription.

WE are greatly indebted to those of our readers who, in ordering or making enquiries of articles advertised in the CANADIAN MANUFACTURER, have named our paper as the source of their information; and if others will do likewise we will esteem it a favor and be much obliged.

A MAN named Michael Ryan was sent to the Toronto jail this week from the police court for twenty days without the option of a fine for interfering with a non-union man who worked on Saturday afternoon when the union men took a half holiday. It will be seen by this that the law discourages the so-called "right" of members of labor organizations interfering with rights of individuals.

MESSRS. NICHOLLS AND HOWLAND have fitted up a special department of their Permanent Exhibition of Manufactures in this city, for the convenience of inventors who may desire to introduce their patents to the notice of the general public, and for the display of models and specimens thereof. The department is in charge of Mr. H. W. Booth, a gentleman of large and successful experience in this direction. The aggregation of models and designs that will be on exhibition will be a useful study to inventors, and Mr. Booth will take pleasure in giving any desired information of which he may be possessed.

AT the recent meeting of the Oatmeal Millers' Association held in this city, the committee which had been appointed to visit every mill in Canada reported that there were sixty-two mills in the country, with a capacity of 8,500,000 bushels of oats yearly, equal to 800,000 barrels of oatmeal; that 160,000 barrels of meal had been consumed in the Dominion during the past year, and that 70,000 barrels had been exported, making in all 230,000 barrels. They found that if all the mills were in

operation for two and a half months in the year, the Dominion trade would have been supplied and that three and a half months' grinding represented the total output for twelve months.

WHEAT SHEAF ASSEMBLY, Knights of Labor, of Toronto, composed of bakers, has given public notice through the city papers that certain master bakers, whose names are mentioned, "having signed the agreement that exists between the masters and Wheat Sheaf Assembly Knights of Labor, are entitled to the patronage of all organized bodies and the public generally." For which gracious concession the Lord be praised. "The public generally" should be congratulated that Wheat Sheaf Assembly Knights of Labor, of Toronto, have formally consented that it may hereafter buy bread from the master bakers whose names are enumerated, and these gentlemen should be most profoundly grateful that the Assembly has declared them "entitled" to the patronage of their customers.

Men who talk about the freedom of contract and the danger of labor organizations interfering with rights of individuals, while the present wage system lasts, are either fools or canting humbugs.

WE extract the above morce u from the editorial columns of a Canadian labor paper, and commend the force and strength of the argument contained therein to all lovers of choice language. Hereafter when men talk about the freedom of contract and the danger of labor organizations interfering with the rights of individuals, not having previously reorganized the present wage system, they should bear in mind that, according to the forcible and logical argument of the labor paper above quoted, they are fools. And there is no appeal from this decision.

THE arrangements for the display of exhibits at the Grand Dominion and Industrial Exhibition which opens in Toronto next week are on a larger and more comprehensive scale than ever before. All of the old buildings have been refitted and the most of them considerably enlarged, and several new buildings have been erected, and all of them are in readiness for the event. Considerable machinery has been placed in position and connections made with the motive power, and about every foot of available space on the grounds has been already assigned to exhibitors. Nothing has been left undone by the manager which could possibly have been accomplished to make the affair an unbounded and most gratifying success, and it will, no doubt, be the greatest event of the sort that has ever occurred in Canada.

THE Union Straw Board Company, in the United States, is one of those combinations of manufacturing concerns somewhat peculiar to that country, which are formed into "pools" for the purpose of restricting production and maintaining prices. Of such character are the Bessemer Steel Company, which is composed of those concerns which manufacture steel rails, or have plants for doing so; the Union Barb Wire Company, composed of the barb wire manufacturers, and a number of other similar organizations. The Union Straw Board Company embraces about all of the straw board manufacturers in the United States, and these are so numerous that their aggregate product is far in excess of the consumptive demand

for such goods, and the object of the combination is to prevent over-production. It is said of the company that it controls 95 per cent. of the straw board capacity of the country, and it has just ordered the closing down of some eight of the largest mills.

A prominent farmer resident about 30 miles from this city is authority for the statement that where there was one farmer coming to Toronto to trade ten years ago, there are a dozen to-day. Whether the proportion is stated with exactness, the great increase in the number of farmers trading here is a patent fact. The gentleman in question gives the opinion that the causes for the increase are many. The greatly improved railway facilities probably have more to do with it than anything else, the general attraction of the city to visitors, the advantages offered for the ready disposal at good prices of everything the farm produces, and others also contributing. The farming trade is now an immense one, and there are great establishments which are devoted mainly to the cultivation of this class of business.—*Toronto Globe*.

JUST so. Toronto is an active, thriving manufacturing city, and many thousands of her population find steady employment in her factories, work-shops, and other industrial establishments. These all require just such farm produce as is above alluded to, the immense trade in which, as the *Globe* states, is so profitable to the neighboring farmers. But the *Globe*, echoing a silly expression of Mr. Erastus Wiman, insists that these same farmers are "hopeless and helpless," although the farmers themselves think very differently, and see no chance for bettering their condition than by removing the barrier that keeps out foreign cheap labor competition, and that makes it possible for these thousands of inhabitants of Toronto to consume the products of these farmers.

Goldwin Smith, who voted with the protectionists in 1878 and stumped for Macdonald candidates, now says: Protection is like the eye salve of the inventor in the American comedy. The more people use it the more they want it. The manufacturers are all crowding to Ottawa, each to get more protection for himself; and at last the industries of this country will be so protected that the people will clear out and go to a cheaper country. Canada will be left to the protected manufacturers and the protectionist politicians.

THE above is clipped from the *Hamilton Times*, though we have never seen this particular paragraph credited to Professor Goldwin Smith. The average annexationist is capable of uttering a great deal of nonsense, but this dose is too nauseating, and surely Mr. Smith could not have written or spoken it. The annexationists are fairly crazy to have Canada made a part and parcel of the United States, and constantly declaim upon the thrift and wealth of that country, but they neglect to tell that in that country, pre-eminently more than in any other country on the globe, "protection is the eye-salve of the inventor;" and that "the more the people use it the more they want it." The idea that "at last the industries of this country will be so protected that the people will clear out and go to a cheaper country," and that "Canada will be left to the protected manufacturers," is absurdly ridiculous and amusing. The United States have grown rich under protection, and according to recent advices the people there are not clearing out to any great and alarming extent, and emigrating to cheaper countries. Our impression is that the tide runs in the other direction.

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ANGUS MCKAY of the Hudson Bay Company at Pitt, Saskatchewan Territory, has a trained moose with which he can make the trip to Battleford, 98 miles, and return in two days.

A STEAM omnibus is in use in Dresden. The motive power is applied to the hind wheels, and is supplied by an upright boiler and compound engine. It is used in the streets for carrying passengers, and will seat twenty persons.

THE special car with samples of the products of Manitoba, intended for display at the forthcoming Dominion and Industrial Exhibition in Toronto, which was to have left Winnipeg on Saturday last, will be in the care of Mr. R. Waugh, of the *North-West Farm*.

ONE hundred and twenty tons of phosphate arrived at Kingston, Ont., last week, over the Kingston and Pembroke Railroad, the first instalment of fifteen thousand tons for the United States. At the same time one hundred tons of ore, the first received during six years, arrived from the Robertsville mines.

Quite a number of Mormons from the United States have settled recently in the Lethbridge, Alberta, district. Over fifty families are already there, and 100 more are said to be coming. Utah doesn't seem to be quite as healthy a place for these people as it was before the Edmunds' Bill became law. Canada had better not encourage Mormon immigration.

At present prices, when we sell \$200 worth of wheat, we have parted with \$57 worth of plant food; in other words, we are selling our farms at the railway stations in a half-bushel. If we sell a horse worth \$200, but \$7 worth of plant food is carried away. When we realize \$200 for butter at 25 cents per pound, we have parted with less than 50 cents worth of plant food.—*Prof. Roberts, in the Empire State Agriculturist.*

A TORPEDO company is now manufacturing for the United States Government three fifteen-inch pneumatic guns of bronze, with forty-foot length of barrel, each calculated to fire a shell containing a ton of dynamite a mile, half a ton two miles, 500 pounds three miles and so on, with reasonable accuracy and safety to crew and guns. The tremendous explosive force of such a projectile would be sufficient to blow any warship to atoms.

MR. SMEATON, Director of Agriculture of the Northwest Provinces of India, has issued a note on the competition between Indian and American wheat. He says India possesses means to compel America to withdraw her hostile tariffs and open her markets to British industry, but is burdened by higher railway freight charges, excessive handling, and apparently (though not really) inferior quality. He advises London merchants to use their influence with the railway.

MR. J. E. PALMER, 176 Broadway, New York, the publisher, has sent us a copy of "The Red Book: a Handbook for Textile Manufacturers," its object being to place in the hands of superintendents and agents of cotton, woolen, and worsted mills a complete list of manufacturers of the various machines, chemicals and supplies used in the textile industries. This, the third edition of the Red Book, is well printed, bound in cloth, and is sold at the reasonable price of one dollar.

A WATER bicycle was propelled across the Niagara river, below the falls, recently, with reported success by its owner. The machine is of the catamaran order and consists of two zinc floats 10 feet long, supporting a bicycle wheel, on the rim of which are a number of 6x3-inch paddles. A small rudder takes the place of the second wheel on the ordinary bicycle and is operated from in front of the rider, who uses a small horizontal steering wheel instead of a bar. The time was four and a half minutes and the distance about 1,300 feet. The swift current and the chop waves did not seem to bother him.

ELECTIONS for delegates to the Minneapolis Convention of the Knights of Labor have developed a tidal wave of opposition to the present administration of the Order. The opposition is apparent in all directions; and while not generally aimed at Mr. Powderly, will, it is almost certain, engulf him with the men who, by their attempt at centralization of power, have incurred the enmity of the laymen of the Order. The October convention will be a memorable one. If the organization survives the dissensions which now threaten its existence, it will come out of the struggle much weaker and its members "a deal" wiser.—*Industrial Gazette.*

MR. J. FITZGERALD, publisher, 24 East Fourth street, New York, has sent us "The Rise of Universities," by S. S. Laurie, LL.D.; price, postpaid, 30 cents. Every educator, and all who take

an interest in the history of education, will find this work to contain a vast amount of information of the highest importance. That nearly all of the great universities of Europe should have arisen in the deepest darkness of the middle ages is in itself a phenomenon worthy of serious study. Truly the founders of those institutions builded better than they knew, for the universities, directly or indirectly, have been the principal agency for the overthrow of all the principles of science and philosophy that were most prized in mediæval times.

THE Zoological Society of Regent's park, London, England, are sending the Toronto Natural History Society a series of living English reptiles for the Dominion and Industrial Exhibition, and a letter has been received from the secretary, Dr. Selater, stating that a collection of snakes, lizards, toads, frogs and newts, comprising over one hundred specimens, is now on its way across the Atlantic. The Allan Steamship Line have given the specimens free passage in one of their vessels, and it is expected that the collection will reach Toronto by the end of this week. One of the Canadian snakes, which Dr. Brodie is keeping ready for the Exhibition, has given birth to between thirty and forty young ones, and the mother and her little family will form one of the most attractive features of the Natural History building.

