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# THE DOMINION MECHANICAL & MILLING NEWS

Vol. VIII.—No. 1.

TORONTO, ONTARIO, MAY, 1887.

Price, 10 Cents  
\$1.00 PER YEAR.

## THE "VELOCITY" MIDLINGS PURIFIER.

MIDLINGS purifiers are so universally used, and the necessity for their use so well understood and appreciated by all intelligent and progressive millers, that any remarks on this point are needless. There have been many different methods adopted for the purification of middlings, but all seem finally to settle on what is generally known as the vibratory sieve and upward air current through the sieve, as being the most controllable and efficient for the purpose of purifying middlings. While the Velocity purifier illustrated on this page does not embody any new principle in purification, it is remarkable as being one of the highest attainments of the machinists' skill. The production of a machine containing so many points of excellence both

in appearance and adaptability to the delicate work for which it is designed, requires many years of practical experiment and gradual improvement. The manufacturers of the Velocity purifier claim to have overcome the many defects found in the earlier machines. Among other points of excellence in the new Velocity may be mentioned the vibratory feed board, which is positive and even in the distribution of the stock; the adjustable eccentric boxes, which can be adjusted to take up wear while the machine is in motion; the ad-

justable sieve hangers and light but rigid shaker frame; also self-cleaning regulating air valves and chambers, which cannot become clogged by accumulations of dust; an aspirating air current through the middlings as they fall onto the sieve from the feed board, and on tailings which are too coarse and pass over the end of the sieve; a new and positive cloth cleaner, one that does not wear the cloth, as it acts on the percussion principle. There are two conveyors under the sieve, both in the same horizontal plane, and the arrangement of valves is such that any portion of the material separated by the sieve can be directed into either conveyor and discharged at either end of the machine as desired. All the shafts are carefully turned, the pulleys balanced, and the journal bearings large and fitted with the best anti-friction metal. The details of construction have been carefully looked after, and there seems nothing wanting to make this one of the standard machines in the milling trade. The manufacturers are Messrs. Wm. & J. G. Greey, of No. 2 Church St., Toronto, to whom all inquiries should be addressed.

[FOR THE DOMINION MECHANICAL AND MILLING NEWS.]

### FORT QU'APPELLE MILL.

By GEORGE B. ELLIOTT.

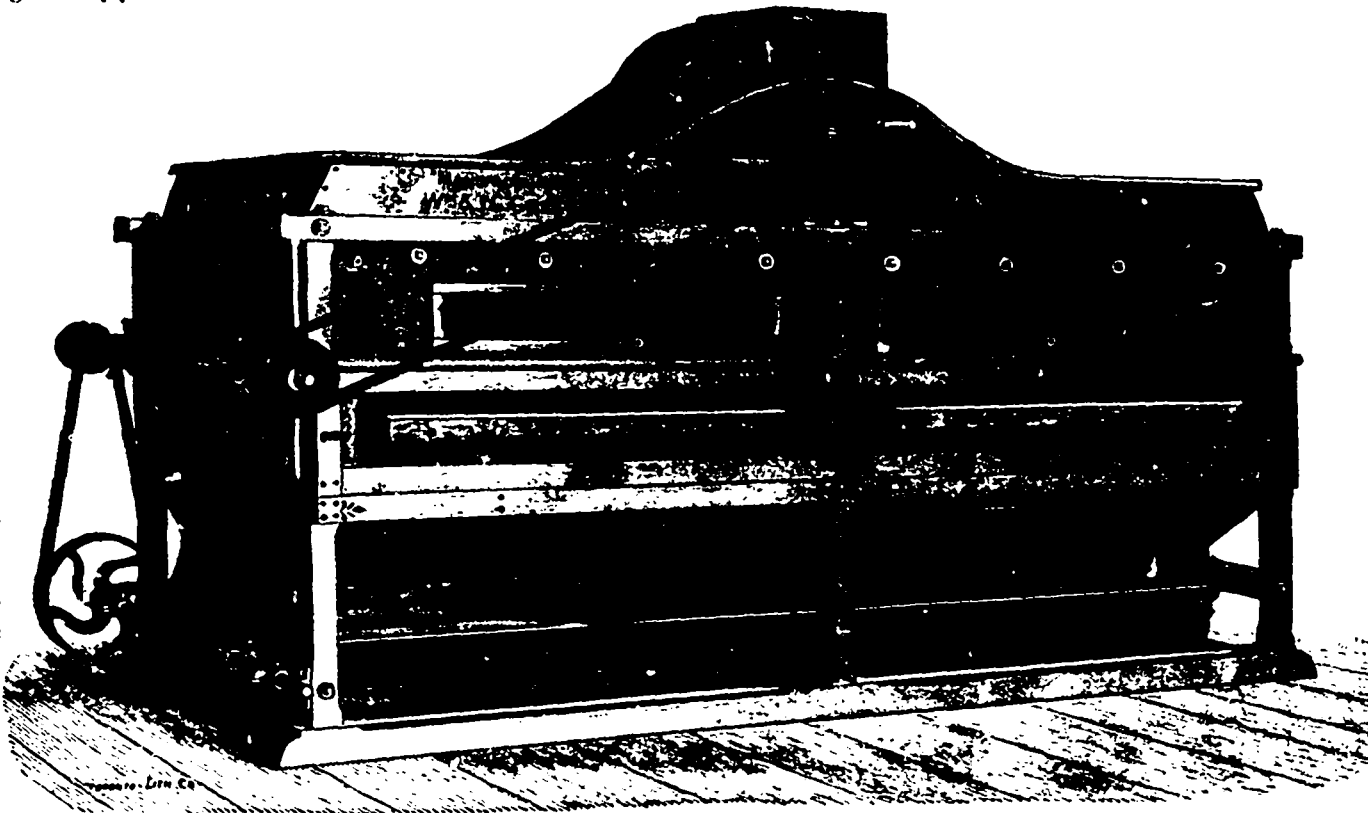
Having expressed a desire to see the interior of Messrs. Ackford, Joiner & Reekard's mill in the Valley of the Qu'Appelle, I was at once invited into the establishment by the foreman, Mr. Tucker, an intelligent Englishman and a practical miller, who for a long time

pursued his craft in Mitchell, Ontario. The mill was built about three years ago by Mr. David Johnston, who has laid many similar loads upon mother earth in the Canadian North-west.

The building is not an imposing structure, though it possesses the snug and tidy appearance so noticeable in western mills. Its coat of dark red is in strong contrast to the snowy whiteness within, while the large white letters with which it is labeled give it a sort of commercial aspect which is in strong contrast to the diminutive letters to be seen on the stores and business houses along the street. Mr. Tucker at once proceeds to prescribe for my curiosity. The mill comprises three runs of stones, and it was run on the old principle until last March, when the roller process was introduced. On the

them to keep up with the demand. To hear him explaining in detail all the economy of the mill, and pointing out how nothing was wasted except, perhaps, the fine powder which was floating in the atmosphere of the room, and which, like the dust of ages, had deposited itself all over the room; to note the ease with which he pulled that, stored this, and drew back the other; to follow him in his explanations as to how the work of converting wheat into flour was doubtless not as difficult as to watch the process itself, but there are so many evolutions, convolutions and revolutions, so many ascensions and descensions, such wonderful manipulations, that one can only account for the perfection the art of making flour has reached on the principle of gradual evolution from the mills which are said to grind slow and hard, to the

mimitable and wonderful roller process. I followed Mr. Tucker in his explanations and at the same time endeavored to keep a nautical eye on the machinery, while also attempting to enter in my note book Mr. Tucker's explanation. Like the young man with the venomial theorem, I thought I had the whole process at my finger's ends, but I am mistaken. I know something about a cracker, and have a hazy recollection of a smutter and a belter, but there is in my mind no logical connection between these great inventions. I know there are long



GREEY'S NEW "VELOCITY" MIDLINGS PURIFIER.

first floor are four double sets of rollers and a packer. On the second floor are scalpels, cockle machines and grain bins. On the third floor are two of Greey's midthings purifiers, and centrifugal reels—mysterious, and if it were not for their sloury coating, handsome looking contrivances, suggesting to my companion the ability of the inventor. All this elaborate machinery runs up to the third storey. In the basement to which we afterwards descended are the engine and the shafting, which gives pulse to the machinery which sets it going, and motion is also imparted to the smutter and brushing machine (the latter the kera V machine that would have delighted the elegant Colonel Starbottle, who was a whale on flushes.) All this is driven by the same power which runs the mill, the capacity of it being 75 barrels per day, and Major McGibbon, of the Indian Department, who is an old Montreal flour merchant, pronounces the quality equal to the best furnished the Department by Winnipeg mills. I notice that the engine is by Corbet & Sons, of Owen Sound, a forty horse power one, and Mr. Tucker says "it is a little daisy." He remarks, "We have the best gristing trade in the North-west Territories. We draw from a circle of 80 miles—we draw south from Broodnew, from the York Colony, Touchwood Hills, and all the country as far as the lake." The cockle machine does its work with great efficiency. The centrifugal reel handles the coarse stock and disposes of it in a fashion which makes the onlooker ask "How is it?" such is the perfection with which its work is done. Mr. Tucker says last summer they ran on an average of eighteen hours a day, and it was almost impossible for

boxes or elevators which are mysteriously at work kicking up a tremendous dust and making a great fuss, but their logical relations to the stones below and the bolts above are to my mind as hazy as the atmosphere which they have rendered hazy by their constant puffing. "As neat and as compact a mill as I ever worked in," remarks Mr. Tucker, and then I am invited into the snug little office, the flour is brushed off or in, and Miller Tucker, who is something of a reader, produces the latest *Punch*, not the permit of that description, but the journal itself, and from the intricacies of the roller process to the eccentricities of Lord Randolph Churchill, Mr. Tucker turns with the ease of a man who does not allow the news of the day to go ahead of him. Even if he is a dusty miller, he is not a rusty one.

According to the *Orillia Packet*, lumbermen agree that the shanties will yield a very good average cut this spring as the result of the winter's work, notwithstanding the unusual severity and continuance of bad weather.

The saw mill owners at Keewatin, believing that they were paying more taxes than they should, got up a petition to the Government, asking that Keewatin be declared a separate municipality. The Rat Portage people objected strongly to the withdrawal of the mill men from the municipality, and a deputation was sent to Toronto to look after the interests of the council. The matter has been compromised by the Rat Portage council agreeing to exempt logs and lumber from taxation; remit one-half of taxes on mill buildings, plant, etc., except school rates; and exempt all mill property from any debenture by-laws which may in future be passed by the majority of the people in the western part of the municipality. The arrangement will apply to all mill property in the township of Rat Portage.

## USEFUL INFORMATION

The *English Mechanic* gives a method of giving new oak wainscoting and other inside finish an antique look. Liquid ammonia of a strength of 880 is exposed to the air in a room or any other compartment which can be made air-tight together with the oak to be stained. The gas combines with the tannic acid of the wood and turns it a deep permanent brown; the darkness of the shade depends upon the amount of ammonia and the length of exposure.

**ELECTRICITY ON COOLING IRON.** Preliminary tests have shown that iron cooled while a strong current of electricity was passing through it was increased fully one-half in tensile strength and ductility.

**TO PREVENT MACHINERY FROM RUST.** Machinery in store for sale may be kept in good condition by applying to the finished parts the best sperm oil. A mineral oil is manufactured by a special process which, owing to a peculiar cohesiveness, is very efficient for rust prevention. Ordinary lubricating oils are not suited to this use. They do not have either the heat-resisting, the cohesive or the adhesive qualities. Metal coatings of amber color are made from petroleum, which have a melting point of 105 to 125 F.; their consistency is between that of lard and tallow. A cheaper product from earth oils and of less body is obtainable: it is of a dark color and its use can be made efficient and easy, as workmen very readily see if all parts are thoroughly covered with it. For heavy machinery to be long exposed to the weather, or for ocean transportation, the "old-fashioned" mixture of white lead ground in linseed oil and tallow is unrivaled for the reason of its great body and because it is heavier than water. There are patent compounds in which gums of various kinds exist dissolved in solvents, of a very vaporous nature; these do not meet with general favor, as the volatile part renders them dangerous when used in the vicinity of a lamp or gas, and they are liable to give trouble by working into the bearings of machinery not possessing any lubricating properties.

**TURPENTINE IN DRILLING.**—An experimenter mentions his successful experience in drilling holes three-sixteenths of an inch in diameter through glass plates about one-eighth of an inch thick, by the use of an ordinary bow drill, with spirits of turpentine as lubricant. The holes were drilled from one side until the point of the drill just punctured the opposite side of the glass; then the glass was turned over and the holes finished by drilling from the opposite side.

**A NEW PROCESS OF WELDING.**—A new process of welding metals, which is the invention of M. Lafitte, is thus described: With a view to overcome the difficulties in spreading the borax or other fluxing materials over the heated surfaces in making welds, M. Lafitte has invented plates, usually consisting of very pliable wire gauze, on both sides of which the flux, being highly vitrified, is evenly spread. Paper may be also used as a support. In cases of small surfaces it is often sufficient to form a sheet of the flux and metal filings agglomerated together. The plates are simply placed between the surfaces in place of the powder being sprinkled on, the wire gauze being welded between the surfaces. A table of tests made was shown on the wall, the results being highly favorable to the system. Mr. Anderson attributed a great part of the success to the much lower temperature at which the welding could be accomplished. Examples of welding by this system were also shown, all of great interest. Perhaps the most remarkable was the case of a hammer head, in which a face of tool-steel had been welded on to an ordinary hammer head forging. This hammer had been in ordinary shop use for six months. To weld tool-steel to iron is certainly a remarkable achievement, and one that marks an era in the history of the smith's handicraft.

**HOW OIL WEARS OUT.** Oil seems to wear out by long-continuous use, and to lose, to some extent, its lubricating qualities. It has been suggested as a reason for this that the minute spherical globules of which the oil is conceived to be made up become flattened by the wear and pressure, and so do not slide and roll over each other as easily as before.

On the subject of dust explosions in planing and flour mills, Mr. F. Butler writes to the *Scientific American* as follows: Some experiments I made about eight years ago to test this point may be of interest. I placed shingles in a sash and door factory where a sandpaper machine was working. In a very short time they were coated with dust to the depth of an inch. This dust was

so wet that when squeezed in the hand, water would run out. I then carried the shingle to my office, where a bright fire was burning, and used a small hand bellows to blow the dust off the shingle so as to come in direct contact with the flame, and the result was an undoubted explosion, of such a force as sufficed to blow the mica lights out of their places in the stove. The result of the few tests I made demonstrated this fact: that if a flame is brought into contact with finely disseminated dust, such as is found in flour mills, sash and door factories, and other works of like nature, an explosion will take place of such violence that no building could withstand it. The factory wherein my experiments were conducted immediately adopted blowers and exhaust fans for the entire removal of all the dust from the building, and this is the only safe way of dealing with this problem.

Some one has recommended the use of turpentine to prevent bugs from destroying bolting cloth. Take a small stick, dip it in the turpentine, and whenever you see a bug or worm on the inside, apply a drop of turpentine, which will kill the bug almost instantly. A little turpentine rubbed on every rib of the reel will destroy their eggs. Always allow the turpentine to dry before starting up. It has been recommended that when the mill is to shut down for a few hours, the bolts and conveyors should be run empty for some time, so as to be perfectly clean. The supposition is that the bugs are busy only when the mill is idle.

### GREEY'S IMPROVED FLOUR FEEDER AND MIXER.

The little machine herewith illustrated, and which is manufactured by Messrs. Wm. & J. G. Greey, of this city, is designed to feed evenly and regularly any kind of stock, and can be regulated to feed from the smallest quantity desired up to five barrels per hour. It requires



GREEY'S IMPROVED FLOUR FEEDER AND MIXER.

no attention after being adjusted, and will feed perfectly and regularly any amount at which it is set. It requires a speed of only 25 to 35 revolutions per minute, using an 8 inch pulley. Millers who want a machine for evenly mixing up choke-ups, low grades, flour and other mill stock accumulations, will doubtless look into the merits of the one in question, full particulars of which will be cheerfully furnished by the manufacturers.

### DON'T FOOL YOURSELF.

An engineer said to us recently, when taken to task for wasting fuel, that it made no difference to his employers whether he burned much or little, for he got no credit for it when he tried to save, he argued, therefore, that economy was useless trouble. So far as his employers are concerned, he may have been correct, for there are such steam users in existence, but in so far as the engineer himself was involved, he was making a mistake. A man who permits himself to fall into careless ways, simply because he thinks he is not appreciated, or that no one praises him for his work, cheats no one so much as himself. It is very difficult to get out of bad habits, when once formed, and the worst enemy a man can have is, often times, himself. Our constant exhortation in these pages is for engineers, and all other mechanics, for that matter, to bear in mind that they are not working for "the boss," but for themselves, and the only way in which they can get along in life is by being faithful to themselves. Let a man once get into the way of thinking that he is putting in so much time for so much money, that he must gauge his service by his pay; his sentence is pronounced, he will be a hewer of wood and drawer of water for others all his days; but if he can grasp the idea that he is his own master, so long as he commands a thorough knowledge of his trade, he will

be in demand by the best firms. Faithful, earnest workers are all too few, and no man ever made a bigger mistake than to say no one cared what he was doing. Such persons are sometimes surprised to find their services suddenly dispensed with, when another comes along who seems to promise better things, but there is nothing surprising in it to those who know the laws of trade.

Let every man practice the highest economy he is capable of, for his own sake, if not for those whose money he receives. He will lose nothing, but, on the contrary, will gain in experience and value in other situations, if he seeks them.—*Milling Engineer.*

### USING COAL TAR AS A FUEL.

Concerning the burning of coal tar as a fuel an English writer says: The use of coal tar for fuel is no new thing. For more than twenty years it has been used for the purpose of firing retort furnaces at the Gaisburg gas works, Stuttgart, according to a method devised by Herr W. Boam, the manager. This gentleman succeeded in designing an injector for tar whereby a thoroughly regular spray was produced with very slight pressure, the tar being thrown on the flame in an arched stream, complete combustion resulting without the production of any smoke, soot, or deposit of any kind, and with only the smallest portion of the tar ever reaching the fire bars, on which a layer of coke is laid. Lately a number of English gas companies at West Hartlepool, Malton and Consett have begun to consume it in their retort furnaces instead of coke, with the assistance of steam; and it is found that with attention to the judicious supply of steam and tar no smoke is given out, and the deposit on the tubes is less than in the case of coke. Seeing that the calorific power of coke is placed by some authorities as high as 27,000 British heating units, it is clearly a valuable fuel when sufficiently liquid to permit its being supplied to the furnaces in regular quantities. At Lisle, in France, De Lisle's furnace-feeding apparatus, by which the coal tar is previously heated to give the necessary fluidity, permits of thickest tar being used as liquid fuel; and steam has been got up on a 50-horse power boiler to a pressure of 30 pounds in one hour and a half, with 308 pounds of this form of liquid fuel; while to do the same work with solid fuel it took 771 pounds of coal and twice the amount of time. Provided there is no undue inflation in the price of coal tar as compared with that of coal, we may be much nearer the reign of liquid and the abandonment of solid fuel than those interested in steam shipping imagine.

This is a subject of more than usual importance to coke manufacturers. It may not be practical at present for coke makers to save all of the by-products, but the tar can be saved without much expense for plant and can be made a valuable fuel by adopting some of the methods of burning that have been suggested. As showing the amount of this tar it may be stated that about 8,450,000 gross tons of coal are used in gas-making in the United Kingdom every year. Taking the average yield of tar per ton of coal as 12.5 gallons of the average specific gravity of 1.185, the yield of tar from these 8,450,000 tons of coal made into gas would be 105,625,000 gallons, or 528,780 tons. There are three methods given with the experiments in its use: 1. Injection into the furnace by means of compressed air, with atomizing apparatus. 2. Injection into the furnace by means of steam, with atomizing apparatus. 3. Feeding into the furnaces by simple gravitation alone or in combination with coke. In using tar it is found that the heat is so intense that only the most refractory of fire-bricks, such as the best Welsh silica bricks, can be found to withstand it. Furnaces lined with the best Stourbridge material would not last out 48 hours, whereas, in ordinary work with coke, they would last over eight months continuous firing. The injection of tar by compressed air for metallurgical uses is of the highest value, as the resulting temperature is immense.

### PUBLICATIONS.

The latest addition to our exchange list is the *Progressive Age*, a large, handsome and ably conducted monthly, published in Philadelphia in the interests of gas and electric lighting.

