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Old Series, Vol. XI, Number 2
New Series, Vol. III, Number 2

TORONTO, ONT., FEBRUARY, 1893

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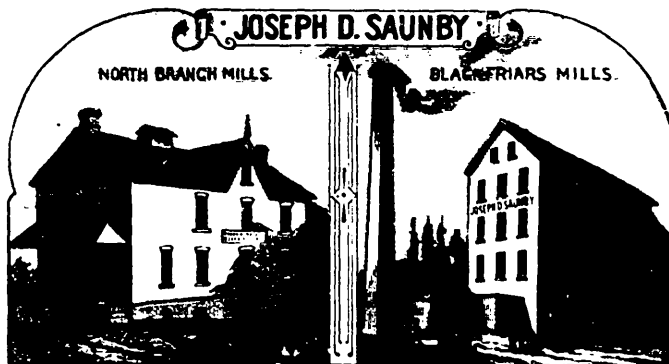
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NEW SERIES, VOL. III }

TORONTO, ONT., FEBRUARY, 1893

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BY THE WAY.

MUCH as some folks will take their bit of fun out of the descendants of Scott and Burns because of their firm reliance in the nutritious effects of oatmeal bannocks and porridge, oatmeal has long since come to stay. A large sized regiment, altogether outside of the sons of Scotland, relish their dish of oatmeal. Even in competition with the various cereal dishes of a fancy character that modern ingenuity has made so popular, oatmeal holds well its place. It is noticeable that Canadian millers are paying increased attention to the production of oatmeal, and these and others will read with interest an article in this month's CANADIAN MILLER on "Oats as a Food Product," taken from the columns of the London, Eng., Miller.

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A movement has been made by Mr. Nicholas Flood Davin, M. P., for West Assinboia, to abolish the privilege of grinding wheat in bond, which was secured to millers in 1880. Mr. Davin, in introducing his bill, affected that he was working in the interests of the farmers of the Northwest, and made the statement that this privilege was granted Ontario millers for the purpose of securing to their mills the necessary supply of wheat to keep them in full operation. From Mr. Davin's standpoint the inference is that this objection no longer exists, for before the millers of the country lay stretched the rich wheat fields of the Northwest from which eastern millers can draw in abundance at their pleasure. The argument is plausible, but in making a point of interest to his constituents Mr. Davin got away from the real purpose of the measure. Grinding in bond gives the miller a favorable position alongside of the American miller in competition for export trade and in this is the strength of the measure. It is a privilege that has been very little used for some time past, yet it is a safeguard that it is desirable to retain in case occasion should call it into exercise. The ground was thoroughly traversed at the time the measure was first introduced into legislation and there is no good reason that has been brought into existence since then, to call for its abolition. Millers, however, will show good generalship in making the matter thoroughly understood by their representatives in the House of Commons from the various constituencies of the Province.

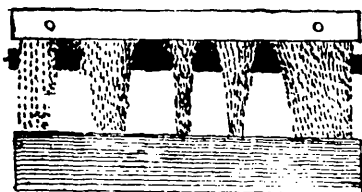
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The resolution passed at the annual meeting of the Dominion Millers' Association in August last declaring that it takes four bushels and forty pounds of wheat to make a barrel of flour has been quite largely copied and commented upon by milling and other journals. Though six months have passed since it first appeared in print it is still a live item, one of the latest references to it coming from an American journal, the Inland Ocean, a few weeks since. The consensus of opinion has been favorable to the opinion expressed in the resolution. The Inland Ocean, after having remarked that the question is one that has long vexed the minds of a great army of millers in the United States makes this comment: "It seems like a very summary way of settling such a problem, but it is better settled that way than not settled at all. And after all there is both method and logic in it. The quantity named is of course to be taken as an average and a basis upon which millers may conduct their business and reckon profit and loss. It is certainly much better than having an official or standard basis. If prices of flour are made and maintained on that basis the miller can tell with a reasonable certainty what he is doing all the time, instead of going it blind on a basis varying all the way from four bushels and ten pounds to four bushels and forty pounds to the barrel, as is reckoned in the United States. Most of the estimates here

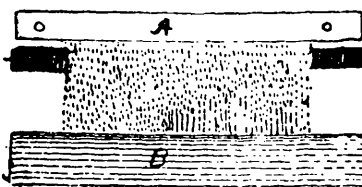
are entirely too low, which leads many millers into errors and undoubted loss. The Canadian plan is much the best. Whether exactly correct or not it is at least a standard." It may be worth while repeating here, what was said by Mr J. L. Spink, in introducing the subject at the convention, that the calculation is not one of guess work, but was fixed by Mr Spink, after a careful accounting of details in the work of his own mill.

