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DOMINION MECHANICAL & MILLING NEWS

DEVOTED ESPECIALLY TO THE INTERESTS OF OWNERS AND OPERATORS OF

Flour Mills, Saw Mills, Planing Mills and Iron-Working Establishments.

Vol. VII.—No. III.

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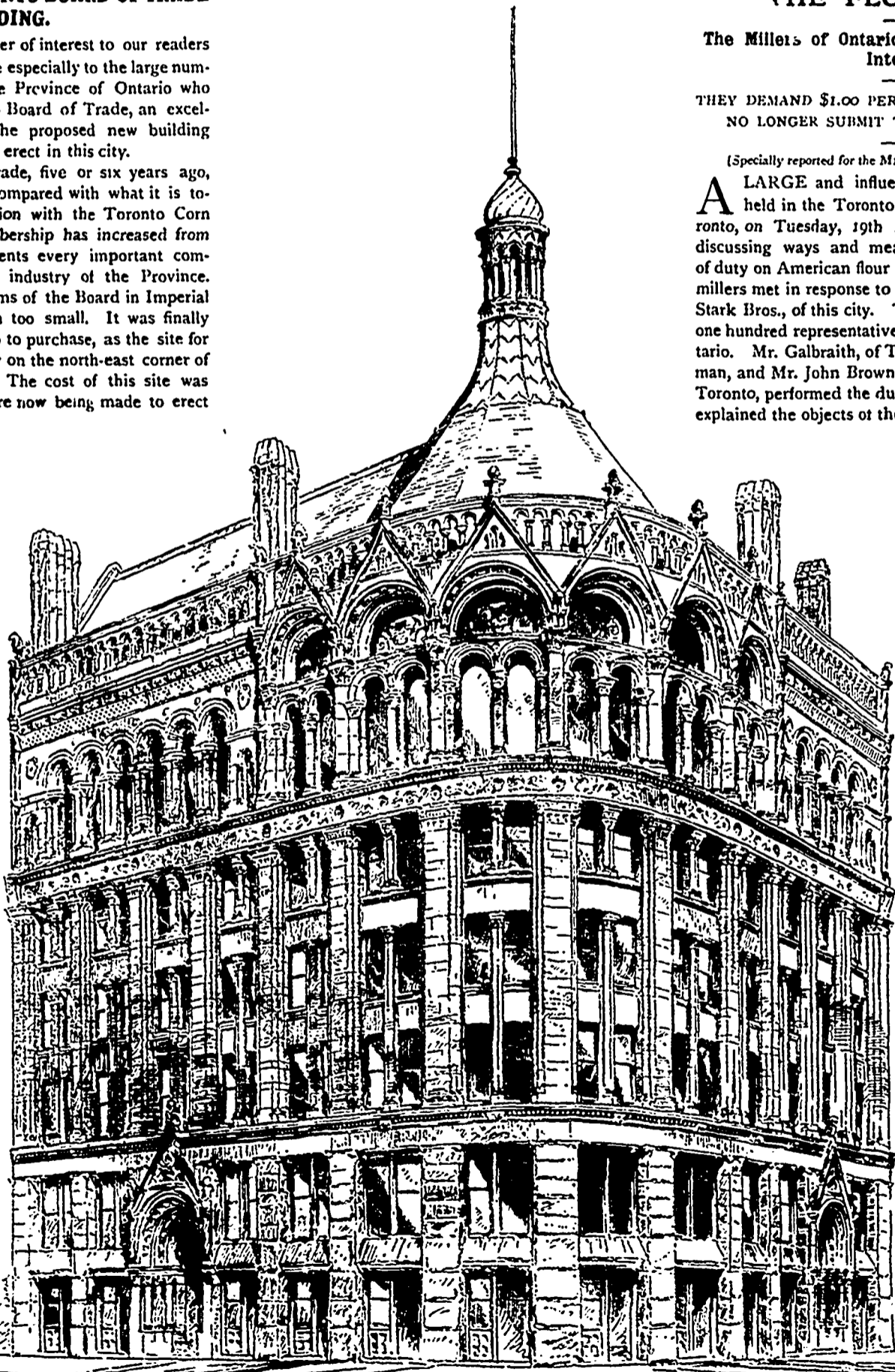
PROPOSED NEW TORONTO BOARD OF TRADE BUILDING.

WE present as a matter of interest to our readers generally, but more especially to the large number of them throughout the Province of Ontario who are members of the Toronto Board of Trade, an excellent perspective view of the proposed new building which the Board is about to erect in this city.

The Toronto Board of Trade, five or six years ago, was an unimportant body compared with what it is today. Since its amalgamation with the Toronto Corn Exchange, in 1884, its membership has increased from 200 to 1000. It now represents every important commercial and manufacturing industry of the Province. For some time past the rooms of the Board in Imperial Bank Buildings have been too small. It was finally decided about two years ago to purchase, as the site for a new building, the property on the north-east corner of Front and Yonge streets. The cost of this site was \$55,000. Arrangements are now being made to erect thereon, in accordance with the design shown in our engraving, a building of some six stories. The Board of Trade requires a large hall of an area of 1925 feet, a reading room of 875 square feet area, a clerk's office of 300 square feet area, a council room of 520 feet area, a grain inspector's room of 300 square feet area. The rest of the building is to be divided into large and small offices. There are to be two elevators placed together, running from the basement to the top. The building is to be heated with steam, and grates are to be placed in all the principal offices.

Mr. J. Cockburn's new mill at Ravenhurst, Ont., will be ready for next season's work.

A measure introduced into the United States House of Representatives by Mr. Farquhar, of Buffalo, provides that no raft of logs or timber shall be brought into or taken out of any harbor port of the United States nor brought into or upon any of the great lakes from any river, stream, port or place in the Dominion of Canada, or any other foreign port. Ottawa lumbermen hope to see it become law, as they claim the bill will simply protect Canadian forests from the American invader.



PROPOSED NEW TORONTO BOARD OF TRADE BUILDING.

THE FLOUR DUTY.

The Millers of Ontario Fully Aroused to their Interests.

THEY DEMAND \$1.00 PER BARREL DUTY, AND WILL NO LONGER SUBMIT TO UNJUST TREATMENT.

(Specially reported for the MECHANICAL AND MILLING NEWS.)

A LARGE and influential meeting of millers was held in the Toronto Board of Trade rooms, Toronto, on Tuesday, 19th February, for the purpose of discussing ways and means of securing an increase of duty on American flour imported into Canada. The millers met in response to circulars sent out by Messrs. Stark Bros., of this city. The meeting comprised about one hundred representative millers from all parts of Ontario. Mr. Galbraith, of Toronto, was appointed Chairman, and Mr. John Brown, of the Citizens' Milling Co., Toronto, performed the duties of Secretary. Mr. Stark explained the objects of the meeting by saying that the

resent was thought to be an opportune time for asking the Dominion Government to increase the duty on flour coming into Canada from the United States, to see if a stop could not be put to the large quantity now finding its way into Canada, and especially into the Lower Provinces. With this end in view, petitions to the Dominion Government had been circulated extensively through the Provinces of Ontario, Manitoba and Quebec, and he had brought these with him to show the meeting, they being largely signed and favorably received by all millers and grain men throughout the entire country. The direct object in calling the meeting was to adopt a unanimous resolution, stating the amount of duty the millers considered was necessary, and to appoint a deputation to go at once to Ottawa and impress their ideas strongly upon the Government now in session. In addition to this, it was intended to have expressions of the

views of those present as to the relative duties on flour and wheat.

Letters of regret at their inability to attend the meeting were read from Groves Bros. of Fergus, John Moody & Son, Dunnville, Sadler, Dundas & Co., Lindsay, James Dunlop, Hamilton, Gould & Son, Montreal, J. Lee, Walkerton, J. E. Edmonson, Oshawa, MacMilling and Brewing Co., Carberry, Man., Todd Milling Co., Galt, Jas. Stark, Paisley, J. B. Renaud & Co., Quebec, Hunt Bros., London, J. A. Williams & Co., Zurich, Meldrum, Davidson & Co., Peterboro', Macfarlane Milling Co., Sherbrooke, Q; P. Quance, Delhi, R. G. Chapman, Teeswater, and James Fair, Clinton. Some of these letters are given in full at the conclusion of this report.

Mr. M. McLaughlin: "I wish to move a resolution in order to have this matter properly laid before this meeting for discussion. The cause that brings us together to-day, has brought us together a good many times before. We have discussed the unjustness of the flour duty as it is at present. In fact the question has been so much discussed, that almost every one present knows about as much about it as I do. It never was a subject for argument, for the word "argument" implies that there must be some reasonable argument on both sides. As I stated a short time ago in a letter to the press on the subject, I was one of a deputation to wait upon Sir Leonard Tilley and his colleagues, and then there was never any argument offered against our demands, and we were never told that our requests were unjust or unreasonable. The only thing that we were ever told was that as regards Manitoba, as that country was being fast opened up, there would be such quantities of wheat produced there that in the face of this, it would be impossible for Americans to import either flour or wheat, and that we wouldn't be able to import wheat at all. And yet, now we are in exactly the same position, and worse, as we were years ago before that country was opened up or developed at all. It is now ten years ago, and doubtless a good many of you who are present will remember the time, when the Government asked us to say what we thought would be the proper duty on flour. At the meeting we held to discuss that question, there was a mistake made. A great many of us, I among the number, thought the proper way to do was to ask the Government plainly for that measure of protection which we thought we would require. But it so happened that we had with us at that time a gentleman of very high standing and considerable political experience, who was an ex Finance Minister I refer to the late Hon. T. W. Gibbs. That gentleman, who was as I have said, a politician and an ex Finance Minister, told us if we asked too much we would probably be disappointed and not get it, whereas if we asked for a moderate measure of protection, say 50 cents per barrel, we would doubtless get just what we asked for without any modification. But there is just this thing to be remembered in this connection. At the time Mr. Gibbs wanted us to ask for only 50 cents per barrel duty on flour, we had no idea what the duty on wheat was going to be, and I am sure if we had known at that time what the duty on wheat would be fixed at, there was not one of us at that meeting who would have voted for asking 50 cents per barrel duty. Well, Mr. Gibbs was a gentleman who had the faculty of bringing those whom he was addressing into his way of thinking, and we asked for but 50 cents per barrel duty on flour, and we got it. Now once is often enough to make a mistake of this kind. Everybody will agree on this point. These petitions which have been circulated are pretty long ones, and have taken a good deal of time in the preparation of them, by Mr. Stark and Mr. Lawder, who are, you will all agree with me, very much entitled to our thanks." Applause. Mr. McLaughlin then read the petition, and moved that "It is the opinion of this meeting that the proper duty is \$1 per barrel, and that \$1 per barrel be asked for." Continuing his address he said, "Now if we can unite on that, and if we can show to the Government of the Dominion that we are united in our demands, we will be successful, for we have the power; and having the power and influence, we are going to get just that duty we ask for. (Applause.) But we are not going to get it by asking for one-third of what we want. (Hear, hear). We have the power; we have the influence; we have justice on our side; we want what we ask for, and we are going to get it, too. (Applause). There is no one here but will accord with me when I say, we have the power. (Hear, hear). If the present Government doesn't grant it—if the present session is brought to a close, without our knowing whether or not we are to be afforded protection under the National Policy as other manufacturing industries are—then I say we should not allow ten days to pass until we organize, and take such prompt and decisive

action as will ensure our getting what we have asked for. (Applause). The millers' interest is as important an industry as there is in Canada to-day. The millers are scattered all over the country. Their interests and those of the farmers are one and the same, for would not the farmers in every locality suffer if the Canadian millers were forced to go under? And let me say here, if we go Ottawa with our demands supported and backed up by the interests of the farmers, as we do, there can be no influence brought to bear upon the Government that will induce them to refuse our requests. It is proposed to send a deputation to Ottawa to press our claims on the Dominion Government, and let us send that deputation direct from this meeting. Then, if that deputation comes back to us with the same old story, let us organize and get some man to work the thing up for us, and make it an issue which must be settled, and settled at once. (Applause).

H. S. Howland: "I second this resolution asking for an increase in the duty on flour coming into Canada, because I feel that in the past the flour manufacturing industry of this country has not been properly dealt with. When the fiscal policy of the present Government, called the N.P., was adopted, we were told that it was a policy adopted for the purpose of encouraging and fostering Canadian manufacturing industries. To-day all other manufacturers are protected to the extent of 25 to 40 per cent. but the milling industry, one of the most important, can hardly be said to be protected at all. Our country is made a slaughter market for our opponents, and you all know very well that the object of the N. P. was to prevent this, and this was not to be permitted at all. Even if we get a duty imposed on American flour coming into Canada, it will not be a protection of 25 per cent., nor anything like it. If we send a barrel of flour to the other side, we must pay over \$1 per barrel duty, and I, for my part, can't see why we should not be protected to the same extent. If the policy of the Government is, and that's just what it is, a policy intended to protect manufacturers, I don't see why the flour millers of the country are not put in a different position as regards duty on American flour coming into Canada. I think that this millers' meeting ought to send a good strong deputation down to Ottawa, and have this deputation insist on our rights, and that we be put on an equal footing with other Canadian manufacturers, as is our due. (Applause).

Mr. James Hamilton, of Glen Huron: "As an old miller, and probably as old a miller as there is here, having built my own mill and afterwards run it myself, and having had a great deal of experience, I can understand a little of what the feelings of millers are, who have been so unjustly treated by the Government of this country of ours. There is no class of men in Ontario to-day that has so benefitted the country, and benefitted the farmers, as the millers have done. They are not found altogether in one or more large cities. They are not all in Toronto, or Montreal, or London, or Ottawa, or Guelph, or in any other place, but they are scattered all over the country wherever there is wheat to be ground, and water power to be had. Every man in the country is benefitted by the millers, and I don't see why the Government of the country has taken such a stand against us. But I believe if the millers have been badly treated in the past, it has been to a great extent their own fault. They should know what they want, and be a solid body when they ask for it, and then they will get it. When at St. Johns, N. B., a few years ago, I saw a cargo of Ontario flour arrive there for sale, but hardly had it been unloaded before three or four cars of American flour was thrown right on top of it, and had to be sold before the Ontario flour could have any show at all. What we want now to do, is to place our grievance before the Government, and tell them just what we want, and then we will get it, for the millers of Canada are a power and carry a weight with them—not only the big millers, but also the small mill owners. One dollar per barrel duty is not enough to compensate us for the way we have been treated in the past. I feel that millers ought to get their just rights, and I am sure they will, too, if they ask for what they want and are entitled to have. There are, of course, a few Quebec millers and flour men who may not see things as we see them; notwithstanding this fact, we ought to, and I am sure we will, carry weight with the Government, and will get our equal rights along with every other Canadian manufacturer. (Applause).

Mayor Peplow, of Port Hope, said: "This is the first meeting of this kind I have ever attended. I may state I am heartily in accord with the sentiments as expressed by previous speakers at this meeting. Before any duty was put on at all, we were able to compete, favorably, with the American millers. I am a free trader, and would like to have the same market again,

but as the Americans have put up a fence in the shape of a duty to keep us out of their market, I think we ought to put up just such a fence of the same height on our side, to keep them out of our market. We have a right to go on this principle, that if we can't have part of their loaf, we have no right to allow them to have the whole of ours. To-day we come into competition with the Americans' flour in Canada at almost every turn, and more especially in this true of low grade flours. As for our high grades, we have not so much difficulty in disposing of them, but they bother us a good deal with their low grades. (Applause).

Mr. Plewes, of Brantford: "At the time we accepted 50 cents per barrel duty on flour, we were given to understand we could not get \$1 per barrel duty if we asked for it, and it would be better to ask for what we were likely to get, than for what we had no chance of getting. Well, we thought that with 50 cents per barrel duty we could manage very well in competition with American millers, and so we did for a while; but now, circumstances have changed, and, as you all know, American flour is coming into pretty close competition with our article, and we must confess, is getting the better of us. I have no hopes whatever that even the Americans will lower the duty they have imposed on our flour going into the States, or that they will give us Commercial Union, or free trade, or whatever else you've a mind to call it, so long as it means access to their market of sixty millions, of which we would be very glad. Therefore, the thing for us to consider is, what is the best thing for us to do at the present time. I have no doubt but that the Government is convinced we are right. When the Government has anything to do, it is not a question with them whether it is right or wrong, but it is merely a question of votes. No Government is open to conviction of right or wrong. They are only open to votes (laughter). I have been on previous deputations to Ottawa, and have every time tried to put the question in as good and strong a light to them as possible. First I tried to convince them, but it was no go. Then I told them we were British subjects and Canadians, and wished to remain so. I told them we paid our taxes and ought to be protected against Americans and foreigners who didn't pay taxes. But all in vain. Then I begged them to allow us to bring in the 4,750 bushels of wheat necessary to make 1000 barrels of flour, and to allow us to grind it in bond. Then we would have 1,000 barrels of flour in bond. Let the American send along his 1,000 barrels of flour in bond also. When we both had 1,000 barrels of flour in bond let us take it out of bond and pay our 50 cents per barrel duty, and then we would be satisfied to compete with the American millers every time. The answer I got then, from Sir Leonard Tilley was one I shall never forget. It was, "Plewes, no Government on earth could deny you that privilege." (Applause). In my innocence, (laughter) I came away happy and contented (laughter), but I afterward found out by experience that nothing but votes will influence any Government. (Renewed laughter). We waited in vain. We never got what we asked for. Now, I just want to say something to you about the way we must go about it, if we want to get this increase of duty. You will not get it unless by some other means than that of convincing the Government (laughter), and you will not get it unless you convince the Government that it is simply a question of votes, and a pretty serious question of votes too, (applause and laughter). There is nothing that will touch the feelings of the Government like votes. (Renewed applause and laughter). Circumstances have changed since ten years ago. Then we had sufficient cheap wheat to enable us to compete with the Americans every time, and we didn't feel our injustice so much as we do now. Let us now ask for either one thing or the other. We want the duty we ask for, or none. (Applause). \$1 per barrel duty is what we want. If they will give it to us, well and good, but if they don't, I for one am quite prepared to change my politics at once, and ask for the free trade we had before ten years ago. (Applause). It is no use mincing the matter. There is no use mincing anything with a Government. If they are going to adopt this protection which is due us, and which we ought by rights to have had long ago, then all right, but if they are not, I for one, am quite prepared to take the stump and show them, as we did the Mackenzie Government, that if they can't give us what we are entitled to, we put them there, and we will turn them out, and put in men who will either give us proper protection or free trade. (Applause).

Mr. John Brown, of the Citizens Milling Co., said: "I have listened with a great deal of interest to what has been said, and I almost think it is unnecessary for me to say anything further about this duty we want to ask for, of \$1 per barrel. But there is one aspect of the

case that has not been touched at all. I find that cash wheat was quoted at 97½ cents in St. Louis yesterday. The flour made from that wheat would cost \$5.29 per barrel delivered here. That is the price it would cost to lay it down here, duty paid. I find it would cost us 10 cents for freight, which is certainly very low, and this, with the duty added, would make us pay for the wheat \$1.22½ cents laid down here. \$5.53 would be what it would cost us to make the barrel of flour out of the same wheat the American makes his flour out of, making the cost to us 24 cents dearer than to the American. (Hear, hear). Now, they have already paid the duty of 50 cents per barrel. If they paid 24 cents more, or 74 cents net duty, we would at present prices of wheat, be on exactly an even footing with them. What does this show? Simply, that if we get the Government to increase the duty to \$1 per barrel, we will have 26 cents protection on our \$5, or about 5 per cent., and I think our milling industry ought to be protected more than that. The woollen manufacturers are protected to the extent of over 1-5, and here we are only asking for less than 5 per cent., and can't get that. (hear, hear) It is a mighty queer thing, if with our fifteen millions of good, hard, cold cash invested in Canada, we have not sufficient influence and power to get a protection of 1-5, of what other manufacturing industries are getting. All I have to say is this, that if such is the state of affairs, God help the millers of Canada! I find by turning over my books that six years ago, in March, 1882, we were paying \$1.32 per bushel for our wheat, and had a margin of 34 cents on our flour. To-day any of you will be able to say what margin you have, and will agree with me that we don't get a quarter of that amount. Sir Leonard Tilley said in reply to a deputation of which I was one of the spokesmen, "It may be a question, whether or not this question should not be taken immediately into our earnest consideration." Last year, 900,000 barrels of flour were imported into Canada and here we are to-day, paying something like \$450,000 per annum to the Government, for the privilege of having Canadians use American flour in Ontario. What are we to do about it? Gentlemen, if any one of us builds a \$10,000 mill, we have to pay a duty of \$2,500 to do so. There is just that much protection on the mill furnishings, materials and machinery. True enough, the materials are manufactured in Canada, but the manufacturers are protected to the extent of 25 per cent., and we pay that duty. (Hear, hear). I had the pleasure last summer of attending a millers' convention in Buffalo, N. Y., and heard an address by President Sebyt; and he said this: "If a mill is built, it is built to stay there. You may give such opposition to the miller as will kill him and crush him out of business, but the mill is there all the same, and every time one man is crushed or crowded out, some other man will come along and take hold of that mill and work it, and make flour. You may kill the miller every time, but the mill remains there just the same." (Hear, hear). Now, just another thing. Instead of one lot of millers meeting here and another lot meeting there, and one lot wanting and asking for one thing, and another lot wanting and asking for another, the American millers, with whom we come into competition, are organized every time. Why, it was surprising, at that meeting in Buffalo, N. Y., there were millers present from all over the United States. Some had come all the way from California to discuss millers' interests. The result is, they are a power and an influence in the States, and their power and influence is felt and respected. I don't know any reason why we can't have a similar organization right here in Canada. Then, if we can't get what we want, and what is rightly and justly due us from the Government, we will take other means adapted to that purpose. As has been said, it's votes Governments are after; and if we can't get what we want by asking for it, then we have just got to go to work and show what we can do, and will do, and then we'll get what we want. (Applause).