We have received the prospectus of a new publication, called the *Universal Tinker and Amateur's Assistant*, the first number of which will be issued in July next by Messrs. Hodgson & Bertrand, the well-known publishers of mechanical literature, 297 Broadway, New York. The paper is designed to interest and instruct amateurs, and according to its prospectus "will not confine itself to construction work but will take up every subject that may be brought before it and that may be dealt with from an amateur's standpoint." The price of the paper has been fixed for the first year at \$1.00, and its size at 16 pages.

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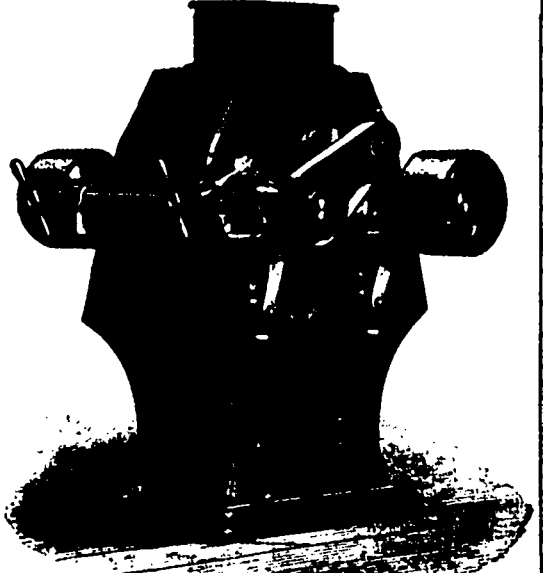
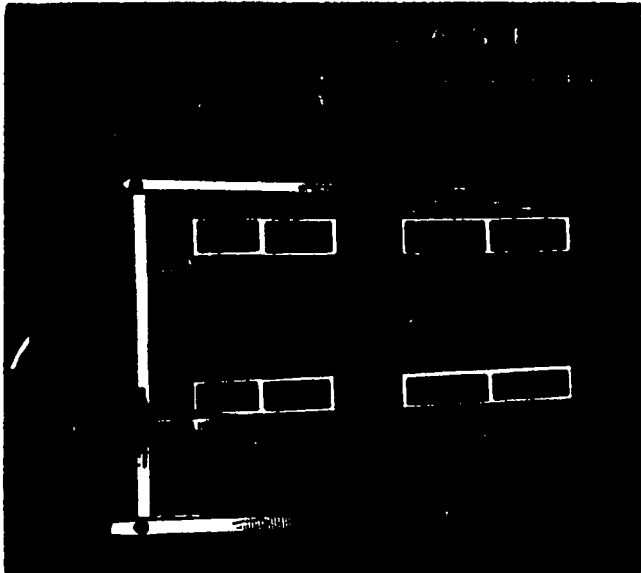
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**THE CASE SYSTEM**

**A PERFECT SUCCESS**



**READ**  
THE  
**ACTUAL EXPERIENCE**  
OF  
**PRACTICAL MEN.**

SIMCOE, Ont., March 19th, 1887.

MESSRS. INGLIS & HUNTER,  
Toronto, Ont.

Gentlemen: The mill machinery on the Case system put in by you last fall gives entire satisfaction. You only guarantee her to make 100 bbls. per 24 hours, and we can make from 125 to 150 and clean up well. The flour produced is above the average, and we have no hesitation in stating that she is a first-class mill in every respect, and would recommend your machinery and system to any person contemplating a change. We believe Mr. Petch to be the best milling expert in Canada today.

Yours, &c.,

W. B. BROWN & CO.

COLDSRING MILLS, Ancaster, Jan. 7th, 1887.  
MESSRS. INGLIS & HUNTER.

Dear Sirs: I received yours of the 3rd, and was sorry that Mr. Inglis could not come up to see the mill. I am sure he would have been well satisfied with the run of all the machinery and especially with the rolls. I have called to see a good many roller mills in this part of the country, but have not seen any that runs so quiet and smooth as our own. With regard to the work, all I can say is that we have been running for the last two months mostly on farmers' work, and sold considerable in Hamilton and Dundas, and have not heard any complaints yet. I am well pleased with all the machinery which I got from you, and I give Mr. Wm. Ross, millwright, great credit for the way he did the work. We have no trouble with anything if we keep our belts right, and I think when you see the mill you will say that he has done a first-rate job. As we got all the machinery from you by contract, and got the work done by the day, I will give Mr. Inglis a correct account of what the job cost when he comes up. I have sent to your address this day one thousand dollars (\$1,000), being second instalment, and when Mr. Inglis comes up we will settle about the balance.

Yours truly,

A. CHAPMAN.

MEADOWVALE, Ont., March 30th, 1887.  
MESSRS. INGLIS & HUNTER,

Toronto, Ont.

Gentlemen: I have much pleasure in stating to you that the mill of 125 bbls. capacity per day, which you put in for me on the Case system at Meadowvale in October last, has more than filled my expectations. It has been running constantly ever since, day and night, and after six months trial I can positively say it has no superior and few equals in Canada. The quality of the flour I am producing is beating out all rivals, and I am doing a fine business, with large orders ahead all the time, while many other mills are idle or running on short time. I can cordially recommend millers proposing a change to deal with you and know that you can give them satisfaction with the Case system. Wishing you every success, I am, gentlemen,

Yours truly,

A. H. WHEELER.

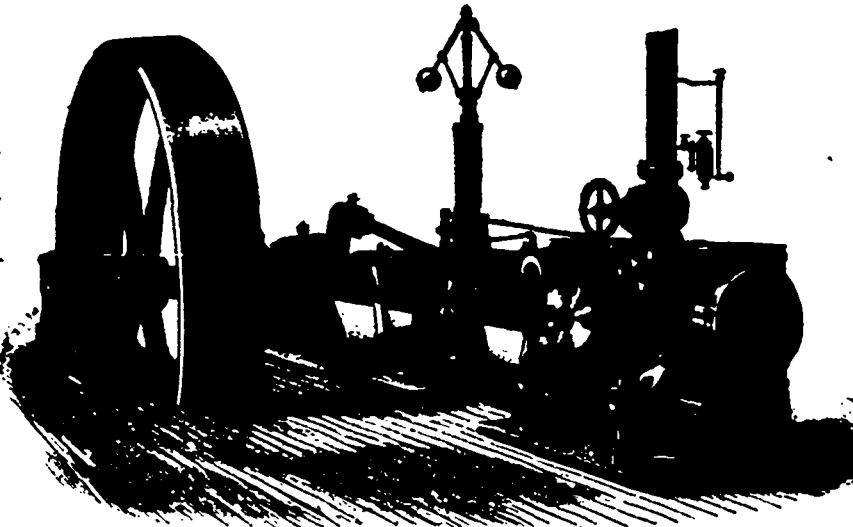
In order to obtain first-class results, nothing is more necessary than steady power, and where STEAM is used, this most essential requisite, combined with the greatest economy of fuel, is being obtained with our Celebrated CORLISS ENGINES. Read what the Millers all over the country have to say:

CHATHAM, April 5th, 1887.  
MESSRS. INGLIS & HUNTER,  
Toronto, Ont.

Gentlemen: In reply to your favor of the 1st inst. we have to say that we are very well pleased with the large Corliss engine we purchased from you some years ago. It has given us but little trouble, and for regularity of speed and economy of fuel we think can hardly be beat. We have much pleasure in recommending it to those in want of an engine as, in our opinion, one of the best Corliss engines on the continent.

Yours very truly,

CAMPBELL, STEVENS & CO.



PENETANGUISHENE, Ont.,  
13th April, 1887.  
MESSRS. INGLIS & HUNTER,  
Toronto, Ont.

Gentlemen: We have one of your Corliss engines running in our flour mill for some time past, and can cordially recommend it to the millers requiring power as being economical in fuel and very regular in speed. It is also very cheap and easy of maintenance, costing nothing for repairs, and can be run by any man of ordinary intelligence. Should be pleased to show mine to any intending purchaser.

Yours truly,

G. COPELAND & SONS.

MESSRS. INGLIS & HUNTER.

Gentlemen: The 13x30 Corliss engine I got from you has undergone some severe tests in the six years she has been running, and has been thoroughly satisfactory every time. At one time I had a saw-rig driven by a 14 inch belt with a heavy tightener pulley on it, and have seen the saw jam in a log and stop instantly, and the engineer standing by the engine could detect no variation of speed, while for driving flour mill machinery could never detect any difference of speed under any pressure of steam, though I have made many tests. For economy of fuel give me a Corliss every time. I ascribe a great deal of the superiority of my engine to the quality of the workmanship and the material used throughout down to the smallest detail. It may be equalled but not surpassed, while as to durability I consider my engine as good as new, and with ordinary care will last a lifetime. Only one pair of brasses have ever been tightened on it, and beyond accidents from frost, through a cold engine room and severe climate, has not cost me \$10 for repairs, facts which speak for themselves. If I wanted another good engine for economy, perfect regularity of speed, good material and workmanship nothing would content me but an INGLIS & HUNTER Corliss. Wishing you every success, I am, gentlemen,

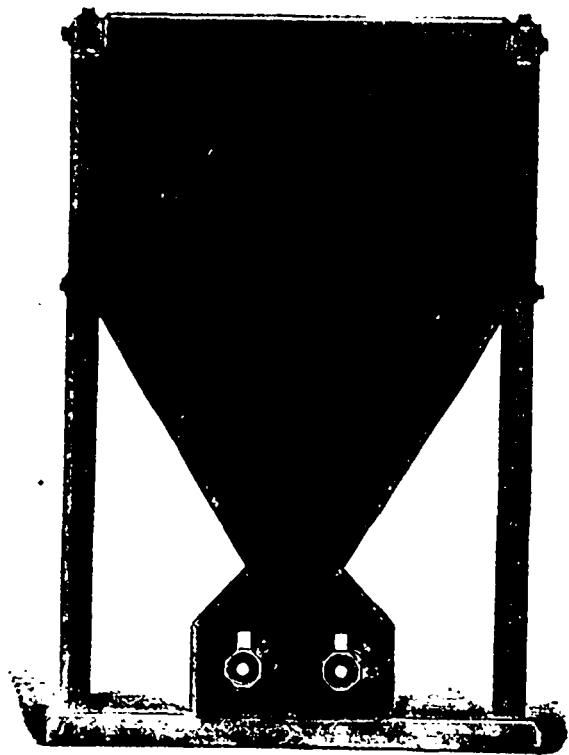
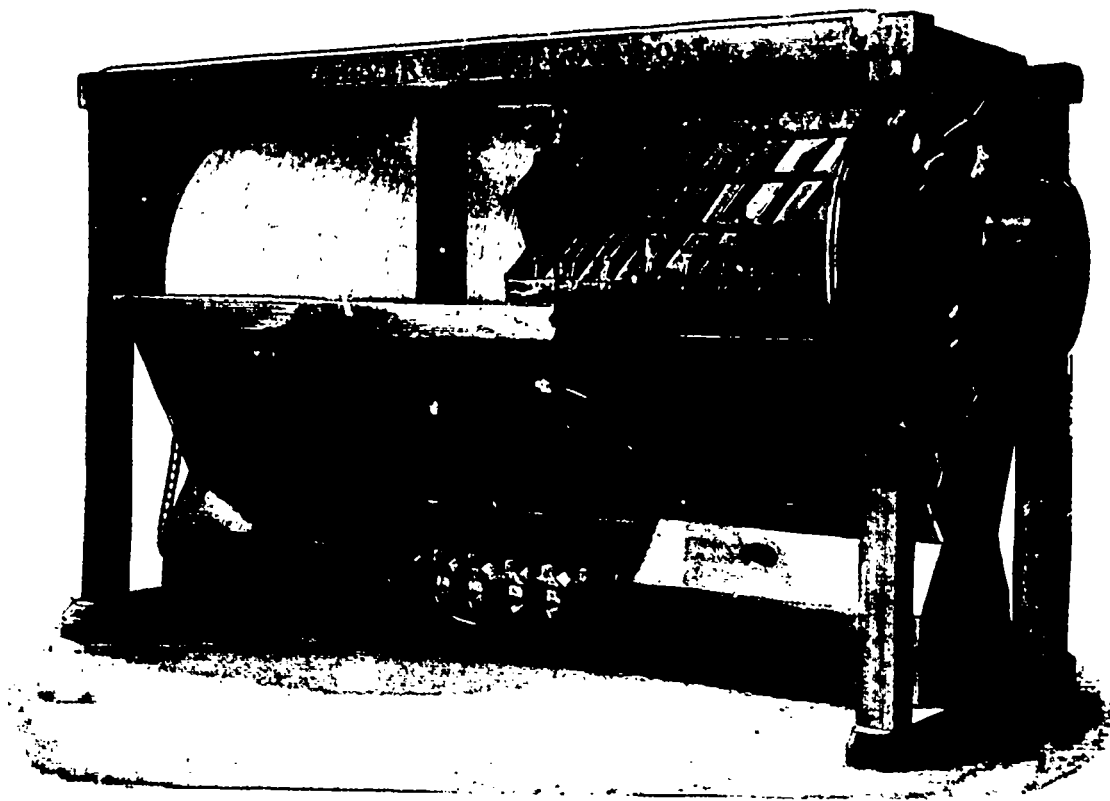
Yours obediently,

H. J. F. ROSE.

HIGH BLUFF, April 5th, 1887.

**INGLIS & HUNTER,**  
**6 STRACHAN AVE. TORONTO, ONT.**

# SILVER CREEK FLOUR BOLT



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Stationary and Marine Boilers,  
Case Rolls and Mill Machinery,  
Silver Creek Rolls and Centrifugals,  
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# DOMINION MECHANICAL & MILLING NEWS

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CHAS. H. MORTIMER,

Office, 31 King Street West,

TORONTO, - - ONTARIO.

## 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. Money sent in unregistered letters must be at senders' 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.

Mill-owners and manufacturers requiring help, and millers and mechanics in search of situations, may make their wants known through these columns, free of charge.

PAGES 5 and 6 of this paper, bear strong testimony to the success of the Case system mills put in operation by Messrs. Inglis & Hunter, of this city. Millers and other machinery users should read their advertisement.

THIS number of the MECHANICAL AND MILLING NEWS evidences in the best possible way the faith of the manufacturing classes in the merits of this paper as an advertising medium. Manufacturers who have not given it a trial, should do so without delay.

MONTREAL manufacturers have again suffered heavy loss during the last month by reason of the annually recurring inundations. It is rumoured that to escape such misfortunes in the future some of them contemplate removing to Toronto.

THE MECHANICAL AND MILLING NEWS would be pleased to receive the name and address of the oldest Canadian miller. We would like also to learn the whereabouts of the oldest flouring mill in existence in country. Will our readers kindly give us the desired information?

A NEW insurance organization called the Manufacturers' Industry and Life Insurance Association will, it is said, shortly be established in Toronto with a capital of \$2,000,000. It is understood such an Association has been necessitated by the putting in force of the Ontario Factory Act.

THE proposal of the Dominion Government to establish a Department of Trade and Commerce is a good one, and is made just at the right time, when the necessity for opening up new avenues of trade for our manufacturers is being generally recognized. Such a department, if wisely managed, might assist very greatly the development and prosperity of this country.

THE well-known mill-furnishing house of Wm. & J. G. Greey, of this city, give unmistakable evidence of their enterprise and faith in judicious advertising, by occupying no less than twelve pages of advertising space in the columns of the MECHANICAL AND MILLING NEWS this month. We bespeak for those pages a careful perusal on the part of Canadian millers, and as the result a large, increased volume of business for the Messrs. Greey.

WE are pleased to learn that the Government has consented to hold the Dominion Exhibition this year in Toronto in connection with the Industrial Exhibition. This arrangement will no doubt give general satisfaction. It now becomes the duty of the citizens of Toronto and of Ontario to assist the Exhibition Association in every way possible to make this year's Exhibition very much superior to anything of the kind ever before held in Canada.

REPLYING to our enquiry as to the prospects Canadian millers might have of finding a profitable market for their flour in the West Indies, Messrs. Ogilvie & Co., of Montreal, who have experimented in that direction write: "Our shipments to the West Indies have turned out well enough, as regards the keeping of the flour, but financially they have not been a success. Probably we have not pushed it so far as we might have done, and we think that American southern wheat suits better, and they can do it cheaper than we Canadians can, which is the reason we have not pushed sales further."

THE system of bonusing manufactures which has been adopted by so many municipalities, is an unprofitable one. The firms who are seeking bonuses, as a rule, have previously failed somewhere else, or are in straightened circumstances and hope by means of the bonus to get upon their feet again. An instance of this has just come to hand. The town of Oshawa lately granted a bonus of \$5,000 to Messrs. Pocock & Co., saw manufacturers, of Hamilton, to remove their works to that town. We now learn that the Sheriff has taken possession of the firm's premises to satisfy a chattel mortgage. Oshawa came very near losing its \$5,000. Events of this kind should teach other municipalities to shun the bonus hunter.

THE *American Miller* fails to explain why it omitted the word "Milling" when printing the name of this journal. Such tricks are certainly difficult of explanation, and we do not wonder that our contemporary shirked the task. Nor does it add dignity or strength to its position by calling to its assistance the editor of an obscure country newspaper published in the backwoods of New Brunswick, whose desire to be known outside of his township prompted him to furnish our Chicago contemporary with some blank cartridge for a shot at this paper. The *Miller's* insinuation that this journal supplies its readers with information that is not trustworthy, is of a piece with the statements of one of its correspondents, whose ignorance or disregard of facts we have dealt with elsewhere.

A WEAK spot in the constitution of trades unions and labor protective associations generally has been the lack of any standard of skill as a qualification for membership. While the unions have demanded for their members the highest rate of wages, they have given no guarantee that their skill as workmen entitles them to receive it, or that they are any more skilful than hundreds of non-union men whose services could probably be had for less money. If more attention was given to the means of educating workmen in the most intelligent and best methods of doing their work, and if none but the most skilful workmen were admitted to membership in trades unions, disputes between labor organizations and employers of labor would be of much less frequent occurrence.

IN the *American Miller* for April, a correspondent who signs himself "Canadian Miller," denies the accuracy of the statement given in our December issue of the rate of wages paid to millers in Canada. Our statements were: 1. "Wages for head millers range from \$600 to \$1,000 a year for the largest number." Any one knowing anything about Canadian merchant mills knows this statement to be strictly correct. The number of mills having a head miller at all which pay less than \$600 a year, is small enough to leave the balance "the largest number" by a safe majority. 2. "And from \$1,000 up as high as \$4,000 for a few mills of large capacity, such as those of the Messrs. Ogilvie, Montreal, the latter being of course an exceptional figure." "Canadian Miller" says: "To say that any miller receives as much as \$4,000 a year salary in Canada is too ridiculous for anything." The firm mentioned above have paid their head miller, in charge of their Montreal mill, \$4,000 a year for many years. "Canadian Miller" admits the correctness of the other part of our second statement that a few mills of large capacity pay \$1,000. 3. "For second or working millers, from \$40 to \$50 per month, with occasionally up to \$60, is the thing." On the Welland Canal, which is one of the largest centres of Canadian milling, second millers' wages range from \$45 to \$50 per month. In Toronto, and the mills tribu-

tary to Toronto, any good second miller gets as much as, or more than we put down as the minimum figure, \$40 per month. In one large mill in this city second millers' wages are \$45 per month. No information that we have been able to obtain points to any incorrectness in our statement, that "we do not think many second millers are working for less than \$40." "Canadian Miller" does not know what is meant by "two sets of men running a mill 24 hours." Up to this point we are disposed to exercise the utmost charity towards "Canadian Miller"—we give him facts to enlighten a clouded brain—but when he deliberately states that he, being a miller, does not understand what is meant by "two sets of men running a mill 24 hours," we draw the line. He is either so naturally stupid that \$45 a year, is beyond his worth to a modern miller, or, which is more probable when taken in connection with his slings at the MECHANICAL AND MILLING NEWS, he is not a Canadian miller at all, but some one who writes with a concealed object. Whoever he may be, he will do well to know whereof he speaks when next he rushes into print and assumes the role of critic.

## TRADE NOTES

Craig & Sons, of Napanee, have ordered from Wm. & J. G. Greey, of Toronto, one of their double chilled iron roller mills.

Messrs. Stahlshmidt & Co., of Preston, Ont., have received an order for one thousand school desks for the Toronto public schools.