A LESSON ON FEEDS IN FEW WORDS.

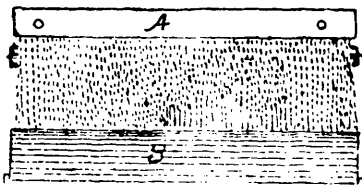
WHETHER you are a practical miller or not, you know a thing when you see it; and when you lift the shutters to a roller mill, in your mill, and find the feed going to the grinding rolls in bunches and jumps, in strong and weak currents, or in runs of thread streams of unequal density, thus



or only feeding at the middle, like this



and never in a sheet of equal density spread the full length of the rolls, you can bet your bottom dollar that it will pay you to buy an automatic feeder that will feed your rolls according to the following sketch, see?



CONDITIONS IN RUSSIA.

SAYS a recent letter from Odessa, Russia "As the winter advances the sufferings from want and disease are becoming indescribable in the famine-stricken districts. One of the foreign consuls here, who has been visiting these districts, says that the poor starving people are dying off like flies at the end of summer. In addition to other places the provinces where hunger and disease are killing the peasantry are Kieff, Bessarabia, Kharkoff, Koursk, Riazan, Orel, Tula and Voronesh, and how these poor creatures are to survive the winter is a problem which the government is trying to solve. Rarely has the commercial outlook been so dismal in South Russia as at the present time, and the number of large business houses verging on the brink of bankruptcy is causing the government great uneasiness."

"Light and air in the engine and boiler rooms pay well," says an exchange. Surely, say we, and in every department of the mill.

THE DISCOVERER OF STEAM POWER.

INVENTION, a journal devoted, as the title would indicate, to the subject of inventions and inventors, tells the pathetic story of Solomon Caus, a Normandy scholar, who lived in 1576 and thereafter, and wrote many scientific works, all of which led up to his conception of an idea which resulted in the transformation of his whole life into a tragedy. After pestering the king and the cardinal of Paris, he was ordered to be taken to Bicetre the mad house, and there shut up. This was done. They had just one way with mad people in those days. They shut them in iron cages and fed them through the bars like wild beasts. They did this to Solomon Caus. For a long time he stood behind those bars all day and called to those who would listen, and to them repeated the story he had told the cardinal. He became the jest of the place. Some of them gave him writing materials, and then, amid the misery of his surrounding, he wrote down his ideals and amused his jailers so much the more. However, it could not be long before such a life, such surroundings, would shatter any brain. In time Solomon Caus was as mad as every one believed him.

It was in 1624 that an English nobleman, Lord Worcester, went to Paris and visited Bicetre. As he was passing through the great court, accompanied by the keeper, a hideous face with matted beard and hair, appeared at the grating, and a voice shrieked wildly, "Stop! stop! I am not mad, I am shut up here most unjustly. I have made an invention which would enrich a country that adopted it." "What does he speak of?" the marquis asked his guide. "Oh, that is his madness," said the man laughing. "That is a man called Solomon Caus. He is from Normandy, he believes that by the use of the steam of boiling water he can make ships go over the ocean and carriages travel by land; in fact, do all sorts of wonderful things. He has even written a book about it which I can show you." Lord Worcester asked for the book, glanced over it and desired to be conducted to the writer. When he returned he had been weeping. "The poor man is certainly mad now," he said, "but when you imprisoned him here he was the greatest genius of the age. He has certainly made a very great discovery." After this Lord Worcester made many efforts to procure the liberation of the man, who, doubtless, would have been restored to reason by freedom and ordinary surrounding, but in vain; the cardinal was against him, and his English friends began to fancy that he himself had lost his senses, for one wrote to another, "My lord is remarkable for never being satisfied with any explanations which are given him, but always wanting to know for himself, although he seemed to pierce to the very centre of a speaker's thoughts with his big blue eyes that never leave theirs. At a visit to Bicetre he thought he had discovered a genius in a madman, who declares he would travel the world over with a kettle of boiling water. He desired to carry him away to London that he might listen to his extravagancies from morning till night, and would, I think, if the man had not been actually raving and chained to the wall."

Thus, in Bicetre died the man to whom, after his works were published, many people gave the credit of being the discoverer of steam power, and it is said that from the manuscript written in his prison, Lord Worcester gathered the idea of a machine spoken of as a "water commanding engine, which he afterward invented.

Historians have denied that Caus died in prison, but there exists a letter written by Marion de Lorme, who was with Lord Worcester at the time of his interview with Caus, which establishes the fact beyond doubt.

SOME MORE MILLERS STILL.