A CLOSE observer of the fire extinguishers tests said:—Did you ever notice that all these tests are made under very similar conditions? There is a barrel with a hole at the bottom or a closet-shaped erection of wood, but never a pile of fuel to which the air has access from every side to represent a heap of rubbish. You will also notice that the fire is never set to the back of the closet-shaped structure, but always to the front, so that it is prevented from spreading out. The reason is that in the barrel or enclosure the gas generated by the chemicals curls up in front of the fire and chokes it off; but if the air had access from all sides, the gas would quickly be dissipated, and the fire go on with undiminished vigor. Now, fires start under all sorts of conditions, and the tests should be arranged to cover all these.—*Globe.*

MR. W. J. BELL, of Messrs. W. Bell & Co., manufacturers of organs, Guelph, Ont., who has for some time had charge of the business department of the concern at 58 Holborn Viaduct, London, E.C., England, will sail in a few days on the steamer from San Francisco to Sidney, New South Wales, and will remain in Australia about a year, looking after the interests of his firm, his headquarters being at Sydney. He will establish agencies in all the principal cities in Australia for the sale of the celebrated Bell instruments. Mr. Bell was to have been married yesterday in Omaha, Neb., to a daughter of General Lowe, of that city, and his wife will journey with him into the Southern Hemisphere. Until Mr. Bell's return to London the office there will be in the charge of Mr. John Jenkinson, who has long been connected with the business.

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. There are nearly three hundred choice literary selections representing these authors—a truly wonderful amount of entertaining literature for a little money. The work is designed to be completed in 15 volumes. The publisher offers a sample volume, postpaid, for the nominal price of 35 cents, on condition that within three days after receipt the remainder of the price be remitted or the book be returned, in which case the 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 street, New York.

THE revenue and expenditures accounts of the Dominion Government for the last fiscal year have been closed, and show the former to have been \$35,801,941.46 and the latter \$35,667,504.26, leaving a surplus of \$134,437.20. The sources of revenue were as follows: Customs, \$22,395,993.23; Excise, \$1,308,195.35; Post office, \$2,012,062.17; Public works, including railways, \$3,488,022.79; Miscellaneous, \$1,597,667.92. Total, \$35,801,941.46. Compared with last year this shows an increase of \$2,450,521.89 in revenue and a decrease of \$3,509,458.98 in expenditure. Every item of revenue shows an increase, except miscellaneous, which is \$1,288,451.32 less than last year, the falling off being mostly in the item of interest consequent on the closing up of the Canadian Pacific railway accounts. The increases are: Customs, \$3,022,141.12; excise, \$455,157.76; post office, \$112,907.17; public works, \$188,767.16.

LUMBERMEN generally expect to cut about as much in the woods this year as was cut last year, if nothing interferes with the season's

operations. In connection with this it is interesting to note that it is estimated that the busy saws at the Chaudiere will cut this summer about the following figures, which are somewhat less than last year's figures, which were the largest for the previous twenty years; J. R. Booth & Co., 90,000,000 feet; Bronson & Weston, 75,000,000 feet; E. B. Eddy & Co., 80,000,000 feet; Perley & Pattee, 70,000,000 feet; Hurdman & Co., 50,000,000 feet. The cut of Messrs. Grier & Co. last season was about 16,000,000 feet, but since the building of their new mill has given them increased facilities it is expected that they will more than double that amount this year. James McLaren will cut over 50,000,000 feet this season.—*Ottawa Journal*.

THE last foot of space in the main building of the Exposition was allotted several days ago, and the space in all the other buildings is filled. It was found necessary to enlarge the agricultural implement building by the erection of a new wing, 125 by 16 feet, along the side of the stove building. In the carriage building nearly every exhibitor had to submit to a slight reduction of the space at first allotted to him. The plans for the allotment of space in all the buildings can be seen at Secretary Hill's office. Reduced rates have been granted by the Canadian railways. The general arrangement is single fare for the double journey, but there are also special rates, including a \$7 rate from Montreal and return. There will also be an excursion from New York and return for \$9 or \$10, and Mr. Hill is receiving letters from agents all over the United States who are getting up excursions to Toronto.

JULIAN HAWTHORN, who ought to be a good judge, says of H. Rider Haggard's story of "King Solomon's Mines": "There is no story of adventure that surpasses it." That seems to be the popular verdict. Everybody is reading it or talking about it. Of course there are no end of editions published, from cloth bound at \$1.50 to the Seaside Library edition at 20 cents. And, as might be expected, the cheapest of all is *The Literary Revolution* edition, which in large type, unabridged, sells for 5 cents in paper covers, or 20 cents in cloth binding. Specimen chapters are sent free to anyone asking for them. It is a source of amazement to look through one of the *Revolution* 64-page catalogues (sent free to any applicant), and note the literary riches to be secured almost "for a song." If you have never seen a catalogue, or have seen none recently, it is worth while to write a postal card and get it. Some extraordinary bargains are offered during the summer months. Address John B. Alden, publisher, 393 Pearl street, New York, or Lakeside Building, Chicago.

LT.-COL. MACPHERSON, as director of militia stores, makes the following report to the Minister of Militia on military clothing:—"The annual supply of clothing required for the militia has been obtained under contract from the Canadian manufacturers, all the clothing, including the Infantry scarlet tunics, being now supplied entirely within the Dominion. Contracts for necessaries and store supplies required for the Schools of Instruction, as well as saddlery and accoutrements to a limited extent, have been entered into this year with Canadian firms. The experiment of producing scarlet cloth in Canada has been attended, so far, with marked success, and reflects much credit upon the manufacturers, the Paton Manufacturing Company, of Sherbrooke, Que., who have made special efforts to supply scarlet cloth satisfactory to the Department. It is worthy of notice in this connection that the several contractors have manifested a praiseworthy desire to supply the Department with clothing equal, if not superior, in quality of material and make to what had formerly been purchased in England."

THE Canada Atlantic Railroad Company have ordered from the Wagner Car Company a fine train of passenger cars, which were expected to arrive in Ottawa this week. The first-class cars are models of perfection. The sleepers are the best kind turned out by the Wagner Car Company. They are all inlaid with rosewood and cherry and will be lighted by electric light. There will be eighteen incandescent electric lights in each car. This will be the first train of cars in Canada that will be lighted by electric light. In addition to lighting the inside of the cars the company have introduced a new feature which is a great improvement on the old style, and will prevent many serious accidents. Many accidents have been caused by people coming out of a well lighted car on to a dark platform, and alighting at a way station in the dark. To prevent accidents of this kind the company will supply their sleepers, which are lighted by electric light, with a light on the platform of each car. When the train is running the light will not be burning, but as soon as a train stops at a station, the conductor, by pressing a button, lights these lights on the platforms of the cars, and by this light passengers are enabled to alight at any station without danger of an accident in the darkness.



Notice to Contractors.

SEALED Tenders, addressed to the undersigned and endorsed "Tender for Steam Heating Apparatus, Custom House, London, Ont.," will be received at this office until 12th September, next, for the erection and completion of a

Steam Heating Apparatus

AT THE

CUSTOM HOUSE, LONDON, ONT.

Plans and specifications can be seen at the Department of Public Works, Ottawa, and at the office of Messrs. Durand & Moore, Architects, London, Ont., on and after Monday, 22nd inst.

Persons tendering are notified that tenders will not be considered unless made on the printed forms supplied, and signed with their actual signatures.

Each tender must be accompanied by an accepted bank cheque made payable to the order of the Honorable the Minister of Public Works, equal to five per cent. of the amount of the tender, which will be forfeited if the party decline to enter into a contract when called upon to do so, or if he fail to complete the work contracted for. If the tender be not accepted the cheque will be returned.

The Department will not be bound to accept the lowest or any tender.

Department of Public Works,
Ottawa, 19th August, 1887.

By order,

A. GOBEL, Secretary.



Notice to Contractors.

SEALED TENDERS addressed to the undersigned, and endorsed "Tender for Steam Heating Apparatus, Infantry School, London, Ont.," will be received at this office until 12th SEPTEMBER next, for the erection and completion of a

STEAM HEATING APPARATUS

AT THE

Infantry School, London, Ont.

Plans and specifications can be seen at the Department of Public Works, Ottawa, and at the office of Messrs. Durand & Moore, Architects, London, Ont., on and after MONDAY, 22nd instant.

Persons tendering are notified that tenders will not be considered unless made on the printed forms supplied, and signed with their actual signatures.

Each tender must be accompanied by an accepted bank cheque made payable to the order of the Honorable the Minister of Public Works, equal to five per cent. of the amount of the tender, which will be forfeited if the party decline to enter into a contract when called upon to do so, or if he fail to complete the work contracted for. If the tender be not accepted the cheque will be returned.

The Department does not bind itself to accept the lowest or any tender.

Department of Public Works,
Ottawa, 19th August, 1887.

By order,

A. GOBEL, Secretary.



TENDERS.

TENDERS addressed to the undersigned at Ottawa, and endorsed "Tender for Toronto Lifeboat House," will be received up to the 5th September next, for the construction of a boat-house for the lifeboat on Toronto Island. Plans and specifications can be seen and forms of tender procured, at this Department, Ottawa, and at the office of the Chairman of the Board of Steamboat Inspectors, Toronto.

Department of Marine,
Ottawa, 18th August, 1887.

WM. SMITH,
Deputy Minister of Marine.

Maw & McFarlane

DUNDAS, ONT.

IRON FOUNDERS, ENGINEERS AND MACHINISTS,

MANUFACTURERS OF

Drop Hammers,

LIFTERS, DIE SINKERS AND PRESSES.

ALL CORRESPONDENCE SOLICITED.

Manufacturing.

THE CANADIAN MANUFACTURER.

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

MR. R. T. SYLVESTER, Rosenfield, Man., has obtained a patent for a nut lock.

MR. F. H. MORICE, Sackville, N.B., has erected a factory for the manufacture of mineral paint.

THE Napanee Paper Company, Napanee, Ont., are making needed repairs on their premises at Newburg.

THE Hamilton Powder Company, Hamilton, Ont., are building a storage magazine at Rat Portage, Man.

MR. ALEXANDER GIBSON, Maryville, N.B., is building a large brick hotel near his cotton factory in that place.

THE Ogilvie Milling Company, of Morden, Ont., have forwarded a shipment of flour, from their Winnipeg mill, to Japan.

MR. GEORGE E. FULL, of Charlottetown, P.E.I., is preparing to build a steam roller process flouring mill at that place this fall.

MR. S. C. ELKINGTON, lately from England, has bought the flouring mills at Fort Qu'Appelle, Assa., and will hereafter operate it.

MR. GEORGE B. TOWERS, St. Catharines, Ont., manufacturer of cotton batting, is making important additions to his premises and plant.

MESSRS. FORBES & Co., Hespeler, are adding another wing to their building, which will be ready for machinery in about six weeks.

MR. W. H. STOREY, Acton, has put in a hydraulic ram at his planing factory for the purpose of supplying his residence and grounds with water.

THE Hochelaga Cotton Manufacturing Co., of Montreal, have given notice of a quarterly dividend of $2\frac{1}{2}$ per cent. on the paid up capital, payable Sep. 1.

BUSINESS in the yarn manufacturing trade is booming this season, most of the manufacturers, though working over time, are unable to meet the demands made upon them.

THE G. & J. Brown Manufacturing Co., Belleville, Ont., recently shipped a large lot of hand cars and other railroad appliances for the Red River Valley Railroad, Manitoba.

MESSRS. McDONALD, KEMP & Co, Toronto, the manufacturers, furnished the Walters patent metallic shingles with which St. Patrick's church, at Ottawa, has been covered.

MR. A. W. GREEN, of Acton, is about to remove to Waterdown, where he has purchased property. We understand that it is his intention to re-establish his knitting business there.

QUEEN VICTORIA has accepted a tete-a-tete china service illustrating the progress of Canada in the manufacture of such wares. The service was made by Pigot & Bryan, London, Ont.

MR. SHEPARD, of Welland, Ont., whose fruit and vegetable canning establishment was recently destroyed by fire, has arranged to start up again, and was to have been in operation this week.

THE Ogilvie Flouring Company, who recently made a shipment of Canadian flour via the Canadian Pacific Railroad and Vancouver, to Japan, are instructed to make similar shipments monthly until further notice.