Wm. & J. G. Greey are supplying Mr. J. H. Dracass, of Streetsville, with one of their improved coil spring flour packers complete with all tubes.

Mr. J. G. Kirkly, of Richmond Hill, has bought one of Messrs. Wm. & J. G. Greey's double roller mills and will improve the system of his mill in other ways. The Messrs. Greey have the order for all other supplies.

Mr. O. P. Hurford, of Chicago, writes to say that Mr. R. Whitelaw, of Woodstock, Ont., has arranged to build the Hurford patent flour bolt and purifier in Canada. Our milling friends who peruse these columns regularly every month, will shortly learn further particulars concerning these machines.

Mr. George Rowntree, of Thistleton, has entered into a contract with Mr. E. P. Cave for the refitting of the Humberford mills. Messrs. Wm. & J. G. Greey will supply all the machinery, rolls, purifiers, cleaners, etc., Mr. Cave doing the millwright work and supplying plans, programme, etc.

Mr. N. Roswell, of Wyoming, has placed an order with Wm. & J. G. Greey for one No. 1 separator, one No. 0 cockle machine, double sets of 6x15 rolls, two No. 1 purifiers, two No. 1 centrifugals and one flour packer; also all the belting cups, cloths and other furnishings, for completing the mill on the system usually adopted by the Messrs. Greey.

Messrs. Wm. & J. G. Greey have received an order from Mr. James D. Field, of Hartford, Ont., for the necessary rollers and other machinery to complete his mill to the full roller system. Mr. F. has satisfied himself by a practical test that the combination of rolls and stones, which he, like many other mill-owners, fondly hoped would enable him to retain his share of public patronage, is a snare and a delusion.

Mr. J. W. Plowman is about refitting the mill which he lately bought near Delhi, Ont. He has ordered from Wm. & J. G. Greey, of Toronto, a complete outfit of small rolls, and will put the mill in a thorough state of repair. Among other improvements he will introduce the new slow and light running flour dressing machines manufactured by Messrs. Greey, also their new cylindrical scalper reels. Mr. P. having some experience in roller milling, intends making his own plans, &c., with a view to developing some recent ideas in short system roller milling.

Messrs. T. Chapman & Co., engravers, lithographers, and general printers, whose advertisement appears for the first time in our columns this month, occupy fine new premises at 78 Wellington St. West. A look through their establishment revealed the fact that it is fitted up with the very latest improved and most costly machinery, which, operated under the supervision of Mr. Chapman, who has had thirty years' experience in Europe and America, is a guarantee as to the quality of the work turned out. We cordially recommend the company to the business public.

Mr. George Fensom, of Elmwood, who is building a first class steam roller flour and grist mill, has entered into a contract with Messrs. Wm. & J. G. Greey, of this city, to supply the following machinery: one No. 1 separator, one No. 1 smutter, five double sets of 6x15 rolls, two No. 2 purifiers, three No. 1 centrifugals, three No. 1 flour dressers, four scalpels; also the iron work, millwright work, belting and cups, lumber, a chopper and a new engine and boiler of the improved Corliss class, the engine to be 11x30 and boiler 12x4 feet. Work will be pushed on as rapidly as possible.

Messrs. Wm. & J. G. Greey have contracted with Mr. Simeon A. Julien, of Wallaceburg, for one of their complete roller plants, consisting of one No. 1 combined wheat separator and cockle machine, one No. 1 smutting machine, one No. 1 wheat brusher, ten pairs of 9x15 and 18 rolls in five double frames, six scalper reels complete, two of Greey's new and improved flour dressing machines, four centrifugal reels, one bran and shorts duster, two new style Velocity middlings purifiers, one No. 1 germ aspirator, one improved flour packer for power and two hand bag packers. The Messrs. Greey also supply all belting cups, shafting, etc., and complete the whole work of constructing the mill.

Messrs. Wm. & J. G. Greey, of Toronto, have been favored with a large order from Mr. Henry Green, of Lyndhurst, consisting of the entire machinery and all supplies for an 80 bbl. mill. Mr. Lawrie, the Messrs. Greey's traveller, was in the village last week taking dimensions of the building, which was erected some years ago for a stone mill, but never finished. The roof will be taken off, raised one story, and covered with galvanized iron. The machines for the roller mill will be one separator, one cockle machine, one smutter with Cockrell case, and a wheat brushing machine. Twelve pairs of Greey's new and improved rolls will reduce the grain to flour, shorts and bran, while four centrifugals and four flour dressers will bolt or separate the flour from the offals. Then there will be a bran and shorts duster, purifiers for the middlings, aspirator for the germ stock, and packers for filling the different products into the farmers' bags. An improved collector will gather all the dust and deposit it where it can be utilized for feed. It is also the intention to have two runs of stones in the mill for grinding feed and buckwheat, but these will be attached to a separate wheel and be entirely independent of the roller mill.

## PROCTOR'S POINTS.

"BILL No. 137, Ontario Legislature. An Act respecting the Licensing of Engineers," by Mr. Carson—innocent enough looking on the face of it the title page all right—but it's "a whitened sepulchre."

If some of the country members had introduced this bill, in the interests of their poor relations, or that they might boast to their constituents of having put "a very important Act upon the statute book of the Province," it might seem as if the far-reaching evil and pernicious effects resulting from the making law of such an ill-timed conception, had been lost sight of for the moment, before the vision of personal gain or political popularity. But coming from the member for Lincoln, who was elected by the Knights of Labor, it looks like a deliberate attempt on the part of the K. of L. to get their grasp, both figuratively and literally, on the throbbles of the manufacturing interests of this country.

Clause 1 of this bill reads: "All persons within the Province of Ontario having charge, or who may take charge or operate any steam boiler or other devices under steam pressure, shall be examined and licensed before assuming or attempting to take charge of such steam boiler or devices, and any person attempting to operate a device of any kind subject to steam pressure, without first procuring a license, shall be subject to a fine of not less than \$10 nor more than \$20." This is one of the shortest and mildest clauses of the bill.

Almost all users of steam power are manufacturers or producers, to some extent. This bill, if made law, would almost paralyze a large number of the smaller industries, such as printing offices, spice mills, cabinet factories, planing mills, jobbing machine shops, tanneries, country saw mills, shingle mills, steam threshers, &c., &c. These industries, by the hundred, would simply have to stop running, because they could not obtain, to begin with, nor afford to keep if they could obtain, a licensed engineer to run their engine and boiler. In nearly every one of the shops or industries mentioned above, it is quite a common thing for one of the workmen to attend to the engine and boiler and at the same time look after or be engaged at some other work. The owners do not need and could not afford to have a man looking after the engine and boiler and doing nothing else, not even an ordinary workman, let alone a "licensed engineer."

What a pretty combination could be gotten up by the Knights of Labor with such a law as this to back them! It would not be very long before they would dictate to every user of steam power just who he should hire as an engineer, what wages he should pay, and how many hours a day his establishment should be run, &c., &c.

Clause 2 provides for the appointment of inspectors. There is very little doubt but that there is a factor for good in the idea of inspectors, but the method of selecting them under this Act would not work successfully, or accomplish any adequate return to the country for the very serious outlay incurred in selecting, appointing and supporting them. "One for every electoral district." Think of it! What an opportunity for government patronage! Some good staunch supporter of the member for the county, or successful engineer (for the party) in power, would have a nice soft "sit" at the expense of the persons whom he shall have been appointed to inspect and look after.

Clause 3 provides that inspectors shall be paid by the fees which they shall collect. Exactly! That's the way the thing is done in some other places where an Act of this kind is in force, and they collect fees from most everybody—engineer and owner, engine seller and engine buyer, and in fact become pretty thoroughly master of the whole situation, so that engines and boilers can neither be bought nor sold until the inspector is thoroughly "greased on both sides"—paid by the buyer for picking out a good rig, and paid by the seller for the privilege of making the sale; and no use trying to make a sale without getting the inspector "solid" for you, because your rig is no good to the buyer if a liberal supply of grease has not been furnished to the inspector's department to make it run easily. "Proctor" would just like to illustrate out of personal experience on this point, but he might give away pretty badly some men who hold official positions in this fair Dominion of ours, and so from a purely patriotic standpoint he exercises forbearance.

Clause 6 in brief is: "Ever owner of a steam boiler

or device subject to pressure shall employ an engineer, or be subject to a penalty of from \$10 to \$250." And so every well regulated household would have to employ a licensed engineer to look after their hot water heating apparatus or go to bed in the cold. *Reductio ad absurdum.* "Proctor" could say a good deal more on the evils that would ensue if such a bill became law, but he trusts that the common sense of the members of the Ontario Government will prevent any such malicious blow being dealt at the younger and struggling industries of our country as would be dealt by the passage of such an Act.

PROCTOR.

## PRIZE ESSAY Department

A cash prize of \$10 is given every month for the best essay contributed to this Department on a subject selected by the editor. The essay selected as the best in each month will be published, and \$10 forwarded to the author within ten days to the author. The conditions on which these prizes are offered are as follows:—1. Competitors must be paid-up subscribers to the Dominion Mechanical and Milling News. 2. All articles sent in to become the property of the publisher of this journal. 3. Articles must reach this office not later than the 20th day of the month next preceding the date of issue. 4. Every article must be accompanied by the bona fide name and address of the author, not, however, for publication unless desired. 5. Articles to be written on one side of the paper only, and not to exceed 2,500 words. The merits of all articles written for this Department will be decided by three thoroughly competent and impartial judges selected by the editor, and competitors may depend upon being fairly treated in all cases.

Subject for next competition: "Would Commercial Union with the United States prove beneficial to Canada?"

### "HOW DO THE YOUNG MECHANIC'S PROSPECTS COMPARE WITH THOSE OF YOUNG MEN IN OTHER PURSUITS OF LIFE?"

BY "CANADA."

In different countries, having different conditions of industrial, social, and political life, the comparative prospects of any stated pursuit are different. What would be true of the young mechanic's prospects, relatively to the prospects in other walks of life, in Canada or the United States, would not be true in some other countries. My comparison will be on the Canadian basis, and not applicable in the Republic to the south of us.

"Prospects" is a word that bears much studying, which I leave to the thoughtful reader, and will regard it in its popular definition—the outlook for getting on in the world—gaining a living, wealth, honors, position.

Among the nations, Canada, though a colony, holds a high position as owner of one of the few great mercantile fleets of the world. Canadian fisheries were of world wide celebrity, long before they got the benefit of that splendid advertisement—the Retaliation Bill. Notwithstanding these facts, I start the competition without entering either a sailor or a fisherman. The great majority of Canadians spend their lives among the industries on land, instead of the industries on water, and I ring the starting bell at the age of nineteen. Five entries. All trained. All average samples, in their respective spheres of young Canada. All have learned their specialty. All are without money or collateral assistance. The race is before them. The pace is of their own making. They are the farm worker, the mechanic, the professional, the commercial, the city worker, who does not class under any one of the preceding heads. The preliminary struggle, the training, the effort to fit themselves for the condition in which they start—or in other words, to learn their trade or calling may be an unequal one, but is not a part of the subject, as we are to start the young mechanic in competition with young men in other pursuits of life. The race is for a lifetime, the prizes a living, competence, wealth, honors, the power to benefit their fellow beings. That the world owes every one a living is wrong, but that the world is well pleased to give every one who deserves it a living is true. Every one of our young competitors is sure of that much, unless he deliberately and persistently rejects it. Competence is less attainable, but is nevertheless assured to all our competitors if they have the two qualities of keeping straight on the track and guarding the advantages they attain, of sticking to their calling and saving their gains. The struggle for wealth is more severe. So severe in any calling in life that many men who profess wisdom, have ruled it out, as an unworthy aim. But what young Canadian would call a competition complete—a life competition—if wealth were not a prize to be run for? Wealth, and with it, and because of it, the power to benefit those dependent on us, and those we come in contact with, and through the right use of it to deserve honors at the hands of our fellow-men; honestly and worthily earned wealth, is the great aim of the majority of men, and has been so, and will be so. What then are the relative prospects of our competitors, to win this prize?

So many things enter into the struggle—so trifling are sometimes the circumstances on which depend success or failure, that a generalization that would cover all is impossible. To make money and save it. To take care of pence. These are good foundation stones for fortune. Not only are they good; they are the best, the best not only as foundation stones, but the best material for use all the way through the superstructure. True, they are not in universal demand among very young men in this country at least. It takes time, and often long time: experience, and often bitter experience to learn their tremendous value. A brilliant dash, a speculation in commerce, a wonderful discovery in mechanics (with a patent to it), performing a great operation, winning a great case, gathering into one title deed a vast number of acres, and trusting to markets or luck to make or get the money that will free them from incumbrance. Some of these enter more often into the prospectus of the starter than does the utility of that plain hard notion of getting together four twenty-five cent pieces and finding them a dollar—a dollar that will earn interest day and night until the opportunity comes for a closer alliance between the earning power of the dollars and the earning power of their owner—the opportunity to head or take a leading place in an enterprise of his own, in his own line. Tested by this true standard, the opportunity to gather together sufficient capital to make a start on their own account, and in their own line, how stand the relative prospects here in Canada? In considering this detail of the prospects, gauge it as applicable to human nature as it is. The exceptional young man who can plod the round of the year, no matter what his environment, will be the sooner a small capitalist the more money he gets for his services. His expenses are very little more than what it costs him for board and clothing. An increase in wages, a new acquaintance or set of acquaintances, has no injurious effect upon his saving power. We are not considering the case of the exceptional young man, and the average young man is not proof against all temptations to "see life" or "have a good time" if these temptations be very strong and near.

In this respect, as in some others, the young man whose lot is cast among the tillers of the soil, has a decided advantage over all others in Canada, young mechanic among the rest. The young man brought up on a farm, who plants himself on the great prairies of the Northwest, has the best prospects of any young man in Canada, all being without capital or with very little. A few years of hard work—which though hard is healthy—of close economy, less difficult to practice where there is practically no temptation nor opportunity for personal expenditure, and that young man is the owner of such a domain as should gratify any healthy ambition. Next to the farmer, and second only to that farmer who settles in the Northwest, I place the young mechanic. He earns more money in the early years of his career than the professional or the clerk, and has less temptation to squander it. "Society" makes less demands on his time, leaving him greater opportunity to improve his intelligence, and fit himself for his career. His field is no contracted one in this country where manufacturing is making such rapid advances. His daily labor exposes opportunities for bettering his condition by improving on the methods practised. In good time he finds the way of getting a larger reward for his labors, by utilizing his savings as capital. His living is assured. Competence is within reach. Fortune is not beyond attainment, if he continue the life of a mechanic—the mechanic directing larger operations by the wisdom of his experience.

I have given first place to the Northwest farmer, and second place to the mechanic. If I have dwelt more on the importance of the saving prospects than the making prospects in the various callings, it is because it is the more important consideration; The often heard saying that "any one can make money, but the trouble is to save it," is very nearly universally true. Next to the young man on the prairie, the young mechanic's prospects for saving is unsurpassed. His opportunities for enlarging his sphere of knowledge are good, and in this country, which has developed so great a manufacturing industry of late years, his field of activity and progress are certainly of the largest.

Mr. Henry S. Moore, of the town of Norwich, Ont., having been granted a bonus by the municipality for that purpose, is about to build a first-class 100 barrel roller flour mill. Messrs. Wm. & J. G. Greer have been awarded the contract for the entire outfit, which is to be on the new system of flour dressing machines and centrifugals, instead of the old-fashioned system of long, hexagonal reels. The roller mill is to occupy the western half of the present oatmeal building, which is to be raised two stories in height and have a mansard instead of the present gabled roof. A new engine of 75 horse power will drive the whole establishment, which will include a substantial grain elevator, with a capacity of upwards of 50,000 bushels, and occupying a ground space of 50x35 feet.

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The Parry Sound saw mills will shortly begin operations. A steam saw mill has lately been fitted up in Owen Sound. Boudette & Co., sash factory, Ottawa, were lately burnt out. Mr. A. Oetzel is building a new planing mill at Waterloo, Ont. Joseph Warren is erecting a sash and door factory at Cobden, Ont.

Messrs. Sheewin & Kelly, have started a shingle mill at Allanwick.

Work will be commenced on Tait & Wylie's new saw mill at Midland at once.

The shingle mill at Reaboro, Ont., is turning out about 18,000 shingles per day.

Mr. McLaren shipped from Mississippi 400,000 feet of lumber last week.

Park's new planing mill at Stouffville, Ont., is in operation and employs a large gang of men.

The firm of Watt & Carr, planing mill proprietors, Wingham, has been succeeded by Watt & Little.

The firm of Hastings & Peterkin, planing mill, Toronto, has dissolved, Wm. Hastings retiring.

Carswell, Thistle & Mackay, Calabogie, Ont., expect to cut 8,000,000 feet of lumber this season.

The Selkirk Lumber Company, of Manitoba, have the largest cut of any on the lake, about 60,000 logs.

Mr. J. H. Bowman, of Dundas, is erecting an addition to his planing factory, in which to manufacture furniture.

The Minneapolis & Ontario Lumber Company has purchased 1,500,000,000 feet of timber in British Columbia.

Wyatt & Co. are thinking of establishing a sash and door factory in connection with their lumber yard at Virden, Man.

Major Walker, of Calgary, will open a branch lumber yard at Banff, which will be supplied from his mill at Kananaskis.

James Benrock has been admitted as a partner to the firm of Scrimgeour Bros., sash and door manufacturers, Stratford.

Mr. Joseph Maunder has placed a new twenty-five horse power boiler in his planing and shingle mill at Little Britain, Ont.

The Rathbun Co.'s mills at Campbellford are to resume work shortly. New coal and lumber sheds are to be built on their property.

Messrs. Bronson & Weston are making extensive improvements in their mills in the Chaudiere in preparation for the coming season.

Messrs. Huston, Hopkins & Stevenson, Glencoe, will rebuild the sash and door factory at that place. The new building will be of brick.

The Eau Clair Milling Co. are building an immense saw mill on the Bow River, and are anticipating a healthy business as soon as it gets in operation.

Mr. A. Wing is running the Lynden, Ont., saw mill full blast on custom and bill lumber. He intends shipping principally to Brantford this summer.

The firm of H. A. Booth & Co., Odessa, Ont., have dissolved. Booth & McKay will run the woolen mills, P. A. Mabey & Son the saw mill and store.

Mr. Kennedy, of Manvers' Station, Ont., is building a new saw mill about a mile from that place, and intends going into the lumber business extensively.

Lamoureux Bros., of Edmonton, N. W. T., have an order for 350,000 feet of lumber for Prince Bros., Battleford, to be shipped as early as possible this spring.

R. & J. Watson have purchased the planing mill property at Portage la Prairie, which has been idle for some time, and will put it in shape for beginning operations at once.

The saw mill belonging to the estate of Henry Bros., Randwick, Ont., was recently sold for \$1,800 to Mr. J. H. Smith, of Toronto, who will remove the machinery to North Bay, where he has timber limits.

The Keewatin Lumber Company intend opening up a yard at Winnipeg, under the management of Mr. R. E. Souter. That gentleman will be succeeded at Keewatin by Andrew McNeil, of Vermillion Bay.

Rough lumber jumped up 25 per cent. in price at Vancouver, B. C., recently. Dressed, flooring, rustic and double-dressed finishing lumber have advanced from 5 to 10 per cent. Shingles and laths are 10 per cent. higher.

Stratford Beacon: Mr. Peter Megan has taken the contract to cut logs for Mr. Corcoran at Beaver Creek, about 90 miles north-east of Selkirk, on Lake Winnipeg. He expects the contract—about five million feet—will occupy about two years.

It is reported that Messrs. McLachlin Bros., of Arnprior, are contemplating the erection of a railway from their Petterawa limits to the Madawaaka, in order that they may have more rapid carriage of their lumber, and under their own control.

There are more than 400 American and 130 Canadian barges employed in the Ottawa River and Lake Champlain lumber trade. This vast array of craft would be thrown out of employment were President Cleveland to enforce the Retaliation Bill.

Kingston News: A. Hoppins has purchased for shipment 400,000 feet of lumber from J. Hawley, of St. George's lake; half a million shingles from P. Grey, of Maberly; 200,000 shingles from R. Lily, of Bolton Creek, and two million shingles from D. Egan, of Sharbot Lake.

The Wm. Hamilton Manufacturing Co., of Peterboro', shipped the other day to the Charlemagne Lumber Co., of Quebec, an immense iron gang for cutting lumber, with a 54 inch sash, and taking saws 3 feet 8 inches long, weighing in all about 25 tons.