Mr. Gibbs said: "Although I am not a miller, yet I handle flour, but it isn't a matter of any particular moment to me whether I handle Minneapolis strong bakers or Canadian flour. It is just a question whether it would not be better to consider the matter more carefully before proceeding further. There is no use asking more from any Government than you are entitled to. The difference between the duty on flour and the protection afforded to other manufacturing industries, is not just exactly as Mr. Brown has stated. If you get a duty of 25 cents per barrel more than protection against the American flour, it is a direct tax upon the people, and you can't get over it. Now, on woollen goods there is a difference, for the money is paid out to the country again in wages, and that's the principle of the National Policy. 4 per cent. duty on flour is a great deal higher tax on the people than 40 per cent. duty on woollens or on any

other article where a large number of hands are employed in the manufacture. But, on the other hand, if you ask for an *ad valorem* duty of the same extent as the Americans have against us, then if the Government doesn't grant this, the sympathies of the people will be with us, for they will see we are asking for only what we are entitled to and should have, and what won't be a direct tax on the people. There is no use urging the Government to put up the duty to make a direct tax on the consumer, for they won't do it, and there's no use asking them. Quebec and the Lower Provinces will be arrayed against them, and it will be no use asking \$1 per barrel. Better ask 75 cents and get it, than \$1 and be refused.

Mr. J. L. Spink said: "I don't think there's anything in what Mr. Gibbs has said at all. No miller in Canada is going to charge the 99 cents every time because he has \$1 protection against flour coming in from the United States. There may be an idea that we would keep up the price of flour, and so I guess would men in any other branch of trade, but I can tell you that so long as Canadian mills can in 45 days manufacture all the flour consumed in Canada, and can in 65 days make flour of every bushel of wheat grown in Canada, there's no danger that I can see of any one having a huge monopoly on a protective tariff of 26 cents. (Applause.)

Mr. Macdonald, of Collingwood: "We are here to-day for the purpose of considering the milling interests of this country, and it seems to me we ought to do so in a quieter and more business-like manner. If you go down to Ottawa and ask for \$1 per barrel specific duty, it seems to me you will be defeated. I am inclined to the opinion that we could get a specific duty equal to what the Americans have against us. Let me just say here, I would a great deal rather you got \$2 per barrel, but, of course, no one here would ask for that much. Now, if this meeting asks the Government to put just the same duty on flour coming into Canada as the Americans have put on our flour going into the States, I don't very clearly see how they could refuse. The Government must look at this question in the interests of the whole country, and not in the interests of the millers, or the farmers, or of any one body of people. It must be remembered that the present time is one at which it might not be wise of the Dominion Government to assume an aggressive stand against a Government now in power in the United States which has shown itself by no means friendly to Canada and to Great Britain, and on the eve of a great change in the American administration, it would be hardly right to allow any question of tariff, such as the present one, to embarrass the Government at Ottawa. I think if we ask for an *ad valorem* tariff of 20 per cent., we will get it, but of course if the majority of those present want a specific duty of \$1 per barrel, I am willing to go in for it to make it unanimous."

Mr. J. L. Spink: "I have attended similar meetings of this kind before, and have taken the matter up and discussed it with the Government on a delegation to Ottawa. As Mr. Plewes said, there has been no denial of the fact that we have been treated unjustly. But it is simply, as has been said, a question of votes. I remember being told while at Ottawa, that if we brought a deputation of 1,000 down there, the farmers would probably bring down 20,000. It is simply a question of votes, and nothing more. There is one point we have now we did not have before. The Government is interested in opening up the North-West, and I have no doubt something might be done by the C. P. R. interests down at Ottawa, if the arguments were put that way, and it were shown how much more Manitoba and North West wheat would be required down here in Ontario if American flour were kept out."

Mr. Caldwell, M. P. P. for Lanark: "Let us ask what we have a right to have, and no more, and then if we are refused, we can do something, for the public will feel we are under an injustice. If we make a moderate request of the Government, we will probably get it."

Mr. Plewes: "I don't advise being moderate. That's the way we did before, and we have paid for it, too. (Applause). Let the request we are making of the Government be a unanimous one, and we will have it granted if they see we are in earnest, for there can be no denying but that it is a moderate one."

Mr. Macdonald, of Collingwood: "If the majority of the meeting want the \$1 per barrel specific duty, I am perfectly satisfied to let it be so, and in fact would rather have it, but it would be better to ask for just 20 per cent. *ad valorem*, the same as the Americans have against us."

Mr. Snider, M. P. P., of St. Jacobs: "20 per cent. will be enough duty for us, and will give us a show against the Americans, for I think with that duty, we can compete with them very favorably."

Mr. Edmonson, Oshawa: "I favor the \$1 duty.

The Farmers' Institute of Oshawa held a meeting and expressed their opinion that we ought to get it. They were to have brought the matter up at the Central Institute here for approval. With respect to the 20 per cent. *ad valorem*, that would be in some cases less than 50 cents per barrel specific on low grades, and some low grades would even get in at 35 and 40 cents duty. I will vote for the \$1 specific duty."

The discussion here closed, and the resolution asking for a duty of \$1 per barrel was unanimously adopted.

SOME ADDITIONAL OPINIONS.

GALT, ONT., 28th Jan., 1889.

MESSRS. STARK BROS., Toronto.

DEAR SIRS, Your petitions were received this a.m. We think, however, that they do not go quite far enough. Our senior has been appointed as a delegate to go to Ottawa by the Western Millers' Association, and we are of opinion that the tariff should be equal to that of the United States, viz., \$1 per barrel. Do you not think it would be well for you to amend the figures in your petitions by making them equal to the amount charged by the American Government?

Yours truly,

TODD MILLING CO.

LONDON, ONT., Jan. 26th, 1889.

MESSRS. STARK BROS., Toronto.

GENTLEMEN, Your circular letter dated 2nd inst., also blank petitions for signatures came duly to hand. We will try and get them filled up and returned to you during the 1st week in February. You deserve the thanks of the millers of Ontario for the great trouble you have put yourself to in their behalf, and, if successful, we will send you to Parliament, provided you promise to keep all American flour out of the Dominion of Canada in future.

Yours truly,

HUNT BROTHERS.

ZURICH, Jan. 24th, 1889.

MESSRS. STARK BROS., Toronto.

DEAR SIRS, We have your letter, also petitions, of 23rd inst., which I quite understand. You say, have all these petitions signed. Now, (proposition No. 1) where duty on wheat is reduced 3 cents, an advance of ten on flour is no good. This will not keep Americans out of our market. Proposition No. 2 is about right in my estimation. We are willing to spend time and money on this object to make it a success.

Yours truly,

J. A. WILLIAMS & CO.

WALKERTON, FEB. 4th, 1889.

MESSRS. STARK BROS., Toronto.

DEAR SIRS, I return to-day to your address the petitions. Send them to H. Cargill, Esq., Ottawa, our member. I have spoken to him about them, and he is in favor of the object, being himself a miller. I hope it may do something for us.

Yours truly,

J. LEE.

HAMILTON, Feb. 16th, 1889.

MESSRS. STARK BROS., Toronto.

DEAR SIRS, Your card to hand and noted. Thanks for your kind invitation. Sorry I will be unable to attend. Hope you will have a good meeting, and appoint delegates that will have the desired effect when they go to Ottawa.

Yours truly,

JAS. DUNLOP.

SHERBROOKE, QUE., Jan. 28th, 1886.

MESSRS. STARK BROS., Toronto.

DEAR SIRS, With reference to the petition sheets you sent us, do you wish them filled on both sides? We have secured the names of all the prominent men in town, and if you want both sides filled, or would prefer the names on another sheet, let us hear, or send us new sheets and we will do as you wish at once. We heartily concur with this movement, and will do all in our power to make it a success as far as this district goes.

Yours truly,

MACFARLANE MILLING CO.

OSHAWA, Feb. 12th, 1889.

MESSRS. STARK BROS., Toronto.

DEAR SIRS, Re petition. The Oshawa Farmers' Institute passed a unanimous resolution asking the Government to place a duty of 20 per cent. *ad valorem* on flour. The resolution will come out in the daily journals on Monday. The Central Institute will meet in the City Hall, Toronto, on Tuesday. There will be present delegates from every Farmers' Institute in the Province. Would advise that you get the very strongest deputation you possibly can, and press our petition on them for adoption. If you think it well to have the farmers co-operation, you may obtain it in this way.

Yours truly,

E. S. EDMONSON.

DUNSVILLE, Feb. 18th, 1886.

MESSRS. STARK BROS., Toronto.

DEAR SIRS, I regret very much I cannot be at your meeting on Tuesday, as the scheme is a good one, and should be worked with all force possible. When through with it, I wish you or some of the millers present will form an Association for millers, electing necessary officers. I doubt if there is a miller in Ontario who would not become a member. We would, through an Association be able to cope with the "bear" element which exists in the provinces; also acquaint each other with many grievances now existing.

Yours truly,

JOHN MOODY.

FERGUS, Feb. 18th, 1889.

MESSRS. STARK BROS., Toronto.

DEAR SIRS, I regret exceedingly that I shall be unable to attend the millers' meeting on Tuesday, as I sympathize with the object in view. The present tariff is not only unfair to the Cana-

dam miller, but at the same time operates injuriously to the wheat growing interests of the country. Should the meeting see fit to place me on the delegation to Ottawa, I shall make a point of going and doing what I can to secure such a re-adjustment of the tariff as the interests of the country demand. As a representative of the smaller mills only I might not have much weight, but at the same time it might be well for the Government to see the movement was not one simply in the interests of the large dealers. Wishing the meeting every success, I am,

Yours truly,

A. GROVES.

LINDSAY, Feb. 17th, 1889.

MESSRS STARK BROS., TORONTO.

GENTLEMEN, We regret exceedingly that we are unable to attend the millers' meeting on Tuesday. Our Mr. Flavelle fully intended being there, but owing to family trouble of our Mr. Dundas, we will not be represented at the meeting. It cannot be too strongly pressed on the Government the necessity of advancing the duty on flour imported from the United States. As it is now, the National Policy (which was adopted largely for the purpose of fostering manufacturing industries) is legislating against the largest manufacturing industry in the Dominion, inasmuch as the duty on the raw material is largely in excess of the duty on the manufactured article. We trust you will have a large representative meeting, and that you will go to the Government as a united body. If so, the millers throughout the Dominion should be strong enough to insist upon justice being done them.

Yours very truly,

SADLER, DUNDAS & CO.

THE MILLERS' APPEAL.

THE import duty on flour coming into Canada is 50 cents per barrel. The import duty on the quantity of wheat required to make a barrel of flour is 67½ cents. (In this comparison I take the quantity of wheat—4½ bushels—required to make a barrel of flour in the best mills, handled in the best and most careful way. The average quantity of wheat actually used in the mills of either Canada or the United States is not under 4 bushels 45 lbs., on which quantity the duty the Canadian miller has to pay is 71¼ cents, or 21¼ cents over the duty paid by the American miller who sends in flour).

The American miller pays freight on 196 lbs. (Flour.)

The Canadian miller pays freight on 270 lbs. to 285 lbs. (Wheat.)

The American has a further advantage over the Canadian miller in the bran and shorts, for while the former sells his in the Eastern States markets, free of duty of course, the Canadian has to sell much of his in the same market, paying the United States Customs duty of 20 per cent.

Our position so far as the present Canadian Customs duties on the raw material, and on the manufactured article are concerned, is illustrated by the following case:

The American miller sends into Canada one thousand barrels of flour, and stores it in bond. The Canadian miller brings in enough American wheat to make one thousand barrels of flour, grinds it in bond and stores it in the same warehouse in which the American miller has his thousand barrels stored. The two men, or their agents, go to the Customs to pay their duty. The American miller has to pay \$500; the Canadian miller has to pay \$567.

That such laws could ever have been made by a Government whose existence was and is due to their adoption of the policy of protection to home industry, seems impossible. Yet it was done by them, but done in error, an error that has never been attempted in Parliament or out of Parliament to justify. The appeal of the millers is that this error be corrected.

Not only have we a right to demand that the protection now given by the Canadian tariff to American millers should be removed, but we have a right to demand also, under our system of protection to home industry, that some protection should be given to us as against foreign millers, in the same way that protection to Canadian as against American manufacturers is given by our tariff, in all other lines of manufacture.

It has been said that the request of the millers that the duty be made \$1 per barrel would, if complied with, increase the cost of flour to the consumer. But the contention of the framers of and the believers in the National Policy, was and is, that protection does not increase the cost to the consumer. The milling capacity of Canada is largely in excess of what is required to make all the flour that is consumed in the Dominion. The mills are scattered all over the country, and are owned by more than 2,000 different owners. This being the case, there is no human possibility of the millers advancing the price of flour. As well might the farmers be suspected of an intention to combine to raise the price of wheat. The competition in either case is too great, and the interests too wide-spread. The consumers of Canada will not have to pay either more or less for their bread by such a correction of the tariff as will make it possible to grind the flour that it is made

from in Canada instead of in the United States, while the Canadian mill owners, their employees, and others amongst us, in a less direct way will benefit by the cost of manufacturing, which benefit is now enjoyed instead by the corresponding classes in the United States.

There are at this moment stored in Montreal about 70,000 barrels of American flour, while few if any mills in Canada, are running enough to make expenses.

No one who gives our case a little consideration will confound our appeal with the requests of those manufacturers who are asking for "increased protection." We have no protection. The American miller has the protection, and has it by the Canadian Tariff of Customs.

We are asking to have an error rectified. We respectfully submit the above facts for the consideration of people who may not have had occasion to investigate the desperate condition to which the milling business of Canada is reduced.

M. McLAUGHLIN,

Chairman of the Millers' Delegation.

Toronto, Feb. 23, 1889.

Statement showing the quantity of wheat and flour imported into the Dominion of Canada from the United States and entered for consumption during the six months ending 31st December, 1888; also the quantity of flour remaining in bond in Canada on the 31st December, 1888:

Articles	Six Months Ending 31st December, 1888.		Remaining in Bond 31st Dec., 1888.
	Imported.	Entered for Consumption.	
Wheat, Bush.	1,484,819	9,705	6,784
Flour, Brls.	171,336	154,896	
Customs Department Ottawa, 14th Feb, 1889.	Flour Entered for Consumption, 154,896 Barrels = 697,032 Bushels.		9,705 Bushels.

J. JOHNSON, Commissioner of Customs.

The petitions for a correction of the tariff bears the signatures of the following millers:

- Tew & Marshall, Plattsville.
- Plattsville Milling Co., "
- John Richardson, St. George.
- W. E. Dench, Chippewa.
- F. Tench, "
- Isaac Rutherford, Bruce.
- James Stark, Paisley.
- James Lacc, "
- Arch. Fisher & Son, Paisley.
- Will. Brown, Lockerbie.
- C. Macdonell, Collingwood.
- A. Melville, "
- Lavistock Milling Co., Tavistock.
- H. B. Schmidt, Thornhill.
- Walter Lawson, Stewarttown.
- Geo. S. Baldwin, Aurora.
- F. R. Wadsworth, Weston.
- C. & W. Wadsworth, "
- Walter Taylor, "
- J. L. Spink, Pickering.
- Howland & Elliott, Lambton.
- Stark Bros., Toronto.
- Spink Bros., "
- W. P. Howland & Co., Toronto.
- W. H. Howland, Toronto.
- W. D. Matthews, "
- Bennett & Lockerbie, Spencerville.
- J. G. Armstrong, Spencerville.
- John Wales, Oakville.
- W. Stewart, Mitchell.
- S. R. Stewart, "
- W. A. Stewart, "
- Peter J. Griffin, Mount Vernon.
- Peplow & McCabe, Port Hope.
- Harold Barrett, "
- Thos. H. Fee, "
- Alfred Lent, "
- J. G. Bechtel, Burford.
- A. Watts, Brantford.
- David Plewes, "
- Wm. Pearson, Singhampton.
- S. Ramage, Chesley.
- Alex. Wilson, "
- M. F. Ramage, "
- Hay Bros., Listowel.
- Hutton & Carr, Wingham.
- P. Kelly & Son, Blyth.
- H. S. Huber, Londonboro.
- Jas. Fair, Clinton.
- A. E. Banyard, Hensall.
- J. A. Williams & Co., Zurich.
- Jas. Pickard, Exeter.
- Cole & Lounsbury, Seaford.
- Cullis & Fleming, Auburn.
- Robert Baird, Kincardine.
- Jacob L. Eild, Mildmay.
- R. B. Clement, Walkerton.
- J. Lee & Son, "
- Jacob Steinmiller, "
- John Hull, Lakefield.
- T. C. Edwards, "
- A. Snellgrove, "
- Geo. S. Podger, "
- D. McLean, "
- J. H. Maw, "
- Wm. Crane, "
- A. M. Bowen, "
- Thos. Foulds, Onondaga.
- R. Thompson, Lynden.
- Geo. Needer, Millbrook.

- Hay & Harrison, Forest.
- A. W. Littleproud, "
- J. E. Robinson, "
- Dugald McPherson, "
- Jos. S. Green, "
- Thos. Birrel, Bradford.
- Samuel Lukes, "
- Robt. Vick, Orillia.
- Jas. Thompson, Orillia.
- Wm. Ritchie, "
- P. Ritchie, "
- J. E. Edmonson, "
- John Waddell, "
- Geo. Vick, "
- Meldrum, Davidson & Co. Peterboro.
- H. A. Mulhern, Peterboro.
- Cranston & Scrimgeour, Galt.
- J. Hilborn, Blair.
- Lewis Kribbs, Hespeler.
- Galt Milling Co., Galt.
- Wm. S. Skene, "
- E. A. Cherry, "
- Todd Milling Co., "
- John Cherry, "
- A. Marshall, "
- J. R. Hillock, "
- A. S. Detweiler, "
- J. M. Lott, Edgar.
- Norris Dight, Lucan.
- Geo. Moorehouse, "
- A. E. Stanley, "
- Geo. Adcock, "
- Thos. Dight, "
- Jas. Wells, Orangeville.
- Walter Puckenharn, Orangeville.
- D. Clarke, Ayr.
- J. Clarke, "
- D. Goldie, "
- Jas. Lawson, Thorold.
- W. A. Walker, "
- John Baird, "
- Wm. Downie, Merriton.
- Sylvester Neelon, St. Catharines.
- Jas. Norris, St. Catharines.
- H. King, "
- John Notman, "
- H. M. Helliwell, St. Catharines.
- R. Reynolds, "
- A. Groves, Fergus.
- T. Mutrie, "
- Hilborn Hambley & Co., Salem.
- J. C. Vanstone, Bowmanville.
- Geo. Pearson, "
- John W. Pettinger, Bowmanville.
- A. W. Carveth, Leaskard.
- S. A. Lazier, Belleville.
- W. H. Lingham, "
- R. B. Cooper, "
- W. D. Rolison, Carberry Man.
- Wm. Purdy, "
- Manitoba Milling & Brewing Co., Carberry.
- G. A. Thompson, Souris, Man.
- Geo. McCulloch, "
- Wm. Herriott, "
- C. S. Wright, Minnedosa, Man.
- R. J. Kerr, "
- W. F. Mann, "
- W. Murchison, "
- W. M. Alexander, Brandon.
- D. W. Russell, "
- J. S. Maxwell, "
- J. P. Humphreys, "
- G. Kelly, "

ARE FOUNDRY PATTERNS TOOLS?