THE works of the Scotstown Chemical Pulp and Paper Company, at Scotstown, Que., were badly damaged by fire a few days ago, a considerable part of the machinery being saved, though the building was destroyed.

THE city council of Ottawa has ordered a Langevin extension fire ladder for that city, at a cost of \$1,500, the apparatus to be capable of an elevation of 75 feet. The inventor of this ladder is a son of Sir Hector Langevin.

NOTICE has been given in the city council of Vancouver, B.C., that a resolution would be introduced offering \$25,000 premium for the establishment of an iron furnace, and \$10,000 for a foundry and machine shop in that place.

GORDON & KEITH's furniture factory, in Halifax, N.S., one of the most extensive of its kind in the Maritime Provinces, was totally destroyed by fire a few days ago, together with all the contents. The loss is estimated at \$25,000.

THE Retort Gas Burner Company, Montreal, have applied for incorporation with \$99,000 capital stock. Messrs. James Baxter, W. H. Olive, J. E. Elliott, T. P. Butler, Thomas Pringle and W. J. McLean are the Montreal incorporators.

THE St. John Nut and Bolt Company, St. John, N.B., are erecting a new building at their works, 90 by 40 feet, and otherwise improving their premises and plant, to enable them to keep abreast with the orders that are pouring in upon them.

MR. JOHN HARRIS, son of Mr. Alanson Harris, and member of the well-known firm of A. Harris & Son, manufacturers of agricultural implements, etc., Brantford, Ont., who had been ill for some time, died at his residence in Brantford, Aug. 25.

MR. G. TAYLOR, M.P. is the president and manager of the recently formed company at Gananoque, Ont., which will manufacture buggy wheels. It is calculated that the company will manufacture 10,000 sets of wheels the first year.

THE Beaver Mine Company, Port Arthur, have shipped, or have ready for shipment, \$100,000 worth of concentrates and \$75,000 worth of smelting ore, making 100 barrels of concentrates and 75 barrels of smelting ore. — *Winnipeg Commercial*.

ALEXANDER, KELLY & Co., Brandon, Man., have closed their mill for repairs. All the old machinery is being overhauled, and new machinery put in. More warehouse room will also be added.

It is rumored that a number of practical millers of Huntington, Pa., will erect a large water power flouring mill at Minnedosa, Man., this fall. If the mountain will not go to Mohammed, Mohammed must of necessity go to the mountain. So much for the N.P.

A FEW days ago the scaffolding around the new addition being built to Forbes' woolen mills, at Hespeler, Ont., gave way and precipitated a number of workmen to the ground, a distance of about 40 feet. Fifteen men were injured, one of whom has since died.

MESSRS. W. BELL & Co., Guelph, Ont., are building a four-story brick addition to their organ factory, covering a space 108 by 42 feet, which will afford them facilities for employing about 100 more hands than they now have at work, or a total of about 450 hands.

THE United States and Canada Phosphate Mining and Fertilizing Company has been organized at Hallowell, Mo., having \$200,000 capital. The Company has purchased 200 acres of land in Ottawa county, and will proceed at once to mine phosphate and manufacture fertilizers.

CAPTAIN DOUGLAS, the representative of the Nordenfeldt guns in Canada, has received an order from Mr. A. P. Binder, who represents a company who are engaged capturing porpoise in the Gulf of St. Lawrence, for a 7-barrelled Nordenfeldt gun to be used in killing porpoises.

MESSRS. E. P. ALLIS & Co., Milwaukee, Wis., have the contract for furnishing the machinery of the big flouring mill now being built at Moosomin, Assa. Much of the machinery is on the ground, and it is expected that the mill will be ready for operation during the present month.

THE Brown steam engine, built by Mr. John Perkins, Toronto, for the oatmeal mill of Mr. A. Barclay, 192 King street east, this city, has proved a most gratifying success, and is giving great satisfaction. Mr. Perkins is placing considerable new shafting, pulleys, etc., in Mr. Barclay's mill.

THE Coaticook Braid Co., Coaticook, Que., intend enlarging their premises next season. They are making a splendid line of braid, and are deserving of the patronage extended to them. This industry, we believe, the only one of its kind in Canada, and is a direct offspring of the National Policy.

A NUMBER of operatives from Lancashire, Eng., cotton mills are now at work in Park's cotton factory, at St. John, N.B., and more are coming. Several of the men have their families with them. A number of additional new looms and new spinning machinery is being placed in the Park's new factory at Courtney Bay.

A NUMBER of car loads of lumber arrived at the station for Mr. Heaps, on Saturday last, and more will follow. The large factory is beginning to look a little more like business. The large trees in front have been cut down and the fence cleared away. The large archway has also been partly bricked up. — *Oshawa Vindicator*.

A PORT ARTHUR special says:—Malcolm McGregor and Charles Gehl have just returned from the Attie, Sand and Round Lake mining regions. They say that a new and rich mining region has been discovered about forty miles west of the Great Beaver mines. Silver and iron abound throughout the entire region.

NEARLY all the mills in the country that depend solely upon water for power have been greatly troubled this season on account of the long drought. This, however, has had the effect of awakening them to the advantages of steam power, and the majority of them are discarding their water wheels and erecting steam engines.

At the recent annual meeting of the Canada Anthracite Coal Co. the following officers were elected.—President, McLeod Stewart, Ottawa; vice-president, Senator Thorp, Wisconsin; treasurer, O. H. Ingram, Wisconsin; secretary, W. B. Scarth. Directors—A. Pugh, St. Paul; John Stewart, Macleod; Archibald Stewart, Ottawa.

FARMERS are holding back their wool this season in hopes of being able to secure large prices. They have already succeeded in forcing it up to an unnatural figure far above its real value, and they will probably hold it a day too long, as manufacturers find it is cheaper, comparatively, to use a good medium foreign wool than Canadian at prevailing prices.

THE Osborne-Killey Manufacturing Co., Hamilton, Ont., have recently finished and delivered a 150 horse power steam engine to Messrs. Michael Brennen & Sons, Huntsville, Ont., for their new saw and planing mill just being completed. This is the fourth steam engine built by the Osborne-Killey Manufacturing Co. for Messrs. Brennen & Sons.

AN effort is being made to induce the Alpha Oil Company, of Sarnia, to locate a branch of their works in Windsor, Ont., for the manufacture of gas out of their oil. They are burning the gas in their own establishment in Sarnia, which they claim is superior to coal gas, and which they can furnish to consumers at \$1.00 per thousand cubic feet.

THE suction hose recently manufactured in this city by the Toronto Rubber Company, for the Nova Scotia Wrecking Company, of St. John, N.S., is said to be the largest suction hose ever made in this country. It is 120 feet long and 10 inches internal diameter, and weighs two tons. Accompanying it were several sections of discharge hose of same diameter.

THE Snow Drift Baking Powder Co., of Brantford, Ont., made a shipment a few days ago of three tons of baking powder, consigned to one firm in Winnipeg. This is a heavy shipment, and shows in what high repute the firm's goods are held. The output of the Snow Drift Baking Powder Company is steadily on the increase and now reaches nearly seven tons per month.

MR. JAMES PROVAN'S hay carrier has met with greatest success the present season. He has sold nearly six hundred machines so far this year. From every quarter reports come in that the machine is working well, and in no one instance has it failed to give satisfaction. It is without doubt the most perfect invention of the kind ever placed on the Canadian market.—*Oshawa Vindicator*.

MESSRS. FERGUSON, ALEXANDER & Co., Montreal, have bought the interest of the late firm of McDougall, Logie & Co. in the Glasgow Lead and Color Works of that city, and will continue the manufacture of white lead, paints, oils, varnishes, etc. They are introducing into their works a considerable quantity of new machinery, with all the latest appliances for economical working.

MR. JAMES McPARTLAND, of Messrs. Campbell & McPartland, St. John, N.B., has been granted a patent for a flush valve for water closets, for which it is claimed that it possesses many advantages over other systems now in use. It can be attached to any system, is inexpensive, prevents unnecessary waste of water, and flushes the basin before and after use.

MR. J. R. REID, president of the Chatham Street Railway Co., Chatham, Ont., is in communication with the Mead Electric Light Co., of Toronto, in regard to their new system of electric lighting and motive power, whereby a dynamo is absolutely dispensed with and a simple chemical battery substituted therefor. It is claimed that the Mead is the best and cheapest system of propelling street cars.

MESSRS. EDWARDS & McRAE, Cookshire, near Sherbrooke, Que., have their new roller process flouring mill nearly ready for operation. The mill is of 50 barrels a day capacity, is operated by a 35 horse power steam engine, and cost about \$8,000. Wheat will be brought by rail from Manitoba to the door of the mill, and the sur-

plus product, after supplying the local demand, will go by the short line to lower ports.

MESSRS. ROYNS & SONS, Welland, Ont., have been giving exhibitions of their patent fire escape, which have been very successful. The apparatus is placed on a suitable truck, to be drawn by horses, and is easily handled, the weight being only 3,500 pounds. At a recent exhibition from the time the truck was wheeled into position until the escape had been extended, and two men at the top of it, was only 45 seconds.

THE Kingaton Hosiery Company have introduced a novelty in the shape of a dyeing machine. It consists of a circular drum, divided into compartments, made to fit inside an ordinary vat, its metallic parts being made of non-corrosive metal upon which acid has no effect. It can be made to revolve at any speed through the dye liquor, thus securing perfect evenness to the goods to be dyed. It is giving splendid results.

A RECENT despatch from Belleville says:—Mining operations in North Hastings are booming. H. J. Ritchie, president of the Central Ontario Railway, will open the Baker mine in a few days. J. B. McMillan, late superintendent of the same road, has bought a gold mine near Bannockburn, which he will operate at once. The ore will be sent to be crushed at Malone. The St. Charles mine is also to be opened at once.

MESSRS. PARK BROS., Chatham, Ont., have the contract for supplying the Chatham Dredging Company, of that place, with the necessary pumping machinery to be used in reclaiming certain lands in that section. The pump wheel will be 28 feet in diameter on an 18 foot 7 inch shaft, the fly-wheel weighing three tons. The boiler will be 72 inches in diameter and 150 horse power, and the steam engine will be 120 horse power.

AT the recent Colonial Exhibition in London, the Canadian exhibit of musical instruments surprised the British public, and many of the most prominent musicians, including Dr. Stainer, spoke in eulogistic terms of the pianos manufactured by Messrs. Heintzman & Co., of Toronto. The thirty-seven years that this concern has been engaged in the manufacture of pianos have resulted in the establishment of a most enviable and honorable reputation.

MESSRS. SAMUEL CLARE and Edward W. Smith, of Winnipeg, Man., have patented a billiard cue chalk; Mr. Thomas R. Brough, of Gananoque, Ont., a centre board for sailing vessels; Messrs. F. W. Fuller and B. S. Synder, of Port Elmsley, Ont., improvement in bobbin holders for textile machinery; Mr. P. G. Walker, of Westwood, Ont., for improvement in sleigh brakes, and Mr. Matthew Wainman, of Thorah, Ont., an improved churn.

A LARGE amount of new machinery has been added to the Marysville cotton mill during the past two or three weeks, and more has just arrived. Two large cotton mules, of 800 spindles each, have been received from England for the mill. Of the 200 looms that have been ordered, 75 only have reached here as yet. The remaining 125 looms are expected shortly. Upwards of \$2,000 were paid in duty for the cotton mill machinery received here yesterday.—*St. John (N.B.) Globe*.

THE Dominion Show Case Manufacturing Company, Toronto, have made some changes in the personnel of their management, as will be observed by their business card in another page. This concern are running to their full capacity on orders for their show cases, a great many being in course of construction and already finished for displays in the Dominion and Industrial Exhibition and in the Permanent Exhibition of Manufactures of Messrs. Nicholls and Howland, on Front street, this city.