The Dominion Terra Cotta Lumber Company is applying for a charter. It is to have a capital of \$200,000, and the chief place of business will be Deseronto. Among the incorporators are J. F. Torrance, F. S. Rathbun, E. C. French, H. B. Rathbun and R. C. Carter, the latter of Kingston.

An outside estimate places the total lumber output of Manitoba camps during the past winter at 45,000,000 feet. The Winnipeg Free Press says there is no doubt that the output this year is considerably in advance of previous years and the prospects for the summer business are fairly bright.

A deputation from the Calgary Board of Trade waited on Supt. Whyte at Calgary the other day in regard to freight rates on lumber, and asked for a reduction of the now practically prohibitory rates on lumber from the west. The superintendent agreed with the deputation, and said that as the company had a big stake at Calgary he would endeavor to have the rates lowered.

Mr. O. E. Comstock, of Arnprior, is reported as saying that the past season has been very unprofitable to the lumbermen. The snow has been so deep that it was impossible to get the logs out and many thousand feet of valuable timber will lie in the woods all the summer, simply because it could not be moved. Many of the lumbermen who had engaged their men by the week sent them home early in the season. The loss will amount to a good round figure, and many of the lumbermen will be almost stranded.

In many parts of Canada, says an exchange, the timber growing upon the land is specially adapted to the manufacture of such pulp as is used in the manufacture of paper, and as a substitute for lumber in the manufacture of furniture and other articles. From 40 to 120 cords of this timber is the average yield per acre, and the pulp, by mixing with clay, steatite, asbestos, plumbago, mica, etc., can be made to assume every possible color, and is adaptable to a great variety of uses.

A novel building has been established in St. Paul, Minn., which gives promise of very profitable results. It is the manufacture of a fire-proof building material, termed terra cotta lumber, made of a peculiar clay, formed into bricks into which sawdust is mixed, the whole then subjected to an intense heat which bakes the clay, but burns the sawdust. The bricks, when completed, are filled with little air cells which, being conductors, constitutes the fire-proof qualities of the material. It is readily cut into any shape with edged tools, and plaster can be laid directly upon it, without the use of laths or studding.

A dispatch from Donald, British Columbia, says: A new lumber tariff has been published by the C. P. R. which gives rates from Shuswap and all shipping points east of Shuswap to all points from Banff to Enerson. On the longer distances the rates in comparison with those in force are slightly lower, but on shorter hauls rates are doubled. The new tariff is regarded with great displeasure by dealers in Calgary and by mill men in the neighborhood of Donald as calculated to destroy their trade. Calgary and Banff are deprived of all advantage from their proximity to timber, and will have to pay as much for lumber brought 150 miles as they would have to pay if it was 600 miles distant.

In some of the great mill establishments of the west, 6-foot circular saws are run 760 revolutions to the minute. Running at 760 revolutions to the minute, the teeth of the 6-foot saw are travelling nearly three miles a minute. Six-foot saws have been driven at as high a rate as 880 revolutions to the minute. In Michigan, a few years ago, a Canadian company geared up its mill to run a 6-foot saw 850 revolutions to the minute. A saw mill at Paducah, Ky., which had a 76-inch saw and steam feed, cut one day 10,751 feet of 1-inch poplar boards in about 70 minutes. In this trial the saw made no sawdust; each tooth tore out a strip of wood about one quarter of an inch long. Michigan sawyers have boasted of a mill dropping 16 1-inch 16-foot boards a minute, but this seems like an exaggeration.—Boston Budget.

Bryson Equity: Messrs. William Richards, Hiram Richards, Jesse Smith and Wm. Lothian stopped at the Forest House on Thursday night. They were on their way down the river, having completed the work of building improvements for this season. The last job disposed of was a rudder boom, built at Pembroke but intended to be floated down to Lapasse, when navigation opens. This boom is the second of the kind which has been built by the company, the first having been constructed at the Chats rapids a few years ago. These booms take the place of what was formerly known as glancing booms. They are made about four feet wide, of timber solidly bolted together. One end of the boom is held stationary by means of a pier or stout anchor; to this end so held is attached a heavy rudder upon which the current strikes with such great pressure, that the projecting end of the boom is held in an oblique position across the channel. The boom recently constructed is about 500 feet long.

According to the Dundas Banner, Hamilton will not be the scene of very extensive lumbering operations this year. The cut of timber in the Muskoka district this winter is 20 per cent. less than last season, and the cut in the Ottawa district has fallen off about 25 per cent. The chief reason for the light cut is the great depth of snow all winter. In some places roads three miles long had been made through the snow to get out the timber. English orders, Mr. Flatt says, are running more largely to boards and deals, and the result will be that more timber will be sawed in Canada and less exported in the log. Flatt & Bradley are filling an order the like of which has not been given in Canada for many years. It is a shipment of pine masts for the English Navy, which has been in other years supplied from the forests of Norway. The masts are cut in Beverly township in this County, and in the neighborhood of Weston, Woodbridge and Saginaw, Mich. They are magnificent sticks, some of them 110 feet long. Those cut in Canada will be rafted at Toronto and go to England from Halifax.

From the Monetary Times we extract the following description of Gilmour & Co.'s extensive saw mills at Trenton, Ont.:—"The

"big mill," which has both circular and gang saws, has a capacity of 350,000 feet of lumber every ten hours, and is driven by an engine of 1,500 horse power, with sixteen boilers. The timber mill turns out 20,000 feet of ordered stuff daily for builders, and the shingle mill equipped with the best machinery, cuts 125,000 shingles per day, by means of a 750 horse engine. Five hundred men are employed in these mills. A line of railway runs the entire length of the firm's property, through its lumber yard. These yards have storage capacity for 40,000,000 feet of lumber. The planing mill is run by water power. At present it has four modern planers and there is room in the building for five more. The mill has a capacity for planing 80,000 feet of lumber per day. Connected with the mills is a complete fire system. A commodious brick fire shed has been erected at the water's edge, between the two largest mills, with stables, engine room and quarters for the 25 men, who constitute the fire company. They have charge of an Amoskeag steam fire engine. Then there is a force pump in the engine house connected with a 12 inch pipe which leads around the different mills and through the yards. This pump can throw 15,000 gallons per minute. There are 10 hydrants outside the mills and 18 inside. An electric fire alarm system, 16 bells, connects the several principal parts of the yard with the fire department.

### LIMITATIONS OF THE EXPANSION OF STEAM.

Prof. Wm. D. Marks, of the University of Pennsylvania, reaches the following conclusions as the results of a mathematical investigation of the limitations of the expansion of steam.

We cannot expect, under the most favorable circumstances, to reach an economy which will surpass but very slightly one pound of coal per indicated horse power per hour.

This would place eighteen per cent., of the heat in coal as the extreme limit of its utilization. The condensation of steam occurs during its admission to the cylinder, and in some cases is surprisingly great.

The law of this condensation is as follows:

The condensation of the steam in the cylinder is proportional to—

1. The difference of temperatures of the steam at the point of cut-off, and while being exhausted.
2. To the area of cast iron exposed to the entering steam up to the point of cut-off.
3. To the time of exposure of the interior surface of the steam cylinder to the exhaust steam.
4. The condensation is reduced by compression, subject to the same laws, but this is usually quite a small quantity.

The initial condensation of steam is due principally to the piston and cylinder heads.

The equilateral hyperbola approximates quite as closely as any other curve to the curve of expansion of steam in engines not embarrassed by a sluggish valve motion.

Compression will save some vaporous steam, but will not largely diminish the initial condensation because of its short duration.

Superheating is the most efficient expedient for economizing coal.

The steam jacket is not so efficient as is ordinarily assumed.

Slide valves are frequently the cause of large and unlocated losses.

The valves and pistons of steam engines are rarely steam-tight.

With properly designed compounded cylinders, the ultimate expansion of the steam is a function of the ratio of the two cylinders.

The saving in compound engines is due to lesser initial condensation in the non-condensing cylinder.

From the physical properties of iron arises the necessity of, and advantage of, compound engines.

The beneficial effects of superheating, steam-jacketing, and compounding, are more apparent in small than large engines.

The most economic ratio of stroke to diameter for steam cylinders is a function of the number of expansions, of the boiler pressure, of the exhaust pressure, and of the number of strokes per minute.

A large cylinder is more economical than an equal volume divided among small cylinders.

The Jackson, (Mich.) daily Citizen of April 14th, contains the following: Business with the Geo. T. Smith Middlings Purifier Company has increased so much that very material increase of shop room will be made. The dry kilns will be torn down and removed to another part of the city, probably North Mechanic street, as the lots on which the works stand will be fully occupied. Draughtsmen are now engaged on the plans. The building will be large—its exact dimensions are not yet determined—and will be three stories high and of brick. Iron working machinery will be placed in a portion of it, and what room is not needed for machinery will be used for storage purposes. The works are now crowded to their utmost capacity, some departments working day and night. Orders for three car loads of milling machinery were received from Constantinople, Turkey, and for one car load to go to Melbourne, Australia, recently.

## Northwest Letter.

**G**RAIN and milling matters in the Prairie Province are very quiet at present, and have remained so for some time past. In wheat there is nothing doing, beyond the shipment from stocks in store to Lake Superior ports, there to await the opening of navigation for transfer to the East. Farmers have been busy for some time seeding, and have been doing nothing in the line of delivering grain or produce of any kind. What little wheat is still held in first hands, will not be moved until after spring work has been all completed, and this wheat will about all go into the hands of local millers. At the time of writing, seeding had been pretty well completed over the greater portion of the country, and with a few days more of such weather as we are now enjoying, all the crops will be in, in good shape, some time before this reaches the readers of the MECHANICAL AND MILLING NEWS. The snowfall was very light throughout Manitoba last winter, and as the ground was very dry in the fall from entire absence of late rains, the melting snow this spring was hardly sufficient to moisten the soil. However, we were treated during the early part of April to several days of mixed snow and rain, which, though making most disagreeable weather for a while, was just exactly what farmers were longing for. Since then the weather has been warm and dry, and most favorable for seeding.

In some parts of the province the area sown to wheat will be larger than last year, but taken altogether the wheat acreage of the entire Northwest will not be very greatly in excess of last year. It will certainly be the largest in the history of the country, but at the same time the increased area of wheat sown will not show such a rapid advance as at one time was expected. A few years ago nothing but wheat was talked of in this country, until one would think the soil and climate of Manitoba were not adapted to anything but the growing of the leading cereal. The chief aim of each settler was to get as much land as possible into wheat, and as a consequence the production of wheat increased very rapidly between the years 1882 and 1885. Various circumstances, however, have operated to curtail the area sown to wheat, or rather I should say, to curtail the continued rapid expansion of the area sown to wheat, during 1886 and 1887. The first reason is undoubtedly the early autumn frosts of 1884-85, which damaged the crops in sections of the province and the adjoining States and Territories, and which caused a good many settlers to look to other sources of profit from their farms. The very low prices which have ruled for wheat during the past few years and particularly during the past season will also have the effect of inducing many farmers to curtail their wheat acreage. The crops as is well known, came through all right last year, so far as freedom from injury and frost were concerned, though suffering considerably from drought. But farmers have found that there are many other sources of profit open to them, other than depending solely upon wheat-growing, and they are now more largely going into mixed farming and stock-raising. A partial or total failure of the wheat crop will therefore be felt much less severely in the future than in the past. To show the rapid strides which have been made in other directions by our farming population, it is only necessary to refer to one industry, namely, hog-raising. Two years ago there was but one pork-packing house in Winnipeg, and nearly the entire supply of hog-products was imported from Chicago. Now there are seven packing houses in the city, all doing a large wholesale trade, beside the packing done by butchers for their retail trade, and turning out a sufficient quantity to supply the local market. There were also sixty five cars of live hogs exported from the province to Montreal and Toronto, during last fall, besides a number of car lots of dressed pork exported the past winter. This is only one instance of rapid expansion, and will show why the production of wheat has not been increasing as rapidly of late years as during 1882-83-84.

The city mills have all been running pretty steadily since our last letter, but a number of provincial mills have been closed down. In the city the output of flour will be about the same as last year, though the grades will be different, a larger percentage of high grades being turned out this year. The output from provincial mills will probably not be any larger than last year, notwithstanding the larger number of mills in the province this year, owing to the inactivity of country millers. Millers have found that they cannot compete to advantage with the product of some of these smaller country mills, in the present depressed state of the flour markets. There is no doubt also that several of the small mills, built mainly through the aid of bonuses, have been put up as cheaply as possible, and are not fit to do anything but

custom work. There are exceptions, however, to this statement, several of the country mills being first-class for their capacity. Several mills are also reported short of wheat, some millers having delayed purchasing until too late to be able to obtain full supplies, the wheat movement having wound up suddenly and much earlier than was expected, judging from the movement of former years. Prices of flour have scarcely varied here for several months, the latest change having been a decline in patents and a firmer tone in low grades. To the local trade prices are: patents, \$2.25; strong bakers', \$1.80; low grades, \$1.00 to \$1.30, Winnipeg prices. Owing to the high prices for feed and coarse grains, bran and shorts have been in active demand, at high prices, bran holding at \$14 per ton and shorts at \$16 per ton, in car lots. These high prices for millstuffs have caused the firmness in low grade flour, and millers have been running a good deal of low grade into shorts, as they find it about as profitable to sell as shorts and save bagging. Indeed, had it not been for the high prices for millstuffs, which are just about double what they were a year ago, the Winnipeg city mills would not have been grinding very steadily for the past two months. A year ago bran was exported from Winnipeg to Montreal. This year it is taken up at the mills as fast as turned out. Stocks of high grade flour are heavy in the city, and there is also a considerable quantity of Manitoba flour stored at Lake Superior ports, awaiting the opening of navigation for shipment eastward.

Although in a number of districts the question of establishing flour mills is being agitated, it would appear from present indications that there will not be much addition to the milling capacity of the province this year. There is the 1000 barrel mill which will probably be erected at Keewatin, Lake of the Woods, which, though just outside the eastern boundary of the province, is looked upon as a Manitoba institution, in that the supply of wheat will be drawn entirely from this province. But aside from this mill, no other projects have yet assumed definite shape. In one or two instances bonuses have been voted to aid in the erection of mills, but voting the bonus does not always secure the mill. For instance, the municipality of Rockwood voted a bonus of \$10,000 last year, without finding any person willing to undertake the establishing of the mill. Since then, however, a mill has been secured under a different arrangement, by the changing of a stone mill to the roller process. The rage for roller flour mills has been a sort of epidemic in this province. One town or municipality voted a bonus for a mill because a rival town had secured a mill, and so on it went. However, the establishing of a number of poor mills, and some failures to complete mills, has militated against the bonus business, and even with the aid of bonuses, it is becoming more difficult to get parties to undertake such projects in the more remote districts, under greater restrictions than were at first imposed. No active steps have yet been taken toward the erection of any of the proposed mills, but should crop prospects prove favorable, later on more activity might be shown. Several elevator projects are talked of, and with favorable crop prospects, a number of new elevators will be established throughout the province.

Prospects for the lumber trade are better than they have been for some years. Building operations in Winnipeg will be on a larger scale than for any year since 1882, and the country trade will also be fairly good. On the Lake of the Woods, whence our principal supply of lumber comes, preparations are being made for the commencement of the season's work. Navigation opens on the lake about the middle of May, but some of the mills will be running before that time, where logs are at hand from last season. There are five mills at the two points on the lake where sawing is done, namely, Rat Portage and Keewatin. At least four of these mills will be in operation this summer, and probably the five will cut. The companies operating on the Lake are: The Ontario and Minnesota Lumber Co., the Keewatin Lumber Co., the Rainey Lake Lumber Co. (in liquidation), Dick & Banning, and Cameron & Kennedy. The estimated cut for the lake is placed at from 35,000,000 to 40,000,000 feet. The lumber is white and red pine, and a considerable portion of it will be drawn from the State of Minnesota. On Lake Winnipeg about 12,000,000 feet of spruce lumber will be cut.

Since the construction of the C. P. R. into the mountains, quite a lumbering industry has sprung up in the country between the summit of the Rockies and the Selkirk range of mountains, which is well timbered. The market for this lumber is found in the western portion of the territories, and a great portion has been used on the railway construction in the mountains. The C. P. R. Co. has recently advanced the rates on lumber shipped from these mountain mills so as to render transport eastward all but prohibitive. This has raised a

great agitation not only among the lumbermen, but also the people of the western portion of the territories, who were looking to the mountains for cheaper lumber than they had heretofore been able to obtain from the Cypress Hills and Bow River mills. It is understood the C. P. R. authorities have promised to re-consider the matter, with a view to again reducing the rates.

A new industry has lately been established in Winnipeg, in the shape of a canning factory. There is a very large market in the Northwest for canned goods, owing to the convenience of handling and shipping canned commodities to the more remote settlements. Travellers on the prairie also subsist largely on canned goods. As Manitoba produces all kinds of vegetables and many varieties of fruits to perfection, there would seem to be a good opening for the industry here. There is also a plentiful supply of meats to be had for canning purposes. The industry should prove a profitable one in time.

### MISCELLANEOUS NOTES.

Hay Bros., of Listowel, Ont., sold three carloads of flour the other day to a firm in Antwerp, Belgium.

Mr. John Scott, of Belwood, is making extensive changes in his mill putting in new engine, Hercules wheat scourer, rolls and centrifugal reels.

The Monkland oatmeal mills at Fergus, Ont., destroyed by fire last fall, are again in operation. Mr. Nelson, the proprietor, intends in the near future to build a roller flour mill under the same roof, as he has ample room and power.

The Hercules Mfg. Co., of Petrolia, Ont., write that they are having quite a boom in the manufacture of their wheat scourers. Their 'scourers' are coming in thick and fast, averaging an order every day for some weeks past. They expect to sell 300 machines this season.

A correspondent writes to the *Lindsay Post* from Cambury, Ont.: "The oatmeal turned out by the Cambury mills has obtained such a reputation for excellence that Mr. Berkley has been requested to place an order for one thousand bags per month, but was unable to accept, as with his present facilities he would be unable to supply his regular customers and fill such an extensive order. Mr. Berkley talks of putting in a set of rollers for the manufacture of roller flour."

Honesty seems to be a mighty scarce commodity in the neighborhood of Minneapolis, judging by the following extract from the *Northwestern Miller*: "An honest man has been discovered in Canada. He bought a carload of flour which contained ten barrels more than the bill called for. He promptly notified the shippers, telling them to add the price of ten barrels to their next bill. We regret that his name is not given, as it would be a pleasure to present it to the flour trade."

Mr. Campbell, of Brandon, after five years experience of buying Northwest grain, says he doesn't think the soft varieties would ever harden to the standard of Red Fyfe, and that if White Russian, or White Fyfe, are grown in any quantity, or other soft wheats, they will rule in price from five to fifteen cents a bushel less than Red Fyfe. Mr. Kelley, of the milling firm of Kelly & Co., Brandon, expresses the same opinion about difference in prices. The Northwest farmers will have cause to regret it if they change to the soft varieties of wheat.

Messrs. Gould Bros., of Uxbridge, having purchased the Red Mill in that village, known as the "Wheler Mill," have decided to change it to the roller system. For this purpose a contract has been made with Wm. & J. G. Greey, of Toronto, for the entire refitting of the mill with their improved roller flour mill machines. The list embraces the following: One No. 1 combined separator and cockle machine, four double 6x15 and two double 6x18 rolls, two No. 3 V. facility purifiers, one aspirator, six scalpers, four flour dressers, four No. 2 centrifugals, one No. 1 shorts duster, one power packer, two bag fillers, one No. 1 bran duster, one indicator, one feeder and mixer, and one 3-high chopping roll.

Mr. Alonzo Bowen, of South Mountain, is building a new 100-hol roller mill at a point on the new Montreal line of the C. P. R., about eight miles east of Kennebec. Mr. W. S. H. Lawrie, of the firm of Wm. & J. G. Greey, was down that way and succeeded in getting the contract for his house. As the point is a central one, surrounded by a good country, a model mill will be built. The system decided upon is Greey's new centrifugal and flour dresser plan. The building will be four stories and an attic. The first story will be stone, the rest frame, covered with sheet iron, and the main building will occupy a ground space of 48x65 feet with an engine and boiler house 20x35 feet. Mr. Bowen has been in the milling business for the past thirty years, and being an active vigorous man with plenty of enterprise, will no doubt establish a prosperous business at that particular point, which will probably be the starting of a new town.