WE have been asked if the word "tools," in the following form of policy upon a machine shop and foundry, would cover foundry patterns. The policy reads:—\$1,500 upon fixed and moveable machinery, engine, lathes and tools, and \$500 on stock, etc."

By a fire underwriter, the answer would at once be that foundry patterns were not covered under this form, because from the peculiar nature of this class of patterns and their status as to value, it has always been the usage to cover them specifically, and in fixed sums, usually not in excess of fifty per cent. of their value. They are also regarded by fire underwriters as of two kinds or classes, viz: those "in daily use," as stove patterns or some certain kinds of standard machines or machinery, which hence have a permanent value. Another class is those patterns made for some special temporary service, and after once using are laid aside until, perhaps, some other chance job may bring them or some portion of them into use again. These are held to have no insurable value, as they have been already paid for to their full value by the party calling them into use, hence they cost the foundry man nothing. In large shops, this class is found in large quantities, and they are usually held by their owners at their original valuation, especially if they are to be sold to an insurance company in consequence of a fire.

Furthermore, there can be no ambiguity in the word "tool," which is defined to be "an instrument of manual operation; particularly such as are used by artisans, mechanics and handicraftsmen."

"An implement of labor, as hammer, saw, plane and the like. An implement for some operation, commonly used by the hand of one man, in some manual labor."

A pattern is an original or model prepared for imitation, that which is to be copied or imitated, either in things or in actions; anything cut or formed into shape of something to be made after it. (Webster.)

Implements: Such things as are used or employed for a trade. Things of necessary use in any trade or mystery, with which the work cannot be performed. Whatever may supply wants, particularly when applied to "tools," utensils, vessels or instruments of labor, as implements of trade, husbandry, etc. (Webster.)

From the definitions of these several words, tools, implements, and patterns, it is evident that a "pattern" cannot be considered in the light of a "tool," because it is neither a hammer, a saw, a plane or anything of a similar or like nature in the matter of use, for it is never used by the hand of the operative, or manually, except merely to be placed in a position for the formation around it of the mould for the reception of the material of which the thing is to be composed. It is no more of a tool than type in a printing office, and types have been held by the Sup. Ind. Court of Massachusetts as not being included in the term "tool."

A pattern, so to speak, is but a passive implement, while the very nature of a "tool" is, on the contrary, an active one, when in use—as a saw or hammer—propelled by active manual labor, while forming the subject; and no practical mechanic would ever call a foundry pattern a tool. A pattern is an implement, but all implements are not necessarily "tools."

Nevertheless, to prevent any misunderstanding, when machine shop and foundry risks are to be covered by

insurance and patterns omitted, it will be well to state specifically, "no patterns to be included." Or if the patterns are to be covered, it should be done under something like the following: "On patterns in use, to be estimated in case of loss at the cost of replacing," patterns out of date, not covered by the policy."

Or, still later, let them be *scheduled* by name, with the maximum amount to be paid on any, in case of loss. There can then be no dispute as to the value when the underwriter buys them. Those not scheduled are not covered.—*Insurance and Finance Chronicle.*

PROPOSED MECHANICAL EXHIBITION.

An interesting address was recently made by Colonel J. A. Price before the Scranton Board of Trade on the desirability of holding a mechanical exposition. In the course of his remarks he said: In proposing a mechanical exposition that shall be not only national but international in its character, to be held in this capital city of the great anthracite coal field of the world, the object will be to assemble as never before, an exhaustive and comprehensive representation of the fuels, power producing apparatus, mechanical devices of applied power and its distribution, together with the tools and instruments that constitute so much of the wealth and means of development of natural resources. Such an exposition should be devoted rather to the devices that produce than the product—to the lever rather than to the wheel—not goods, but machines. The assemblage of devices should aim at historical development as well as the perfected machine. There is nothing that will stimulate progress more keenly than a ready knowledge of the successive steps from the crude forms of first devices to the latest accomplishments. The mechanical sequence thus obtained will have an incalculable influence upon the engineer, the mechanic, the economist, and the general public. For example, suppose there were to be assembled one of the old stationary engines of James Watt, as well as the first ever put to work, in Rhode Island, I believe, in this country, together with fair or representative successions to grand motors of to-day, can any one doubt its attraction and its influence? Or if we take another form in the movable engine or the locomotive, and exhibit such as Geo. Stephenson's "Rocket" and the "Stourbridge Lion," our country's first attempt in steam carrying, and in a measure particularly identified with our immediate locality, down to the beautiful creations of the present decade, and no one would deny the inspiration that would be felt in such a presentation. The same may be said of a steam boiler, of the gas producer, of the gas engine, and of a whole line of initial as well as distributive mechanical devices, which thus brought into juxtaposition would serve the double purpose of mechanical education and stimulation. This has never been attempted on any comprehensive scale. The little that may be noted anywhere in the past has been done as a mere matter of curiosity and apparently wanting in the avowed purpose as an educator.

The outline then of the proposition would be to collect an exhaustive, historical as well as perfected exhibit of machines and tools of all kinds that have ever attained any place in the economics and welfare of the human being, by the assistance of which he has been able to surround himself with the untold luxuries of the high civilization in which we find him, and which marks his advancement from brutality to refinement. From mere existence but little better than the plant or animal, we have come to be able to draft into service the forces of the great nature about us like a God. Let us attempt not so much to see *what* we have done by the usual exhibits of products, but *how* we have done it, by the devices evolved out of the cunning brain and skilful hand of man, step by step by a long succession. And let us remember also the progress of the present century—a period readily within our grasp—has been greater than that of all the preceding and that to our own generation largely belongs the great final accomplishments by which the face of the earth is transforming in fierce conflict from a wild state of nature to a blooming bewildering paradise of culture, privileges, luxuries and tastes.

Passing then to detail of classification for such an exhibition I would suggest:

First—Every known method of combustion for whatever purpose of power, heat and ventilation, whether conducted in mass, powdered or gas form.

Second—The generation of steam in boilers and of gas in producers.

Third—Motor applications of all possible kinds, as steam and gas in the engine, and the utilization of wind, steam and tide by their appropriate mechanical attachments.

Fourth—The various systems of electrical distribution.

Fifth—The whole field of producing machines, tools

and applications, as far as it may be possible to accumulate them, comprehending not only the latest perfected devices, but the historical sequence in regard to their development from crude to skilful forms.

Sixth—An accumulation of raw materials upon which we draw for our progress, and through which we are suitably fed, clothed, housed and educated.

This general schedule is sufficiently comprehensive to admit of the greatest latitude of treatment in any particular branch or direction. Articles of like kinds may be grouped to be educational as well as inspiring. The experience of the greater expositions of England, France, Austria and the United States establishes the fact that local compact exhibits of a single article are infinitely of greater value than more brilliant displays in a state of diffusion. However, this whole question of arrangement into departments, sections or groups as well as into classes is one in which we have already a vast accumulated experience, and it will not be easy to get astray with the past before us.



Mr. Dunlop, Arkona, is putting in a set of rolls supplied by Wm. & J. G. Greey, of Toronto.

Mr. W. Arthur Lambeth, has purchased one of Wm. & J. G. Greey's improved 3 roll chopping mills.

Mr. W. F. Lewis, Grimsby, Ont., has ordered two Whirlwind dust collectors from W. & J. G. Greey, Toronto.

Mr. Wm. Wilson, of Wilson's mills, has ordered from Wm. & J. G. Greey, of Toronto, a Little Giant water wheel.

Mr. John Wright, Owen Sound, has placed one of Wm. & J. G. Greey's Victor heaters and a steam generator in his mill.

Freur Bros., of Acton, have ordered from Wm. & J. G. Greey three No. 3 improved flour dressers for their Acton mill.

Messrs. John Inglis & Sons, Toronto, are manufacturing a 200 h. p. steel boiler to form part of the Cobourg water works plant.

Mr. J. H. Dracass, of Streetsville, has put in one of Wm. & J. G. Greey's improved Victor heaters and steam generators.

Messrs. John Askew & Sons, Leamington, have put in a No. 2 Victor wheat heater, manufactured by Wm. & J. G. Greey.

Mr. W. G. Wilson, Springfield, Ont., is using one of Wm. & J. G. Greey's 3 roll chopping mills, and is highly pleased with it.

Mr. O. Poucher, Plainfield, Ont., has bought one of Wm. & J. G. Greey's 3 roll choppers, and is well pleased with its operation.

Messrs. John Inglis & Sons, Toronto, are supplying the necessary machinery to remodel Essery's flour mill at Orangeville, Ont.

Messrs. South & Harris, Springfield, Ont., are putting in an improved two-reel bolt chest built by W. & J. G. Greey, Toronto.

Messrs. Wm. & J. G. Greey, of Toronto, have supplied Messrs. Campbell, Rutherford & Sinclair, of Blenheim, with a corn and cob crusher.

Mr. John Johnston, Waldemar, Ont., has put in a double set of Wm. & J. G. Greey's improved rolls to do the work formerly done by the millstone.

Messrs. Hunt Bros., of London, and the Charlottetown Mill Co., recently purchased from Wm. & J. G. Greey an improved motion indicator with alarm attachment.

Mr. J. D. Naismith, the well-known Toronto baker, is putting in a new 18 h. p. boiler, manufactured by Messrs. John Inglis & Sons.

Mr. G. R. Nesbitt, Cowansville, has bought a No. 1 combined separator and cockle machine, also a No. 1 Cockerell scouring case for smutter, from Wm. & J. G. Greey, Toronto.

Mr. C. K. Stewart, Milton, Ont., has bought and placed in his mill a double set of 6 x 15 inch rolls and a No. 1 centrifugal reel, manufactured by Wm. & J. G. Greey, of Toronto.

A Corliss engine of 50 h. p. capacity for the addition to the manufactory of the E. & C. Gurney Co., Toronto, is being manufactured by Messrs. John Inglis & Sons, of this city.

Mr. D. S. Clemens, of Winterbourne, Ont., has added a double set of rolls to his mill at that point for the purpose of doing away with the mill stones. Wm. & J. G. Greey, of Toronto, had the order.

Mr. D. S. Clemens, Hespeler, Ont., has recently improved his mills by the addition of a wheat brush machine, aspirator, bolt cloth, and other supplies, furnished by Wm. & J. G. Greey, Toronto.

Mr. H. A. Mullern, of the Otonabee mills, Ashburnham, has added two No. 3 Victor wheat heaters and a 6 h. p. steam generator to his new roller mill. Messrs. Wm. & J. G. Greey, of Toronto, had the order.

Mr. P. R. Hoover, Green River, Ont., has lately placed two double sets of 9 x 24 inch and 18 inch rolls in his mill, in addition to his former plant, also a No. 3 centrifugal. The order was filled by Wm. & J. G. Greey, of Toronto.

The new mill at Treherne, Man., is now completed and in running order. Messrs. Wm. & J. G. Greey, the builders, have received word of its successful starting. The mill is 125 barrels capacity, and is built on the improved connected roll and rope drive system.

Mr. Wm. Ross, of Brussels, Ont., have ordered from Wm. & J. G. Greey, Toronto, a new wheat brush polisher, a No. 1 bran and shorts duster, and a Cockerell case for their smutter.

Messrs. Summerteldt & Sons, of Sutton West, have contracted with John Abell, of Toronto, for the necessary machinery for a sixty barrel roller mill, using Silver Creek Flour Bolts, latest improved Minneapolis Roller Mills, and other advanced machines.

Wm. & J. G. Greey report a sale of 3 run of second-hand stones, a No. 1 combined smut and brush machine and two bolt chests to eastern parties for the manufacture of oatmeal, and to other parties the sale of one 30 inch under-runner portable mill, No. 3 flour dresser, No. 0 smutter for a grist mill.

Mr. W. V. Emery, Port Burwell, Ont., has ordered a full set of roller machinery for his mill on the Little Otter Creek, near Port Burwell. Mr. E. Redman, of St. Thomas, is the millwright, and the machinery is to be supplied by Wm. & J. G. Greey, of Toronto, on their new system of connected rolls and rope drive.

Mr. Stephen Knight, of St. Marys, has placed an order with Wm. & J. G. Greey, of Toronto, for one of their 35 barrel plants of roller machinery on their new system of rope drive and connected rolls, using Greey's new improved flour dressers. It is expected that the mill will be ready for business about the middle of March.

Mr. G. F. Lewis, of Wmuna, Ont., is having a full set of rolls and machinery on what is known as Wm. & J. G. Greey's improved system of connected rolls and rope drive put into his mill at Grimsby. Work is now well advanced, and the proprietor expects to have his mill in operation by the first of April. The plans and machinery are being supplied by Wm. & J. G. Greey, Toronto.

Mr. W. B. Sanders of Stouffville, Ont., has purchased the Raymer mills of that place and has contracted with John Abell of Toronto, for a supply of the latest improved Minneapolis machinery. Mr. Petch, representing Mr. Abell, has made the necessary plans, and it is expected the mill will be in running order by the first of May, with a capacity of 100 barrels per day.

Messrs. Robin & Sadler, the well known leather belting manufacturers, of Montreal and Toronto, have just finished another large driving belt for The Royal Electric Light Co., Montreal, to be used on their new double engine. This belt, which is of double leather, is 25 inches wide and 100 feet long, and is another evidence of Robin & Sadler's ability in their special line of manufacture.

Father Louis, of St. Jerome's College, Berlin, has received word from Rome that His Holiness, the Pope, selected for his own use, from the thousands of Jubilee gifts sent him from all parts of the world, the magnificent office desk presented to him by St. Jerome's College. We might add that this desk was manufactured by Messrs. W. Stahlschmidt & Co., Preston, and was really a work of art, as all who saw it will bear witness.

The new roller mill of Mr. A. Little, of Teeswater, Ont., was started about the first of Feb. It is 75 barrels capacity, and was built on the new system of connected rolls and rope drive by Messrs. Wm. & J. G. Greey, of Toronto. Mr. Little was well pleased with the way the mill started, there not being a single choke up or change of any kind required, and the smooth and easy operation of the whole of the machinery. A good trade is anticipated, as roller mills are not numerous in that locality.

Messrs. Bingham & Webber, of Toronto, have just received a letter from Messrs. Frost & Wood, agricultural implement manufacturers, Smith's Falls, in which they express their satisfaction with the promptness in filling their order for 1,000 catalogues and also for the superior quality of the work done. The catalogues have been much admired and promise is made for future orders. At the present time Messrs. Bingham & Webber who are deservedly leading the trade in catalogue printing, have upwards of \$14,000 worth of work under contract.

During the past three months Messrs. Wm. Kennedy & Sons, Owen Sound, have made and sold over 3,000 h. p. of their new American Water Wheel, made up as follows:—Hall, Ross & Co., Rat Portage, one 66 inch wheel; E. B. Eddy Mfg. Co., Hull, P. Q., one 66 inch wheel; R. Booth, Ottawa, one 66 inch wheel; Pierce & Co., Ottawa, one 66 inch and one 30 inch wheel; J. Riordan, Merriton, one 66 inch wheel; Jas. Davy, Thorold, one 54 inch wheel; Alex. Jeffrey, Montreal, one 66 inch wheel; and have also supplied the mains, gears, shafts, etc., for most of them.

Letters patent have been granted incorporating the B. Greening Wire Company, Hamilton, (limited); capital stock \$200,000; 1,000 shares of \$100 each. The officers of the new company are S. O. Greening, president and general manager; John Maw, superintendent; Robert H. Merriman, secretary. These gentlemen with Chas. A. Herald, and Thos. Cockburn, are the stockholders. The new company will add to the business of their predecessors, Messrs. B. Greening & Co., the manufacture of all kinds of wire, for which necessary buildings will be erected. Some of the machinery will be purchased in England but the greater part will be constructed here.

The report of the Commissioner of Crown Lands for 1888 shows the amount collected on these lands and on former sales to have been \$5,347. The area of Crown Lands sold during the year was 52,962 acres aggregating in value \$76,453. The collections on account of these and former sales was \$77,071. The area of these lands sold during the year was 345 acres, aggregating in value \$768,26. The collection on account of these and former sales was \$11,395. The collection from woods and forests was \$1,316,139, including \$748,865 paid on account of bonuses, leaving the net collection on account of timber dues, ground rent, etc., \$567,373. The lumber trade had been healthy, a principal feature being the active demand and fair prices obtained for timber in the Quebec market. On the account of fire ranging there was paid during the year \$24,213, but of this \$6,258 was on account of 1887, leaving the net expenditure on account of this year \$17,854, one-half of which is refundable by the licensees. About 70 bush fires had taken place, the timber damaged being one hundred and sixty millions of feet, of which not more than 20 or 25 millions will be a total loss. The reports from Crown Lands Agents, fishery overseers and others show that the law has been fairly well observed.

LEATHER BELTING.

By C. F. KINSEY.

THE following interesting paper prepared on the above subject was read at a recent meeting of the Stationary Engineers Association of Toronto, by Mr. C. F. Kinsey, of this city:

There are two kinds of leather belts, known as oak belting and hemlock belting respectively. The difference between the two is, that the oak belting is tanned with oak bark, or an essence of oak bark, and the hemlock with hemlock bark, or an essence of hemlock bark. Those engineers who are not acquainted with the two sorts on seeing them together would probably notice that one belt was lighter colored and much smoother in appearance than the other. The light colored one is the oak belt, and the dark red one the hemlock belt. The difference in the color is easily detected if they are both properly made.

It sometimes happens that on an oak belt you will perceive dark stains or black places. This tells its own story, viz., that in the dark places the belt was not scoured properly, or, as it is called in a belt shop, the bloom or essence of the oak tan was not raised. The same thing is sometimes seen in a hemlock belt, but owing to its reddish color it does not show so much as on an oak belt. Whether or not these dark stains are a detriment to the wear of the belt I am not prepared to say; it is certain, however, that they alter the market value considerably.

Now as to the wearing qualities of the two belts. If I was asked which I thought was the best of the two I would most decidedly vote for the oak belt, because it has far more workmanship put into it than the other one. Another reason is that the oak belt is firmer and finer than the hemlock belt. Hemlock belts as a rule (so far as my knowledge goes) are generally a little soft to the touch, and I think if they are put to extraordinarily hard work, a few years will wear them out. As I never had a new belt of either sort to work through-out its natural life, I could not say which will last the longest. I do know, however, that an oak belt costs far more than a hemlock belt, and am inclined to think that two articles of a kind show such a difference in price, one must have earned a better reputation than the other, and the only way for a belt to earn a reputation is by doing a certain kind of work for a long term of years.

It is just possible that some engineer may wonder if his belt is made of good material. A very simple way to test it, is taken from Roper's book: cut a slice off the belt about 1-16 of an inch thick and half an inch long; put it in vinegar; if it is well made, it will stay leather for months; if it is poor leather, the fibres of the leather will swell and it will become like a piece of glue. I have tried this method myself, and found it correct.

I propose now to give you an idea how to get a belt and how to keep it in working order. The points to be borne in mind when calculating for belting are: power to be transmitted, speed per minute, distance from centre to centre, and whether the belt runs in a horizontal, inclined, or vertical position, the diameters of the pulleys used, width and thickness of belts, and the material of which the belt is composed; whether the belt is open or crossed; its tension, and the area of its contact; also the general conditions under which the belt has to work. A belt for driving high speeded machinery should combine, as far as possible, uniformity in thickness and width, pliability and smoothness, closeness and adhesiveness of grain made from the backs of carefully selected hides, and be well stretched before using, even joints of sufficient width to transmit the required power without straining the band joint. Wide belts drive better than narrow ones, a loss of power is largely increased through curling up at the edges. New belts do not bed themselves so well on the pulleys as when they are older. Belts should never be allowed to get greasy or glazed over, as their driving power is thus lessened. In calculating the transmission of power by means of belts, a considerable margin must be allowed for slipping. If it is necessary to run at short centres and the slipping is excessive, the pulleys should be covered with brown paper. Never use resin to make the belt grip, as it acts injuriously on the leather. For transmitting power for high speeded wood-working machinery, the belts, owing to their becoming hard and dry, should be made about one fourth wider than is found necessary in other kinds of machines running at slow speeds. As I have said before, it is also very necessary that the belts should be uniform in thickness, with nice even joints to avoid jumping on the pulleys. Twisted belts should be avoided as much as possible. A double belt should never be run over a pulley less than 24 inches in diameter as they very soon crack and are then ruined.

The best way to put a belt on pulleys is to put the

smooth or hair side to the faces of the pulleys. One reason for this is, that belts have a better grip on pulleys, owing to the two smooth sides coming together and so excluding the air, and I believe myself that a partial vacuum is formed underneath the belt and the atmospheric pressure makes it grip the pulley all the tighter. Another reason is that it prevents the belt from cracking.