THE entire production of petroleum in the United States last year was equal in fuel capacity to 6,000,000 or 8,000,000 tons of coal. From this it is argued that if it be granted that petroleum is a good substitute for coal as a heat producer it would cut a very small figure, owing to the very small quantity of coal it would substitute. Those who look at the subject in this light appear to overlook the fact that the production of petroleum could be very greatly increased if demand required it.

MICHAEL BRENNEN & SONS, lumber merchants and saw and plant ing mills proprietors, are building a new saw mill on their timber limit, Huntsville, Ont. This mill will have a capacity of about 75,000 feet per day and will be the largest of their three mills. The mill building is now up and the two 75 horse power boilers are in place. The engine of 150 horse power is being now shipped. The weight of the steam machinery will not be less than 50,000 pounds.—*Hamilton Spectator*.

AN effort is being made to, if possible, induce the Rathbun Company of Deseronto to make Lindsay their headquarters for this district. The company are looking for a site on which to build a large

wood-working shop and factory and possibly a saw mill. Reeve Smyth for the town council, and in the absence of Mayor Walters, has had some correspondence with the company and has submitted such inducements towards influencing the location of the factory here as are afforded by the local by-law in granting exemptions from taxation.—*Lindsay (Ont.) Post.*

THE paint and white lead works of Messrs. Wm. Johnson & Co., Montreal, were destroyed by fire last week entailing a loss of about \$30,000. The factory was embraced in a new four-story and an old three-story building, facing on the canal, and forming three sides of a square. About 75 hands are thrown out of employment. The firm give notice that the destruction of their works will not in any way interfere with the delivery of goods or the filling of orders; and they expect to have their factory again in operation running to their full capacity in a few days.

THE Gutta Percha & Rubber Manufacturing Co., of Toronto, are making considerable additions to their works at Parkdale, near this city. They have established a warehouse on Yonge street, in addition to their storehouses at their factory, where they display specimens of all their products, and carry large quantities of goods in stock. This company say that they are the largest manufacturers in the world of vulcanized India rubber goods for mechanical purposes, such as rubber belting, hose, packing and tubing, rubber, linen, and cotton fire hose, leather belting, etc.

THE new chemical paper pulp works of Messrs. William Angus & Co., at East Angus, Que., are in successful operation and producing about six tons of paper pulp a day, consuming in its manufacture 10,000 cords of spruce wood per annum, a lumber mill operated in connection with the works cutting about 40,000 feet of lumber a day. These works are all equipped with the best and most modern apparatus and machinery, operated by a splendid water power obtained from the St. Francis River, and give steady employment to over 150 men, and during the lumbering season to about 250.

A STRANGE spectacle met the view of pedestrians, whose business took them in the direction of the canal, on Tuesday afternoon, in the shape of an immense boiler, the property of the Toronto Paper Company, of Cornwall, being towed up the canal. It was brought from Antwerp by the steamer *Grasbrook* (White Cross Line), was cast overboard from that ship, having been first made air tight that it might float properly. It is intended to be used for reducing wood pulp to paper and will be lined with lead. It is estimated that its weight will be about forty tons when completed.—*Montreal Gazette.*

MESSRS. THOMPSON & Co., Sherbrooke, Que., manufacturers of bobbins, etc., whose factory was recently destroyed by fire, have purchased a tract of land in that place contiguous to the Grand Trunk depot, and commenced the erection of a brick factory building 92 by 35 feet. In addition to the main building there will be a boiler house, engine house, shaving house, etc. They have ordered machinery of the latest and most approved pattern, and intend to carry on the manufacture of all kinds of turned work, in addition to their ordinary manufacture. They expect to be in full working order this month.

AN Omaha man recently embarked in business and became bankrupt within a week. He started a factory to darn stockings and sew on buttons for young men, old bachelors and others who might have no women folks to look after them. At the offstart he got more orders than he could fill; he hired a lot of nice girls who knew how to do the work, and they did it well, but the enterprise collapsed. The girls didn't become dissatisfied with the work, but they just naturally paired off with the customers when they came for their things on Saturday night, and it kept the minister busy all day Sunday joining them in matrimony.

MESSRS. HURDMAN & Co., the extensive lumbermen of the Chaudiere, are making arrangements for the construction of a new circular saw mill, which will utilize a part of their unused water power in the rear of their office, in Ottawa, and next to the works of the Chaudiere Electric Light Company. The new mill will be used entirely for sawing dimension timber and will be 150 feet in length by 74 m breadth. The building will be of wood and will have sufficient capacity to saw all the dimension timber the firm will be able to turn out. The firm have a gang of men engaged in preparing the timbers for the new structure, and the foundation of the new mill will be started about the middle of September.

MR. JOHN LIVINGSTONE, trustee, Oshawa, Ont., is offering for sale the Joseph Hall Machine Works, in that place. These works cover 140,000 superficial feet of land, the main buildings being of brick, substantially built, two and a half and three stories high.

They are admirably equipped for doing a large agricultural implement, general machinery, or car works business. The premises, machinery, tools, patterns, etc., originally cost over \$200,000. The property is offered en bloc or in parts to suit purchasers. A large quantity of agricultural implements, engines, machinery, machines in process of manufacture, parts of machines for repairs, unsold stock, etc., valued at over \$50,000, is also offered for sale.

MISS EMILIE H. M. CASTON, of Toronto, has been granted a Canadian patent for a process of manufacturing thistle-down into a mercantile material. The machine is described as grasping and securely binding the thistle heads, the process causing the heads to spread out into a ball which may be shaved to imitate plush, or left natural, the roots of the clusters of down showing starry points. When the material is allowed to retain its natural color it has the appearance and lustre of raw silk. The thistle heads when manufactured by this process is specially applicable for milliners' ornaments. Miss Caston has applied for patents on her process in the United States, England, and several of the European States.

THE new woolen mills at New Westminster, B.C., which are now completed, is described as follows: The mill consists of three flats, a basement and an engine house. On the first floor are five looms, 400 spindles, warping machine, press and beaming machine, shears, dresser and ruler. On the second floor one set cards, two operators or dusters, jack and grinder. Third floor, picker, drying apparatus, etc., and store-room. The basement contains the fulling mill, dye vats and washing vats. The engine is 35 horse power, and the boiler is capable of supplying steam for two engines of this size. Hydrants and hose, in case of fire, are on each floor. When in operation the mill will give employment to twenty hands.—*Winnipeg Commercial.*

It will be remembered that for a number of years and up to within a recent date, Mr. Thomas Worwick was engaged in the manufacture of the celebrated Brown steam engine at Guelph, Ont. Deciding to retire from business Mr. Worwick sold out his concern, which was transferred to parties in Toronto, but becoming tired of an inactive life he has accepted the position of mechanical superintendent of Mr. John Perkins' Toronto Engine Works, this city, and will give his personal attention to the construction of the Brown engines which Mr. Perkins will hereafter build, and with which he is so entirely familiar. The fact that Mr. Worwick superintends the construction of Mr. Perkins' Brown engines will be considered a guarantee of their excellence.

MESSRS. D. MORRICE, SONS & Co., manufacturers' agents, Toronto and Montreal, handle the products of the following named concerns: The V. Hudson Cotton Mills Company and the Ste. Anne Spinning Company, both of Hochelaga, Que.; the St. Croix Cotton Mills, of Milltown, N.B.; Auburn Woolen Mills and Blythe Woolen Mills, of Peterborough, Ont.; Trent Valley Woolen Manufacturing Company and Campbellford Woolen Company, of Campbellford, Ont.; James Wattie, Valleyfield, Que.; Pemman Manufacturing Company, Paris, Ont.; Jonathan Ellis, Port Dover, Ont.; Conticook Knitting Company, Conticook, Que.; Glen Tay Woolen Mills, Glen Tay, Ont.; Strathroy Knitting Company, Hamilton, Ont.; Beatty & Henderson, Merriton; and M. Malcolm & Son, Brantford.

MR. WILLIAM RUSSELL, of Guelph, Ont., who a few weeks ago sold out the Guelph Novelty Works to Messrs. Auld & Woodyatt, was the recipient a few days ago of a gold-headed cane, a testimonial of the esteem in which he is held by his late employees. In the address which was presented to Mr. Russell it was stated that during all the years of his proprietorship of the works the relations as between employer and employee had always been of a most agreeable character, Mr. Russell having always evinced a deep interest in the welfare of all connected with his establishment, and ever ready to lend a helping hand to any desiring advice or assistance. In replying Mr. Russell said that he had always found that success in business depended upon the harmony existing between employer and employee.

THE additions to the rubber works at Granby, Que., are expected to be erected in the course of a month, when the new machinery will be moved in. The works will probably be in operation by the 1st November, when sixty or seventy hands will be employed at the start, the number to be increased to about 150 as the work people become instructed. Vulcanized rubber clothing will be a specialty of the new establishment, though gossamer clothing will be continued to some extent. Cotton will be the base of most of these clothes, no attempt being made at tweed rubber goods, as the Canadian tweeds are not suited to this product, and the duty on the imported tweeds would make the price too high. The new goods will come into competition chiefly with American products.—*Canadian Journal of Fabrics.*

Messrs. R. L. FETHERSTONHAUGH & Co., 19 Board of Trade Building, Toronto, made a very successful exhibition of the Household fire extinguisher, for which they are agents, a few days ago. A wooden building, 18 by 12 feet, was constructed and filled with inflammable materials, over which a quantity of coal oil was poured. Fire was applied, and when the blaze was at its fiercest Mr. Fetherstonhaugh completely extinguished it in less than a minute. A similar structure was erected near the one above spoken of, the intention being to test the merits of another extinguisher at the same exhibition, but the apparatus didn't seem to operate, and the building would have been entirely consumed if Mr. Fetherstonhaugh, at the request of the fire chief, had not quickly subdued the flames with the Household.

Messrs. BELDING, PAUL & Co., Montreal, manufacturers of sewing silks and all threads for manufacturing purposes, speaking of the Canadian silk industry, say that the great difficulty to be contended with is the low grade of goods required. In nothing is this more apparent than in the comparatively small article of sewing silks. The great demand in Canada seems to be for cheap quality, buyers forgetting that a cheap thread must necessarily be a fine and consequently a weak one. This firm make three grades of spool silk, and of these different qualities the poorest one has by far the largest sale, while at the same time they constantly hear of complaints of poor sewing silk. If purchasers will take the trouble to ask for Belding, Paul & Co.'s make they will be sure of getting a superior article, and just what they want.

WORK at Illicilleweat mines is being pushed with energy, and exceptional evidences of prosperity are evident. Messrs. G. B. Wright & Co. have over half a hundred men at work mining, and many more engaged in building trails through their mines. The mines are situated about three miles from Illicilleweat station, and about 5,000 feet above the C.P.R. track. The ore mined is chiefly silver and is very rich, some samples assaying \$2,000 to the ton; \$700 to the ton is said to be the average assay. Mules are used to pack the ore down the mountain, but Messrs. Wright & Co. propose shortly putting in a wire cable road or cars at an early date. The C.P.R. Company have put in a siding to the foot of the mines and ore is being shipped daily. The crushing and other machinery recently introduced is being worked, and things are booming generally.—*Victoria (B.C.) Standard.*

Messrs. COWAN & Co., iron founders, Galt, Ont., proprietors of the Galt Foundry, Engine and Machine Works, and manufacturers of all kinds of woodworking machinery with all the latest improvements, steam engines, Harris-Corliss engines, slide-valve engines, etc., have sent us their 1887-88 price list, the reference to their woodworking machinery being very extensive and comprehensive, embracing about every modern and useful machine used in the woodworking industry. A table is given embracing descriptions of the different sizes of steam engines made by this concern, and their capacities in horse power, embracing both Harris-Corliss and slide valve engines; and the information is also given that boilers of the required size or horse power are supplied to suit purchasers, the finish and workmanship of which are first-class, the best mechanical skill and experience being employed in their construction.