Messrs. Wm. & J. G. Greey have secured the order for a full line of their milling machines, for Mr. George Copeland, of Penetanguishene. Mr. Copeland has not yet decided on the location of the mill, but it will be somewhere between Barre and Penetanguishene, probably Elmvale. The proposed capacity is 100 bbls, but the rolls and other machines determined upon will probably produce 150 bbls, without crowding. There will be one each of the following grain cleaners: No. 3 milling separator, No. 2 smutler, brush and cockle machine, followed by 14 pairs of Greey's latest improved chilled steel rolls. The dressing machinery will consist of 4 centrifugals and 8 flour dressers, 4 purifiers, 2 aspirators, 1 bran duster and shorts duster, together with the necessary packers, scales, magnets, etc., making one of the most perfect plants in that section. The Messrs. Greey constructed the present mill owned by Mr. Copeland at Penetanguishene. This mill has proved a success in every sense of the word. A testimonial from it will be found in the advertising sheets of the Messrs. Greey in this issue.

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**SAW MILL MACHINERY** for sale by H. W. PETRIE, Brantford, Ont.

**SAW MILL**, Waterous make, direct action, complete, with power, good.

**SAW**, all ready for use.

**SAW MILL**, Goldie & McCulloch make, with inverted tooth saw.

**SAW RIG**, Haggert Bros.' make, St. Thomas, Ont. with or without power.

**SAW MILL**, Reid & Barr's make, 30 ft. carriage, modern rig.

**LOG AND LUMBER CARS**, several in stock, prices low.

**ONE SINGLE EDGING TABLE**, complete, in good order, very cheap.

**ONE WATEROUS ADJUSTABLE BOLTER** and picket machine.

**LATH MACHINE**, one Waterous self-feeder, good as new.

**LATH MACHINE**, in good order, price \$30.

**TWO STAVE CUTTERS**, complete with pitman rod and counter shaft.

**TWO DOUGHERTY SHINGLE MACHINES**, in good order, price very low.

**UPRIGHT SWING SHINGLE MACHINE**, Laws' patent, Galt make, iron frame.

**SHINGLE MACHINE**, Smallwood patent, Waterous make, with jointer and drag saw.

**WATEROUS SELF-ACTING SHINGLE MACHINES** and edgers, new saws.

**GOLDIE & McCULLOCH SELF-ACTING SHINGLE MACHINE**, latest make, a fine mill.

**WHEEL JOINTERS**, 4 by different makers, and very cheap.

**HEADING MACHINERY**, one heading planer, saw, turner and jointer, at a bargain.

**LARGE STOCK** of engines, boilers, iron and wood working machinery, grist mill machinery, &c. Send for circular catalogue.

**12 WATER WHEELS** of different makes. Send for descriptive catalogue.

**FULL STOCK** of pipe dies and taps; also hand taps and dies, pipe vices, &c.

**FULL DETAILS** of any of the above machinery forwarded on application. Address H. W. PETRIE, Brantford, Ont.

**WATER WHEELS**. The following is a list of water wheels for sale by H. W. PETRIE, Brantford, Ont. (machine dealer.)

**TWO 45 IN. SAMPSON TURBINES.**

**48 IN. TYLER WHEEL**, left hand.

**42 IN. TURBINE**, right hand.

**42 IN. CANADIAN TURBINE**, left hand.

**42 IN. TYLER**, left hand.

**40 IN. DOUBLE TURBINE.**

**30 1/2 IN. LEFFEL**, left hand.

**TWO 35 IN. LEFFELS**, left hand.

**30 IN. TURBINE**, left hand.

**15 IN. GALT ARCHIMEDIAN TURBINE**, right hand.

**13 1/2 IN. LEFFEL**, brass gates, right hand.

**ABOVE WATER WHEELS** are being thoroughly overhauled by a practical builder of water wheels. Send for descriptive catalogue. H. W. PETRIE, Brantford, Ont.

**MISCELLANEOUS MACHINERY.**

**ONE 12 FT. WIND MILL.**

**ELECTRIC LIGHT DYNAMO** for 2 arc lights.

**CLOVER HULLER AND CLEANER**, Sawyer make.

**4 VO THRESHING MACHINES**, refitted.

**A NUMBER** of small meat choppers.

**POWER MEAT CHOPPER**, 32 in. block.

**CABLE WHEELS** and endless wire rope for transmission of power.

**ONE PATTERSON FEED GRINDER.**

**ONE CORN HUSKER**, Sell's make.

**ONE IRON OIL TANK**, 50 gallon.

**ONE SET** of butter tub machines.

**WOOD HOWL MACHINE**, with knives for the various sizes.

**ONE WIARD SULKY FLOW**, Cockshutt make.

**CARD OR PAPER CUTTER**, for printers or book binders.

**SODA WATER APPARATUS**, Taft's make, Boston, Mass.

**SET OF MALT CRUSHING ROLLS** in iron frame.

**POWER CUTTING BOX**, Maxwell make.

**TWO BARK MILLS** for tanners' use.

**LEATHER SPLITTER**, heavy machine.

**ONE FRENCH WATER FILTER**, same make as used by Nile expedition.

**ONE CORN AND COB MILL**, Noyes' make, Buffalo.

**FLOUR TRIERS** kept constantly in stock.

**CANNING MACHINERY**, a complete outfit.

**5 HYDRAULIC RAMS** of various capacities.

**STEAM ROCK DRILL.**

**5 ROTARY PUMPS**, various sizes.

**TWO BRICK MACHINES** and one tile machine.

**ONE PAIR 52 in.** French burr stones, with curb hopper, spindle, &c.

**WOOD YARD OUTFIT**, power splitter, circular saw, &c.

**ONE PAIR 36 in.** burr stones, with all parts.

**ONE GRAIN CRUSHER**, Maxwell make.

**ONE NIAGARA CORN SHELLER**, Noyes' make, Buffalo.

**ONE BURWELL CORN SHELLER**, hand or power.

**TWO AIR PUMPS.**

**30 IN. PORTABLE CHOPPER**, Noyes' make, Buffalo.

**ONE HAND FIRE ENGINE.**

**TWO SETS** of biscuit machinery.

**FRUIT EVAPORATORS**, several sizes.

**LACE CUTTERS AND LACING**, large stock.

**SPEED INDICATORS**, only \$1 each, sent post paid.

**BOILER PURGER**, try a sample lot.

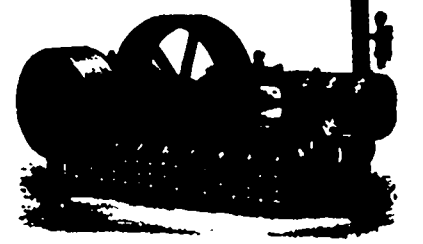
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**EMERY GRINDERS AND WHEELS**, all sizes.

**A LARGE STOCK** of engines, boilers, iron and wood working machinery always on hand.

**DON'T FORGET!** to send for a copy of my new catalogue, No. 13. Address H. W. PETRIE, Brantford, Ont.

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**BECKETT ENGINE CO., HAMILTON**, for automatic engines.

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**BECKETT ENGINE CO., HAMILTON**, for saw mill engines.

**BECKETT ENGINE CO., HAMILTON**, for shafting and pulleys.

**BECKETT ENGINE CO., HAMILTON**, for patent couplings and hangers.

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**BECKETT ENGINE CO.** test all their boilers to three times the working pressure, before caving the works.

**THEIR BOILERS AND ENGINES** are specially built with a view to safety, economy and efficiency; get our quotations before deciding your purchase, by writing BECKETT ENGINE CO., Hamilton, Ont.

**ECONOMY—TO STEAM USERS**—great saving in fuel; a steady and uniform steam supply and a positive increase of steam capacity are effected by using the U. S. Rocking Grate Bar Co.'s grates, manufactured under patent by Beckett Engine Co., Hamilton, Ont.; from twenty to twenty-five per cent. saving according to testimonials; in use in over one hundred and forty thousand horse-power of steam boilers; two boilers with these grates do the work of three with the fixed grates. Full particulars from BECKETT ENGINE CO., Hamilton.

## GOLDIE AND McCULLOCH, GALT, ONTARIO.

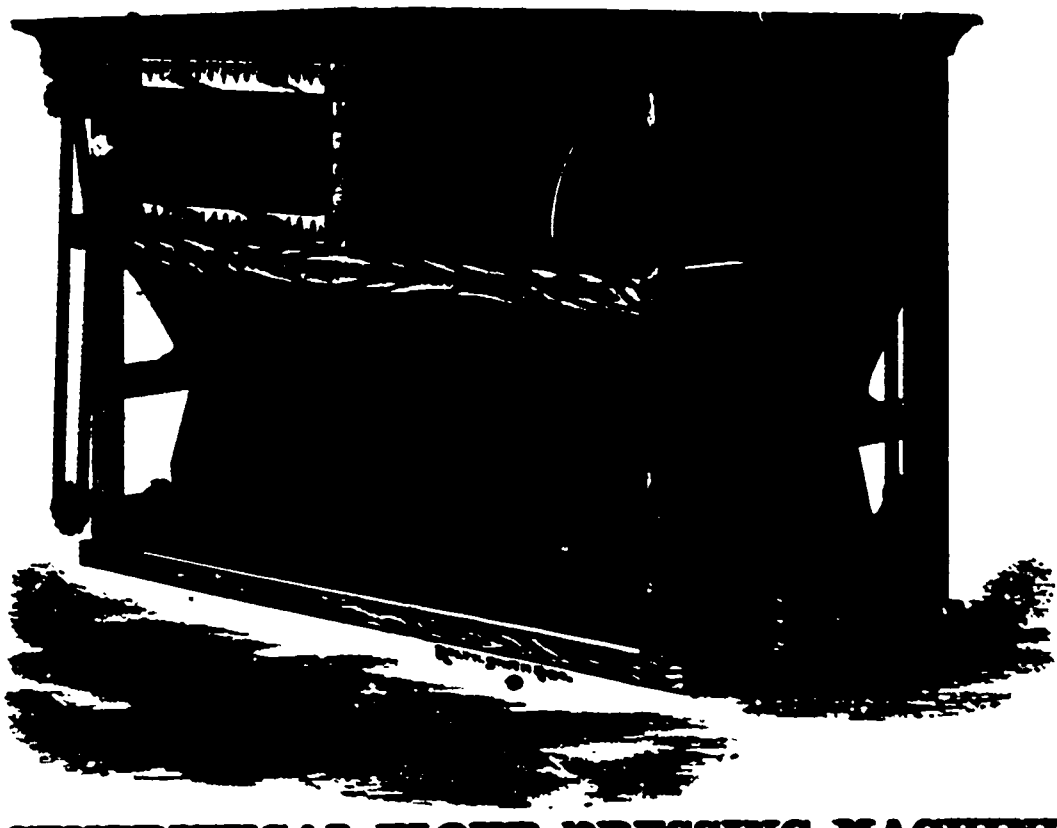
TO PARTIES WHO CONTEMPLATE

# BUILDING OR RE-BUILDING FLOUR MILLS,

On 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.

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

**THE WHELOCK AUTOMATIC ENGINE,**  
**Wool Working Machinery,**  
**SHINGLE AND BARREL MACHINERY.**  
**WOOL MACHINERY.**  
*Special Price Lists furnished on application.*



**FIRE AND BURGLAR PROOF.**  
**SALTERS**  
**V. A. TILLY - DOORS, & CO.**  
*First Prizes Awarded, Toronto, 1882, 1886.*  
**CORRESPONDENCE SOLICITED AND ORDERS PROMPTLY ATTENDED TO.**

### CENTRIFUGAL FLOUR DRESSING MACHINE

Our Centrifugal, as shown above, contains important improvements covered by Canadian Patents which we control. Parties purchasing elsewhere, will do well to look out for infringements. All our machines are made under our own immediate supervision, of the best materials and workmanship. Satisfaction guaranteed.

**GOLDIE & McCULLOCH.**



### A CANADIAN GRIST MILL OF 1819.

THROUGH the courtesy of Sheriff McKellar, of Hamilton, the MECHANICAL AND MILLING NEWS is enabled to present to its readers an illustration of a very primitive contrivance for grinding grain which was in use in this country in the early years of the century. So far as we know it is the oldest grist mill extant in Canada. Placed side by side with the modern roller mills which now dot the land, it affords subject for thought, and brings very vividly before the mind the wonderfully rapid progress which has taken place in the milling and other manufacturing industries of this country. The old "Bragh," as it was called, now adorns the museum of the Canadian Institute in this city, having been recently presented to that institution by its former owner. From a manuscript which accompanied the gift we extract the following particulars in the history of the old mill:

"The want of a more effectual means of grinding the grain was sorely felt, and when, late in 1818, or in the beginning of 1819, a stone mason named Menzies came to the little settlement, bringing with him a complete set of tools of his trade, Peter McKellar, my father, who, as I have already said, possessed great mechanical talents, thought he saw the way to supply the need. There was no steam in those days, and no water mill or water power convenient to run one, therefore my father undertook to make a hand mill, or "Bragh" as it is more correctly and euphonicly called in the original as spoken by Adam and Eve. A large granite boulder was found on lot A, No. 1 in the township of Aldborough, at the top of the 52 mile creek, close to the county line of Elgin and Kent. From this boulder my father and Menzies made the "Bragh" stones, the former fitting them into the frame early in 1819, just as it appeared when shipped to the Colonial Exhibition in England in March, 1856. The mill, when completed, was set up in my father's house, and there was in constant use for some years by the whole settlement. I can well remember seeing the big, strong Highland men coming in at evening after their days work in the clearings. Each would come with his little sack of grist, which in his turn he would grind, and then return to his home, often two or three miles distant."

### PERSONAL.

*Items of personal intelligence from or concerning persons engaged in the various branches of mechanical industry represented in Canada will always be welcome to this column, with the stipulation that the name of the sender be given, not for publication, but as a guarantee of good faith.*

Mr. Geo. Fensom has removed from Hanover, Ont., to Elinwood, Ont.

Mr. John Oman, an old and respected citizen of Stratford, Ont., recently had four of his fingers severed by a circular saw in Orr's mill.

Mr. Robert Thomson, of the Great Western Mills, Woodstock, Ont., at the request of numerous ratepayers has consented to be a candidate for a seat in the town council.

The death is reported of Mr. Rental Whidden at Windsor, N. S., at the advanced age of 96 years. The deceased gentleman was well known a few years ago as an extensive lumber operator at St. George, N. B., and Calais, Me.

James Leask, saw mill owner, Leaskdale, is dead.

Mr. Nathaniel Hillman had two fingers cut off in his saw mill at Comber lately.

Mr. Geo. Vashinder, of Welland, recently had his hand badly mutilated by a circular saw.

Mr. W. Rombough, foreman of the canoe works at Peterboro, lately had a finger split by a circular saw.

Frank Oaks, employed in a furniture factory at St. Thomas, was badly injured by a circular saw on the 13th ult.

Mr. John Blackwood, of Galt, has entered into partnership with Mr. A. J. Snow in the Vulcan foundry, Mount Forest.

Mr. Knight got his hand caught in the stretcher in his planing mill at Leamington, Ont., and had it severely lacerated.

Mr. J. Bowman, late of the Ogilvie Milling Co., intends to start an intelligence office at Portage la Prairie, Man., shortly.

Mr. Richard Douglas, who fractured a rib in Goldie & McCulloch's foundry at Galt recently, is able to be about again.

Mr. Cullen, of the milling firm of Hodck & Cullen, Stratford, Ont., while adjusting some machinery in the mill recently, narrowly escaped being crushed to death by a heavy piece of shafting which fell within a few inches of his head.

Miss Nellie Burrows, while attending a machine in the Screw Factory at Dundas, had the index finger of her left hand badly crushed.

Mr. Matthew Rosevear, who was engineer of the first locomotive brought to Canada, died at St. Thomas a few days ago, aged 77.

Mr. W. Doherty, of the Clinton organ factory, has been admitted an Honorary Fellow of the Society of Science, of London, England.

Mr. J. R. Hoover, the well-known miller, of Pickering, Ont., has been appointed one of the License Commissioners for South Ontario.

A young man named Laird Fraser had all the fingers of his left hand taken off by a circular saw in Laird Bros.' planing mill at Brampton, Ont., lately.

Mr. John Alexander, of Oshawa, has severed his connection with the Ontario Lumber Company and engaged with a new company at Windsor, Ont. There were no less than 220 applications for the position.

Mr. James Howell, employed for twenty years as foreman moulder at the Waterous' foundry at Woodstock, Ont., was found dead in bed recently. Rupture of a blood vessel of the brain is supposed to have been the cause.

Miller John Pickard has removed from Aldershot to Thorold, Ont.; Thos. H. Fee from Hastings to Brussels, Ont.; Chas. Selley from Hawksville to Plattsville, Ont.; W. J. Campbell from Alliston to Meadowvale, Ont.; Jos. Duff from Lansing, Ont., to Maxwelltown, Scotland.



Previous to his departure to take up his residence in Toronto, the citizens of Port Perry presented Mr. W. J. Trounce, the well-known lumberman, with a silver ice pitcher, fruit dish, butter cooler and napkin rings.

Richard Horn, tail Sawyer in Dunn's mill at Big Bay, Ont., while passing the saw stepped on a slab, which tipped and threw him on the saw, resulting in his right foot being completely severed from the leg. He will recover.

While a Mr. Davis was working with a swing circular saw in a portable saw mill at Hepworth, it went through a block quicker than he expected, striking him on the leg, making a horrible gash over eleven inches long. It then flew up and struck him in the arm, nearly severing that limb.

Mr. James Plewes, a well-known mill man, of Dundas, Ont., while trying to prevent some saw logs from injuring his mill dam, fell into the water, was carried down the stream, and although rescued after being some time in the water, died five hours after. The deceased gentleman was father of the late J. S. Plewes, of Shelburne, whose death under sudden and very melancholy circumstances was recorded in these columns at the beginning of the present year.

Benjamin Hagaman, book-keeper for the well-known milling firm of Howland, Jones & Co., Thorold, Ont., on the pretence of taking a few days holiday, got away to the States last fall, and, as was afterwards discovered, took with him several thousand dollars belonging to his employers. Detectives were put on his track and they succeeded after some time in locating him at San Francisco. With some difficulty they secured the necessary

authority for his extradition, and he is now in Canada to receive the criminal's reward.

Newmarket Era: A commercial traveller for a New York firm visited Denne's mill on Monday for the purpose of introducing his oils. In the meantime he stepped into the engine room and became so interested in examining the machinery that before he realized his position, the governor balls hit him a bat on the head that knocked him senseless upon the floor. Engineer Peck caught him as he was falling and rendered every possible assistance, but it was more than five minutes before he came to his senses again.



Boyle & Storey, iron founders, Paisley, Ont., have failed. Culp & Finlay, engine builders at Hamilton, have dissolved. Culp continuing.

The hammer manufactory of Wilson Bros. at Merriton was destroyed by fire a couple of weeks ago.

Joseph Brook, of Simcoe, is about erecting a 5-set woolen mill to take the place of one recently burned.

The Victoria Wheel Co., of Galt, have added to their establishment a 100 h. p. Goldie & McCulloch engine.

Pocock's new saw factory at Oshawa is being got into shape, and is expected to start operations in a few days.

Ingersoll has voted a bonus of \$20,000 to Messrs. Egan Bros. & Little, of London, to establish a piano factory there.

Mr. John Fensom, Toronto, has been granted a patent for improvements in hydraulic valves and valve mechanism.

Ingersoll, Ont., has voted the London Machine Screw Works a bonus of \$2,500 and tax exemption to remove to that town.

It is said a foundry will shortly be started at Rosemont, Ont. The people are willing, if necessary, to bonus such an industry.

The Canadian Cutlery Co., of Montreal, that decided to locate in Bowmanville, are demurring at the terms offered them by the council.

A company is being formed at Hull, Que., to manufacture a fire-proof composition out of clay and sawdust. The promoters of the enterprise are Americans.

"The next thing, I suppose," says old Grouler, "will be a steam engine made entirely of paper, and then we shall have what you might call a stationary engine."

Fire was discovered in the pattern room of the Waterous Company's shops at Brantford recently, but was fortunately extinguished before much damage had been done.

Messrs. John Herriman & Sons, of the Canada Tool Works, Dundas, Ont., have opened a warehouse at 38 Yonge St., in this city, for the display and sale of their machinery.