A tight belt should always be avoided. You may increase the power of the belt, but make sure if you tighten it too much, the constant strain will soon break it. If your belt is not powerful enough, it is far better to put on a wider one, and use the other for something else. A belt should not run faster than 30 feet per second, nor have tension of more than 300 lbs. per square inch of sections, and the machinery should be so planned that belts will not have to run in a vertical line; the direction of the belt should be from the top of the driver to the top of the driven.

In fastening belts on pulleys, there are several good ideas that I have seen in the way of hooks, staples, etc. I still use the old-fashioned plan of lacing, but no matter how you fasten a belt, you must do it so that it will run round the smallest pulley without jumping. I might say, that in lacing, you should lace from the centre, make the holes oval, and tie the knot in the centre and on the outside of the belt. For myself, I would never have a laced belt if I could so arrange it as to have an endless one, especially if it has to do very heavy work. I always consider that a laced joint is a great weakness, and I know it is a source of anxiety, for one never can tell when it will give out unless the practice is followed of looking at it daily. Some firms have an idea that they have saved a few dollars by getting a belt without a lap joint to make it endless; but the engineer does not think so. These hints that I have given on fastening belts, are for those engineers who are unfortunate enough to have to lace or fasten them.

Perhaps some of my engineer friends would like to make a lap joint when that irresistible desire to be working at something seizes them, so I propose to tell you how to go about it. In the first place, plane the two ends down level, until the lapped joint is the same thickness as the belt; scrape off all the uneven places left by planing until you have a level surface for joining; get some good cement and spread it quickly over the two ends; put the ends together and clamp them between two warm plates of stiff iron; if you have no clamps, put them in the vise, and in about an hour the belt will be ready for work. From the works of M. Powis Bale, I copied the following table of the different laps required for various sized belts:

Width of belt in inches	1	2	3	3 to 6	6 to 8	Above 8
Amount of lap in inches	3	4 1/2	5 1/2	6	8	10

In most cases after a belt has been at work a short time, it stretches out considerably and begins to slip. Anybody could say that it wants tightening or drawing up, but just how to do it and do it right, is the problem. To those engineers who make a practice of throwing the belt off and tightening it, then forcing it on again by hand, I would say, don't do it again, for you surely make one side longer than the other, and a loss of power is the result. Always shorten a belt when it is in its place with stretchers. They can be hired or borrowed from any belt shop, and if not, then make a stretcher of your own. Another question is: how much may it be taken up without injury to the belt? From the above mentioned work I give the following rule: When putting on a new belt, draw it up one inch for every five feet of its length, and in taking it up for the first time draw it up one inch for every 10 feet of its length; for the second time, one inch to every 20 feet, and so on.

An engineer may look at his driving belt, and wonder to himself what power his belt is developing or would develop under favorable circumstances. The following rule taken from the "Practical American," says for leather belts, the product of the speed of a belt in feet per minute with its width in inches, is equal to 500 times the horse power transmitted. From these rules we may calculate: 1st, the horse power which a belt of given width and velocity can transmit, 2nd, the velocity with which a given belt has to be run to produce a given horse power, and 3rd, the width necessary for a belt to transmit a given horse power with the speed it is running the pulleys.

FIRST RULE.—Multiply the speed of the belt in feet per minute with its width in inches, and divide by 500; the result will be the horse power. Example—suppose a belt is running with a velocity of 2,500 feet per minute with a 16 inch wide belt, what horse power will it develop? $2,500 \times 16 \div 500 = 80$ horse power.

SECOND RULE.—Multiply the horse power by 500, and divide by the width of belt in inches; the result will be the velocity in feet necessary to transmit the

power. Example:—Suppose you require 100 horse power with a 20 inch belt, what must the velocity be at which it must run? $100 \times 500 \div 20 = 2,500$ feet per minute.

THIRD RULE. Multiply the horse power by 500, and divide the product by the velocity of the belt in feet; the result will be the width in inches required to transmit the power without slipping. Example:—What must be the width of a belt for a 150 horse power engine, the belt travelling at the rate of 2,500 feet per minute? $150 \times 500 \div 2,500 = 30$ inches wide.

These rules hold for moderate sized belts. Very large belts need not be so wide, but may be 20 per cent. narrower than medium sized ones, while for very narrow ones the width must be taken more by some 20 or 30 per cent. We may deduce from this a rule easily remembered; it is that for every horse power, it takes one inch of belt if it runs at the rate of 500 feet per minute, and that the horse power increases in the ratio of this velocity. I may say these rules apply to single belts. Double belts are 3-5 stronger than single ones, therefore they need not travel so fast or be made so wide as the other belts to do the same work.

Rules laid down by some engineers make the diameter of the smallest pulley by a direct factor of the force which should be transmitted. Others make the length of belt in contact with the pulley such a factor. Others make the force transmitted as the arc of contact, or proportion of the circumference of the pulley enveloped by the belt.

Three forces are principally concerned in transmission of power by a belt: First, its tension on the driving side; secondly, its tension on the slack side, and thirdly, its adhesion to the pulley. The difference between the first and second is the net force transmitted, and cannot exceed the third. It is necessary first to inquire what tension can be continuously applied to the driving side without injury. The question then will be: What other, and less tension applied to the slack side will produce an adhesion at least equal to the difference between the two tensions?

The subject has been investigated mathematically by Rankine, and experimentally by Morin and others. A paper contributed to the *Journal of the Franklin Institute* by Mr. Robert Briggs, gives the result of some investigations made by himself and Mr. H. R. Towne, and is of great practical interest. The same paper is also published in Mr. J. H. Coopers "Use of Belting." The greater or driving tensions were taken at 67 lbs. per inch wide, or one-third the ascertained breaking strength of the laced joinings of single leather belts, and the co-efficient of useful friction at six-tenths of that established for sliding friction. By their own experiments, as well as those of Morin, it was found that with equal areas of contact, the adhesion did not materially differ on pulleys of 12, 24, or 42 inches diameter. Their experiments, as well as a number of examples cited, confirm their theoretical conclusions. The results are summarized in the following table, which gives for arcs of contact from $\frac{1}{4}$ to $\frac{3}{4}$ of the circumference, the net force which should be transmitted for each inch in width of single leather belt:—

Arc of Contact.	Lbs. per inch.	Arc of Contact.	Lbs. per inch.
90°	32.33	150°	44.64
100°	34.80	180°	49.01
110°	37.07	210°	52.52
120°	39.18	240°	55.33
135°	42.06	270°	57.58

For convenience of memory, these results may be approximated by the use of the following rule. To one-seventh of the number of degrees of contact, add 21; the result is the force in pounds per inch wide, which should be transmitted.

The single leather belt, laced, is in such general use that its strength must be taken as the basis in the arrangement of general machinery. Mr. Towne found the strength of rivetted belts to be about 80 per cent. greater than laced ones. A few have been known to last a long time under tensions twice as great as those indicated by the above table. But tensions one-third greater than those of the table are about as high as can be applied to single rivetted belts of average quality, without unequal stretching, and consequent loss of durability.

In our association meetings and our school meetings, we have often had lessons given on the strength of boiler plates and the strain or pressure they are safe to work at; also what pressure would burst any boiler plate. I think an engineer may sometimes look at his belt and think to himself, what strain will that belt stand to burst or break it.

I propose to give you an idea how to work that out. The strength of the best hides used for belting has been

calculated at about 3,086 lbs. per square inch of section. This is reduced at a rivetted joint to 1,747 lbs. and to 900 lbs. at a laced joint. One-third of these figures may be considered a safe working strain. As belts vary very much in thickness, the following table in lbs. per inch width of safe working strain may be of use:—

Thickness of Belt.	Working Tension.
3-16 inches	60 lbs.
7/32 "	70 "
1/4 "	80 "
5/16 "	100 "
3/8 "	120 "
7/16 "	140 "
1/2 "	160 "
9/16 "	180 "
5/8 "	200 "
11-16 "	220 "
3/4 "	240 "

Another way of measuring the power of a belt, is to get an ordinary two-part clamp with a hook on the back, and fasten the clamps tight on the belt. To the hook fix a spring scale, and fasten the scale to the nearest wall or timber that will give a direct pull. Throw the belt over the driving pulley of the engine; hold the other end tight on the pulley, and set the engine off. The moment the belt slips, the reading of the scales is taken, and that is the actual resistance or tension of the belt on the pulley. This multiplied by the speed of the belt per minute gives the total foot pounds transmitted by it for the time reckoned.

In conclusion, I would like to give you a couple of recipes—one for fastening your belts, and the other for making them pliable:

CEMENT FOR LEATHER BELTING.—Common glue and isinglass, equal parts, soaked for ten hours in just enough water to cover them; bring gradually to a boiling heat, and add pure tannin until the whole becomes ropy, or appears like the white of eggs.

For making belts pliable, castor oil is good, besides making the belt vermin-proof. It should be mixed half and half with tallow or oil. Pyroligneous acid will preserve leather from moulding, and will remove the mouldy places by first rubbing with a cloth, then applying the acid.

A little advice on belting may not be out of place here. To those engineers who have full power to get their own supplies of everything round their engines, I would say, when the time comes that you require a belt, always buy the best that money can buy. The best is always the cheapest in the long run. To those engineers who do not enjoy the confidence of the firm they work for, and are not allowed to select their own supplies but must first consult a foreman, (in many cases a man who never devoted five minutes of his life to studying these things), show him the benefits to be derived from getting a good belt. A cheap belt is always a poor one. I have seen them made, and have drawn my own conclusions a long time since.

When once you have a belt, take care of it. It will pay you for all the trouble you bestow on it. Keep it well dusted and free from moisture. If you see the least curling of a joint, if you can repair it, do so; if not, report it to somebody who can. I believe in the old saying, that "a stitch in time saves nine." I know it is true with regard to belts.

CARE OF WATER WHEELS.

WHEN a mill owner buys a water wheel and puts it out of sight under his mill, he expects that wheel to "keep right along eating shad" fifty-two weeks per year, and never stop for bones. Some men have been known to purchase a steam engine, and, after once starting up, run the machine 130 hours per week as long as the engine held together. Occasionally, way back in saw mills, this sort of thing is tolerated now-days, but the increased price of coal has induced most steam users to become progressive, even when other considerations failed to move them.

It would be barbarous to treat an engine as above described, yet water wheels are subjected to just that kind of care, year in and year out. The "best wheel in the world" is purchased and dropped into the wheel pit. Nothing more is thought of that triumph of hydraulic engineering until the gears fall out of mesh, and the mill stops running through the burning out of a step. Repairs, in such cases, often consist merely of a new step, a new bolt or two, and a hurry to get out of the wheel pit.

Water wheel repairs are not often called for, except to the case or penstock, but, like many other repairs, could be made valuable. A water wheel is a rusty looking concern, not at all interesting to the owner, who too often gives it a poke with his cane, decides that it is "all worn out," and listens to the smooth tongued agent

of another "best wheel made." If the old wheel could have \$10 laid out on it for repairs, it would have done good work for ten years longer, and perhaps have delivered more power than the new wheel.

It will pay to let Mike clean the rust off the old wheel and polish it up with a wire scratch brush, such as is used in the foundry. A vigorous use of this tool, reinforced by a cold chisel and hammer, will work such a transformation in the old turbine that its owner would even forget to give it the conventional poke with his cane.

A water wheel, once clean, should be painted with boiling hot gas tar and allowed to dry at least two hours—better two days—before being put back into the pit. The case should receive the same treatment. Lumps of rust on the chutes of turbine wheel cases do not add to the power derived from the water, and the cleaner the chutes, the better the percentage available.

It pays to shut out the water once in three months and crawl into the wheels. If a man takes with him on these occasions two quarts of brains, a monkey wrench, a cold chisel and a hammer, he can crawl out of the wheel in two hours time knowing that the turbine is many dollars better than when he went to it.

Perhaps a crank rod is broken, which allows one of the gate chutes to remain open or shut, as it may chance to lie. In this case waste of water is taking place when the wheel is idle, or a fraction of the wheel's entire power is lost by the chute remaining closed at all times. To determine this fraction, regard the numerator as one and the entire number of chutes in the wheel, or gate, as the denominator. The segment gears, if there are any in your make of wheel, may become badly worn, and they will wear badly under water, causing only a partial opening or closing of the gate, and quite a loss of power and water thereby.

A little bolt may get loose, fall out or rust off, letting the end of a lever get loose. Perhaps this may cause a leak of water or of power, or it may cause a tremendous breakdown, which might ruin the wheel, its case, and perhaps the main gears as well. The quarterly visit to the wheel enables the millwright to nip in the bud many of these incipient breakdowns. He applies new parts, and, in fact, does the repairs "just before they are needed." He prevents breakdowns by anticipating repairs.

The whole turbine business may be summed up as follows: If a manufacturer would treat his water wheels half as well as all his other machinery is treated, they would do more work with less water, last longer, need replacing less frequently, and cause fewer breakdowns than they do under existing methods of careless handling. Every mill owner ought to make his millwright a New Year present of \$10 or \$20, with the request to pay it back by "taking care of the water wheels" during the coming year. It would repay the investment many fold.—*Paper Trade Journal.*

MILLERS' AND MANUFACTURERS' INSURANCE COMPANY.

THE annual meeting of the Millers' and Manufacturers' Insurance Company was held at the Company's offices, 24 Church Street, on the 22nd February. The President, Mr. James Goldie, occupied the chair. The Secretary, Mr. Douglas Sutton, acting as Secretary.

On motion of the President, seconded by the Vice-President, W. H. Howland, the annual report of the Directors and the financial statements were read and adopted as follows:

To the Members and Shareholders of the Millers' and Manufacturers' Insurance Company:—

GENTLEMEN,—

Your Directors beg to submit the fourth General Statement of the business of the Company, comprising Revenue Account and Profit and Loss Account for the past year, and the Balance Sheet, showing Liabilities and Assets on 31st December, 1888.

The total number of Policies in force at the close of the year was 579, covering at risk, after deducting Re-insurance, the sum of \$1,363,625.

It is gratifying to be able to repeat our statements at previous meetings that the expectations regarding this Company are being verified, as the accounts show that the average fire losses alone of other Companies continue to exceed the fire losses and management expenses combined of this Company.

The steady increase of the business is the best evidence that our efforts to reduce the fire waste and thus cheapen the cost of insurance, are being appreciated.

To have been able at the close of the year to set aside an ample re-insurance reserve, declare a ten per cent. dividend to continuing policy holders, and leave at

the credit of the Profit and Loss Account \$30,725.44, should, we think, be considered highly satisfactory.

The retiring Directors this year are: Jas. Goldie, W. H. Storey, A. Watts and H. Scott, who are eligible for re-election.

All of which is respectfully submitted.

JAMES GOLDIE, *President.*

HUGH SCOTT, *Managing Director.*

DOUGLAS SUTTON, *Secretary.*

REVENUE ACCOUNT FOR YEAR ENDING DECEMBER 31ST, 1888.

Dr.	
To balance cash premium income, 1887	\$12,291 64
" premium income, 1888	\$81,350 48
" commission income, 1888	1,940 34
" interest, 1888	1,317 11
	<u>\$84,607 93</u>
	\$96,899 77

Cr.	
By statutory assessment, printing, stationery, advertising, etc.	\$ 648 34
By rent, postages, telegrams and Auditor's fees	507 00
By salaries	3,216 31
" travelling expenses	1,512 52
" Directors' fees	1,130 70
	<u>\$ 7,075 53</u>
" Re-insurance	13,075 90
" cancelled policies	1,628 38
	<u>15,344 28</u>
" claims paid	12,123 00
" balance to profit and loss	62,356 90
	<u>\$90,899 77</u>

PROFIT AND LOSS ACCOUNT TO DECEMBER 31ST, 1888.

Dr.	
To balance revenue account, 1888	\$62,356 90
	<u>\$62,356 90</u>
Cr.	
By renewal bonus fund, 1889	\$ 3,928 08
" dividend to shareholders	1,225 00
	<u>\$ 5,153 08</u>
" re-insurance reserve, being 50% of cash premiums of existing risks	12,802 45
" re-insurance undertaking	13,075 90
" balance	30,725 47
	<u>\$62,356 90</u>

BALANCE SHEET FOR THE YEAR ENDING DECEMBER 31ST, 1888.

Liabilities.	
To capital stock subscribed	\$125,000 00
" profit and loss account	30,725 47
	<u>\$155,725 47</u>
" re-insurance reserve	12,802 45
" renewal bonus fund	3,928 08
" dividend to shareholders	1,225 00
	<u>17,955 53</u>
" reinsurance undertakings in force	13,075 90
" sundry creditors	3,535 09
	<u>\$190,891 99</u>
Assets.	
By investments	\$ 33,714 89
" sundry debtors	4,383 17
" cash in office	649 53
" office furniture	113 60
	<u>\$ 38,861 19</u>
" undertakings in force Dec. 31st, 1888	\$ 39,280 80
" capital stock not called up	112,750 00
	<u>152,030 80</u>
	<u>\$190,891 99</u>

AUDITOR'S REPORT.

To the President and Directors of the Millers' and Manufacturers' Insurance Co.

GENTLEMEN,—I hereby certify that I have audited the books and examined the vouchers and securities of the Company for the year ending 31st December, 1888, and find the same correct, and carefully kept and properly set forth in the above statements.

WILLIAM A. WILSON, *Auditor.*

Toronto, February 18th, 1889.

The retiring Directors, Messrs. Jas. Goldie, W. H. Storey, A. Watts and H. Scott, were unanimously re-elected, after which the meeting adjourned.

At a subsequent meeting of the Board, Mr. James Goldie was re-elected President, and Mr. W. H. Howland, Vice-President, for the current year. The Board of Directors is now constituted as follows: Jas. Goldie, Guelph, President; W. H. Howland, Toronto, Vice-President; H. N. Baird, Toronto; Wm. Bell, Guelph; Hugh McCulloch, Galt; S. Neelon, St. Catharines; Geo. Pattinson, Preston; W. H. Storey, Acton; J. L. Spink, Toronto; Hugh Scott, Toronto; A. Watts, Brantford; W. Wilson, Toronto.

Application will be made for the incorporation of a new flour mill company at St. John, N. B. The principal members of the company are George Robertson, Gilbert Pugsley, and Robert Humphrey, of St. John; Henry Fisher, of Regina; Henry Hogan and Samuel Fatt, of Montreal.



PUBLISHED MONTHLY,

BY

CHAS. H. MORTIMER,

Office, 31 King Street West,

TORONTO, - - CANADA.

ADVERTISEMENTS.

Advertising rates sent promptly upon application. Orders for advertising should reach this office not later than the 25th day of the month immediately preceding our date of issue.

Changes in advertisements will be made whenever desired, without cost to the advertiser, but to insure proper compliance with the instructions of the advertiser, requests for change should reach this office as early as the 22nd day of the month.

Special advertisements under the headings "For Sale," "For Rent," &c., if not exceeding five lines, 50 cents for one insertion, or 75 cents for two insertions. If over five lines, 10 cents per line extra. Cash must accompany all orders for advertisements of this class.

SUBSCRIPTIONS.

The DOMINION MECHANICAL AND MILLING NEWS will be mailed to subscribers in the Dominion, or in the United States, post free, for \$1.00 per annum, 50 cents for six months. Subscriptions must be paid strictly in advance.

The price of subscription may be remitted by currency, in registered letter, or by postal order payable to C. H. Mortimer. Please do not send cheques on local banks unless 25 cents is added for cost of discount. Money sent in unregistered letters must be at sender's risk. The sending of the paper may be considered as evidence that we received the money.

Subscriptions from all foreign countries, embraced in the General Postal Union will be accepted at \$1.25 per annum.

Subscribers may have the mailing address changed as often as desirable.

When ordering change, always give the old as well as the new address. Failure upon the part of subscribers to receive their papers promptly and regularly should be notified at once to this office.

EDITOR'S ANNOUNCEMENTS.

Correspondence is invited upon all topics pertinent to the mechanical and milling industries.

This paper is in no manner identified with, or controlled by, any manufacturing or mill-furnishing business, nor will a bestowal or refusal of patronage influence its course in any degree. It seeks recognition and support from all who are interested in the material advancement of the Dominion as a manufacturing country, and will aim to faithfully record this advancement month by month.

Readers of the "MECHANICAL AND MILLING NEWS" will confer a favor upon the publisher and derive material benefit themselves by mentioning this paper when opening correspondence with advertisers. Drop us a postal card when you have written to an advertiser, give us his name, and then we will put you in the way of getting the benefit. Don't forget this.

WE are indebted to the Secretary of the Indiana State Millers' Association for advance proofs of the proceedings at the meeting of winter wheat millers held recently at Indianapolis.

JUDGING from the number of new mills projected, and the transfers of mill properties chronicled in the present number of the MECHANICAL AND MILLING NEWS, it would seem to be the opinion of many persons, that profits can still be extracted from the milling business.