MR. CHARLES M. GREEN, now at 53 Richmond street east, Toronto, finding his present place of business too small, has obtained the three-story and basement building on Bay street, near Front, 102 feet deep and 35 feet wide, which is being fitted for his occupancy, and which will be ready for him early in October. In addition to his present plant he will introduce a full equipment of metal spinning and other machinery, and will give employment to about 100 hands. Mr. Green succeeded to the Toronto Light Lamp Manufacturing Co. last October, at which time he employed only five hands—at this time he employs some 40 hands. His products embrace stove urns and ornaments, stove knobs, hinge pins, foot rails, etc., carriage lamps, rim bands and carriage hardware, Light King, Wizard, and Matthews' student lamps, kerosene burners, fancy brass goods, door knobs, bell pulls, etc. There will be a fine display of these goods at the Dominion and Industrial Exhibition.

MR. S. D. RANDALL, of Bothwell, on Friday last, took from the Wagon Works fourteen farm wagons fastened one behind the other by the tongue and drawn by three spans of horses. He finds it much cheaper to haul them to Bothwell by horses than to ship them by rail. Mr. Randall has purchased of the Chatham Manufacturing Company, since spring, sixty wagons and found sale for them all. It is estimated that if every twenty square miles of Ontario no better settled than the territory worked by Mr. Randall was as well worked as is less than this much territory by him, our wagon

works would be compelled to increase its capacity very materially to supply the demand for Ontario alone. It speaks well for the Chatham wagon that, just as sure as one can be introduced into a settlement, the whole settlement goes in for them. Mr. Randall said at starting in the spring he intended making \$1,000 by selling Chatham wagons this season, and he says the prospects are good of doing so.—*Chatham Planet.*

THE Lawrence Machine Company, of Lawrence, Mass., have just been awarded the contract for one of the largest pumping plants ever planned in this country. The plant is for the city of Montreal, P.Q., and consists of four centrifugal pumps, each with a discharging opening of 24 inches diameter, and capable of handling 18,000 gallons of water per minute, and four similar pumps of 16 inches discharge opening, with a capacity of 7,000 gallons per minute. Thus the four 24-inch pumps have a combined capacity of 72,000 gallons per minute, 4,320,000 gallons per hour, 103,680,000 gallons, or 386,000 tons of water per day of 24 hours, and the four 16-inch have a combined capacity of 28,000 gallons per minute, or 1,680,000 gallons per hour. These pumps are contracted for by the Inundation Committee of Montreal, and are designed to pump the sewage of the city over the walls and dykes now in process of erection, to protect the lower portions of the city from the annual inundation caused by the floods and ice gorges of the St. Lawrence river. *American Manufacturer.*

Messrs. CLARE BROS. & Co., Preston, Ont., have sent us their new descriptive catalogue of stoves, ranges, hot-air furnaces, agricultural furnaces, hollow-ware, registers, etc., manufactured by them. In the introduction to the catalogue they call attention to the large number of new lines of patterns which they have added to their assortment, most of which are new in principle and construction, and not before offered to the trade. Mention is made of extensive additions having been made by the firm to their buildings and machinery, rendering their facilities for manufacturing unsurpassed; and that being favorably situated as a shipping point, and their stock and capacity large, they can forward goods promptly. The goods illustrated are the Marvel range, for coal or wood fire in four sizes and every desirable variety of style, the fire box being so arranged that either wood or coal may be burned, as desired; the Perfect reservoir range, a most artistic and attractive article, in similar sizes and styles as the Marvel; Fame, wood or coal cook; Grand Perfect, cook, for wood; Acorn, Diamond, Kremlin, Consort, Maple Leaf, New Republic, and Tribunal, all excellent cooks of various styles; Prize Gem, a parlor heating cook; Harvard, a cottage heater; Cone Disc, a powerful heating cannon stove; and Fancy, Sunflower, and Fire King, attractive box heaters. A full line of agricultural furnaces, stoves, hollow-ware, etc., are also shown, as well as the Hilborn wood furnace, made in eight sizes; the Waterloo self feeding coal furnace; the Pleasant Home furnace with low radiator, and a number of elegant hot-air registers. The catalogue embraces some 60 pp., the artistic and mechanical execution of which is equal to any similar thing in the trade. Accompanying the catalogue is a wholesale price list of convenient size, for the information of dealers.

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NICHOLLS & HOWLAND, TORONTO.

We invite attention to the following particulars :

Under the pressure of keen competition, economy in the manufacture of goods has been a constant source of study, and in most establishments every avenue of waste has been closed, and every perfected method of production has been adopted.

It is far different with the *distribution of goods*, and it is the very necessary economy in this direction that we have in view, as it matters not how cheaply goods may be manufactured if the expense of selling them is so great as to swallow up most of the margin of estimated profit.

A number of outside firms now have, and many more are finding out the necessity of having, a branch office in this city. In many cases such offices are located on a side street, and are visited only by those who go there purposely on business bent. In maintaining such offices expense has to be incurred for salaries, rent, light, heat, caretaking, telephone, etc., etc., and no matter how the expense of each item is curtailed, the annual cost is bound to be a large one.

It is our object to afford a practical arrangement whereby this unavoidable expenditure may be *largely* reduced, while at the same time the benefits sought to be attained will be very much greater. For a moderate rental we offer every advantage of a private branch office, with the additional advantage of being represented in a trade centre or "commercial exchange," where an exhibitor's goods will be seen by thousands of business men throughout the year. To an appreciable extent our Exhibition will change the existing order of things, as in many instances the customer will visit the agent instead of the agent having to hunt up the customer.

The Permanent Exhibition will be open, free to the public, every week day.

Extensive advertising will keep the exhibition and its advantages fresh in the minds of the people.

Power and shafting is provided for exhibitors who may wish to show machinery in operation.

Instructed attendants will be in charge for the purpose of explaining the merits of each exhibit to interested visitors.

It is designed to supply the long-felt want of a central exchange, wherein goods can be kept on show for the inspection of the thousands who come up month after month to this commercial metropolis.

It is also in contemplation to provide, for the convenience of outside manufacturers, and for city merchants and brokers, suitable accommodation for meeting and transacting business, and which may be designated as a "CHAMBER OF COMMERCE," or "TRADE EXCHANGE." For example, a manufacturer whose works are located in an outside town, but who makes periodical business trips to Toronto, can advertise on his office stationery that either himself or representative may always be found, between stated hours on certain days, at the Permanent Exhibition. Other particulars, such as accommodation for trade sales, etc., will be made public at a later date.

DIRECTORY OF EXHIBITORS:

The following firms are already represented in the Permanent Exhibition. Their manufactures have a deservedly high reputation, and are recommended to the notice of intending purchasers of any of the respective lines in the following list. Prices, terms, discounts, etc., may be obtained from the several firms direct, or from Messrs. Nicholls & Howland, Permanent Exhibition of Manufactures :

- | | |
|--|---|
| <p>Armstrong, J. B., Manufacturing Co., Guelph, Carriage Materials.
 Atkinson, J. A. & Co., Guelph, Ont., Carpets.
 Automatic Refrigerator Co., Ottawa, Ont., Haurahan's Patent Automatic Refrigerators.
 Brunum, The Wire and Iron Works, Windsor, Ont., Wire Goods of all descriptions,
 Railing, Cresting, Fencing, etc., etc.
 Barb & Ellis Co., The, Toronto, Ont., Manufacturing and Wholesale Stationers,
 Ace unit Books, Office Sundries, etc.
 Bertram, John & Sons, Dundas, Ont., Iron and Wood Working Machinery.
 Blake, George F., Manufacturing Co., Boston, Mass., Steam Power Pumping Machinery.
 Boeckh, Charles & Sons, Toronto, Ont., Brooms, Brushes, Woodenware, etc.
 Breithaupt & Co., Berlin, Ont., Leather.
 British George, Eagle Foundry, Montreal, P.Q., Blake Stone Crusher.
 Clare Bros. & Co., Preston, Ont., Stoves and Furnaces.
 Cowan & Co., Galt, Ont., Wood Working Machinery, Engines and Boilers.
 Creelman Bros., Georgetown, Ont., World's Star Knitting Machinery.
 Crompton Corset Co., Toronto and Berlin, Ont., Corsets.
 Lalley, F. F. & Co., Hamilton, Ont., Extracts, Essences, Blacking, and Grocers'
 Sundries.
 Dominion Baby Carriage Co., London, Ont., Baby Carriages and Rattan Furniture.
 Donald Produce Co., Norwich, O.-L., Evaporated Fruits.
 Doty Engine Co., Toronto, Ont., Engines, Boilers, etc.
 Dominion Barb Wire Co., Montreal, P.Q., Barb Wire.
 Dorecourt Twine Mills, Toronto, Ont., Twines and Cordage.
 Dominion Starch Works, Walkerville, Ont., Corn Starch and Laundry Starch.
 Ellis & Keighley, Toronto, Ont., Coffees, Spices.
 Ellis & Co., Toronto, Ont., Manufacturing and Wholesale Chemists and Druggists.
 Ellis, F. W. & Co., Toronto, Manufacturing and Wholesale Jewellers.
 Fenwick & Selater, Montreal, Que., Files and Mill Supplies.
 Gate City Stone Filter Co., New York, Water Filters.
 Globe Tobacco Co., Windsor, Ont., and Detroit, Mich., Tobaccos.
 Gooch & Co., Danville, Que., Leather Belting and Lace Leather.
 Grand & Toy, Toronto, Ont., Tuckey Automatic Letter and Document Files.
 Grand River Knitting Mills Co., Paris, Ont., Smyrna Rugs and Knit Goods.
 Grape Sugar Refining Co., Walkerville, Ont., Syrups and Glucose.
 Hamilton Industrial Works Co., Hamilton, Ont., Wringers, Mangles, etc.</p> | <p>Hart Emery Wheel Co., Hamilton, Ont., Emery Wheels and Emery Wheel Machinery.
 Hay, Peter, Galt, Ont., Machine Knives.
 Hearle, J. G., Montreal, Que., Toilet Soaps and Perfumery.
 Howland, H. S. Sons & Co., Toronto, Ont., Hardware Specialties.
 Howland, H. S., Kleinburg, Ont., Flour.
 Hemming Bros., Toronto, Ont., Fancy Plush Goods and Jewellers' Cases.
 Ingersoll Door Guard Co., Ingersoll, Ont., Patent Door Guards.
 Ireland, F. C. & Sons, Lachute, Que., Breakfast Cereals.
 Ives, H. R. & Co., Montreal P.Q., Fencing, Cresting, Stoves and Hardware Novelties.
 Jarline, A. & Co., Toronto, Ont., Coffee, Spices, and Pure Gold Baking Powder.
 Kerr Bros., Walkerville, Ont., Water, Steam and Gas Valves of Improved Pattern.
 King, H. W. & Co., Georgetown, Ont., Power Knitting Machinery.
 Leslie, James, Montreal, Que., Woolen and Cotton Mill Supplies.
 McCaskill, D. A. & Co., Montreal, Que., Varnishes and Japans.
 Miller Bros. & Mitchell, Montreal, Que., Beauty's Steam Power Hammer.
 Munderloh & Co., Montreal, Que., Watchmen's Clocks.
 Morris, A. W. & Bro., Montreal, Que., Cordage and Binder Twine.
 Morrison James, Toronto, Steamfitters' and Plumbers' Supplies.
 Northey & Co., Toronto, Ont., Steam Pumping Machinery.
 Northumberland Paper Co., Campbellford, Ont., Straw Board and Tanned Paper.
 Ontario Bolt Co., Toronto, Ont., Bolts, Nuts, Spikes, etc.
 Oshawa, Stove Co., Oshawa, Ont., Cooking and Heating Stoves.
 Pepper, T. & Co., Guelph, Ont., Carriage and Wagon Axles.
 Pillow, Hersey & Co., Montreal, Que. (Geo. A. MacAgg, Western representative),
 Nails, Tacks, Bolts, etc.
 Ramsay & Son, Montreal, Que., Plate and Stained Glass, Paints, Oils, etc.
 Robin & Sadler, Montreal, Que., and Toronto, Ont., Leather Belting and Lace Leather.
 Rumpel, Geo., Berlin, Ont., Felt Boots and Shoes.
 Simpson & Co., Berlin, Ont., Furniture.
 Smith, R. H. & Co., St. Catharines, Ont., every description of Saws.
 Stahlshmidt & Co., Preston, Ont., Office Desks, Chairs, School Furniture, etc.
 Storey, W. H., & Son, Acton, Ont., Gloves.
 Toronto Rubber Co., Toronto, Belting, Fire Hose, etc.
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 Watts, A. & Co., Brantford, Ont., Household soaps.</p> |
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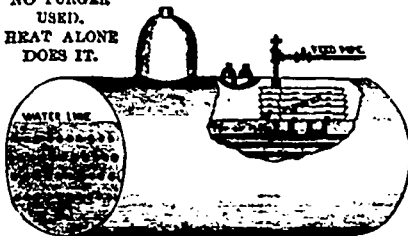
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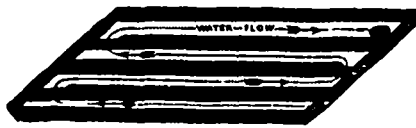
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LAKE WINNIPEG, Capt. M. L. Traumar	3,300
LAKE NEPIGON, Capt. P. D. Murray	2,300