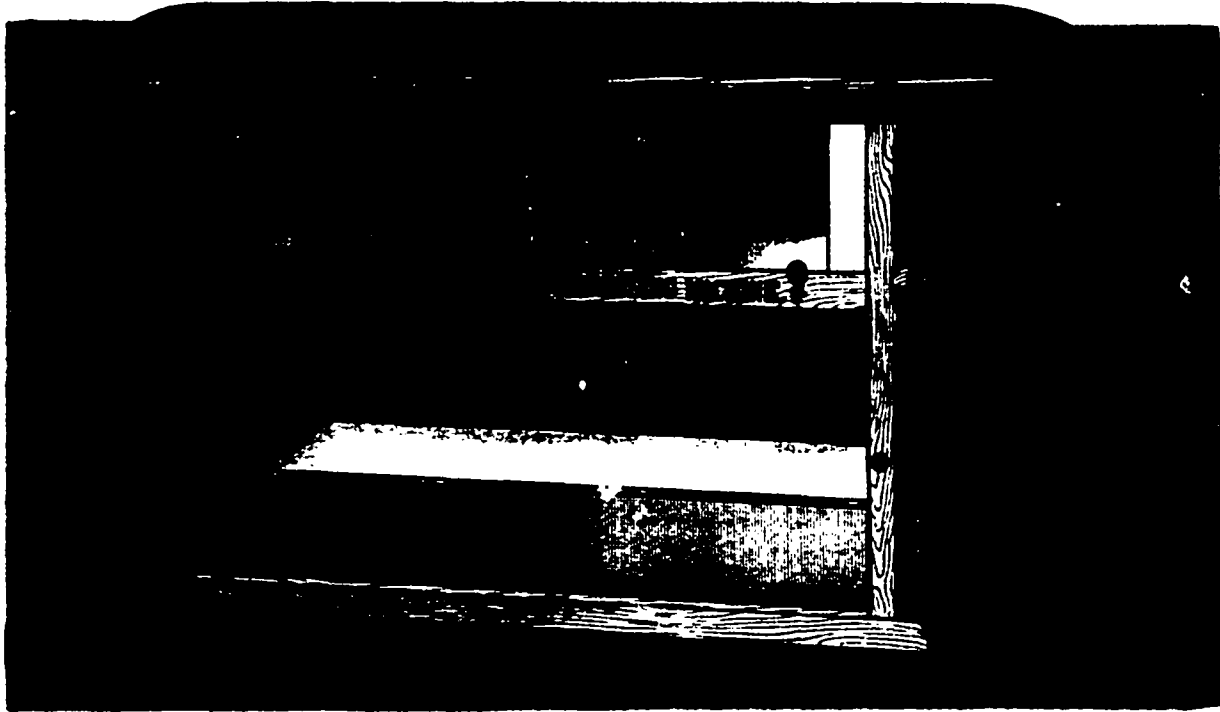
The Brantford Cordage Company have commenced operations. Their machinery is almost entirely from the firm of Lawson & Sons, Leeds, Eng. A large number of hands will be employed.

If two-thirds of the machine shops in the country would keep a careful account of the time required to hunt up tools and appliances required in doing work, they would have at hand a strong argument for establishing tool rooms.—*American Machinist.*

The Northern Echo, one of the most influential papers in the north of England, is authority for the statement that a Durham invention will soon produce a startling economic improvement in the matter of fuel consumption and the heating of steam boilers. Protection has been obtained for the invention. The cubic bulk of the fuel that henceforth will be required for marine steam engines will be reduced, it is said, by 70 per cent, giving a gain to the extent indicated by that proportion to the storage space for cargo in ocean going steamships. The time for raising steam will be diminished in all steam boilers, stationary or marine, by at least two thirds. The cost of the fuel consumption will be reduced by more than half, and the production of smoke will be absolutely annihilated. The process has been made the subject of actual experimental demonstration and every test has been applied. Full details are promised soon.

There may be, and it is known that there are, defects of both workmanship and materials sometimes so hidden that they cannot be detected by any inspection short of cutting the boiler to pieces, testing the material, and searching for the "scamping" done by the workmen. Still it is believed that these cases are very rare compared with the detectable defects which are being reported by the thousand and for which timely and adequate remedies are suggested and adopted. There is now a large plate of iron in the collection of defective material in this office which came from the establishment of a manufacturer noted for the excellence of his boiler plates, and it was put into a boiler by a firm of undoubted ability and honesty, where it kept its place but a short time under the ordinary circumstances of boiler practice, when a very slight but peculiar defect was discovered by the inspector, and on careful search more singular, but all slight, defects were detected in the same sheet. Its removal having been recommended it was found to be so brittle in places as to fall to pieces under the blows that were necessary to detach it from its place. This is mentioned (being the most recent and best authenticated of the many cases that are on record) as tending to show that no firm is exempt from the liability of sending out occasionally a defective piece of work, and that perfect immunity from accidents in the use of steam can only be reached by careful and frequent inspections by the most competent and reliable professional inspectors.—*The Locomotive.*

# THE GEO. T. SMITH CENTRIFUGAL MILLS



CATARACT MILLS,  
(daily capacity 300 bbls.)

WHEELER BROS.,  
Full roller process Flour.

CATARACT, Ont., March 17, 1887.

THE GEO. T. SMITH M. P. CO., Stratford.

GENTLEMEN: Your No. 6 Centrifugal arrived here a few days after we wrote you last. We have it now at work and we must say that we are delighted, and more than pleased with it. The workmanship of the machine is perfect, making it a very hand some machine, and the great quantity it will bolt with the cleanness it will dress the flour greatly surprises us: It runs very quietly and with very little power. We must say that were we building a new mill or remodelling an old one, we would use your Centrifugals only to do all our bolting, and would discard the hexagon reel entirely.

Respectfully yours,

WHEELER BROS.

Office of Donald McLean, Trent Valley Flour Mills,  
Lakefield, March 18, 1887.

S. S. HEYWOOD, ESQ.,

GEO. T. SMITH M. P. CO. of Canada, (Ltd.), Stratford, Ont.

GENTLEMEN: After thoroughly testing the mill built for Messrs R. & G. Strickland by your company, I have much pleasure in certifying to the great merits of your Centrifugal system. The mill works like a charm, sure, swift and smooth, and I challenge any mill in Canada to produce a better quality or larger quantity of flour from the same amount of wheat. After the first week's run I started the mill on the following Monday and ran continually day and night until a late hour on Saturday night, and have never had a "choke" or anything to delay us since the mill started running. I might mention that I am selling large quantities of flour in the town of Peterboro', and one of the parties to whom I sell tells me that his customers are continually bringing in bread for him to see, and tell him that there was never such good flour sold in Peterboro' before. If any one wants to see the "A 1" mill of Ontario, I consider I can show it to them if they take a trip to Lakefield.

Yours truly,

DONALD MCLEAN.

CANTON, Ont., March 16, 1887.

S. S. HEYWOOD, ESQ.,

Manager GEO. T. SMITH M. P. CO., Stratford.

DEAR SIR: Having settled with you in full for my mill which you built for me upon the Geo. T. Smith Centrifugal system, I can only say everything in connection with my contract with you has been carried out on your part to my entire satisfaction. Wheat was turned on the mill on Thursday last, and the mill has run steadily ever since, making good flour from the first, and finishing as clean as I can wish; in fact, I may have to make my feed better in order to make it saleable. The mill was contracted for 60 barrels in 24 hours. We have been running it at 72 barrels, and I am confident can make 75. The millright work was put in the mill to suit me in every way, and the machinery runs with very little care or attention. Although my first experience with a Centrifugal mill, I have already seen enough to be convinced that it is a great improvement over the old long reel system of bolting.

Yours truly,

W. H. KINSMAN.

Lakefield, Ont., March 18, 1887.

S. S. HEYWOOD, ESQ.,

GEO. T. SMITH M. P. CO. of Canada (Ltd.), Stratford, Ont.

DEAR SIR: We have been running our new mill which you built for us on the full GEO. T. SMITH CENTRIFUGAL SYSTEM one month, long enough to be convinced of its superiority over the old long reel system. Our first mill was built by E. P. Allis & Co. and started in the spring of 1886, about one year ago. It was, we thought, as good a mill for its size as could be built. When it was burned last October we made a contract with you before the ruins were cold, to rebuild it, and could think of no better protection to ourselves in the way of a guarantee than to require you to give us as good a mill as we had before. As you advised us to adopt the Geo. T. Smith Centrifugal system, and in writing the contract left it at our pleasure to put in either system as we might decide, we sent Mr. McLean, a practical miller who was negotiating for the lease of our mill, to Jackson, Michigan, to examine the "Eldred." Upon his return we instructed you to put in the Smith system. The result is a pleasant surprise to us. Wheat was turned on the mill Friday, Feb. 18th, and on the following Wednesday, after careful tests of capacity, quality of flour, yield, and finish, we accepted the mill as entirely satisfactory in every particular. Our contract with E. P. Allis & Co. as well as with yourself was for a mill of 75 barrels capacity. The mill you built runs to 85 barrels much easier than the old one did to 65. It takes less power, the machinery occupies much less room and requires less attention, and the results are a better flour and closer finish. Our business relations with you have been of the most agreeable nature. When the mill was finished a few minutes only were occupied in settlement, there being no disputed bills or claims for damages to be adjusted. Should you find it convenient to send any parties here to examine our mill, we shall have much pleasure in affording them every facility for doing so.

Yours truly,

R. & G. STRICKLAND.

*We now have a large number of our FULL CENTRIFUGAL MILLS running here in Canada, and parties about to build new or remodel old mills, will find it to their interest to examine some of these before deciding what style of mill they will put in. A list of these mills will be furnished upon application, and every facility afforded for a careful examination of the work they do.*

**ROLLS RE-GROUND AND RE-CORRUGATED AT SHORT NOTICE.**

**The Geo. T. Smith Middlings Purifier Company, of Canada (Ltd.)**

United States Shops, JACKSON, MICH.

STRATFORD, ONT.



The Hespeler mills are running night and day.

A grist mill is in course of erection at Clear Springs, Man.

Mr. Booth, of Gravenhurst, has leased the Washago grist mill.

The Wheatley roller flour mill is to be removed to Comber, Ont.

R. Saunders, of the Forestville grist mill, has gone out of business.

Thos. Hicks, grist mill, Victoria, has been succeeded by John Shaw.

Urquhart & Wright have sold the Hensall oatmeal mill to Hood & Robertson.

The Bobeaygeon grist mill has shut down for a time owing to high backwater.

The grist mill at Cadmus, Ont., will soon be in operation on the roller system.

Mr. Geo. Shepherd's mill dam at Printrose was recently swept away by a freshet.

Birtle, Man., is to have a second flour mill, with a capacity of 50 barrels per day.

Mr. Porritt's new mill at Sunderland, Ont., is expected to go into operation in a few days.

A cylinder head blew out in Bisnett's mill at Blenheim, the other day, causing a shut-down.

Whitby grain buyers handled over half a million bushels of barley during the past season.

Mrs. Bonfield is changing her mill at Egansville to the roller process at a cost of \$6,000.

Mr. George Haskins has sold to Walter Haskins his mill property near Phillipsville, Ont.

J. & R. Bell & Bros.' mill dam at Utopia, Ont., was partially destroyed by floods a few days ago.

Mr. Reuben Richardson had his thumb torn off while oiling machinery at the Deseronto flour mills.

Gould Bros., of Exbridge, have the material on hand and will commence at once to build a new mill race.

The pioneer oatmeal mill at Portage la Prairie has been supplied with new motive power and other machinery.

Mr. Dent is giving up the milling business at Pine Hill, Ont. A new miller is expected to take the business.

Mr. Warner, of Waterloo, has accepted the position of head miller in Kreutziger's mill at Heidelberg, Ont.

Manitoba papers state that elevators will be built this season in a few good towns where grain deliveries are large.

Mr. D. Rose, of Warsaw, Ont., has purchased the flour and saw mill at Keene, Ont., from H. Burnham for \$5,000.

W. W. McMillan, of D. H. McMillan & Bros., millers, Winnipeg, is in British Columbia in the interest of his firm.

Messrs. John Lawrie & Co., the old established dealers in flour and feed at St. Catharines, have failed. Liabilities \$30,000.

The plant of Campbell & Son's mill at Ingersoll has been transferred to the wood turning factory of Captain Edison, Port Stanley.

The Carberry, Man., flour mill which was recently wrecked by an explosion of flour dust, has been repaired, and is in operation again.

At a conference of Scotch millers at Glasgow a couple of weeks ago, a resolution was adopted demanding that a duty be imposed upon foreign flour.

The project set on foot by the grazers of Sombra township, of establishing a flouring mill on the co-operative principle, is said to be meeting with success.

The G. T. R. elevator at Point Edward is being extensively repaired and improved for the coming seasons business, which is expected to be very heavy.

Mr. J. A. Julien has purchased Mr. D. Johnson's flouring mill at Wallaceburg, and will proceed immediately to change it into a 100 barrel roller process mill.

Mr. J. W. Bowman writes us that he is engaged in putting roller machinery into his mill at Delhi, Ont., and intends to operate it himself after the 1st of May.

Austin, Man., has decided to offer a bonus of \$3,000 for the erection of a flour mill at that place, and a committee has been appointed to carry out the object.

The Portage la Prairie Liberal is authority for the statement that the town and municipality of Birtle are going to give a joint bonus of \$50,000 for the erection of a roller flour mill.

With the view of encouraging emigration to this country, the Canadian Department of Agriculture will exhibit specimens of Canadian grain at the English county fairs the coming autumn.

The scheme to erect a farmers' elevator at Portage la Prairie is said to be working satisfactorily. A large proportion of the shares have already been taken by the farmers of the surrounding country.

Messrs. Dunlop Bros., extensive grain dealers, of Glasgow, in their annual report, say it should be noted that perhaps the finest wheat of the year was received from the rising territory of Manitoba.

The Northwestern correspondent of this journal and the Manitoba papers agree in stating that Oregon flour has been driven out of the British Columbia market by the product of Manitoba No. 1 hard wheat. On the other hand, a gentleman told us the other day that a friend of his just come from British Columbia, and a resident of that Province, denies that Oregon flour has been displaced to any great extent. Who is right?

A Mr. Steele, of Maxwell, has obtained from the citizens of West Winchester, Ont., a private subscription of \$1,500 and an acre of land, to be paid when a mill of 100 barrels of flour daily capacity is in running order.

It is said the C. P. railway company contemplate building a million bushel elevator at Owen Sound and establishing a line of steamers to ply between Owen Sound and Chicago. It is claimed this would give them the shortest route to the seaboard by about eighty miles.

Mr. Dodge's mill dam at Millford, Ont., was swept away by floods on Easter morning. Last year a similar misfortune befell him, and he was engaged the greater part of last summer in repairing the damage to the dam and grist mill. Friends in the township and in Preton are subscribing to assist him to rebuild.

Halifax City Council is agitating for the re-weighing and re-inspecting of flour shipped to that city, and the Dominion Government will be asked to allow such a measure to be enforced by the local authorities. There does not seem to be any good reason for the proposed new regulation, as all flour is subject to inspection before leaving Ontario.

The Roller Mill, Buffalo, N. Y., says: There is something not altogether comforting to grain men on this side in the fact that the Toronto Board of Trade has passed a resolution urging the Dominion Government to enlarge the canals between Lake Ontario and the sea and continue the reduction of tolls on export grain passing through Canada.

A most distressing event occurred at Ingersoll, Ont., on the morning of the 4th of April. The melting of large quantities of snow and ice caused a freshet which swept away the dam at Lang's mill and a row of houses on one of the streets near by. The force of the torrent carried the houses and their occupants bodily down the current, and before they had gone far split them in pieces, the occupants being left struggling in the water. Five out of the eleven men, women and children, perished. The engine room of the mill, 100 cords of wood and part of the Canadian Pacific railway track were washed away, together with several bridges.

Mr. Thos. Wallace writes the MECHANICAL AND MILLING NEWS that he has just completed the erection of Tillson's new oatmeal mill at Tilsonburg, Ont. Concerning this mill, the Woodstock Sentinel-Review says: Perhaps the finest oatmeal mill in the Dominion is now being erected in Tilsonburg by its leading citizen, E. D. Tillson. It is on the site of the old one lately destroyed by fire. It is built of white brick and is both an immense and handsome structure. Although begun only last fall, it is now just approaching completion and is running night and day. It will cost \$40,000. It is the only mill in this country fitted up with all the latest improvements after the model of the best American mills for making granulated oatmeal. It has been erected under the superintendence of Mr. T. Wallace, of Chicago, an expert who has supervised the erection of fourteen of the greatest mills in the United States and who is recognized as a high authority on the subject of oatmeal manufacture. One of Mr. Wallace's most useful inventions is in use in the mill. He will leave behind him a monument to his skill of which this country and especially Tilsonburg may be proud. A run through this magnificent mill the other day impressed us more strongly than ever with the fact, long well known, that E. D. Tillson is a man whom all his fellow citizens should delight to honor. He is one of those kind of men who make prosperity.

The Lindsay Post, referring to the suit at law of Brady v. Sadler, says: It will be remembered this is an action by the plaintiff—a farmer at the Cross Creeks—to compel the defendants, who are the proprietors of the Lindsay flouring mills, to remove the bracket boards from the dam on the River Seugog at Lindsay. The trial at Lindsay occupied three days last November and was not finished. It was resumed here on Friday, 8th April, before Hon. Mr Justice Proudfoot, when the evidence was concluded, having occupied the whole day, and the case was enlarged for argument at Osgoode Hall, Toronto, on Friday, 15th. The argument occupied all day Friday and Saturday and judgment was reserved. Messrs. James Mac-nan, Q. C., Charles Moss, Q. C., and Hugh O'Leary acted for the plaintiffs, and Messrs. S. H. Blake, Q. C., Dalton McCarthy, Q. C., and Thomas Stewart acted for the defendants. This is a long standing dispute and this is the first action brought to settle it, and it will be of interest to the public to know that the costs are estimated at \$5,000. The evidence went back to the building of Purdy's first dam on the Seugog and its subsequent removal and building of the present dam in 1843, and reciting also the past history of navigation on those waters and the early settlement of Lindsay and Ops. The witnesses were gathered from all parts of the county, one coming from British Columbia and another was examined on commission in Chicago. The result of the trial will be awaited with much interest.

### Latest Canadian Patents.

#### Rotary Saw Sharpener.

360,679. Robert Gaskin, Fairville, assignor to himself and George Mealey, Portland, New Brunswick, Canada. Filed Nov. 11, 1886. Ser. A No. 218,522. Dated April 5, 1887.

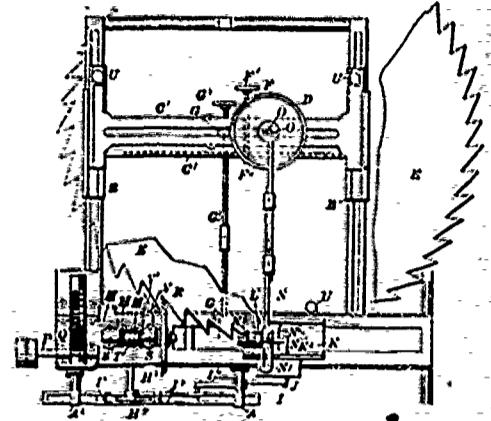
Claim 1. In a rotary saw sharpener, the combination, with a revolving grinding wheel mounted in stationary bearings, of a carriage having forward and backward motion, an adjustable saw holder mounted on the said carriage, and a frame sliding on the main frame and having connection with a rod or arm provided with legs forming bearings for a screw having a sliding nut, and carrying a pawl which revolves the saw on its axis on the said holder the distance of one tooth.

2. The combination, with a revolving grinding wheel mounted in stationary bearings, of a carriage having a forward and backward movement, a saw holder mounted to slide on the said carriage, means for moving the said saw holder longitudinally on the carriage, a frame sliding on the main frame, and having connection with a rod or arm provided with lugs forming bearings for a screw having a sliding nut, and carrying a pawl which engages the teeth

of the saw, and means for imparting a longitudinal movement to the said frame carrying the pawl.

3. The revolving shaft H, the slotted crank disk G3, and the adjustable screw threaded rod G', in combination with the carriage C, adapted to slide on the main frame, the nut G, in which screws the said rod G', and which is held in brackets on the said carriage C, and the adjustable saw holder D, mounted to slide on the said carriage C.