WE know of several Canadian inventors who are at work on new machines designed to improve the processes of wheat and oatmeal milling. The success of some of these inventions has already been demonstrated by the results of their operation. We are promised a description of some of these machines at an early date.

THE example of the absconding American bank cashiers, defaulting city treasurers, etc., who have suddenly conceived a liking for residence in Canada, is said to have had its effect upon Henry Dieckmann, president of a St. Louis milling firm, who is reported as having come north into Canada, to escape the discomforts of a climate rendered preternaturally warm by numerous creditors.

THE Council of the classic city of Stratford, Ont., cannot fairly be accused of undue haste in dealing with matters affecting the interests of their constituents. An enquiry from a London manufacturer as to what inducements would be offered him to establish a new industry in Stratford, remained unopened for three or four months, the Council having no idea as to what the contents of the letter might be. This plan of doing business, while answering well enough, perhaps, in the matter of granting bonuses to manufacturers, might in relation to other matters affect very injuriously the city's interests.

THE importance to manufacturers of a good water power has been impressed upon the attention of the people of Winnipeg by the failure of that city to secure the new 500 barrel flour mill which Messrs. Hastings & McGaw have determined to erect, the site for which has been chosen at Rat Portage. If Winnipeg hopes to become a manufacturing point of any importance it must be in a position to supply free water power. Judging from the fact that the three companies incorporated to develop the water power and navigation of the Assiniboine river have decided to amalgamate their forces, and apply for a new charter, it would seem to be the determination to carry out the scheme to provide ample water power at Winnipeg for manufacturing purposes—a scheme declared by expert engineers to be perfectly feasible.

THE attention of our readers is directed to the annual report of the Millers' & Manufacturers' Insurance Co., of this city, published on another page of this paper. The results of this Company's operations are of a most satisfactory character. The care displayed by the management in the selection of risks, and in seeing that every precaution is taken to guard against the destruction of the property insured, has resulted in reducing the losses to a minimum, while enabling the Company to offer insurance at a very low rate. The Company has been enabled to set aside an ample re-insurance reserve, declare a ten per cent. dividend to continuing policy holders, and leave at the credit of the profit and loss account \$30,725.47. This, as our readers will admit, is a very satisfactory showing, and accounts for the steadily increasing volume of business which is being done by this Company.

LAST month we suggested that any experimenting with frozen wheat for seeding purposes in the Northwest could be more profitably done by the experimental farm authorities, and that the adaptability of partially-frozen grain for seed should be conclusively determined before any such grain was sown. It has since appeared that at the time our article was written, experiments were being conducted by Prof. Saunders at the Ottawa experimental farm, with the object of determining this point. Prof. Saunders reports the result of forty-one samples of frozen wheat sent from Manitoba and the Northwest for the purpose of ascertaining its suitability for seed. It varied in germinating power from 21 to 99 per cent. The vitality of thirteen samples was so low as to render them unfit for seed, no matter how large the quantity sown. Five samples which showed over 90 per cent. vitality have been returned as good seed when sown in the usual quantity, and the remaining twenty-three, ranging in vitality from 66 to 89 per cent., have received qualified recommendations. The use of such seed, the professor says, is not without risk, but should the season be favorable it is likely that in the fertile soil of the western prairies many of the weakly plants would eventually become strong. It would be wise, however, in using such seed to sow a larger quantity than is customary, to compensate for the lack of vitality. A couple of well-known Ontario millers with whom we had a conversation recently on this subject of frozen wheat, were strongly of the opinion that the wheat would gradually become acclimated to the Northwest, after which there would be little or no damage from frost. Both these gentlemen spent their early days on farms in Ontario, upwards of forty years ago, and they state that much damage resulted from frost at that period. Let us hope that these opinions will prove to be well-founded in connection with the future of wheat-growing in the Northwest. In the meantime, it is hoped that the greatest care will be taken in the selection of proper seed, and as far as possible to guard against damage by early frosts.

THE design of the Ontario Factories Act in providing that manufacturers shall be liable for any damage their employees may sustain owing to neglect on the part of employers to provide proper safeguards against accidents from machinery, etc., is a commendable one. Notwithstanding that this is so, it would appear that the practical working out of the measure will in many instances result in injustice being done to owners of manufacturing establishments. From the number of claims for damages which have already arisen under the Act, it is apparent that employees will not be slow to avail themselves of its provisions. The evidence in such cases is heard before a jury. In the United States, where a similar law and procedure obtain, it has been found that, while the law contemplates no partiality between the rich corporation and the poor operative or employee, the jury is quite ready to allow its verdict to be governed by sympathetic considerations favoring the

injured plaintiff, however clear the accident might be due to his own carelessness. Unless a corporation has all the evidence in its favor it stands but a slight chance of gaining any case of this character brought to trial before a jury, as ordinarily made up." As juries are pretty much the same the world over, Canadian manufacturers are pretty sure to come out the small end of the horn in the majority of cases brought against them under the Factories Act. Indeed, the decisions already given which have come to our notice, have been almost invariably in favor of the employee as against the employer. While we are quite ready to admit that in some of our manufactories greater protection from contact with machinery should be provided, we are assured that carelessness on the part of employees in attendance on machinery is to blame in the majority of instances when accidents occur. It is enough that employers should bear the risk of often paying damages because of the carelessness of their employees, without being at the further disadvantage of having their case submitted to a jury whose decision, instead of being judicial, is the outcome of personal feeling. The only means of defence which employers have against such unfair procedure, is to insure against its consequences, and that entails another hardship—the unnecessary expenditure of money.

IT is time that an Association of Canadian millers was organized. It seems well-nigh absurd that in this age of organization, the 2,000 millers of Canada should still stick to the individual in preference to the united plan of working. One of our American contemporaries correctly states that in years gone by the mechanical part of the mill . . . business was uppermost, and any mill which could turn out a good article of flour had no difficulty in disposing of it at a reasonable margin of profit. Now, when nearly every mill can make good flour, it is not so much a question of how to make it as of how to sell it and keep the balance of the profit and loss account on the right side of the ledger. It is now not a question of machinery and system so much as a question of business methods and business policy. It will be admitted that many millers who might otherwise hope to be successful, fail through lack of acquaintance with business methods and business policy. Dominion and Provincial Associations of millers, holding meetings three or four times a year, might discuss with much profit the essentials of successful business management in flour manufacture. While simply mentioning this as one of the important matters which might profitably engage attention, we are aware that there are many others of no less interest. The deliberations of such Associations would be certain to benefit each individual member, and also to advance the prosperity of the milling industry throughout the Dominion. The means would be afforded the millers of the country of becoming acquainted with each other, and should the occasion arise, this acquaintanceship would enable them to work together harmoniously and successfully for their common welfare. The meeting of millers held in this city the other day to discuss the flour duty, showed the need of such acquaintanceship. The millers who attended this meeting, with a few exceptions, were perfect strangers to one another, so much so that when Mr. Caldwell, M. P. for Lanark, rose to speak, the chairman enquired his name. If Canadian millers desire increased prosperity and influence, it is obviously their duty to organize without delay.

WE devote with a great deal of pleasure, considerable of our space this month to the doings of the millers, in connection with the effort they are making to secure the correction of the mistake which was made when an import duty of only 50 cents per barrel was imposed upon American flour. It is a matter of surprise that Canadian millers have so long suffered from the results of that mistake without making a united and determined effort to secure fair play as against their American competitors—not to speak of the protection which is accorded to manufacturers in other lines. The time has at last arrived when from sheer desperation they are compelled to make such an effort to secure their rights. The number and capacity of American mills have increased to such an extent that great difficulty is experienced in finding a market for the large surplus of American flour above the requirements of the home market. The Canadian import duty of 50 cents per barrel is worthless as a barrier against the desire of American millers to make this a slaughter market for their surplus production. In consequence, the Canadian miller finds himself in the position of the honest merchant who is obliged to compete against a neighbor slaughtering bankrupt stocks at half price next door. On the other hand, the ex-

isting anomaly of a higher duty being imposed on imported wheat than on imported flour, makes it impossible for the Canadian miller to compete by grinding American wheat.

We are pleased to be able to inform the millers of Canada that the result of the visit of the deputation of millers to Ottawa a few days ago, was on the whole very encouraging. While Sir John Macdonald threw upon Parliament the responsibility of deciding whether or not justice should be done the millers, it is satisfactory to be told by members of the deputation that a great many members of Parliament on both sides of the House are in full sympathy with the effort to have a great wrong made right, and have promised to do all in their power to assist in the accomplishment of that object. In another column we print "The Millers' Appeal," in which the injustice to which they are subjected is made clear at a glance. Copies of this "Appeal" have been printed for the information of the members of Parliament and others who may not have become fully aware of the disadvantageous position in which Canadian millers are placed by the existing tariff. We have every confidence to believe that when the true position of affairs shall become known in Parliament, no time will be lost in removing the obstacles in the path of the millers' prosperity. As an indication of this, we quote with pleasure the following article from one of the ablest supporters of the Government and the National Policy, the *Montreal Gazette*.—"The following is a statement of the quantity of wheat and flour imported for consumption in the Dominion during the last five years:—

	Wheat bush.	Flour bbls.
1883-4.....	298,696	529,3.
1884-5.....	373,009	538,020
1885-6.....	66,061	199,375
1886-7.....	22,534	168,124
1887-8.....	12,042	96,545

Total..... 772,342 1,465,448
 Reducing the flour into the equivalent of grain, the import of five years amounts to 6,729,500 bushels, or nearly nine times the import in the shape of wheat. The duty collected on both flour and wheat aggregated \$863,569 for the period, or an average of 11½ cents per bushel upon the whole importation of wheat and flour. It is a certainly a curious anomaly that the duty on wheat, the millers' raw material, should be 15 cents per bushel, while upon flour, the manufactured product, it is only 50 cents per barrel. Inasmuch as four and a half bushels of wheat are required to produce a barrel of flour, it will be at once seen that the tariff actually discriminates against the home manufacturer, the Canadian miller. Little wonder that the import of wheat from the United States has dwindled to a miserable twenty thousand bushels annually, for no sane man will bring in the cereal in the shape of grain, and pay thereupon 67½ cents, when he can import the flour at a customs tax of only 50 cents. Nor has the Canadian miller alone reason to complain of the strange discrimination in the tariff against his business, the farmer has also a grievance, since he was led to expect a protection of 15 cents a bushel against American wheat, and has been given a protection of only 11½ cents. The millers this year have once again pressed upon Parliament and the Government the need and the common justice of a readjustment of these duties, either by increasing the specific duty on flour or converting it into an *ad valorem* rate of 20 per cent. The millers point out that whenever it becomes necessary to import wheat or flour from the United States, flour is always brought in because of the lower duty it bears, to the disadvantage and loss of millers, produce dealers, railways and forwarders. The extent of the milling interest of Canada is dwelt upon, it forming both as to the number of establishments and amount of capital invested therein, one of the most important branches of business in the country. It does not, however, require any elaboration of argument to sustain the millers' case; enough to know that their raw material bears a higher tax than the manufactured product. The failure of the Government to correct the anomaly has no doubt been due to a consideration for presumed maritime province interests. Yet the import of American flour into Nova Scotia and New Brunswick in an average crop year is quite insignificant. In 1887-8 it did not exceed 10,000 barrels, that is to say one-eighth of the whole import. In a year of short crop in Canada and an abundant harvest in the United States no doubt a large quantity of flour would come into this country, but surely if we must purchase from our neighbors, it is only fair that raw material, wheat, should be brought, and that the profit of manufacturing into flour

should fall to our own people. The whole spirit and intent of the National Policy is contravened in the arrangement of the wheat and flour duties; millers are suffering keenly from the discrimination, and transportation interests are also injured. The consumer's interests in a country like Canada are not of cardinal importance in this case, because the great bulk of the flour consumed can be as cheaply produced at home as abroad, and the raw material is had here in abundance. The matter is not a new one; it has been pressed upon the Government year in and year out since 1879, but the anomaly still exists. A little courage on the part of the Ministers in the wisdom and efficacy of their own fiscal policy alone is required to secure common justice to the millers and wheat growers of the Dominion."

The contention of certain daily papers that if justice was done the millers, the price of bread would be increased to the consumer, is not well founded. In addition to the good and sufficient answer to this contention contained in "The Millers' Appeal," there is another, viz., that if Canadian mills could run steadily, they would be able to produce flour cheaper than they can do under present conditions, and in addition they would give employment to hundreds of operative millers who are now unemployed. Our Montreal contemporary shews clearly that the tariff in its present shape not only bears unjustly upon the millers, but also upon the farmers, the amount of whose protection has been reduced from 15 cents to 11½ cents per bushel by the insufficient duty on imported flour. The interests of the farmers are therefore identical with those of the millers, and the Government can do justice to both these great interests of our country, by making the duty on imported flour \$1 per barrel.



Gravenhurst, Ont., wants a flouring mill.
 The mill at High Bluff, Man., is to be refitted.
 Mr. Kennedy, of Holbart, Ont., is about to rebuild his mill.
 Mrs. Bonfield will rebuild at once her mill at Eganville, Ont.
 W. E. Tench & Son, millers, Chippewa, Ont., have assigned.
 J. Barclay, miller, Springfield, Ont., is reported to have been sold out.
 There is said to be some likelihood of a flour mill being built at Arden, Man.
 It is reported that the Thompsonville mill property is about changing hands.
 The proposed C. P. R. elevator at Owen Sound, has not yet been commenced.
 Mr. Jas. Mitchell, of Hespeler, Ont., has purchased the Glenmorris flour mills.
 Something like \$2,500 has been subscribed towards erecting a grain elevator in Arthur.
 The addition to the elevator at Midland will boom the grain business there next season.
 Russell, Man., is to have a grist mill, Silver Creek giving \$2,500 and Russell \$2,500 bonus.
 Atcheson's grist mill and shingle mill at Victoria Road, Ont., was destroyed by fire on February 4th.
 Mr. Prince will put up a mill at Calgary next summer, having contracted for most of the machinery.
 Mr. Rannie, of Hensall, Ont., has sold his mill to Mr. Henry Cook, late proprietor of the Zurich grist mill.
 The roller mill belonging to Phillip Carman, Abingdon, Ont., was burned on February 1st. Loss about \$8,000.
 The Hudson Bay Company proposes to complete the grist mill partly constructed a few years ago at Fort Ellice, Man.
 Mr. Jas. Wilson, Fergus, Ont., whose mill was recently burned, has reared a mill at Palmerston, which he will operate at once.
 Mr. Curran, of Halifax, has asked to be allowed to import corn free of duty, in order that he may manufacture it into cornmeal.
 Messrs. Mitchell & Bucknall, of Millwood, Man., are adding to their plant in the mill, four new sets of rolls, centrifugal purifiers, shorts-dusters, etc.
 A joint stock company has been formed at Sparta to erect a steam grist and saw mill in that village. The site has already been selected, and a bonus of \$1,000 is spoken of.
 The Northwest Boards of Trade want the Government to deepen all canals between Port Arthur and Montreal to allow vessels carrying 67,000 bushels to pass through.
 About 800,000 bushels of Manitoba wheat are in store in the elevators at Fort William. The total amount handled to date, this crop, through the Fort William elevators, is about 2,000,000 bushels.
 Messrs. Bennett & Lockertie have purchased the 50 barrel roller mill at Spencerville, Ont., and intends increasing the capacity to 75 or 100 barrels. They have in connection with it a good site for a saw mill, tash and blind factory, and cheese box business, which they offer for sale, or if desired will sell the site and mill property together.

Mr. Peter Sherk, of Bridgeport, has purchased the flouring mills at Baden, Ont., and intends completely renovating and refitting them, introducing the latest roller process of manufacturing.

The Todd Milling Co.'s flour mills at Galt, Ont., are equipped with an apparatus for burning petroleum for fuel, and it is in this way that steam is generated for the 150 h. p. engine that drives the works.

Mr. Thos. Vollens of Windsor, Ont., is looking for a suitable site on which to erect a mammoth flour mill, to cost about \$25,000. It will contain the latest improved machinery, and will have a capacity of 150 barrels a day.

The grist and flour mill at New Hamburg, Ont., which has been thoroughly refitted, and capable of being run by either steam or water power, has been leased to Messrs. Laird & Hamilton of Wolverton, Ont., for a term of years.

A petition addressed to the Minister of the Interior is being signed, asking for a bonus of \$1,500 to erect a custom grist mill at the South Branch, in the Prince Albert district, Saskatchewan. Mr. S. W. Vanluven has the project in hand.

The Port Arthur *Seninel* learns on good authority that the company owning the Keewatin flour mills regret they did not locate at Port Arthur. Cheap fuel and nearness to the water rates are held to counterbalance the magnificent water-power they have.

The losses at the recent fire in Montreal are as follows: Peck, Benny & Co., elevator building, leased to James McDougall & Co., \$25,000, insured for 14,000; James McDougall & Co., 1,000 bushels of corn destroyed; R. T. Routh, 10,000 bushels of grain, and Ira Gould & Sons, 50,000 bushels of grain.

The steam grist mill at Milton, Ont., owned by John Shaw of Toronto, and leased and run by C. K. Stewart, was destroyed by fire on the 25th February. The mill had been lately supplied with new machinery, and otherwise improved. The estimated loss is \$7,000, insured for \$3,000.

Mr. P. McCoy Clark, milling superintendent of the Ogilvie system of mills, has recently made an extended trip through Canada and the United States, with a view to acquiring additional knowledge in the milling line. As the result of his observations, a number of improvements will be introduced into the Ogilvie mills.

Mr. S. McVean's mills at Dresden, Ont., comprise two mills, one solid brick, three stories high and basement, fitted with the full roller process, with 75 bbls. capacity. The other, an iron sheeted mill, contains three runs of stones, one for wheat, one for feed, and one for cornmeal and buckwheat. The engine room is 32x42 solid brick. A 50 h. p. engine drives the roller mill and a 30 h. p. one the other.

The following mills were completed and put in operation in the Northwest last year: A large mill at Keewatin, with a capacity of 1,200 barrels per day; one at Oak Lake with a capacity of 250 barrels; one at Holland and one at McGregor, Man., having each a capacity of 100 barrels. Although there was a decrease in the milling capacity of the country of 400 barrels per day by the destruction of mills by fire, there was a net gain of 1,250 barrels per day.

At the annual meeting of the Canadian Millers' Mutual Fire Insurance Company, Hamilton, on January 15th, D. Goldie, Ayr, Ont., and Wm. Snider, Waterloo, Ont., were re-elected President and Vice-President respectively; Directors, D. Goldie, Ayr; R. Shirra, Caledonia; R. Quance, Elfrida; Wm. Snider, Waterloo; Jas. Goldie, Guelph; J. D. Sausby, London; A. Watts, Brantford; J. R. Wissler, Salem; Isaac Warcup, Oakville.

Few people realize how much flour and grain is handled in Portland, N. B. The *St. John Globe* says, "There were stored last Saturday, there, 50,509 barrels of flour, \$2,600 bushels of corn, and 91,180 bushels of oats. These figures do not include the grain at the Grand Trunk elevator nor any part of that brought in from Canada for shipment on the ocean steamers. Neither do they include flour and grain sold by Portland wholesale houses to dealers in Maine."

The Vancouver, B. C., *News-Advertiser*, says: The members of an eastern firm owning the Montague & Silver Creek Mills at Whitehall, Michigan, are in the city. They have examined various localities in the Province and are convinced that Vancouver is the most eligible location for a flour mill, having regard for its railway and steamship facilities. They propose to erect a roller mill of considerable capacity, on the Hungarian system, fitted with all the latest improvements. The gentlemen in question are desirous of ascertaining if the city will offer them any inducement to start their enterprise here. They have been for some weeks in the Province, during which time they have satisfied themselves that there is an abundant grain supply for a mill. It will add to the general trade of the merchants of Vancouver if a mill is in operation here.

The business carried on for some years past by Messrs. F. C. Ireland & Son, in manufacturing choice breakfast cereals and hygienic foods has become so large, and the demand so continually increasing, that it has become necessary to erect larger mills with more machinery. In consequence of this a notice appears in the last issue of the Ontario *Official Gazette* of application to incorporate "Ireland's National Food Company, Limited, of Toronto," with a capital stock of \$100,000. As soon as Mr. Ireland made known his intention to put the business into a joint stock Co., the stock was soon taken up by a few shrewd business men of this city, who, with Mr. Ireland, now control the business, trade mark, patents, formulas, etc., of this most successful enterprise. There is a wide field open before the new company, and from what we know of the men connected with it, there is no doubt but it will become "National" as its name indicates.

PUBLICATION.

THE Winnipeg *Commercial* has issued a very creditable special number, which contains much interesting matter relating to the Northwest.

Western Letter.