SUMMER SAILINGS, 1887, WILL BE AS FOLLOWS:

FROM LIVERPOOL:

Ship Name	Day	Month	Day
Lake Nipigon	Friday	Aug.	26
"Thamesmore"	Thursday	Sept.	1
Lake Winnipeg	Friday	"	9
Lake Superior	"	"	16
Lake Ontario	"	"	23

FROM MONTREAL:

Ship Name	Day	Month	Day
Lake Superior	Tuesday	Aug.	10
Lake Ontario	"	Sept.	6
Lake Huron	Wednesday	"	7
Lake Nipigon	Tuesday	Sept.	13
"Thamesmore"	Saturday	"	17
Lake Winnipeg	Tuesday	"	27
Lake Superior	"	Oct.	4

*SS. Thamesmore does not carry passengers.

The steamers connect at Montreal by direct rail for all points in Canada, Manitoba, North-West Territories and United States, to which through tickets are issued. These steamers are built in water-tight compartments, and of special strength for the North Atlantic trade.

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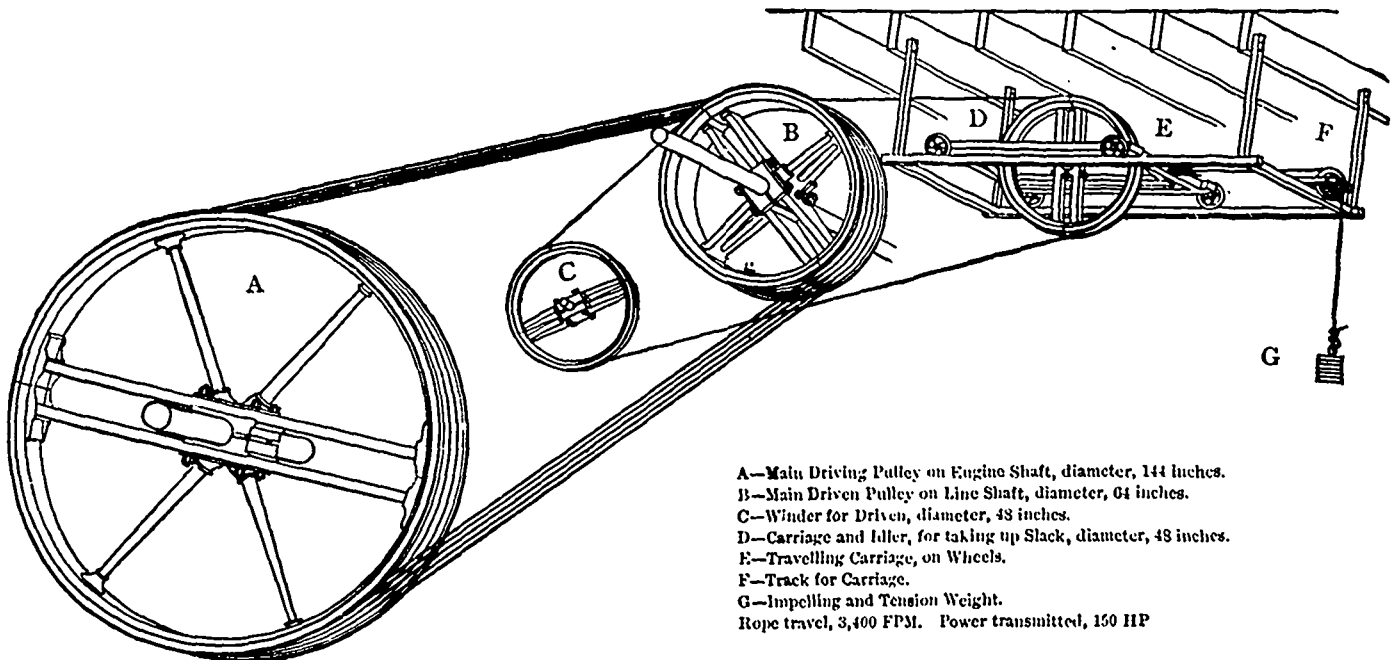
THE TRANSMISSION OF POWER BY ROPES AND THE DODGE PATENT WOOD PULLEYS.

The great advantage of Wood over Iron as a material for belt pulleys (or drums) to transmit power economically, has induced the DODGE WOOD SPLIT PULLEY CO., of Toronto, to introduce grooved hard wood pulleys for the special purpose of transmitting power by ropes (manilla tallow laid), and in this connection Mr. Dodge has taken out Canadian Letters Patent for a system of applying the ropes, adjusting the pulleys, and taking up slack, that is giving the most unqualified satisfaction.

This system of transmitting power by ropes is cheaper and superior to belts in many cases, such as where the driven shaft is at right angles with the driver, also where the drive is perpendicular, particularly when it is quarter twist and perpendicular; also where the driver and driven are close together; also for long drives, such as across a street, or a stream, etc. For transmitting power from an engine to the line shaft this

system is unequalled; steady all the time, not like a heavy belt, which is always more or less flapping, jerking and stretching, then slipping and losing power. It is safe to say that an engine hitched up by the Dodge Rope System will do 25 per cent. more work on the same consumption of fuel than the same engine would do with a belt. We have put up a number of the Dodge Patent Rope transmissions during the past year, all of which are in most successful and satisfactory operation, as certified by the testimonials published in our catalogue of well-known manufacturers who have them in use. Parties who are in want of anything in this line, or who are interested in the efficient and economical transmission of power, are cordially invited to call at our works, 81-89 ADELAIDE STREET WEST, Toronto, and see the ropes and wood pulleys in operation, as we are driving our whole factory by this system.

WITH OUR SYSTEM OF MANILLA ROPE TRANSMISSION is overcome the objection to Wire Rope (because of crystallizing) and gearing, (because of loss of friction) and shafting (because of the liability to get out of alignment, hence loss of power by friction), and a separate engine plant (because of its great expense); on the contrary, with the Manilla Rope System, under the Dodge patents, the power is transmitted with the same efficiency as though the shafts were close together, there being no loss of power by excessive tension, or bad alignment, but simply the friction of the journals to overcome at the carriers, which have a strain of weight of the rope to carry.



A—Main Driving Pulley on Engine Shaft, diameter, 144 inches.
 B—Main Driven Pulley on Line Shaft, diameter, 64 inches.
 C—Winder for Driven, diameter, 48 inches.
 D—Carriage and roller, for taking up Slack, diameter, 48 inches.
 E—Travelling Carriage, on Wheels.
 F—Track for Carriage.
 G—Impelling and Tension Weight.
 Rope travel, 3,400 FPM. Power transmitted, 150 HP

The illustration, as shown above, is one of peculiar construction, and represents an engine transmission of power by a manilla rope, under the Dodge system of patents, and is shown as in actual use at the works of the Dodge Mfg. Co., at Mishawaka, Ind.

The system herewith illustrated and described is one of great interest to all consumers of power. Inasmuch as it takes the place of expensive gearing and broad belts, the advantages to be thus derived may be thus summarized:

To transmit the same power with a rope *versus* a like power with a wide belt, first, requires much narrower faced pulleys; consequently, much less expensive; 2nd, the interest on the money invested in a belt will more than supply the rope, saying nothing about the wear and tear; 3rd, better power, from the fact that all sliding of the belt is overcome, and the rope gear becomes as positive as the cog gear.

The transmission consists of a series of wood split pulleys, and ordinary manilla rope (tallow laid).

The engine used is an automatic, and the size of the cylinder is 18x40, making 90 RPM, and transmits 150 HP., the driver, A, and driven, B, have each several grooves, in which are wound the ropes, the number of wraps being used, as in previous cases, to gain surface in contact, for adhesion of the rope. The winder, C, in this case, is simply used to convey the rope to the slack carriage, to prevent obstruction. This, together with the carriage pulley, D, are each single grooved. The

device for taking care of the slack, and giving the proper tension to the rope, is shown at E, with the impelling weight at G. The slack side of the rope is paid directly from the driver to the carriage, E, which, it will be seen, takes in and pays out slack as it occurs, and acts also for a tension on the rope. The weight at G may be increased or decreased with the power.

This apparatus was erected and started December 2, 1884, and has been running constantly since, with same splice, and transmitting an average of 150 HP.

The rope shows no signs of wear, and looks as though it would last for years to come.

The rope is an ordinary one-inch diameter manilla, and travels at a velocity of 3,420 FPM.

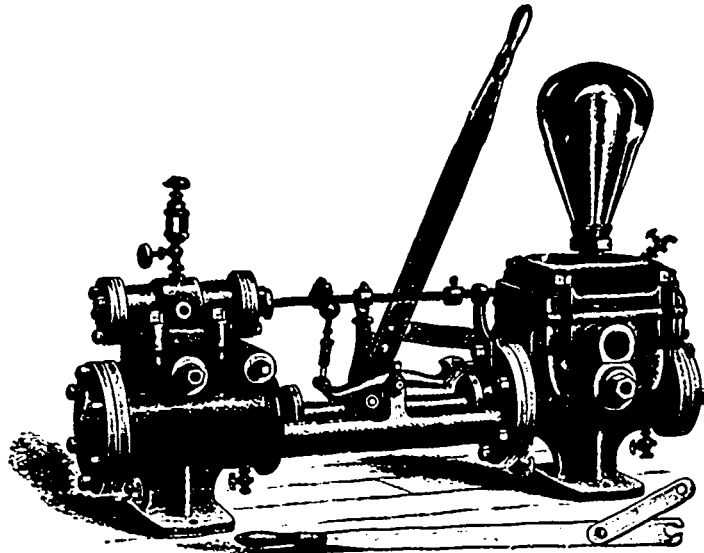
We make the following summary:

Velocity of rope, 3,420 FPM. Transmits, as above, 150 HP. (indicated). The tension on the rope is, therefore, $\frac{3,420 \times 150}{3,420} = 1,408 + 106$ pounds (one-half the weight in the weight-box) = 1,608 pounds; which is the strain on the rope. There being five pulling wraps of rope, hence the strain would be divided five times = $\frac{1,608}{5} = 321$ lbs. strain on the rope = 3½ per cent. of the breaking strain of the rope; it being estimated as safe to use 10 per cent. of the breaking strain of the rope.