4. The carriage C, having a forward and backward movement, and the rack C' on the said carriage, in combination with the saw holder D, mounted to slide on the said carriage C and carrying the shaft F, provided with the hand wheel F' and mounted to turn in the said saw holder D, and the pinion Pa on the said shaft F' and meshing into the rack C'.

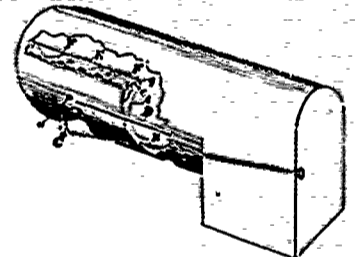


5. The carriage C, the adjustable rod G', the slotted crank arm G3, and the shaft H, carrying the bevel gear wheel H', in combination with the shaft H3, carrying the bevel gear wheel H2, meshing in the said gear wheel H', the cam H4, secured to the said shaft H3, the sliding bar I', operated by the said cam H4, the link I4, pivotally connected with the said bar I', the slotted arm J, in which one end of the said link I4 is adjustable, the rocking shaft, J', to which the said arm J is fastened, the arm J2 on the said shaft J', and the frame K, having connection by a pin, H2 with rod or arm N, provided with lugs, N2, N2, forming bearings for a screw, N3, having a sliding nut L', and carrying the pawl L, and connected by the pin K' with the said arm J2.

6. The frame K, sliding on the main frame A, the pin K2, attached on the said frame K, and the pawl L, in combination with the adjustable rod N, having the slot N', and lugs N2 forming bearings for a screw, N3, carrying a nut, L', to which is pivoted the said pawl, the bolt O, held on the said rod N, and provided with the beveled collar O', engaging the central aperture of the saw, and the nut O2, screwing on the said bolt.

#### Steam-Boiler Cleaner.

360,821. Hiram Rushton, Toronto, Ont., Canada. Filed Aug. 21, 1886. Serial No. 211,497. Dated April 5, 1887.



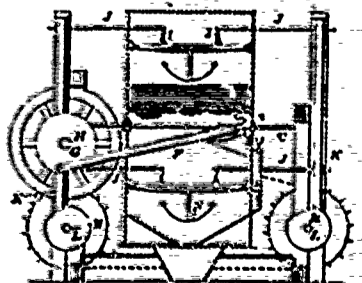
Claim 1. A chamber, A, fitted onto the inner side of the shell of the boiler and arranged so that its interior shall communicate with the feed-pipe D, in combination with the pipe B, provided with a blow-off cock C.

2. A chamber, A, fitting onto the inner side of the shell of the boiler and communicating with the interior of the pipe B, which is provided with a blow-off cock, C, as specified, in combination with a feed-pipe, D, communicating at a with the interior of the chamber A, and having a deflecting-plate E.

3. A chamber, A, fitted onto the inner side of the shell of the boiler and arranged so that its interior shall communicate with the feed-pipe D, in combination with a trough, E, formed on the top of said chamber, and having a series of deflecting-plates, F, and holes G, made in its end plate, F, above the bottom of said trough.

#### Rolling-Machine

360,592. James Huxtable, Horning's Mills, Ont., Canada. Filed May 28, 1886. Serial No. 203,525. Dated April 5, 1887.



Claim 1. A reciprocating chest, a sieve supported within said chest, and means for reciprocating said chest, in combination with the brush I, intermittently-reciprocating vertical non-yielding bars K, and means for connecting said bars and brush, and means for intermittently reciprocating said bars.

2. A chest, B, sieve A, supported within said chest, and means for reciprocating said chest, in combination with the brushes I, rods J, vertical bars K, and mechanism whereby they are raised a certain intervals during the reciprocating motion of the chest.

3. The reciprocating chest B and the sieve A, supported therein, in combination with the cams L, the bars K, resting thereon, the brush I, supported by said bars, and mechanism for rotating said axis, whereby the brush is raised from the sieve at intervals.

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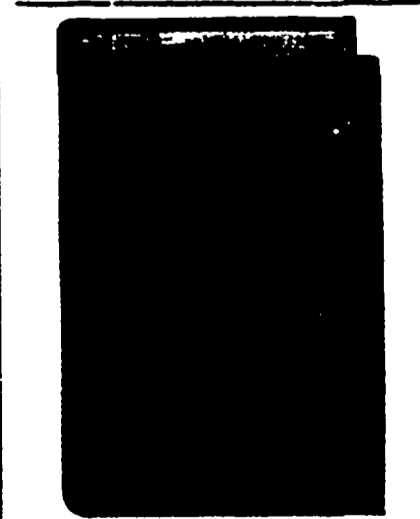
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The lowest or any tender not necessarily accepted.  
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Comptroller N. W. M. Police.  
Ottawa, March 25th, 1887.

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For Sale.—Foundry and machine shop, situated at Lunenburg, near Cornwall, Ont. Has done a successful business for many years. Present owner's advanced age the reason for selling. Large assortment of patterns on hand for mill machinery, canal castings, water wheels, stoves and implements for the farm. Machine shop contains three engine lathes, one planer, one boring and drilling machine, one wood lathe, small circular saw and hand saw. Power supplied by a 20 h. p. engine. This desirable property can be purchased at a low figure, and will bear looking into.

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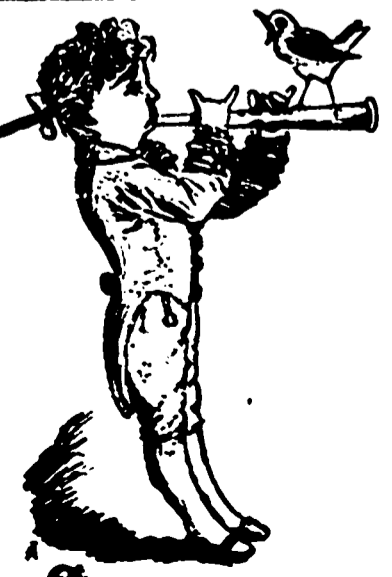
For Sale.—The Clifford Roller mill, Clifford, Ont. Capacity 100 barrels. Driven by steam. Complete in every respect and doing good trade.

For Sale or Rent.—Full roller mill, 50 barrels capacity; has been in operation about a year. One of the best water powers in the country. Also saw mill, two story brick dwelling, 12 acres of land, good orchard, within half a mile of station on the G. T. R., and 2 miles from the town of Simcoe.

For Sale.—Excellent flour mill property, double house, stable and shed, and 30 acres of land, situated in the village of London West, Ont. Plenty of wheat can be had at mill door. Four runs of stones and modern cleaning machinery. A bargain.

For Sale.—Oatmeal, grist and saw mills, well equipped and established, situated 17 miles from Collingwood, Ont. Can be bought at a bargain. Reasons for selling.

For Sale.—Valuable saw and flour mill property in the township of Elderslie, five miles from the village of Paisley. The flour mill is full roller process and contains 2 sets of stones for grinding chop. Run by steam and water power. Sufficient water power exclusive of steam to run it 7 months in the year. The saw mill is operated by water power, contains 3 saws, and has a cutting capacity of 5,000 to 6,000 feet per day. This desirable property can be purchased at a bargain.



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

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### GREY'S MOTION AND SPEED INDICATOR.

THE accompanying illustration represents a most useful and at the same time inexpensive machine which would seem to be an indispensable adjunct to every well-regulated mill where the quality of work and yield depend upon the proper operation of cleaning machinery requiring certain speeds. This machine, which is driven by either cross or open belts, is intended to be fastened to the wall or posts in the mill, and is so arranged that it can be adjusted to give notice by the sharp quick ringing of the gong when any change in the speed of the machinery occurs. It will immediately give notice of belts slipping or running off, elevators choking, feed to the machines being suspended, breakages or accidents to the machinery, or other incidents causing machinery to run faster or slower, no matter in what part of building such may occur, and will at once arouse the attention of the person in charge, by the loud ringing of the alarm. If desired, the alarm attachment can be hooked back out of connection.

The machine is simple in construction and not likely to get out of repair, and when once set in operation needs no further attention than oiling with sperm oil once every two days. This machine is manufactured and sold only by Messrs. Wm. & J. G. Grey, of this city, to whom all inquiries concerning it should be addressed.

### KNOWING WHEN TO QUIT.

Time is valuable to some, it is of course worth more than to others, but every hour is worth something. If you are working for yourself, it is worth that something to you; if you are working for some one else your time is worth more than he is paying you or the probability is that he would not keep you at work and continue to pay you wages.

It is hardly according to the average business habits of business men to employ help of any kind unless they are reasonably certain of making a profit from the work. Of course, they may not always succeed in so doing; other circumstances may be such that instead of a profit being secured they may suffer a loss. Your time belonging to another, it is but right and proper that you should employ it to the best advantage.

In a conversation with the manager of one of the best machine shops in the West, upon wages, he said: "We are obliged by our agreement with the Blacksmith's Association to pay a certain class of help certain wages per day; this irrespective of what they earn or what they are worth to us proportionately. Now, we have one man in particular who is worth fully twice as much as many of the other men who work at exactly the same kind of work and receive the same pay, and the whole secret is that he never strikes a blow too much. He works upon the iron until he gets it into the right shape, and then throws it down. Now, watch a number of the men at the same kind of work; they hammer away on the iron until they think it is the right shape and look at it to see if it is all right; instead of throwing it down they give it another blow, apparently for no other reason than to get to turn it over and strike another blow on the other side. This is just that much time lost to us, and yet nine-tenths of our workmen work after this plan; they do not know when to quit, and consequently lose valuable time, either for themselves or someone else."

And how many know when to quit? The salesman in selling goods, the lawyer in making his plea, the preacher in delivering his sermon, they fail to realize when to quit; when all that is necessary to say or do has been said or done, and what is said or done afterward is a waste of valuable time that rightfully belongs to some one else. They fail to realize the fact that time is more valuable than anything else, because once lost it can never be recovered, and that in everything, no matter how humble or exalted, it is very important to know when to quit; to economize time, whether your own or your neighbor's, and never waste in striking a blow too much.

### THE CANADIAN IRON INDUSTRY.

The following well-trimmed and soundly-worded article appeared recently in the columns of the *Montreal Star*: "Sir Charles Tupper met a number of capitalists interested in the iron industry in Halifax the other day. It is to be hoped that he was thoroughly impressed with the necessity for the adoption of vigorous measures for

the development of the Canadian iron industry. How important an iron industry is to any country is evidenced by the fact that commercial men throughout the United States regard the iron industry as a sort of trade barometer. If the reports of the Secretary of the Iron and Steel Association are hopeful, it is at once assumed that general business prospects are good and that it is safe to make investments. Indeed many capitalists, engaged in other lines of business in no way connected with the iron industry, are guided in their undertakings by these reports. A great iron industry is the backbone of a nation, and it will be a national disgrace if the immense natural iron resources of Canada are not soon utilized. Why should Canadians send to England and the United States for iron when there is more undeveloped iron in Canada than England and the United States combined? If the men who are employed in making iron for consumption in Canada lived in Canada, they would eat Canadian meat, fruit, and vegetables, wear Canadian-made clothing, live in houses built by Canadian workmen, furnish them with Canadian furniture, and heat them with Canadian stoves and Canadian coal. Thus by establishing a great iron industry in Canada every class of the community will be benefitted. Farmers will have a better home market for their productions, and there will be a larger demand for all classes of manufactured goods, which will give work to thousands of Canadian workmen. One noteworthy fact in connection with the iron industry is that only able-bodied men are employed in it. These men receive good wages and are able to support families so that the consuming population of the country would be very greatly increased if all

we find that resting the hand on the tool post with a lump of chalk between the thumb and finger is not the best method of showing the ins and outs of a piece of lathe work. Chalk is fast going out of use, and no one, unless there is a piece of rusty casting to manage, will use it. The lowest places have as much to do with fine work as some of the prominent parts that strike on the chalk occasionally, and where the work is to be left as large as possible one of the lowest places will be found to trouble most. A straight edge tool set close to the work, with something white placed beneath it, will show how true the work is running. One-fourth of an thousandth of an inch can just be seen beneath the two edges when a sheet of white paper is placed for a ground work, and if a bearing is centred till the lowest place will shut out all the light without dragging anywhere on the tool, we can rest assured that the work is not far out of truth.

—*Boston Journal of Commerce.*

### PROGRESS OF TECHNICAL EDUCATION.

Technical education is growing in favor. It has been a criticism for years on the public school system of the United States that the graduates come out superficially informed and inspired by the idea that work is somehow degrading to educated persons. When the schools shall give boys a knowledge of mechanics that is at once valuable, when they shall teach boys the use of tools on wood and iron by actual work, the reason for the criticism will have been abolished. In New York and other large cities, boys are afforded facilities for mechanical work, and it is a favorable indication that the boys who take advantage of those facilities have no idea that any de-

gradation attaches to their acquisition of the skill to handle tools. This is a nation of laborers, and the idea should and generally does prevail, that labor is dignified and honorable and in no wise unfit a man for the highest social or political position to which he may aspire and for which his talents fit him.—*Milling World.*

### ELECTRICAL SPARKS.

Mr. Hickson, General Manager of the G. T. R., has promised to take into consideration the proposition to have the railway cars lighted by electricity and heated by steam from the locomotives, as a protection against fire in case of accident.

The Ball Electric Light Co. have entered into a six months agreement to light the village of Uxbridge, for 25 cents per light.

The American Electric Construction Co. of Canada, Toronto, want to furnish Cobourg with the American system of electric arc lighting at the rate of 25 cents per lamp.

Mr. Geo. Haines has undertaken to light the streets of Bowmanville by electricity at the low price of 16½ cents per light.

Noxon Bros., of Ingersoll, propose illuminating their agricultural works with electricity shortly.

The annual report of the Royal Electric Light Co., of Montreal, shows gross receipts \$70,892.63, which, deducting \$26,265.88 for expenses, and \$13,183.55 for losses, leaves a balance of \$30,503.22. The earnings have been invested in plant, therefore no dividend was declared.

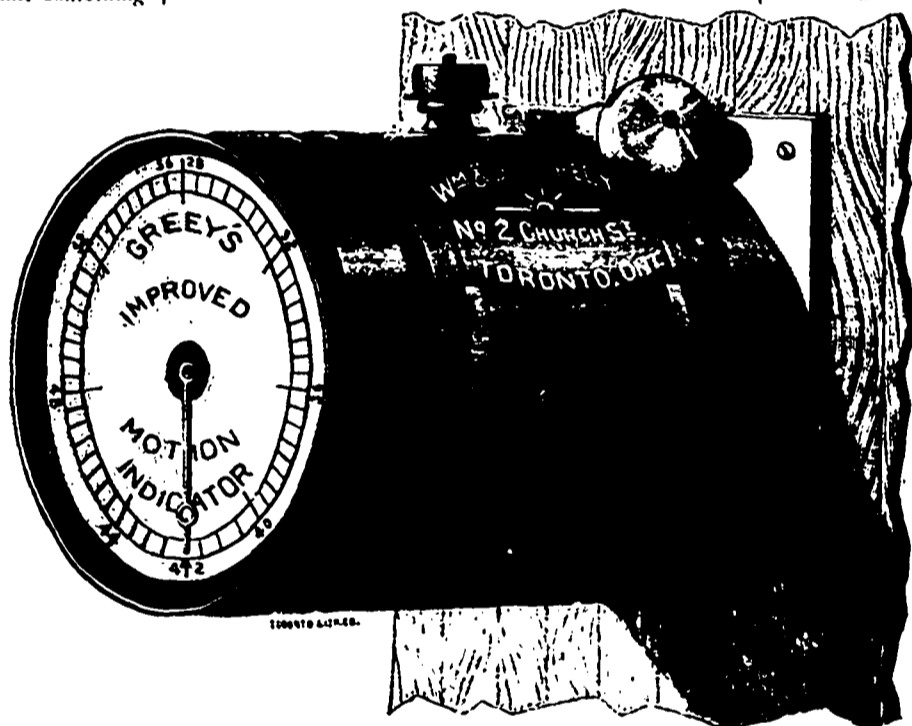
The Manitoba Railway Company, in order to hasten the work of construction on their line, will make use of the electric light to work in the night.

The town of Simcoe, Ont., has just contracted with the Loomis Electric Manufacturing Company, of Boston, Mass., for fifty of its arc lamps for lighting the streets of that town.

### CATARRH, CATARRHAL DEAFNESS, AND HAY FEVER.

[From *Scientific American.*]

Sufferers are not generally aware that these diseases are contagious, or that they are due to the presence of living parasites in the lining membrane of the nose and eustachian tubes. Microscopic research, however, has proved this to be a fact, and the result is that a simple remedy has been formulated whereby catarrh, catarrhal deafness, and hay fever are cured in from one to three simple applications made at home. A pamphlet explaining this new treatment is sent free on receipt of stamp, by A. H. Dixon & Son, 305 King Street West, Toronto, Canada.



GREY'S NEW IMPROVED MOTION INDICATOR.

the iron used in Canada were manufactured in the Dominion. Moreover we would be less dependent upon other countries, less affected by the business depressions in the United States and England if we made our own iron. In short we would be commercially far more independent of outside influences over which we have no control. Let us make our own iron."

### CAP CENTREING.

It is the intention of every machine builder to leave all the centres in every shaft and stud bearings found in their machinery, but the lathe man, when there is any repairing to be done, has no trouble in finding a number of tap bolts in the places where the centres ought to be found, and occasionally an end where the hacksaw has been used after the side tool has taken off as much as possible. The centre rest comes in handy on all such occasions, and will take care of one end of the work to a nicety, and a good lathe chuck will manage the other, but there are places where there is not even a nice round spot left for a steady spot, and a centre must be made where the work will run true till the bearing can be brought into line again. A cap centre comes in handy for such a purpose, and may be used in places where a temporary centre is required. With a chuck having independent jaws both ends of the work are under the control of the lathe man, and if there is a gear wheel that should have its pitch line brought into working order there is a good opportunity to do so before a spot is turned on the bearing for a steady rest. We have seen one of these caps made to work to good advantage in taking the place of a lathe chuck by holding them firmly to the line centre with a yoke, but when it comes to making the work run true,

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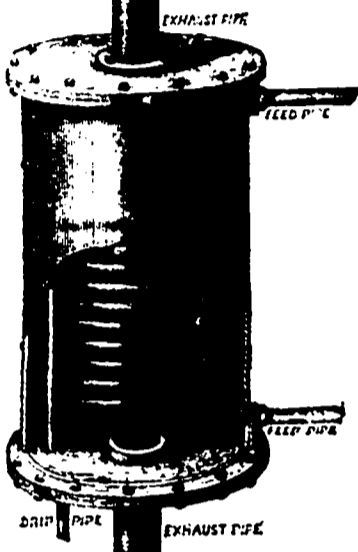
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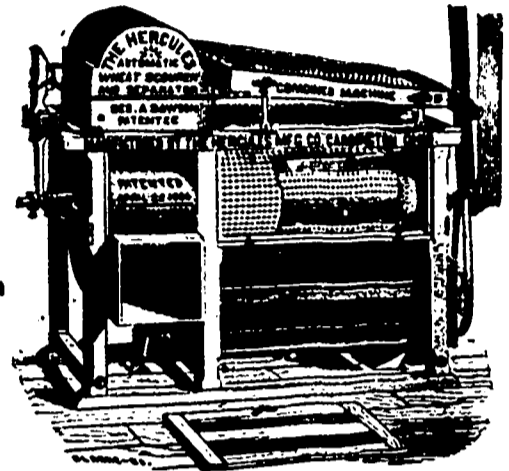
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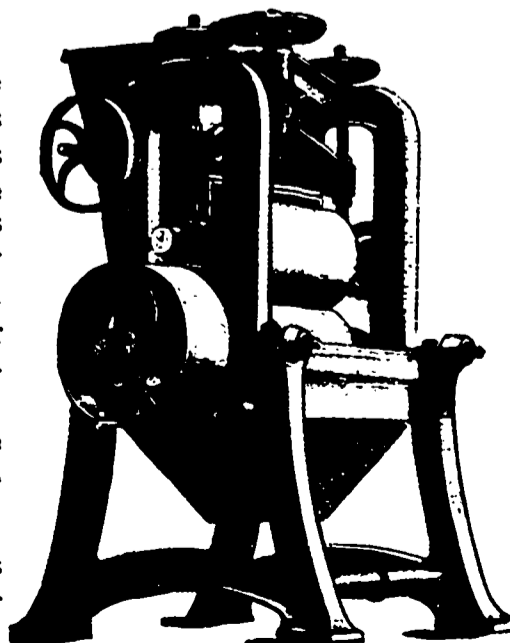
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## Correspondents' Opinions.