PROBABLY the most important meeting ever held in Western Canada in connection with the grain interest was that held in Winnipeg on Feb. 15th last. This meeting was called by the Winnipeg Board of Trade. At the annual meeting of the Winnipeg Board, held early in February, the grain committee recommended that a meeting be called to consider carefully the whole question of the date and manner of fixing the Manitoba grain standards. In accordance with this desire of the grain committee, the Board of Trade called the meeting. Recognizing the importance of the question, and in order that the deliberations should have more weight, it was decided to invite representatives from the other Boards of Trade in Western Canada. In addition to the Winnipeg Board, the following Boards were represented at the meeting: Port Arthur, Ont.; Morden, Birle, Carberry, Brandon, Portage la Prairie and Minnedosa, Manitoba, and Qu'Appelle, Assiniboia Territory. The objects of the meeting were explained, and it was resolved to request the Dominion Minister of Inland Revenue to appoint a Board of Grain Examiners and Arbitrators for Manitoba and the Territories, to be known as the Manitoba Board of Examiners and Arbitrators, and that the examiners to form this Board be appointed by the Winnipeg, Port Arthur and Brandon Boards, three by the former and one each by the two latter Boards. Of course the object of having this Board of Examiners appointed, is to place the control of the grain trade of Manitoba more fully in the hands of Western men. This board, if appointed, would meet in Winnipeg annually, to select the grain standards for grading the crops of this part of Canada, and all disputes regarding our grain would be settled here. The feeling against the fixing of our grain standards at Toronto, has been steadily growing here. It has long been felt that Western men should have the regulation of the Western grain crops, independent of the Eastern Boards of Trade. During the past two years a good deal of grumbling has been heard about sending samples to Toronto, for the purpose of selecting the standards there. The difference of opinion between the Winnipeg and Eastern Boards, regarding the grain grades, greatly increased the feeling that Manitoba Boards should have full control of the business. The decision of the Department at Ottawa changing the grades of Manitoba wheat in accordance with the desires of the Winnipeg Board of Trade, as against the recommendations of the Boards of Montreal and Toronto, gave general satisfaction here. This decision has moreover emboldened our grain men to ask for still further concessions, as will be seen by the request now made to allow of the selection of grain standards at Winnipeg, instead of Toronto. It is fully expected here that the Department at Ottawa will comply with the request. As a matter of fact, the standards for grading the Manitoba crop of 1888 were fixed at Winnipeg. At the meeting of the grain examiners in Toronto, in the fall of 1888, the delegates were unable to come to any decision regarding the selection of standards for grading Manitoba wheat. Representations were made to Ottawa in the interest of Manitoba grain men, which led to the selection of standards at Winnipeg, under the authority of the Minister of Inland Revenue. It therefore seems quite probable that the Dominion Ministers will receive the request of the Western Boards, to arrange for the selection of grain standards here, with favor. The main reason urged why the standards should be selected here, by Western men exclusively, is as regards the time of meeting to make selections. It is urged that the date of the meeting of grain examiners at Toronto, is too early in the season to suit the interests of the Western grain producers and dealers. It is claimed that fair representative samples of the Manitoba crop cannot be secured and forwarded to Toronto in time for the annual meeting of the grain examiners. Again it is asserted that Western men should be more familiar with the peculiarities and requirements of the crop in each year, than the representatives of the Eastern Boards. The failure of the examiners at Toronto last year to fix standards for Manitoba wheat, is also used as a strong argument for having the standards selected annually at Winnipeg. Then on general principles, it is claimed that Western men should have the regulation of the Western grain business, independent of the Eastern Boards.

A movement has been on foot here for some time to bring about a new departure in the mode of handling grain at terminal points. This is to secure the appointment, by the Dominion Government, of an official to be termed a weighmaster, who would have charge of the weighing of grain at important shipping points. This system is followed in the United States at some points, and works well. The Winnipeg Grain Exchange

was the first to take up the question of having such officials appointed in this country. The idea is, that the weighmaster would weigh all grain passing through elevators, giving certificates of weight, just as the official inspectors now give certificates as to quality of grain. The advantage of having an official weighmaster would be to prevent disputes between grain dealers and elevator companies, as to shortage. For instance, there has been a good deal of trouble between grain dealers here and the C. P. R. company, regarding shortage in grain stored at Lake Superior elevators. By the appointment of an official weighmaster at Port Arthur, these difficulties would be obviated, as the certificate of the weighmaster would be sufficient evidence as to the quantity of wheat which a dealer might place in an elevator, and it would show the weight which the dealer would be entitled to receive from the elevator. The salary of the official weighmaster would be met by a small tax on the grain weighed. At an important shipping point, the tax per bushel to meet the salary would be a very small fraction. It is understood the C. P. R. company is opposed to the appointment of weighmasters, and doubts are therefore entertained here, as to the likelihood of the Governments making the desired appointments. The Winnipeg Board of Trade, however, will urge upon the Government the desirability of appointing a weighmaster at Port Arthur.

At the meeting held here to consider the fixing of the Manitoba grain standards, the canal question was also discussed. This is a matter which has occasionally received attention from the Winnipeg Board of Trade for some time. Grain men here are in favor of the deepening and enlarging of the canals of the St. Lawrence, and also of the total abolition of tolls on vessels passing through the canals. The deepening of the canals to allow of the passage of a vessel from Port Arthur to Montreal, drawing fourteen feet of water, is greatly to be desired, in the interest of the Western grain trade. It is claimed that wheat could be carried from Port Arthur to Montreal for about five cents per bushel were the proposed canal improvements carried out. Indeed, this does not seem at all improbable, as during last summer, wheat was carried from Duluth to Kingston at 34 cents per bushel. Large vessels can of course carry grain more cheaply than smaller ones, and the enlargement of the canals to allow of the passage of large crafts, is very important to the grain trade of Manitoba. The very long railway travel between here and the seaboard, renders it necessary in the interest of our grain trade that the waterways should be improved to their utmost extent. The railways cannot begin to compete with the lake route for the cheap transit of goods even at present, and with the canal improvements proposed, the railways would be at a further disadvantage. It is evident that the long railway haul precludes the shipment of any very large portion of our grain crops by the all rail route to the east. Grain not shipped out before the close of navigation, must go into store at shipping or interior points until the following spring. The present rate of freight on grain from Winnipeg to Port Arthur is 21 cents per 100 pounds, and the all rail rate from Winnipeg to Montreal is 46 cents per 100 pounds. The extra freight rate to Montreal over the rate from here to Port Arthur is therefore 25 cents per 100 pounds, or 15 cents per bushel of wheat. Now if grain can be carried from Port Arthur to Montreal by water for five cents per bushel, the saving will be 10 cents per bushel on wheat over the all rail route. Elevating and storage charges through the winter will have to be deducted from the saving of ten cents per bushel in freights, reducing the net saving to about 5 cents per bushel. Five cents per bushel does not seem very much, but it is a big thing in the aggregate. Manitoba may have 20,000,000 bushels of grain for export next crop, and five cents per bushel on this amount, would mean a saving of \$1,000,000. This will show the importance to Manitoba of the improvement and deepening of the great water route to the greatest possible extent.

Another flour mill was completed and put in operation in Manitoba this week. This mill is located at Treherne, Man. It is owned by R. Muir & Co., the machinery being supplied by Messrs. Wm. & J. G. Greey, of Toronto. The mill has a capacity of about 150 barrels per full day. This gives us twenty nine roller mills in the country, varying in capacity from 75 barrels to 1,200 barrels per day. Two mills have each a capacity equal to the largest figures mentioned. All these mills have been established since 1882, the first roller mill in Western Canada having been established in Winnipeg in that year. The aggregate annual capacity of all our mills is fully equal to 8,500,000 bushels of wheat. This grinding capacity will be considerably increased during 1889. Hastings Bros. & Co.'s mill is the only new one so far actually decided upon, but there is

every probability that several other mills will be built this year.

SHORT SYSTEM MILLING.

By "RAY."

AFTER a review of my last article, it appears to me that a few words more on the subject of the breaks would not be out of place, especially as that appears to be the great bone of contention between the advocates of the two methods, long and short.

Hitherto I have refrained from drawing any comparisons between the long and short systems, nor am I anxious to do so now. The great majority of the mills in Canada are what are known as long system ones, and their owners are very largely satisfied with the quality of the work they are performing, and that they may long remain so is my sincere wish. I have nothing whatever to gain by making them dissatisfied, and hope that I am not egotistical enough to think that anything I can say would have that effect. But there is, to my certain knowledge, a percentage of the long system millers, who are beginning to think that perhaps the longest way round may not be the shortest way home after all, and it is for the benefit of these latter, and possibly for the amusement also of the former, that this article is written. Mr. Slater, I think it is, has defined the difference between the two methods as follows:—"The long system grinds by breaking, the short system breaks by grinding." This definition is so much to the point, and covers the ground so thoroughly, that it deserves to live, and I hope I am giving credit to the right party. The object sought to be obtained in the one case is to "break" the wheat into what we know as middlings, making as little flour as possible in the operation. True, the object at the same time is to keep the bran as large as possible, but the method employed is sadly against it. The berry is generally found broken into several pieces before it reaches the third break, thus presenting to the triturating action of the wire-covered scalpels, numerous jagged edges, while the broken pieces retain sufficient weight to secure them a thorough scouring without the aid of the brushing operation, which some have introduced to complete the misery.

Every passage of the wheat between the rolls produces a certain amount of bran powder. This, with the material scoured from the edges of the bran in the scalpels, and mixed with the break flour after the first break, gives this produce its low value.

"Oh, if I could only make it all middlings?" cries the long system miller. But he can't, and there's the rub. But with the short-system we have done the next best thing—we have succeeded in making the break flour equal to the middlings flour without lowering the latter.

Another thing, in long-system work the flour made on the first break runs to feed; in short-system work it runs to patent flour. Say only one barrel of this in the hundred, calculate the difference in price, which do you prefer?

In short-system practice we desire to keep the bran as large as possible throughout the operation, and we succeed so well that I have frequently picked out the entire covering of a kernel of wheat in one piece, yet thoroughly cleaned.

In the first operation, instead of breaking the wheat into several pieces, we aim to make flour immediately, and in so doing we spread the berry out nearly flat. In this state it is much reduced in weight, and its shape is much better calculated to prevent the edge scouring action of the scalper, and as a result the flour is of a much higher quality. The berries coming to the second roll flattened or laid open, slide between the rolls edgewise, and are flayed of nearly all the remaining flour-making material, the bran passing on to the bran roll very little damaged.

We use wire only on the first scalper, and the bran portion being so much reduced in weight after the first operation, very little harm is done in the scalper.

In this article I have principally endeavored to account for the difference in the value of the break flour made by the two methods, and to sum the matter up, it just amounts to this, that the larger amount of bran scourings mixed with the small amount of flour in the one case, necessarily produces a very poor article, while on the other hand, the small amount of scourings (for we have a certain amount in spite of ourselves) mixed with the larger amount of flour, must produce one very much better. That this superiority does exist in favor of the short-system, no person who knows anything about the matter will deny, and this is the only way in which I can account for it.

At a conference of grain men at Winnipeg, recently, it was decided to ask for the appointment of a special board of grain examiners to select standards for Northwest wheat.

PAGE

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WE WANT IT KNOWN TO EVERY MILLER

) THAT (

DOBSON'S

Patent Flour Dresser

Is guaranteed to be SUPERIOR TO ANY OTHER BOLLING DEVICE for

Clear, Clean Bolting, or Re-bolting of all grades of Flour.

THEY CANNOT BE BEAT ON ANY STOCK,

—AND—

Are being extensively adopted for the entire bolting in both new and old mills.



Finely designed and mechanically constructed, slow speed, occupies small space, and has immense capacity.

Manufactured for the Canadian trade by

THE HERCULES MFG. CO.

PETROLIA,

ONTARIO

Send for price lists, testimonials, &c.

Satisfaction guaranteed.

Bloomfield, Nov. 20, 1888.

Messrs. RUNCIMAN BROS.

Gentlemen,—In reply to your enquiry as to how I like the Hurford Bolts which you put in the new mill you built for me. I have much pleasure in letting you know that they are giving perfect satisfaction, and are without doubt the best bolts I have ever seen.

The Cochrane Roll is also doing her work just as you guaranteed to me that it would, and with the Hurford Bolts and Cochrane Rolls combined, I think you have given me one of the best 75 bbl. mills in Canada, and I will also take much pleasure in showing any parties who may call on us, just what we are doing.

Yours truly,

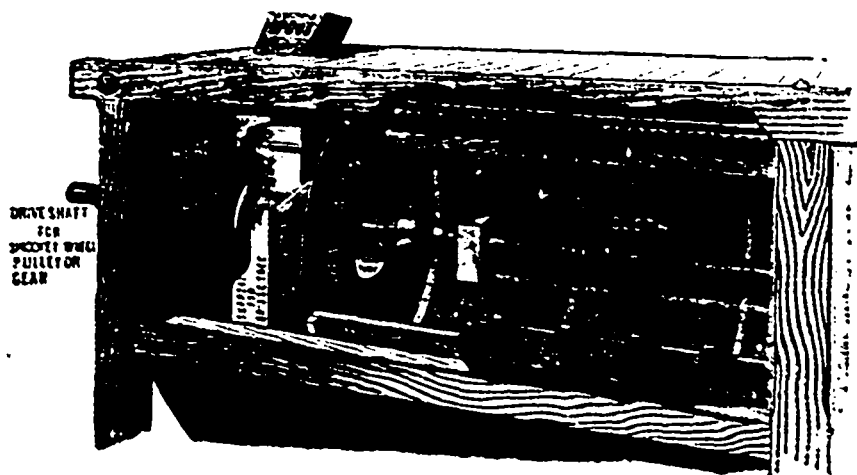
M. B. BURR.

I can fully endorse the above.

H. S. BULL,
Head Miller.

HURFORD BOLT AND SCALPER

The only Round Reel with inside brush, and no Round Reel will do satisfactory work without it.



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Mill Builders and Mill Furnishers

—SOLE MANUFACTURERS FOR THE DOMINION OF CANADA OF THE—

HURFORD BOLT

AND AGENTS FOR THE

COCHRANE - ROLLER - MILL.

OFFICES: COURT HOUSE BUILDING, HAMILTON.



THE

Hurford Flour Bolt

HAS AT LAST

COME TO THE FRONT

In Canada, as it has always done in the United States:

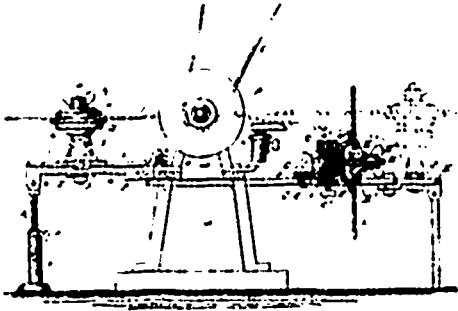
WE are prepared to guarantee the Hurford Flour Bolt the best Bolt in the market, and we are also prepared to put the same in competition with any other Bolt, and guarantee results in every case.



Latest Canadian Patents.

Circular Saw Sharpener and Gumming Machine.

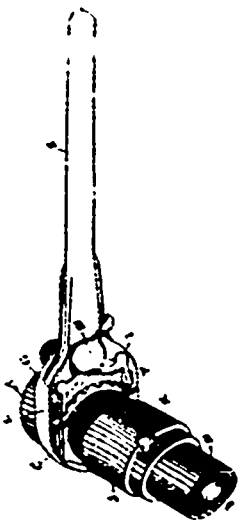
No. 30,343. John Mealey, Fairville, N. B., dated 6th December, 1888.



Claim.—1st. In a saw sharpener and gumming machine, the saw rest G provided with the shank G3, the bearing G4 and the saw clamp holder G5 having a central aperture G6, in combination with the saw clamp H consisting of the recessed plate H1, the clamping teeth H2, the bolt H3, the nut H4 and the spindle H5 which fits into said central aperture G6 of the saw clamp holder, substantially as shown and described. 2nd. In a saw sharpener and gumming machine, the recessed plate H1 provided with the spindle H3 with which said plate turns, in combination with the pivoted clamping piece H2, the bolt H3 on which said clamping piece H2 is held, and the nut H4 for screwing said clamping piece H2 against the saw plate held on said recessed plate H1, substantially as shown and described. 3rd. In a saw sharpener and gumming machine, the combination, with a bevelled grinding wheel, of the carriage O held adjustably on a bed plate, the carrier P fulcrumed on said carriage, the slotted arm Q fulcrumed on said carrier, a plate S held to slide on said slotted arm Q, a rod T adapted to be secured to said plate S, and the lever U fulcrumed on the carriage O and pivotally connected with said rod T to move said plate S forward and backward, so that the saw supported on the plate S is moved to or from said grinding wheel, substantially as shown and described.

Secret Cutter.

No. 30,460. Horace Brown and John Linton, Toronto, Ont., dated 20th December, 1888.



Claim.—1st. A head A, having fixed to it the die B, and provided with a sleeve C to fit over the pipe or rod to be cut, in combination with a handle E journalled in the head A, and provided with pawls F and G to engage with teeth I in the said head A, substantially as and for the purpose specified. 2nd. A head A, having fixed to it the die B, and provided with a sleeve C to fit over the pipe or rod to be cut, a thread being cut on the said

sleeve to correspond with a thread cut in the collar J, which is fixed to the pipe or rod to be cut, in combination with a handle E journalled in the head A, and provided with pawls F and G to engage with teeth I in the said head A, substantially as and for the purpose specified.

Oiler.

No. 30,445. John F. Stairs, Halifax, N. S., dated 19th December, 1888.

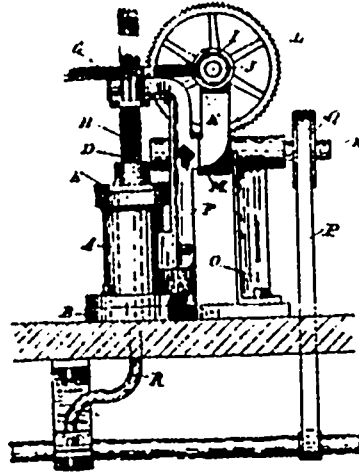


Fig. 1

Claim.—1st. An oiler provided with a cylinder for holding lard, or other lubrication, a piston in said cylinder operated by slow-moving mechanism, and service pipes for conveying the oil or lard from the cylinder, substantially as shown and described. 2nd. In an oiler, a piston moving in a cylinder for forcing lard or oil to the working parts of machinery, the rod of said piston being screwed through the cover of the cylinder are turned by suitable driving mechanism, substantially as shown and described. 3rd. In an oiling machine, the combination of the spindles J and N, screws I and M, and the worm-gear wheels G and L, with the screw-threaded piston rod D, having the key-way H to receive a spline fixed in the wheel G, and turning in the screw-threaded opening in the piston cover E, and the service pipes R, substantially as shown and described.

CANADA'S FOREIGN TRADE.

THE trade returns for the fiscal year ending June 30, 1888, show the foreign commerce of the Dominion to have been well maintained during the period, in spite of such special drawbacks as a deficient harvest. The value of the imports reached \$110,894,630, a total exceeded but four times in the last thirteen years, namely, in 1882, 1883, 1884, and 1887, the imports last year having been two millions in excess of those in 1888. Since confederation the fluctuations in the value of imports have been wide. Beginning with a total of \$73,459,000 in 1868, the figures advanced continuously and rapidly to \$128,213,000 in 1874. Then a change came. The crash in the United States in 1883, and the cessation of borrowing from England for public undertakings, were mainly instrumental in producing the reaction, and during the ensuing five years, down to 1879, trade in Canada was seriously crippled by the unequal competition experienced from the adjoining country, through the slaughtering of American goods. In 1879 the value of imports into the Dominion had fallen to \$81,964,000, the smallest total recorded since 1870; but with the change in fiscal policy then inaugurated, the import trade again moved up, reaching high-water mark for the second time since confederation in 1883, when we purchased \$132,254,000 worth of goods abroad. The reaction since that year has not been nearly so marked as in the period

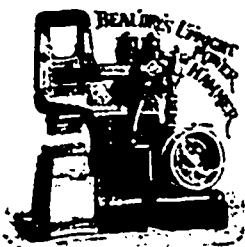
since 1874-9, the value of imports in 1886 having been \$104,424,000, from which it rose again to \$112,892,000 in 1887, and last year was \$110,894,000. The import trade since the establishment of the National Policy, it is proper to observe, has altered greatly in character. Before 1879 our imports consisted of finished products, of goods upon which the labor necessary to prepare them for immediate consumption had already been expended; while since 1879 a large percentage of the imports has consisted of raw materials, such as iron, cotton, wool, hemp, coal, etc., the labor necessary to the production of the finished article being expended within the Dominion. This fact, which is often ignored, completely destroys the pretence that the protective policy has failed of its purpose because the volume of imports has not declined.