[The breaking strain of a one-inch manilla rope is 9,000 pounds.]—*Power and Transmission Journal.*

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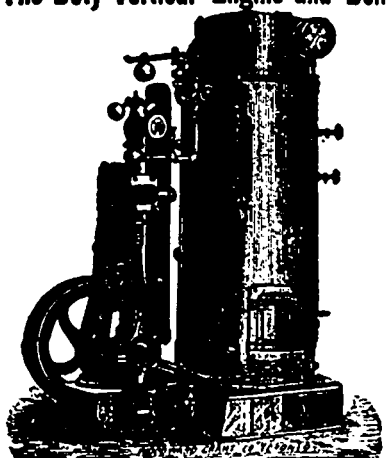
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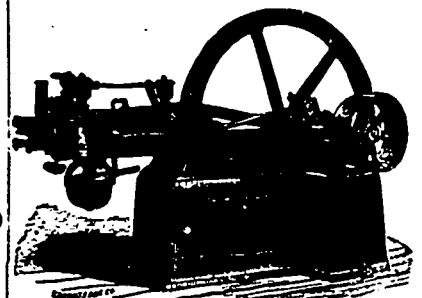
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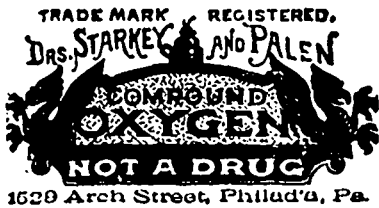
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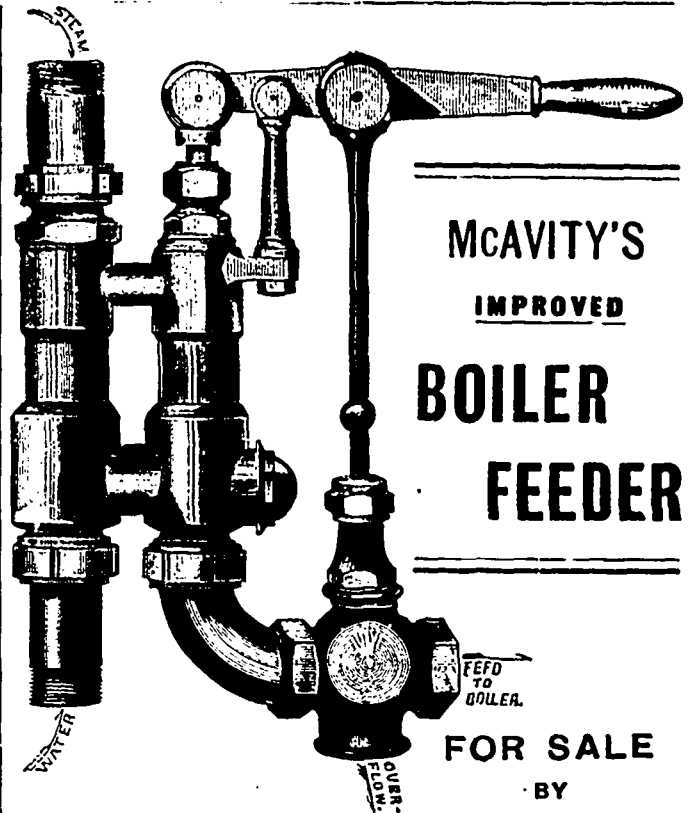
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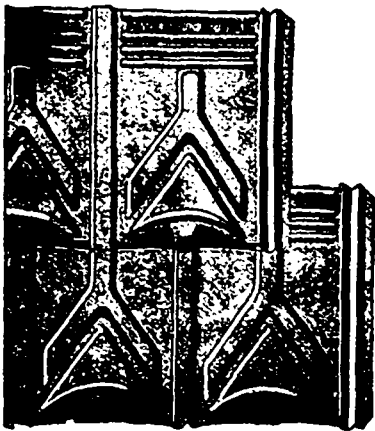
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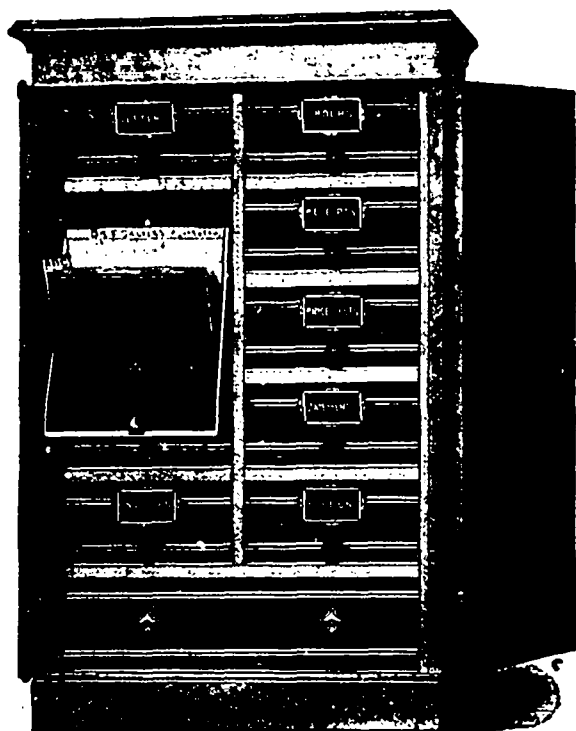