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### INFORMATION WANTED.

Editor *Mechanical and Milling News*

Can any of your readers tell me where the Little Giant water wheel is made? An answer in your next paper would oblige.

ENQUIRER.

### A SHORT SYSTEM MILL.

OAKLAND, Mar. 29, 1887.

Editor *Dominion Mechanical & Milling News*:

Dear Sir: Enclosed please find one dollar subscription to the MECHANICAL AND MILLING NEWS. I have just started up a roller mill on the short system for custom work and local flouring. The machinery was furnished by Goldie & McCulloch, of Galt, and the work designed and executed by D. R. Plewes, of Lynedock, and the result is satisfactory all round. Our flour has to compete with several long mills, and appears to be holding its own. Our yield is much better than I could make with the millstone. I am using four reductions on wheat and three on middlings, and altogether have only four bolting reels in the mill. If you take an interest in this sort of thing I will be happy to send you samples of my different stocks.

Yours truly,

D. McNAUGHTON.

### WHEAT CLEANING.

Editor *Dominion Mechanical and Milling News*

There has been a great deal written and said on this most important branch of milling. But for all that has been said and written on this subject, I can say, without fear of contradiction, that there is not a branch of the business more neglected, or so imperfectly done. In fact in many mills I have been in, it seems to be almost, if not entirely, ignored. Purifiers, centrifugal reels, aspirators, and dust collectors, have all found their place in the mill, and are very good in their proper place and to do the work they are intended to do; but in many instances millers depend on these machines to do the work of the wheat cleaners. Now, Mr. Editor, having had an experience of thirty years, I think I know how essential it is to have good clean wheat to operate on in order to obtain the best results, and I will, as briefly as possible, explain what I mean by clean wheat. When I learned my trade, our cleaning machinery consisted of a rolling screen and a Grimes smutter. Brush machines were not heard of, and if you had spoken about a wheat scourer—a machine to remove the fuzz from the end of the berry—why some of us at that time did not know there was any fuzz. Now it is of this latter machine I would say a few words, but before doing so I will explain what I mean and what I call clean wheat. The separating and removing of the impurities mixed in wheat, such as cockle, chess, smut and so forth, is just a preparation going on to prepare the wheat for cleaning. A sample wheat may be perfectly free from any of the above impurities, and in my point of view as a miller, be far from being clean wheat. Examine the berry and you find some seam dirt probably, and, what is more hurtful in my estimation, a large amount of fuzz on the end. I would rather undertake to make good flour from wheat with a large amount of chess and cockle mixed with it, than to do so with this fuzz still on the end, for on our gradual reduction system of milling, the one can be soon got rid of, while the other sticks to you till the end, impeding the working of your bolts and purifiers by sticking in the cloth, and after discoloring everything it comes in contact with, lines up your spouts with a fuzzy mass, causing the miller innumerable chokes.

Now to get rid of this troublesome fuzz, we must have a machine that operates on the end of the berry. I have often heard it said that you cannot scour wheat too much. That in my estimation is a mistake. I will admit that you cannot clean wheat too much. At the same time, it is quite possible to scour too much. I consider it one of the most essential points of milling to remove the fuzz from the berry, and I also consider it just as essential to do so without weakening or abrading the bran, for if you do the latter you will have more trouble and more impurities to get rid of, than if you had left the fuzz, for if the bran is weakened in any way it crumbles up and causes a large amount of impure stock. I would like to have this subject of wheat scouring more ventilated and would like to hear from some one more capable of handling it than your humble servant.

CLEAN WHEAT.

### KEEPING THE MILL CLEAN AND OTHER MATTERS.

Editor *Dominion Mechanical and Milling News*.

Dear Sir: I have just read a communication from "Method" regarding the cleaning of mills, and while there is truth in all he says, much more might be added bearing upon the same subject that would be not only good for the mill but the proprietor also. The duties devolving on a miller who is competent are many and varied. He should be perfectly acquainted with each machine in the mill, and know the exact amount which each is able to do, and then see that this work is done, neither more or less.

System is necessary in a flouring mill, as in any other business, and indeed it is of vital importance in a mill, while in some other classes of business it might be dispensed with.

I have enjoyed about eleven years in the milling business, and am free to confess that millers, when competent, are deserving of better pay than seems to be offered in Canada. Those men who are paid from nine to twelve dollars per week, are probably getting all they are worth, for too many of them do not know any more about a mill proper than if they had never seen one. So long as the mill jogs along through his watch without any smash or choke-up, many of them think that it is a good sign, when in fact it may be doing all this and wasting enough stuff to pay half a dozen men's wages. Any miller who has charge of a mill of one hundred barrels or more capacity will find every moment of his time fully occupied in going from one machine to another, and watching the work of each, supposing, of course, that he is able to judge whether the machine is doing its work properly, and if it is not, to know what the remedy is. Here is where nine-tenths of the millers are lame, and where the lack of knowledge becomes expensive to the proprietor. The large number of men who own mills are not practical millers, and notwithstanding this, the general desire seems to be to hire men of a cheap class, in the belief that by so doing they are running their mills at small expense; but actual results of a year's business will cause him to wonder why he don't make more money, when if he knew the real truth, he could lay it at the door of his cheap man.

Cleanliness in a mill and experience go hand in hand. The competent man will be constantly up and down and through the mill, detecting any waste, providing remedies, and will see that the oilers, sweepers and packers all do their respective work at the proper time and in a systematic manner. With the immense number of mills in Canada and the United States, the keen competition, and the very small margin (if any) between a barrel of flour and the cost of the wheat to produce it, it becomes more than ever necessary for the most untiring watchfulness and care of a mill in every detail. Do away with this, get a cheap man, and the result will invariably be rich feed, uneven grades of flour, and dirty machinery and mill. Mills are as changeable as the weather—they do not run two days alike. Go into one on a very hot day, and like a human being it becomes lazy; the stuff clogs and drags, and chokes are in order. On the other hand, when the day is cool, all this is avoided. Mixed wheat causes much trouble to millers, and great care should be taken that the rolls are properly gauged and the reels properly clothed, so that the flour may come out as wanted, and not, as is too often the case, a mixed lot of stuff which is almost impossible to grade. The success of a mill depends more largely on the miller in charge than anything else. The proprietor may be sharp, and sell his product to good advantage, but if his miller is using 5½ bushels to the barrel, the sharpness becomes of no account. Anybody can make good flour, but few men can make good flour on say 4½ bushels to the barrel the year round. If the owners of mills would give the millers to understand what is required, and show themselves ready to pay a man what he is worth, we should have a better class of men than are now seeking work, and many institutions now running behind might become profitable institutions.

In this article I do not wish to have it understood that I am finding any more fault with the millers than those who engage them. There is nothing to prevent a mill from being kept clean, providing it is not let run too long. Under the roller process there is much more machinery required, much more oil, and as a natural consequence much more care and attention. Let millers understand that they can get good pay if competent, and you will find hundreds who are ready to commence the study and follow it up. You can't hope to be a miller in six months, for it is now one of the most complicated professions to be found, and one in which there is large room for improvement. I am fully aware that this article treats of more than the cleaning of the mill, but what

I wish to imply is that a competent and experienced miller will see that his mill is clean, and the rest will follow, as a matter of course.

Very respectfully,

"FACT."

Editor *Dominion Mechanical & Milling News*:

I see in your April issue an attack on myself for not telling sooner how to keep the mill clean, and how at a small cost to work off all sweepings to a profit. Had I for a moment thought "Method" would have taken it so to heart, I would certainly have told him sooner, but better late than never.

First, let there be a suitable contrivance provided for a feeder, so that the sweepings can be evenly fed to the mill, and not have to just throw in a scoopful whenever you happen to think about it. Such an article as will answer the purpose to a nicety can be put together by any miller. Let him get a board 16 inches wide, another 14 inches wide, make a box 12 by 16 inside measurement. Let it be 3 ft. 5 in. in depth, which will hold about 100 lbs. Get a roller turned from hard maple to fit inside box, on narrow side of feeder, with one long journal to hold pulley. The pulley should be about three inches in diameter and feed roll about the same, which can be driven at about 10 or 15 revolutions per minute by a one inch belt from any convenient shaft, without any pulley on shaft, as it will take but little power to keep it in motion. Over feed roll place an adjustable slide, so that any required amount of feed can be put through. Now place your feeder in a position where the stock from it can be got to the wire reels, and then any chokes from the breaks can be fed from it and the bran find its way to the bran-room. If desired, one could be put up to feed any low grade stock to centrifugal which would be too poor to go to break flour reels. The whole concern will not cost more than three dollars when complete, and will pay for itself in one week in any mill. When this is done he will be prepared to dust up. But first of all "Method" will have to do away with his old-fashioned notions; yes, kick them clean out of the mill. Let him begin at the top of his mill and see that all his ceilings, spouts, elevator legs, tops of reels, purifiers—in fact all places where dust and dirt can gather is swept and brushed on to the floor. Then let all hands pile in and get the floors clean, (all this we will say is the accumulations of a year). Then we will say he has made a start on a clean floor (both sides), he must see that they are thoroughly swept every day and one day set apart in each week for a general brushing up of all spouts, tops of reels, etc., while at the same time not forgetting his own duties to look at all purifiers, smutters, bran dusters, aspirators, dust collectors, and flour reels, at least once every other day to see that each is performing its full duty, and if once he follows out these first few rules, he will find it very easy to work up all his sweepings and dust, for they will not have had time to get sour or dirty, and can all be put to his credit at stock-taking. But one important item is, if he is troubled by his employer running out and in, opening spouts and everlastingly leaving a stream of dirt and dust behind him, when all other inducements fail, let him apply the same remedy as prescribed for his old-fashioned notions; for I find that whenever the firm is of such temperament, no matter how well or how much work is done, they do not appear to care how much extra labor they put upon their men. Now I do not say it to "spread" myself, but in self defence, if "Method" is blest with a roustabout, I am not. I have two men, and we handle over 4000 bushels of grist per month—all handled by main strength, as our boss is not so careful of our health as to provide for us any simple contrivance to lighten our labor. I hope "Method" is spared such a boss. And yet, after all, the mill doors are always open from 7 a.m., till 9 p.m., and anybody is cordially welcome to call and see us, for our mill is always clean. Come along, friends. Don't be afraid to wear your broadcloth. Now if "Method" is so much troubled with his oil receptacles overflowing, let him get larger ones or empty what he has a little oftener; or, the better way, let his employer buy him a better grade of oil, for good oil will not leave the bearings so quickly as poor oil. Some think they are economical when they get a cheap article if it does take three times as much for the same amount of work. If he is troubled with grease spots on the floor, let him put a little clean bran on them a few times, and he will be surprised to find how soon they will disappear. Such a mill as his fancy pictures in his April letter, I would give a good deal to see. I have more respect for the craft than to try to degrade it by hinting such a case against any man in the trade. I hope that "Method" will try this plan for himself and see how it works. More anon.

Very truly yours,

O. S.

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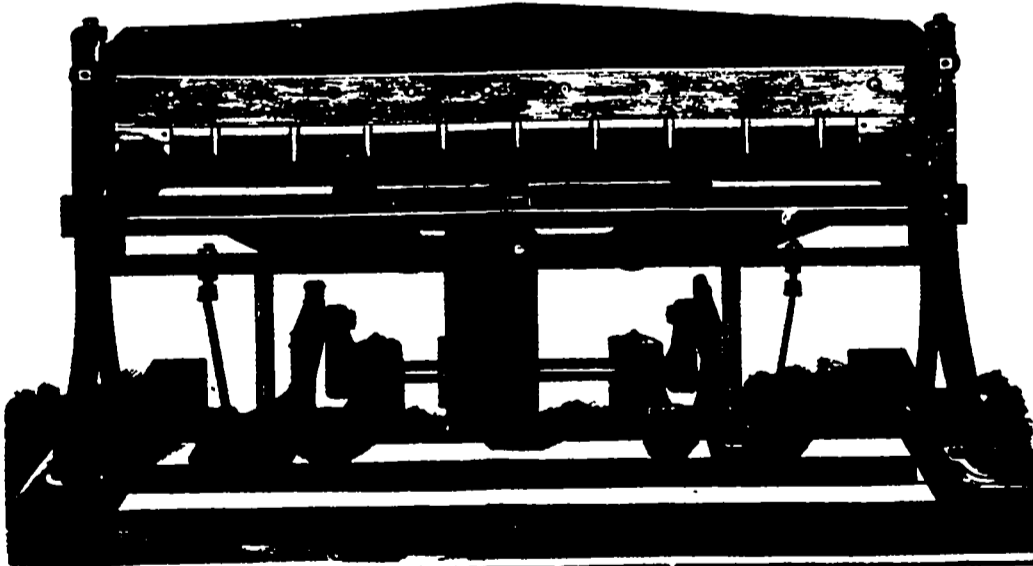
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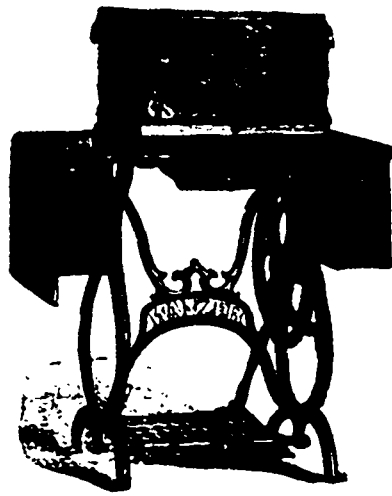


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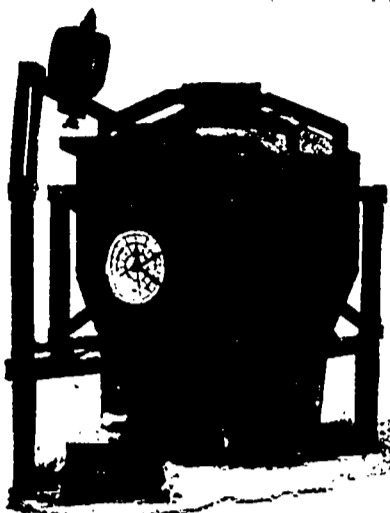
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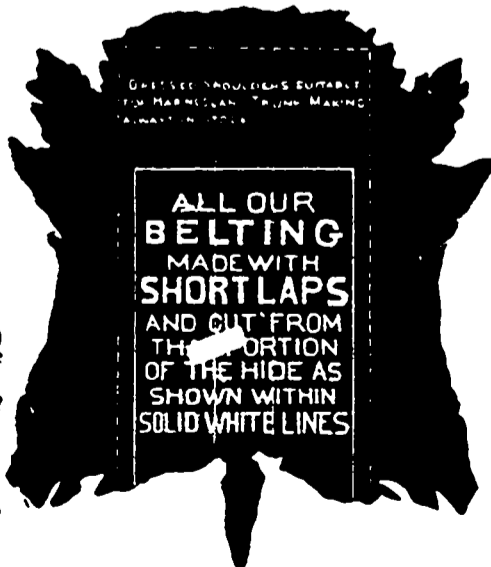
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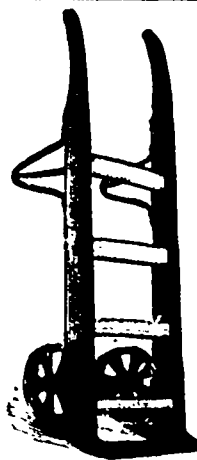
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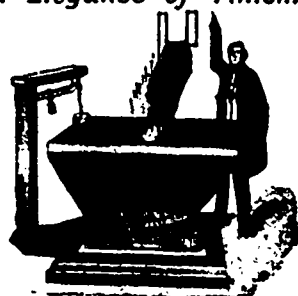
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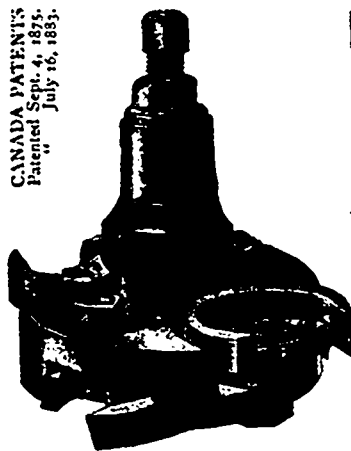
UPWARDS OF 11 000 NOW IN USE.

The Cheapest, The Strongest, The Most Durable,

—AND MET THE—

**LIGHTEST AND EASIEST RUNNING**

Matcher Heads in the World.



TONGUE HEAD.

THEY FINISH HARD

**Cross-Grained & Knotty Lumber**

Neatly, showing Clean Edges, and often

Save their Cost in One Day's Run.

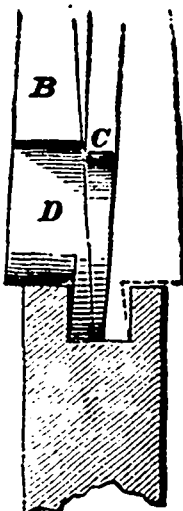
**SAMUEL J. SHIMER,**

(Successor to SHIMER & CO.)

**MILTON, PA., U.S.**



FIG. 1—A NEW CUTTER.



THIS diagram represents a Bit (D) in the position it occupies when making a cut (the Bit (C) which follows to complete the work is given in outline. This explains the division of cut and the free and easy working of the Tool. The Bits are arranged in upper and lower series, and secured to a Head having seats alternately inclined for the purpose of giving the side clearance to their cutting points. This

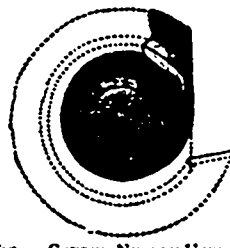
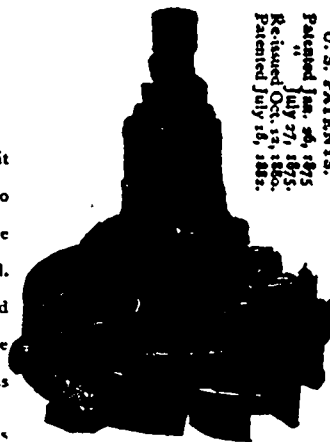


FIG. 2—CUTTER NEARLY USED UP. A. R. Williams, - - - Toronto

explains why these Bits hold their shape and turn

out standard work until used up; the entire circle of Bit being Too cutting edge—see Figs. 1 and 2. The Head carries its weight low down and in line of cut, and runs like a Top.

SELLING AGENT,



GROOVE HEAD.

U.S. PATENTS.  
Patented Jan. 26, 1875.  
July 27, 1875.  
Re-issued Oct. 19, 1880.  
Patented July 15, 1882.

# \* MILLERS \*

## STUDY YOUR OWN INTEREST

And read the following letters:

<p>W. B. BRAGG, Esq. Dear Sir: Our mill, after being refitted with a full set of rolls by you, has given complete satisfaction from the start, being easily driven, never chokes, and runs like magic. The planing and mill right work shows a high degree of skill and thorough workmanship. We have not yet found a single fault. We are making an excellent grade of flour, with a yield considerably under 4 bushels and 10 pounds. Should it be in our power, we shall heartily recommend you to anyone requiring machinery or work in your line. Yours very truly, THOS. BELL, Proprietor Erin Roller Mills.</p>	<p>Erin Roller Mills, Jan. 21, 1887.</p>	<p>W. B. BRAGG, Esq. The mill runs like a top. The chain drives are A 1, they run so quietly and easily. The speed of machines seems about right. The stock from the rolls is invariably cool. You have solved the problem of the "speed of elevators" in this mill, they discharge perfectly and are dustless; spouts flowing into them can easily be left open. I never had or saw less trouble in running any mill, and when Mr. Bell communicates with you, I think you will find he is more than satisfied. Trusting you will have the success your marked abilities deserve. I am, yours respectfully, JAMES W. HORN, Miller.</p>	<p>Erin Roller Mills, Jan. 20, 1887.</p>
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**GENUINE SAMPLES AND GUARANTEED GENUINE YIELDS SENT ON APPLICATION.**

The above mills were programmed by myself, on an entirely new system, which is an undoubted success.

NOT AN INCH OF SILKS WAS ALTERED, NOT A NAIL WITHDRAWN,

which shows that mills can be built perfect at last, by

**THE MILLER'S FRIEND,**

W. B. BRAGG, PRACTICAL MILLWRIGHT,

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