The variations in the value of the export trade have been less sharp than in the import, but have occurred in much the same order. Starting with sales abroad of \$57,567,000 the first year after confederation, the export trade increased to \$89,351,000 in 1874; reached to \$71,491,000 in 1879; bounded up to \$102,137,000, the largest total ever reached, in 1882; and was last year \$90,203,000. The statistics show very forcibly that trade in Canada since 1880 has been more continually prosperous than at any previous period; the barometer has not always, indeed, been a rising one, but it has averaged a high point, and has been free from sudden and violent fluctuations and from the dead level of dullness.

It is a noteworthy fact that the average excess of imports over exports in recent years has been appreciably less than in former times, and to this closer approximation of values may, we believe, be in part attributed the immunity of trade from serious depression. Thus, between 1872 and 1879 the average excess of imports over exports was 32.1 per cent.; while in the period of 1880-8 the excess of imports has averaged only a fraction over 15 per cent., or about one-half that of the earlier period. However much theorists may dispute, it is certain that a commercial crisis will sooner or later overtake a country which buys abroad much more largely than it sells, for the operation merely implies trading on credit, a postponement of payments which must be made eventually, and the accumulation of which, without the means of liquidation, involves embarrassment and bankruptcy. The example of Great Britain has been quoted to the contrary of this obvious truth, but the explanation of the excess of British imports over exports is found in the fact that payment of interest and capital of British investments abroad is made in goods rather than gold. Canada has always enjoyed the largest measures of substantial prosperity when the value of her import and export trade has most nearly approximated, and it is a gratifying feature of the statistics of the last eight or nine years that the excess of imports over exports has not been unduly great.

The export trade in 1888 increased in every department except in agricultural products, the decrease in which was nearly three million dollars, attributable to the deficient Ontario harvest in 1887.—*Montreal Gazette.*

E. O. Champagne, City Boiler Inspector of Montreal, is a candidate for the office of Superintendent of the Montreal Water Works. Mr. Champagne is well qualified for the position, having had years of practical service in engineering practice. As City Boiler inspector, he has succeeded in bringing the efficiency of the service up to a very high standard.



Beaudry's Upright Cushioned

POWER HAMMER

Simple, Practical, Low-priced, Entirely New Design.

—SEND FOR PRICES—

MILLER BROS. & MITCHELL.

(Sole Makers for Canada) - MONTREAL.

Can be seen at Permanent Exhibition, Toronto.

In the Maritime Provinces there are upwards of thirty mills for grinding corn, of this number no more than half a dozen mills are running, as the cornmeal millers say that they cannot pay their way while the duty on the raw material remains as it is now. The Lower Provinces use each year 175,000 barrels of cornmeal. Of this quantity 100,000 barrels are manufactured in the United States, the balance, 75,000 barrels, is divided up between the mills of Nova Scotia and New Brunswick. Ontario, on the other hand,

purchases 2,000,000 barrels, which shows that enough meal is ground in the country for the requirements of the Province of Ontario. The millers ask for such legislation as may enable them to manufacture all the meal required for home consumption. This, they say, also would be the means of giving a large number of new employment who otherwise would have to go to the United States from the provinces.

John Stephen's saw mill at Fall River, Waverley, was totally destroyed by fire recently.

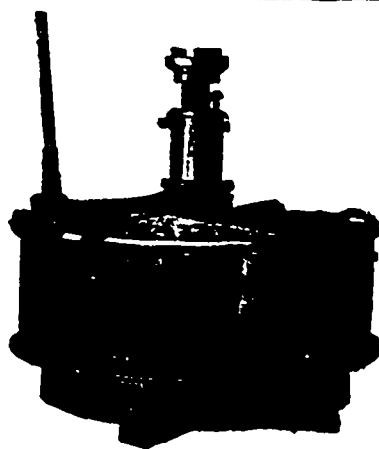
Flour, Flour,

My Traveller is leaving early in March for the East. Millers will please send samples of Flour and Mill-feed which they can offer, with prices. My connections amongst flour buyers are most complete, having lived for years in Eastern Canada, and having personal acquaintance with the leading merchants in the Trade throughout the Provinces.

THOMAS McLAUGHLIN,

Wholesale Dealer in Flour, Mill Feed and Grain,

No. 8 BOARD OF TRADE BLDGS., TORONTO.



GEORGIAN FOUNDRY,
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MANUFACTURERS OF
IMPROVED CANADIAN TURBINES,

The Best and Cheapest, Most Reliable and Economical Water Wheel in the Market.

Agents for Maritime Provinces: MESSRS. A. ROSE & SONS, Amherst, Nova Scotia.

Also complete Saw Mill Outfits and Supplies.

SAW CARRIAGES A SPECIALTY.

Shafting, Hangers, Pulleys and Gearing.

A large list of General Patterns.

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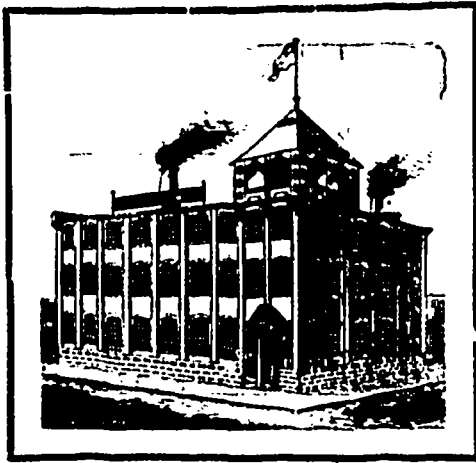
THE BAG AND HESSIAN FACTORY OF CANADA.

BAGS

Of every quality and size.

THE
OLDEST, MOST COMPLETE AND BEST EQUIPPED

Bag Factory in the Dominion.



A Special Feature is the
MACHINERY FOR MANUFACTURING HESSIAN CLOTH.
Every quality and every width can be
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We are now printing 5,000 to 10,000 Bags
daily, and are turning out the BEST WORK in
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WRITE FOR SAMPLES OF OUR
BAG PRINTING IN COLOURS.

WE MAKE
EVERY DAY
THIRTY THOUSAND BAGS

THE CANADA JUTE COMPANY, Limited,

TORONTO AGENTS: MESSRS. STARK BROTHERS,
62 Front Street East, TORONTO.

15, 17, 19 and 21 St. Martin St. - MONTREAL.

A. ALLAN, President.

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F. SCHOLES, Managing Director.

CANADIAN RUBBER COMPANY OF MONTREAL.

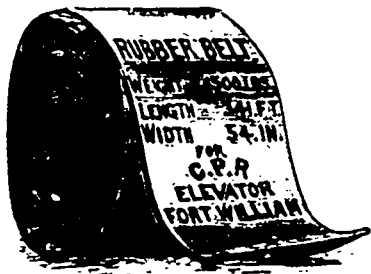
SUPERIOR RUBBER GOODS.

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Rubber Belting

IS UNEQUALLED IN AMERICA.

ALL KINDS OF RUBBER PACKINGS. RUBBER, ENGINE, HYDRANT, SUCTION, STEAM,
BREWERS' AND FIRE HOSE.
RUBBER VALVES, CAR SPRINGS, WRINGER ROLLS, CARRIAGE CLOTHS,
BLANKETS, ETC. MOULD GOODS OF EVERY DESCRIPTION.



Western Branch, Cor. Yonge & Front Sts., Toronto

J. H. WALKER, Manager.

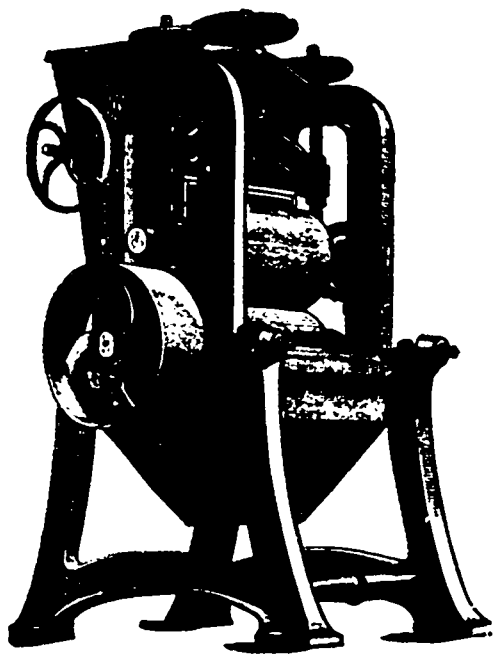
James Jones & Son, MILL BUILDERS

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MANUFACTURERS OF MILLING MACHINERY

- Special Machinery for the Short System of Milling -

AGENTS FOR MILLERS' SUPPLIES.



It has been demonstrated that the Short System of Roller Milling, when properly carried out, will produce better results than can be produced by any other system. It requires less machinery than any other, and therefore costs less money. Two breaks, with proper corrugations and proper differential motion, will produce better results than six breaks on the gradual reduction system.

SOMETHING NEW.

After several years experimenting on the best mill for custom milling, we have lately brought out

OUR MODEL CUSTOM ROLLER MILL,

Which is the Simplest, Cheapest and Best Custom Mill ever offered.

We guarantee to produce as good results as can be produced from the wheat used. Parties desiring to change from the long system to the short system, or change from stones to rolls, or build new mills, will find it to their interest to consult us before placing their order. For further particulars, apply to

JAMES JONES & SON, - THOROLD, ONT.



Mr. Pavner, of Thessalon, Ont., will erect a saw mill at Little Rapids.

Peter & Co. are putting two circular saws in their mill at the Chaudiere, to edge their logs.

Messrs. J. & R. Struthers, of Thessalon, Ont., have added a saw mill to their planing factory.

A fire in Rutherford's saw mill, Cote St. Antoine, Montreal, recently, did about \$5,000 damage.

C. Beck & Co. will cut 15 million feet of lumber at their Pine tanguishene mills, during the coming season.

Messrs. I. White and I. Curran of Muskoka Falls, Ont., are each contemplating the erection of a saw mill near that place.

John Hudson's shingle mill near Feversham, Ont., was destroyed by fire a week or two ago. It was insured in the Gore District Mutual Co., of Galt, for \$600.

McKenzie's saw mill at Appin, Ont., was totally destroyed by fire recently, together with a large quantity of lumber and valuable machinery. Loss, \$2,500, insured for \$500.

Messrs. Bronson & Weston, of Ottawa, have sold to the Shepherd & Morse Lumber Co., of Burlington, Vt., between 15,000,000 and 20,000,000 feet of the present winter's cut of lumber for about \$250.

J. A. Christie, mill-owner of Brandon, Man., has purchased 31 lots north of the city, from the Canada Northwest Land Co., which he will use for piling the lumber manufactured by his new mill on the Assiniboine.

Messrs. Levi Booth and I. J. Harman of Ottawa, have been visiting Southern California, Washington Territory and British Columbia, with a view of selecting a site for a mill and going largely into the lumber business on the Pacific coast.

The following members of the Ontario Lumbermen's Association have been elected as the Board of Management for 1889: M. M. Boyd, J. M. Niven, D. Gilmour, A. H. Campbell, J. McLaren, J. Waldie, J. Charlton, J. L. Burton, E. H. Bronson, W. C. Caldwell, H. H. Cook, N. Dymont.

Messrs. Mickle, Dymont & Son, of Toronto, Ont., have purchased from Christie, Kerr & Co. Toronto, the Bradford Mills, and also the townships of Oakley and Mindon, with a stock of 12 million feet of logs now being taken out. The price paid was \$1,500,000. The company are taking out this and their other lands 40 million feet of logs, and are employing 1,000 men and 400 teams. They are running nine mills this season.

Notice is given of application for incorporation of the Casselman Lumber Company, limited, by John Ira Flatt, East Flamboro, lumber merchant, John Bradley, Hamilton, lumber merchant, Thos. B. Townshend, East Flamboro; Wm. Flatt, East Flamboro, lumber merchant, Mr. Edgar, Hamilton, lumber merchant. The place of business is to be Hamilton, and the capital to be \$250,000 in 500 shares of \$50 each.

The annual report of the Minister of Land and Works for British Columbia shows that there are 25 sawmills in the Province, with a daily capacity in the aggregate of 170,000 ft., or about 275,000,000 per annum. The acreage of timber leases held from the Provincial Government amounts to 135,063 acres, and on Crown Lands, 10,939,400. Timber leasehold, 9,429,565; private property, 3,342,352; total 31,868,384. Royalty collected, \$12,675,59; relate on timber exported 3,051,40. The mills with situations, etc., are Moodyville Saw Mill Co. Burrard Inlet, six locations, in New Westminster district, 33,577 acres in all, Hastings Saw Mill Co., Vancouver, with 8,216 acres on coast, 5,391 New Westminster district, 3,601 coast and Sayward districts; Royal City Planing Mills Co., New Westminster and Vancouver with locations in Sayward on the coast and New Westminster districts, amounting to 20,435 acres in all, Leamy & Kyle, Vancouver, 6,249 acres in coast and Sayward district, W. P. Sayward, Victoria, 1,580 acres in coast district, Wm. Sutton, Cowichan, 7,050 acres in Cowichan district, J. Martin & Son, 787 acres, Harrison Lake; Haslam & Lees, Nanaimo, 18,462 acres, in Sayward district; Croft & Angus, Chemainus, 1,413 acres in New Westminster district, Leonard G. Little, 4,800 acres in Sayward district; Ross & McLaren, 23,600 in New Westminster; Knight Bros., mill of 25,000 daily capacity, Shuswap, Milling Co., Vale district, 3,200 capacity, Muir Bros., Sooke, 2,000, Brunette Sawmill Co., New Westminster, 30,000, Fader Bros., Vancouver, 75,000; Port Moody Sawmill Co., 15,000, W. A. Johnston, Cariboo District, Quesnelle, 20,000, J. B. Nason, Cariboo District, Barkerville, 6,000; Indians, Alert Bay, 5,000, Cunningham & Co., Port Essington, 8,000, G. Willisroft, Georgetown, 12,000, N. Hanson, Kootenay District; Indians, Naas, 3,000, Vancouver Lumber Co., Vancouver, 80,000.

The Ontario Lumbermen's Association, at its annual meeting held recently in Toronto, adopted the following resolutions, relative to the increased export duty recently placed upon saw logs by the Dominion Government—"Resolved, That the export trade in long, round timber is an advantageous one for Canada. Timber of this class is not exported for the purpose of being converted into ordinary sawed lumber, and its preparation and delivery at the place of shipment involves the outlay of more money in Canada, as a rule, than its conversion into lumber would; besides, the waste in squaring the lumber is avoided. The round timber trade is at least as desirable as the trade in boards, in the preparation of which the hollow butted, the shaly, and the knotty portions of the tree are left in the woods to rot, while in the preparation of long, round timber, small hollows in the butt, and the rough portions at the top of the tree are not cut out of the stick. There is as little reason for the imposition of export duty on long, round timber as there would be on square or board pine. That as the exportation of saw logs from the United States to Canada

is not obstructed by a duty, the duty on pine and spruce logs exported from Canada to the United States seems unreasonable, from the fact that the exportation of pine saw logs from the United States to Canada greatly exceeds their exportation from Canada to the United States, the value of logs of all kinds exported from the United States to Canada from 1880 to 1888 having been \$4,319,850, while the value of those exported from Canada to the United States in the same period was only \$156,741. That the small export of pine saw logs during the term of years when the export duty was only \$1 per thousand clearly indicates that the danger of towing short logs on the great lakes will always act as a check on the business of exportation, and leave the export trade, as has hitherto been the case, almost wholly confined to long, round timber, which can be rafted in claims and towed with much less risk than short logs. That the export duty produces irritation and bad feeling, and the movement in the United States to have it removed, and its amount added to the import duty on lumber, will in all probability prove successful at the next meeting of Congress, if not in the present session. That if a plenary duty is once imposed it may be a work of time and difficulty to secure its removal even after the repeal of export duties. The amount of export duty collected in Canada on pine logs in 1888 was \$935,80, while the value of the pine lumber exported to the United States during the same period was in round numbers \$7,500,000, and to risk the increase of duty on the entire export of pine lumber for the paltry pittance of export duty, or for the purpose of preventing the small export trade in logs which might be developed if the duty were removed, seems in the highest degree useless. That the Secretary of the Association be instructed to draft a copy of the resolutions, and that such a copy, duly attested by the President and Secretary be placed in the hands of a committee, who are instructed to wait on the Privy Council at Ottawa, for the purpose of presenting it, and of urging the views of the Association regarding these matters on the Government. That the committee shall consist of E. B. Eddy, J. Charlton, J. R. Booth, W. E. Edwards, Jas. McLaren, N. Dymont, Jas. Scott, E. H. Bronson, A. M. Dodge, W. C. Caldwell, Jno. Waldie, Wm. Caldwell, D. Gilmour, A. McLachlan, H. H. Cook, P. White, A. Fraser, J. Bryson, J. B. Miller, J. Gilmour, H. Robinson, A. Thomson, J. Steward, Jno. Price, J. Gilhes, G. B. Hall, J. Cameron, H. K. Egan, A. Baptiste, W. R. Thistle, R. Blackburn, Col. D. Fisdale, H. McCallum, A. H. Campbell and J. L. Burton."



Mr. R. W. Lloyd, Orillia, Ont., is building a foundry.

The Northwest Pacific Railroad authorities will establish machine shops at Winnipeg.

It is proposed to convert the Alliston, Ont., roller skating rink into a foundry and machine shop.

Mr. Rykert will ask for correspondence with the Canals Department on the subject of water power in the new Welland canal.

It is said that a foundry will be built next summer at Calgary, N. W. T., in connection with the mill to be erected by Mr. Prince.

Application has been made for the incorporation of the Dominion Safety Boiler Company with a capital of \$100,000, and headquarters at Montreal.

The C. Beck Manufacturing Company of Penetanguishene, limited, with a capital stock of a quarter of a million dollars are seeking incorporation.

Messrs. Austin & Bell iron founders and machinists, of Lastowel, Ont., have dissolved partnership. Mr. Bell has gone to Manitoba and the business will be carried on by Mr. Adam Austin.

The foundry of J. S. Bates & Son, Smithville, Ont., was destroyed by fire on the 12th February. The loss will be about \$4,000 on building, stock and machinery; no insurance.

Alex. Gilson, the big lumberman, of St. John, N. B., gives notice of the incorporation of a company with a capital stock of \$3,000,000 for the manufacturing of lumber, cotton and wool goods, brick and the erection of houses.

The Schumaker Manufacturing Co., Silver Creek, N. Y., are said to be asking St. Thomas, Ont., to grant a free site, free water, and exemption from taxation for a number of years, as an inducement to start a manufactory for making mill machinery.

J. H. Fraser, proprietor of the flour mill at Morden, Man., is reported to have returned from Minneapolis, and brought with him a lot of new machinery for his mill. We might suggest to Mr. Fraser that the country which affords him a living can also supply him with as good machinery, and as cheap, as can be imported from the U. S.

The Kilgour foundry, at Mount Forest, Ont., has been sold to Mr. Filshie of Salem, Mr. Filshie paying \$2,000 cash, and giving the town a mortgage on the foundry property for \$4,500, this mortgage to be given up at the end of five years, provided Mr. Filshie keeps the foundry going and on his giving security to run the establishment another three years.

Mr. McKechnie of Dundas, Ont., is said to have purchased four acres, near Carlton Station, on which to erect a large foundry and tool factory. It will be at least 50 feet wide, and two stories high, and will employ about 400 hands. Other factories will, it is said also be erected at this point. Since the above was written, we have been informed that Mr. McKechnie has changed his mind with regard to his proposed enterprise.

The annual meeting of the Canadian Rubber Company was held lately at their offices on St. Paul Street, Montreal. The annual report was read, and was a satisfactory one to the shareholders. The election of directors resulted as follows: Andrew Allan, Jas. Bennett, W. Waball, Hugh McLennan, Fr. Scholes, H. Montague Allan, F. B. Learmont, and A. A. Allan. Mr. Andrew Allan was chosen president, and Mr. J. Bennett, vice-president.



Drill points, heated to a cherry-red and tempered by being driven into a bar of lead, will bore through the hardest steel or plate glass without perceptibly blunting.

It is said to have been demonstrated that in piping natural gas in pipes of one size, about eight pounds per mile of the pressure is lost, but by using the telescope system, with smaller pipes at the well and gradually increasing the size towards the point of consumption, the loss of pressure is reduced to three pounds per mile.

A new process has been brought out in Vienna for the manufacture of copper-coated steel wire for electrical purposes. The old method was galvanic, while, according to the new one now proposed, the steel wire will be coated by spirally winding around it very thin copper bands. The object in all such wires is to combine the great conducting power of the copper with the tenacity of the steel.