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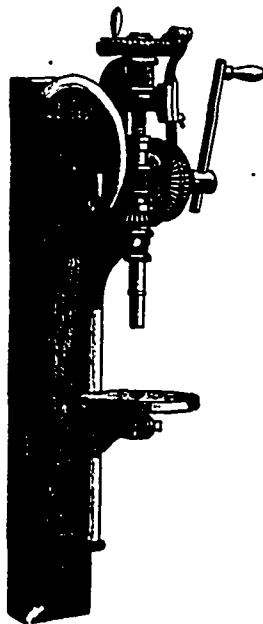
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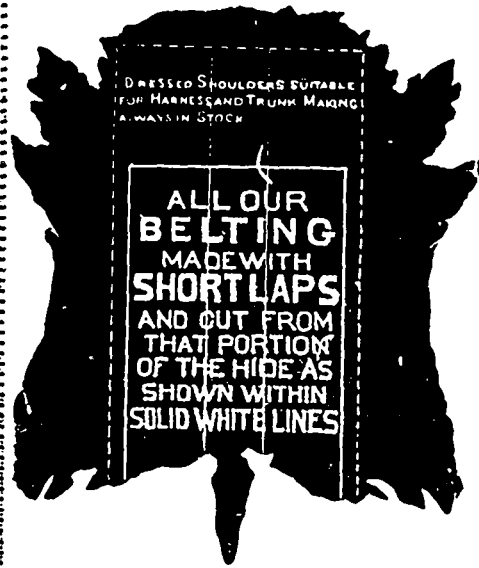
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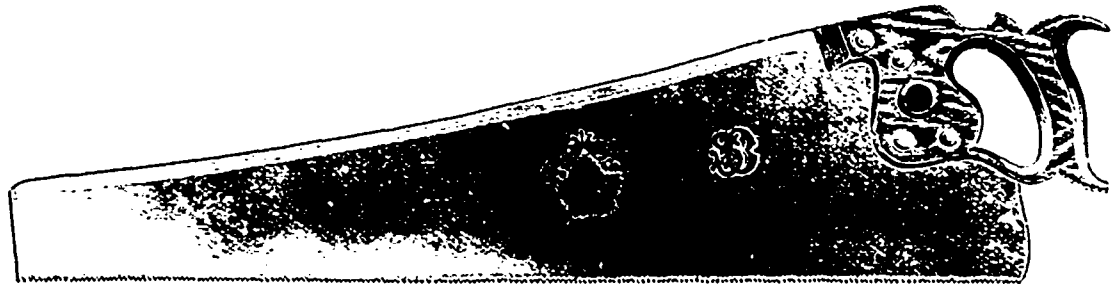
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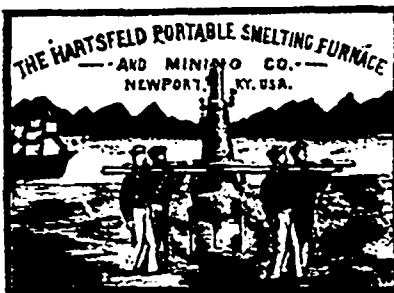
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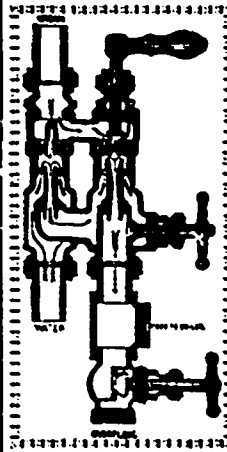
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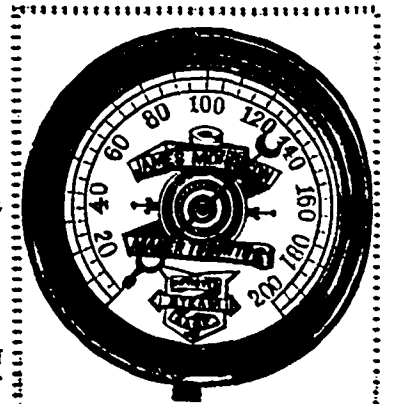
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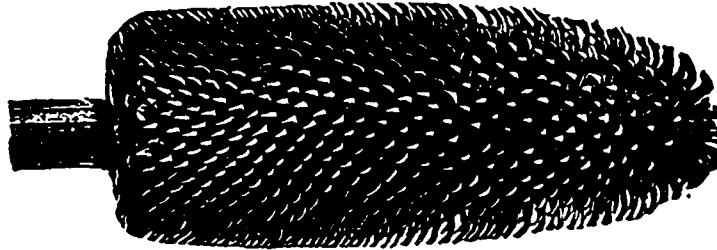
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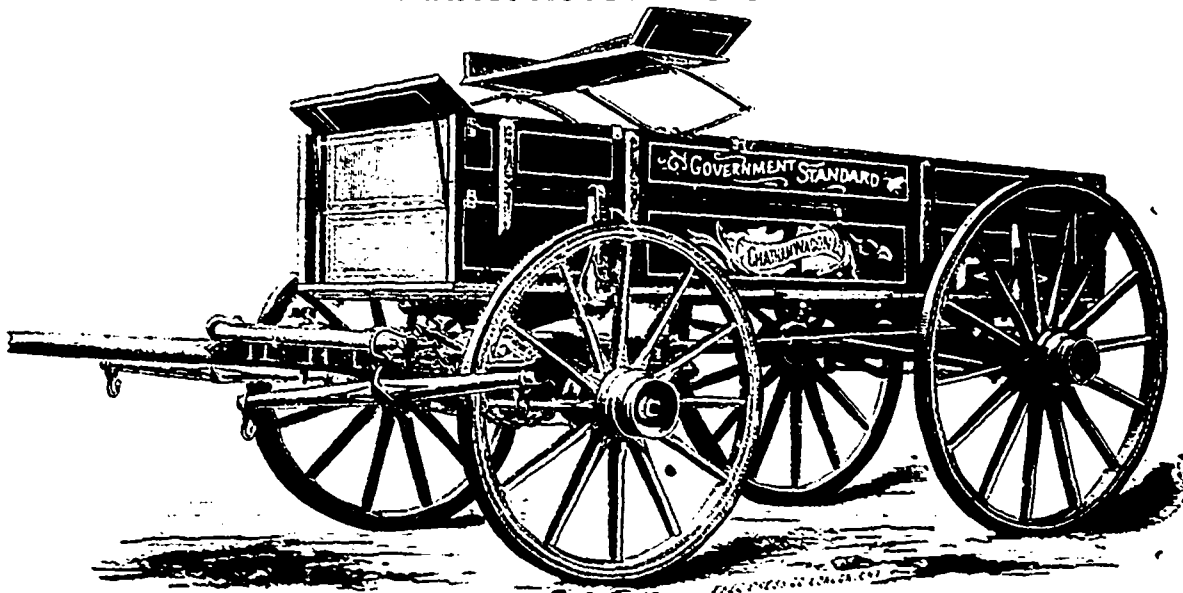
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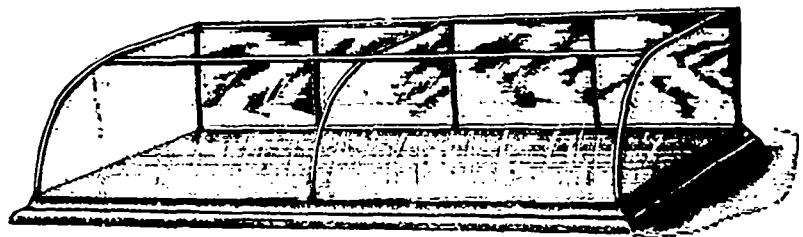
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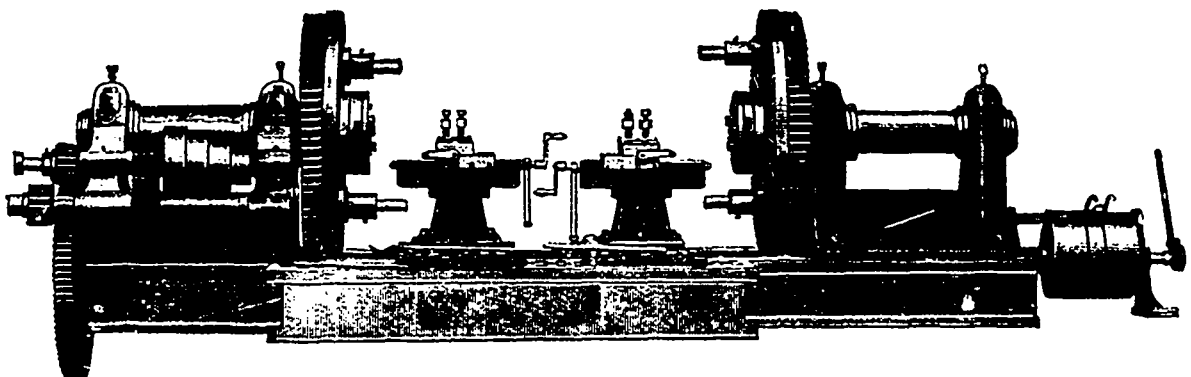
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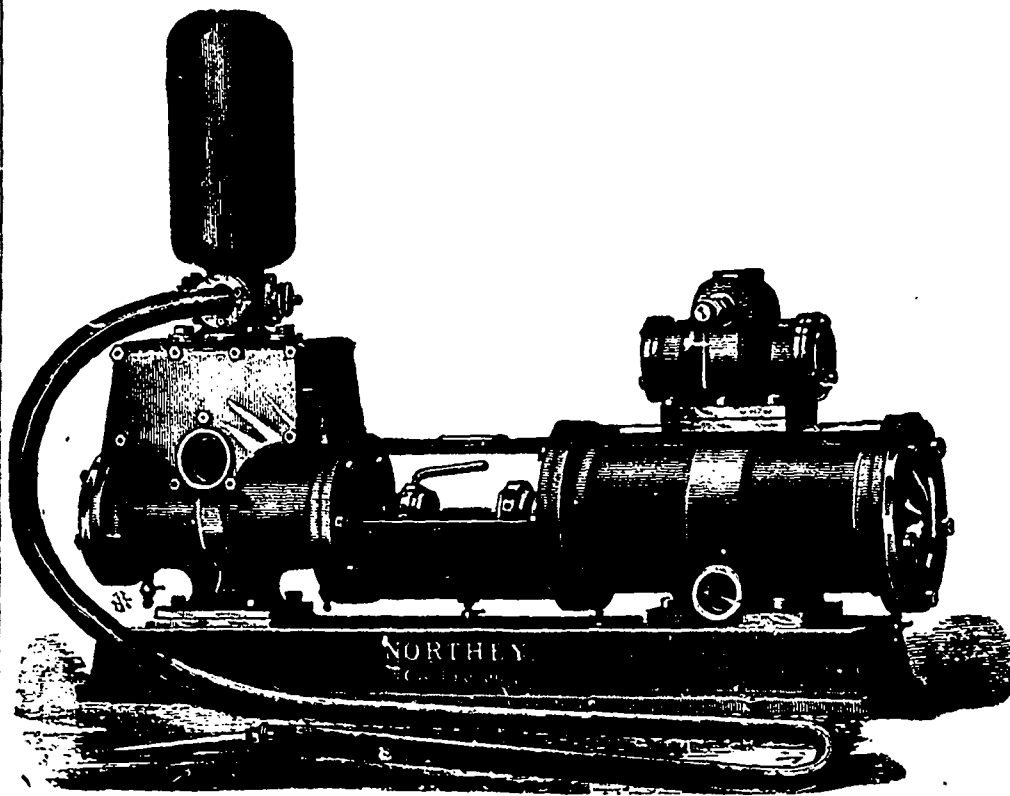
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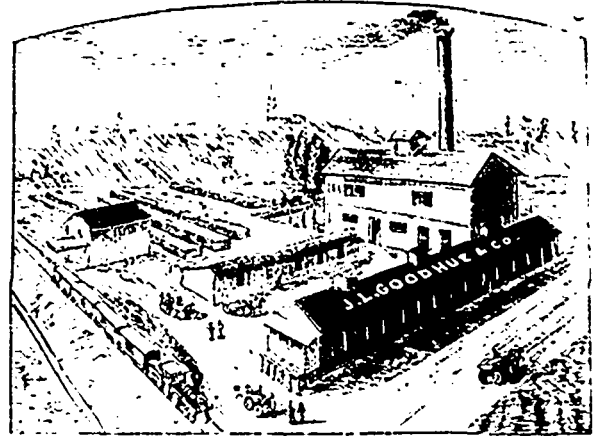
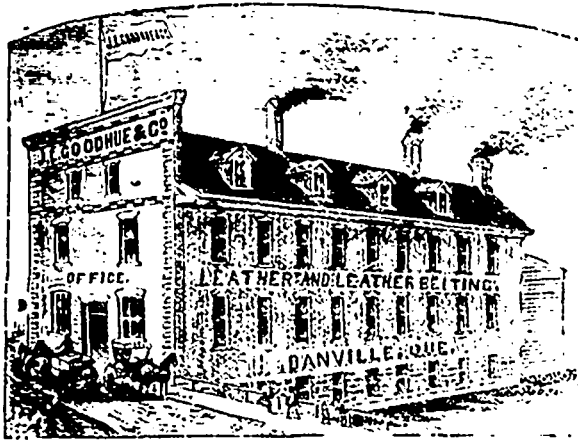
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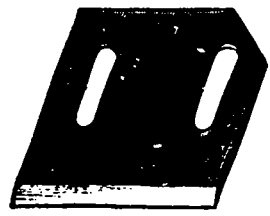


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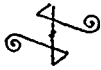
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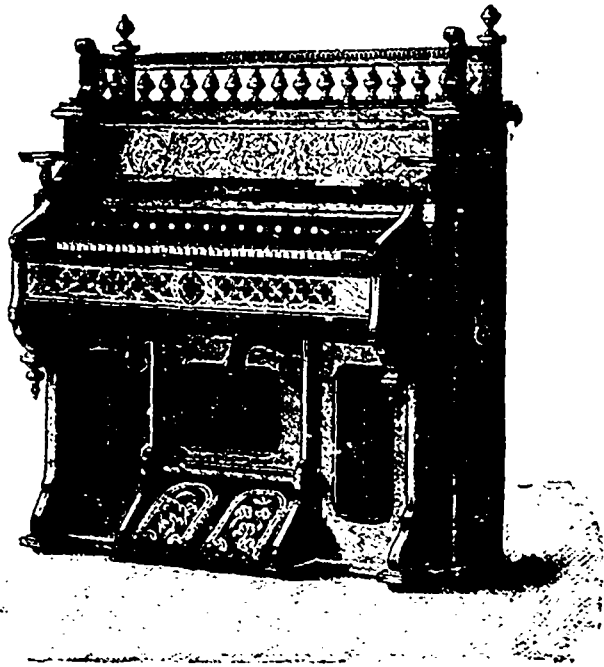
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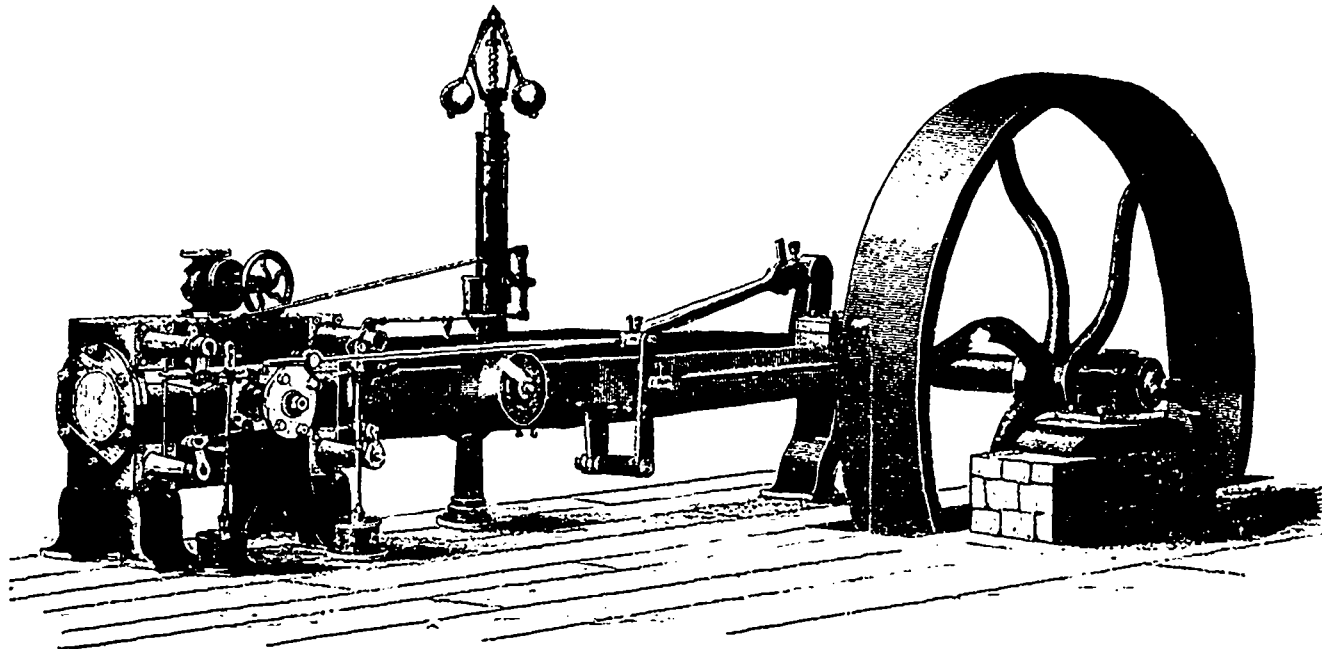
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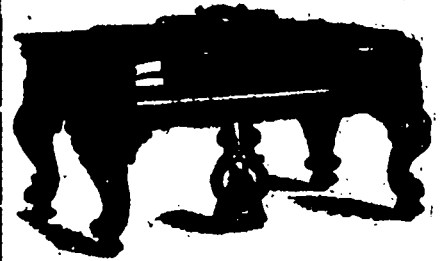
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