If a ladle of iron is accidentally spilled it will of course almost inevitably do some damage or injure some one. But the chances for the men getting away from it are fairly good unless water is encountered, when there is immediately such a violent explosion and scattering of hot metal that there is very little chance for the escape of any one without injury. A combination of melted iron and water is as dangerous as gunpowder, and iron workers should always take pains to prevent such a combination being possible.

The following plan for keeping track of patterns is recommended by a writer in the *American Machinist*: Spread a white paper on the floor, lay patterns on it in proper order, place on each pattern a small square of white paper on which is printed a black, plain figure, beginning with one, two, three, etc.; these may be cut from an old calendar, or printed purposely. Directly over the patterns suspend by any suitable means a photographic camera, and you have it. From the negative thus obtained, make a set of blue prints, send one to the foundry, and the old problem of marking patterns is not only solved, but lost patterns are much more easily found; for a pattern, unlike an actress, resembles a photograph every time.

The Reliance Works, Milwaukee, Wis., are making an experiment in transmitting power by electricity, having built and being about ready to start one of the first, if not the first, electric power travelling cranes in the country. This crane is to work in the foundry, and will have a working capacity to handle a load of twenty tons with ease. All the motions, longitudinal travel, transverse travel and raising and lowering the load, will be effected by electric motors suitably located on the crane, and which will be controlled by three small levers. The motors were furnished by the Sprague Electric Railway and Motor Co., and the experiment, as far as it is gone, promises a complete success.

The first carload of mineral wax that is to take the place of beeswax and to be used largely by electricians recently arrived in New York. It is called ozocerite and is found about 114 miles east of Salt Lake City and is the only source of supply yet known, except in Gahena, Austria. Ozocerite contains from 75 to 95 per cent. of pure wax. Its color varies from a light yellow to dark brown or black. It requires from 160° to 190° Fahrenheit to melt it, and is claimed to be the best insulator known. It possesses the greatest resistance to an electrical substance and is acid proof. It has been used by blacking manufacturers and in the manufacture of sealing wax. When it is refined it is called ceresin and can be used just as beeswax is used. It costs just one-third as much as beeswax. Candles and dolls can be made with it.

By means of a determination of the viscosity of an oil its value as a lubricant may be readily determined, as also the class of work to which it is best adapted. Oils of low viscosity are suitable for light machinery, while those of high viscosity are adapted to heavier work. A good lubricant is of such a viscosity that the moving parts of the machinery are kept separate, while the friction is reduced to a minimum. Many are of opinion that the employment of an oil possessing a viscosity over and above that actually required is a matter of no consequence. Such belief, however, is erroneous, as it is equally as harmful as the employment of one of a too low viscosity; increase in friction being produced in both cases. This is due in the first instance to friction amongst the particles of the lubricant itself; and in the second instance to the improper separation of the metallic rubbing surfaces. It must be borne in mind that strictly speaking the results obtained are only comparative. It therefore follows that the suitability of an oil as a lubricant for any special purpose can really only be determined by the comparing the same with that of an oil which from some practice has been found to be well adapted.

A writer in the *American Engineer* gives the following hints on hardening and annealing: To secure an even temper on work where they are one inch or more in diameter, it is a good plan to use between the two blocks for hardening, two pieces of metal, saw blanks, for instance, of the same thickness as the one to be hardened. This will insure a contact of the block with the flat surface of the saw or flat piece to be hardened, as the two blocks will be parallel. Place two pieces the thickness of the saw at the two similar corners of the block and the saw at the opposite end. The centres of the pieces will then form a triangle and the two blocks will come together as described, parallel. A pair of tongs has been used quite successfully for hardening saws about three inches in diameter. The saws are heated first and then placed in the tongs, the channels or grooves allowing the water to circulate freely over the surface of the saw. Place irons can be hardened between the blocks, as shown above, and kept very flat at the same time. The writer having hardened one in water and annealed it nearly a tenth of an inch, rehardened it between oiled blocks of cast iron and restored it to a perfectly flat shape.

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BAGS

Sample orders will always receive the greatest care.

OUR Bags Works have only been in operation a few months, but nevertheless we are pleased to be able to state that our daily sales exceed those of any similar concern in the country. This is accounted for by the fact that our plant and facilities are vastly ahead of what are ordinarily in operation, and the goods turned off cannot help but be superior in workmanship, appearance, and general uniformity. The Finest Bag Printing Press on the American Continent is running in our works.

Full stock of our Manufactures at all branches.

A. W. MORRIS & BRO., - MONTREAL, QUE.

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BUILDING OR RE-BUILDING FLOUR MILLS,

in the full or combined roller system, we are prepared to furnish estimates or specifications, using a full line of our machines---NONE IMPORTED---manufactured under Canadian Patents controlled by us.

ALL WHO INTEND TO MAKE CHANGES WILL DO WELL TO SEE US BEFORE DOING SO.

Wheelock Automatic Engine,
TURBINE WATER WHEELS,
Wood-working Machinery, - Wool Machinery,
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Special Price Lists furnished on application



Correspondence solicited and orders promptly attended to.

First Prizes Awarded, Toronto, 1882, 1884.

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SAFES,

FIRE AND BURGLAR PROOF

IMPROVED FLOUR DRESSING MACHINE

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Original Designs for Brands Prepared Free of Cost. Send for samples and price lists.

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MILL Properties for sale by H. W. PETRIE, Brantford. Send for Descriptive Lists.

SAW Mill in Bruce County, 80 h. p. Engine, 2 Boilers, Double Edger, Shingle Mill, etc.

WOOLLEN Mill in Waterloo County, fine water power, is now running.

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FULL particulars of any of above Mills on application. H. W. PETRIE, Brantford, Ont.

LIST of Water Wheels for sale by H. W. PETRIE, Brantford and Toronto:

ONE 60 inch Turbine, Goldie & McCulloch, builders.

ONE 60 inch Tyler.

48 inch Lefel.

60 inch Sclater.

48 inch Tyler, in Scroll case.

48 inch Sclater.

45 inch Improved Turbine Water Wheel.

42 inch Sampson Turbine.

PAIR of Sampson Turbine Wheels, 42 inch, run together.

TWO 40 inch Lefels.

36 inch Sclater.

45 inch Lefel.

44 inch Little Giant.

30 1/2 inch Lefel.

30 inch Burnham.

28 inch Lefel.

24 inch Lefel.

20 inch Lefel.

21 inch Archimedian.

21 inch Little Giant.

17 1/2 inch Lefel.

15 inch Archimedian in Globe case.

12 inch Little Giant.

10 inch Lefel, all brass, Springfield, Ohio, make.

WATER Wheel Governor, Galt make.

FULL particulars regarding any of above wheels sent on application. Address H. W. PETRIE, Brantford, Ont.

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Perforated Sheet Metals,

Steel and Iron Wire Cloth,

WIRE GUARDS FOR MILL WINDOWS, ETC.

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Desiring the services of COMPETENT ENGINEERS of any class, can obtain sober, intelligent and reliable men, by applying to

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TO MILLERS.

ADVERTISER, owing to ill-health, is desirous of selling his interest in a first-class roller mill and elevator, favorably located on line of railway in the Northwest Territories, and doing a good trade. Capacity of mill, 100 bbls per day; capacity of elevator, 20,000 bushels. Mill is full roller, with all latest improvements, driven by a new Buckeye engine and large steel boiler. Fuel cheap and plenty. Will sell mostly on time to a good man, or would take a good farm in part payment. Address for further particulars, "N. W. T." care of MECHANICAL AND MILLING NEWS, Toronto.

In the High Court of Justice, CHANCERY DIVISION.

Re. Goodfellow

TRADERS' BANK vs. GOODFELLOW.

Administrators' Sale

under order of Court, to be held at the Town of Aylmer, in the County of Eglw,

— ON THE —

6th day of March, A.D., 1889,

AT 11 O'CLOCK A. M.,

consisting of

Parcel No. 1—Large Roller Flour Steam and Water Power Mill, all first-class, adjoining the town of Aylmer.

Parcel No. 2—Good Brick Dwelling House with lot, in Aylmer, near mill.

Parcel No. 3—Small Lot and old Frame House, in Aylmer, near mill.

Parcel No. 4—Good Frame-Stone Flour Mill and Brick Dwelling, Barn, etc., and about six acres of Land, in Malahide, near Aylmer.

Parcel No. 5—About Twenty Acres of Land in Malahide, opposite to parcel No. 4. Also a large quantity of Milling Implements, Horses, Wagons, etc.

For further description of property and particulars, see posters, or apply to

Edgar & Malone, Barristers, Toronto.

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Crawford & Haines, Solicitors, Aylmer.

Horton & Horton, Barristers, St. Thomas.

John Hoskin, Esq., Q. C., Toronto.

R. MILLER,

Master at St. Thomas

St. Thomas, Ont., 6th Feb., 1889.



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Fire and Storm-Proof, Durable and Cheap.

Our MANITOBA AND SPECIAL STEEL SIDING is specially adapted for Elevators, Warehouses, etc.

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To prevent by all possible means the occurrences of avoidable fires.

To obviate heavy losses from the fires that are unavoidable by the nature of the work done in mills and factories.

To reduce the cost of the insurance to the lowest point consistent with the safe conduct of the business.

The Combined Losses and Expenses on the business of 1887 was under Fifty per cent. (50%).

R. J. McAUPLAN, MILLWRIGHT, 63 Marion Street, Parkdale, Ont.

Plans for Flour Mills, long or short system, also for grain elevators, carefully prepared.

Correspondence solicited.

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Mill Buckets.



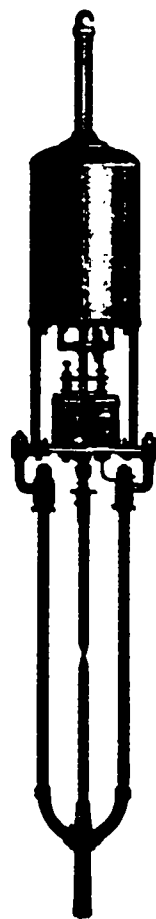
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Send for circulars and price list.

LUMBER PRICES.

Table with columns for LUMBER, CAR OR CARGO LOTS, and various lumber types like spruce, pine, and hemlock with their respective prices.

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Table listing Montreal prices for Lumber, Cement, etc., including items like Ash, Birch, and Portland Cement.

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Table listing prices for St. John, N.B., including Spruce deals, Laths, and other lumber products.

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Table listing New York prices for WHITE PINE and EASTERN SPRUCE, including various grades of lumber.

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Table listing prices for Shingles, including Pine, Cedar, and Cypress.

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Table listing prices for Hemlock, including Timber and Joists.

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Table listing prices for Norway Pink—Rough, including No. 1, 2, and 3.

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Table listing prices for White Pine—Rough, including Uppers, Selects, and Cuts.



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The Case Two-Break System

Especially Adapted for Small Mills; Best Results and a First-Class Mill: John Inglis & Sons,

SOLE LICENSED MANUFACTURERS OF THE "CASE" MACHINERY. SOLE AGENTS FOR THE RICHMOND MFG. CO.'S GRAIN CLEANERS AND ELEVATOR SEPARATORS.

MACHINES REQUIRED FOR

CASE 2-BREAK MILL OF 12 TO 16 BBLs. CAPACITY PER 24 HOURS. 1 6x12 4-Roller Mill, cut. 1 6x12 " " smooth. 1 6x12 " " " 3 Scalping Reels, 4 1/2 ft. x 24 in. 2 No. 1 Case Inter Elevator Flour Dressers. 1 No. 0 Case Improved Centrifugal Reel. 1 No. 0 Case Special Purifier. 1 Combined Separator and Smutter, with Shoe.

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Write for further particulars. A full line of Mill Supplies, Mill Irons, &c., &c. NO. 6 STRACHAN AVENUE, TORONTO

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All Sizes Kept in Stock, and Orders Filled Promptly.

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Or do you know any one who does. If so refer to

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GEO. P. NOWELL & CO., 108 FRUITS ST., NEW YORK.

We have just issued a new edition of our book called "Newspaper Advertising." It has 226 pages, and among its contents may be named the following Lists and Catalogues of Newspapers:—
DAILY NEWSPAPERS IN NEW YORK CITY, with their Advertising Rates.
DAILY NEWSPAPERS IN CITIES HAVING MORE THAN 150,000 POPULATION, omitting all but the best.
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A SMALL LIST OF NEWSPAPERS IN WHICH TO ADVERTISE EVERY SECTION OF THE COUNTRY, being a choice selection made up with great care, guided by long experience.

ONE NEWSPAPER IN A STATE. The best one for an advertiser to use if he will use but one.
BARGAINS IN ADVERTISING IN DAILY NEWS PAPERS in many principal cities and towns, a List which offers peculiar inducements to some advertisers.

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

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

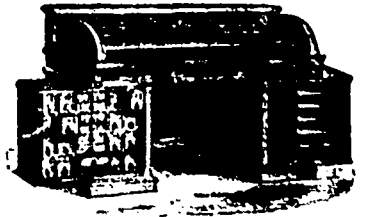
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W. Stahlschmidt & Co.

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Preston, - Ontario.

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Representative,

24 Front Street West, - Toronto.

IMPORTANT TO STEAM USERS.

THE PREVENTION OF BOILER EXPLOSIONS

AND OTHER ACCIDENTS TO STEAM BOILERS.

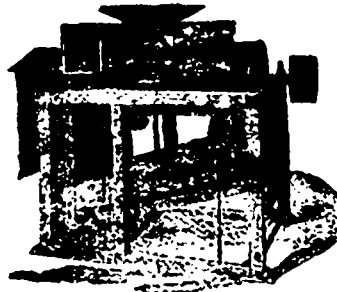
When were your Boilers last inspected? Are they in safe working order?
Are they giving the greatest power at the least cost?

The Boiler Inspection & Insurance Company of Canada.

Head Office, - TORONTO.

LIDLAW'S BARLEY CLEANER

The above machine is unsurpassed in thoroughly cleaning wheat, oats, barley and other grain. Read the following testimonials:



Shelburne, Ont., Jan. 23, 1888.

Messrs. A. Laidlaw & Co., Parkdale.

Gentlemen,—Yours of the 21st received and noted. We have found your Barley Cleaner (No. 1, capacity 200 bushels per hour) a first-class machine, and have no hesitation in stating that it will more than pay for itself in a single season, especially in light or badly awned barley. We cleaned all the barley we handled this season, and find that the average increase in the weight was two pounds per bushel, and the average waste (light grain, dirt, &c.) about one bushel in seventy-five. It increased the value of our barley three to five cents per bushel.

Yours truly,

E. HERWICK & Co.

Toronto, June 3rd, 1887.

Messrs. A. Laidlaw & Co., Toronto.

In reply to enquiry as to the working of your Barley Machines, we would state that they have given us entire satisfaction. Had we any light weight barley in our section last season, we are certain we could speak more positively as to their merits. They run well and fast, and are easily driven. Wishing you every success, we remain,
Yours very truly,

J. MCKAY & COMPANY.

IT WILL PAY MILLERS, OWNERS OF ELEVATORS, ETC., TO EXAMINE THE MERITS OF THIS MACHINE.

Send for circular and testimonials,

A. LAIDLAW & CO., - PARKDALE, ONT.

F. E. DIXON & CO.

MANUFACTURERS OF

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BELTING

Guaranteed in every respect equal to the best American or English Belting.

Send for Latest Discounts and our Pamphlet on Belting.

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70 KING STREET EAST,

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A REVOLUTION IN MILLING!

**THE "COCHRANE" ONE BELT DRIVE
CONTINUOUS TRAIN OF ROLLS**

AN UNPARALLELED SUCCESS!

**Less Power, with
Increased Output,
Less Attention,
More Middlings.**

NO SLIPPING BELTS •• STOCK IS MORE GRANULAR •• LESS EXPENSIVE TO KEEP UP

READ

WHAT ONE OF THE BEST MILLING FIRMS IN EASTERN ONTARIO SAYS,

AFTER

FIFTEEN MONTHS

TRIAL

VALANCEY E. FULLER, ESQ.,
President COCHRANE MANUFACTURING CO.
HAMILTON, ONT.

PETERBOROUGH MILLS, ROLLER PROCESS.
— OFFICE OF —
Meldrum, Davidson & Co.,
Merchant Millers.

PETERBOROUGH, Sept. 20th, 1888.

Dear Sir,—In reply to yours asking a report of how we were satisfied with the Cochrane Rolls placed in our mill by your firm, we would say that, after fifteen months' trial, running night and day, we feel that we cannot speak too highly of them, either for light driving or in their operating on the grain in such a way as to get the very best results, financially or otherwise.

As you are aware, we have same roll surface and number of rolls as our former belted mill. Saving in power in Cochrane Mill, fully ONE-THIRD, or an INCREASE IN OUTPUT, using same power, of FROM FORTY TO FIFTY BARRELS PER DAY. This has been clearly substantiated. Its advantage does not stop here, but through the uniformity in speed of both grinding rolls and feed rolls, together with the fact that there are no belts or anything else to put the rolls out of train, the WHOLE STOCK IS MORE GRANULAR and a much LARGER PERCENTAGE OF "MIDDINGS" is the result, which means a LARGER PERCENTAGE OF FIRST PATENT FLOUR. Any practical miller cannot help but be satisfied of this by examining into the merits of the two mills.

It is a MUCH LESS EXPENSIVE mill to keep up, from the fact that there are neither belts nor gears to keep up and repair, except the main driving belt and a pair of gears at the head end.

We are satisfied the mill HAS ADDED LARGELY TO OUR PROFITS since putting it in—which is the best recommendation we can offer—and consider that Mr. W. F. Cochrane deserves the thanks of the milling public for giving a new idea of such practical value to millers. Hoping you may be as successful as you deserve,

We are, yours truly,
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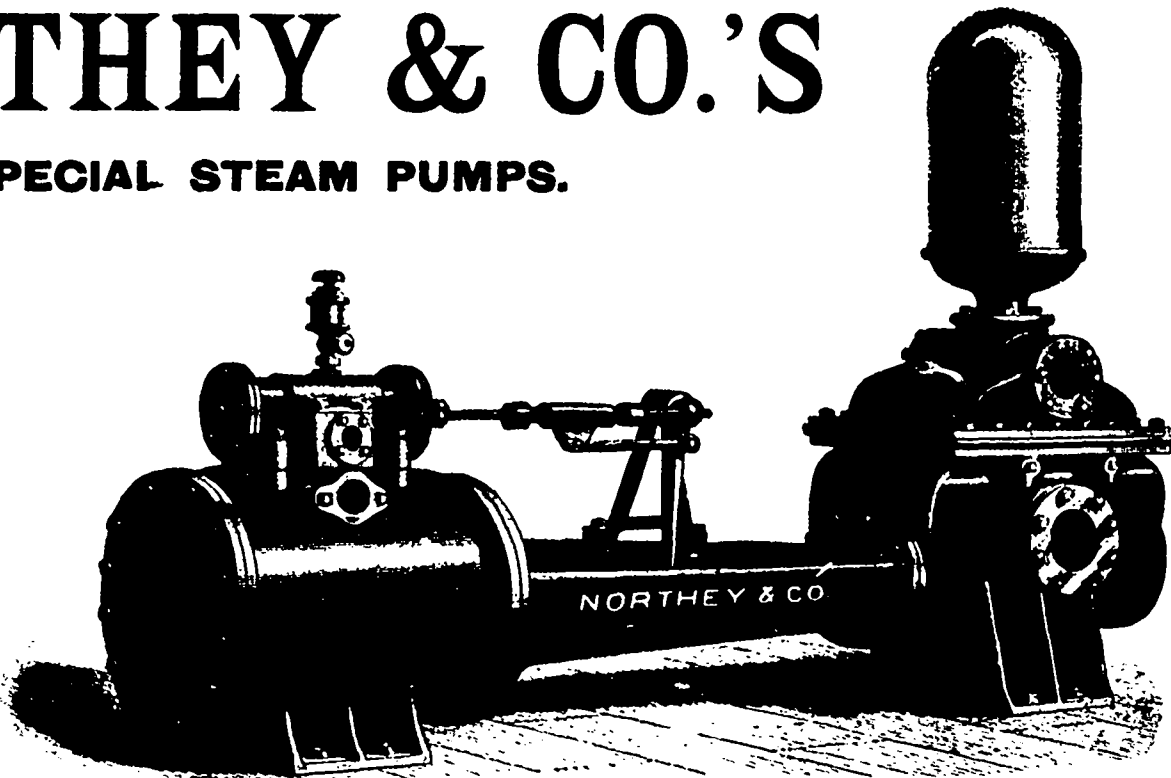
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