A FOOL of a miller in Cambridge,
 Got his head knocked on by a blunt edge,
 And his widow all gay
 Brought suit and got pay
 From the company that owned that samlidge

A handsome young miller in Cirencester
 Met a maid by his mill door and Cirencester,
 And he staid by that door,
 Waiting to do so some moor,
 But it always so happened he mirencester.

There was an old miller in Worcester,
 A regular rock-headed old roeester,
 Who'd ne'er spend a cent
 Till his old mill flat went,
 And hard was the lot he was reeester.

A miller got "stuck" on a system
 Which was "chock full of ducaits" He mystem,
 To his infinite surpris,
 And there were wars in his isre
 When the sheriff came in to assystem

ON REELS.

By W. J. EATON.

AMONGST the various machines used in milling, none, perhaps, has been the object of so many minor improvements, and yet retained its form and position so effectually, as the reel. We have no difficulty in finding a reason for this, as it is, without doubt, the simplest of all our machines, and the one which gives the least trouble in working. As a slow-speeded machine it meets our ideal, for high speeds mean not only more power, but greater wear and tear. A feature, and a mistake, too, in the older construction, was their cumbersomeness; but, then, all classes of machines, including centrifugals, were made too heavy at first. By experience we have learned that two 2-sheet machines are infinitely better than one 5 or 6-sheet machine, and the same remark applies in degree to centrifugals. In long machines, as in the long "face" of the millstones, a portion is finished on the first third, or the first half, but must continue to tumble and turn over the remainder before it can get out, in which process it does infinite harm. We have now come to a more sensible length, namely, 2 or 2½ sheets, with good results.

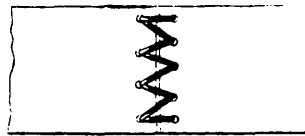
Many devices have been tried for increasing the efficiency of the reel, some of them being what we should now term barbarous. The first reels erected at least by one firm had radial rods to each rail, on which hardwood balls slid, causing a rapping and jarring to keep the silk clean. Many other forms of wrappers or knockers were used, but none were so effective as a piece of light sacking as a sweeper, or wiper, since generally used. In some cases lifting boards carried the material bodily to the top, and dropped it in a body to the bottom, which would be thought a somewhat rough method in the present day. In another case the rail was slotted, or perforated, so as to allow a portion to slide through, with the object of gaining an exactly opposite effect to the foregoing. This was an improvement. Another undoubted improvement was the use of flat iron rails instead of the rather thick wooden ones previously used. In this case nothing was lifted above the centre, so that the action was very gentle, but the efficiency or capacity was somewhat reduced. A further innovation was the introduction of round reels, but although the product therefrom was satisfactory, the efficiency was too much crippled, so that a round reel, pure and simple, was not a success. Not, however, that the principle is wrong, the reason being that the load lay too much in a body, on too small a portion of the silk, to dress at all freely. Indeed, all classes of reels were open to the fault of dressing only on one side, and that where the load was thickest. In the modern reel this defect is overcome, for by means of various devices which distribute the feed on both sides, the efficiency is greatly increased without the barbarous extremes of twenty years ago.

Years ago I discovered that lifters were right in principle, although wrong in arrangement, and that by making them of the right shape a portion of the feed could be carried over the centre and deposited on the descending side of the reel with vastly improved results. Indeed a reel can be made to work almost, if

not quite, equal to a centrifugal. Anyone can apply these to their reels; the only thing is to have the inclination sufficiently acute to prevent the material falling off too soon, and at too great a distance, so as to cause harshness. A variation of this idea, and doubtless an improvement, is found in several machines of recent introduction. Various devices are adopted for distributing the feed on both sides of the machine, with, I doubt not, satisfactory results, for the possibilities of the reel are unquestionable, and all millers should feel thankful for the increased efficiency and perfection which will warrant and ensure its retention in our mills. We may invent new machines, but I doubt if we shall find a more useful and simple servant than our old, well-tried friend, the reel, as now constructed. For certain classes of work the centrifugal is quite unsuitable, although in its place it is a good machine. The reel, however, has the advantage of adapting itself to all classes of work in a satisfactory manner. I should certainly give the preference to reels which are round, provided they are made effective by internal arrangement. Of course the greatest efficiency is gained in a machine where the feed is discharged in a direct line with the holes in the silk. A reel can never do this, and hence can hardly attain alike efficiency, but some of this difference is undoubtedly made up by the use of a coarser silk, which, when the feed meets it obliquely, as in the reel, produces almost the same effect as the finer silk in the direct-acting machine. The mesh of a No 8 silk at an angle of 45 to 60 degrees gives a result equal to a No 18 or 12 when the action is direct; the only difference is decreased efficiency. I incline to the idea that flour dressing could be accomplished by direct action, either vertically or horizontally, with a very small surface of silk, and I shall not be surprised to see invention start off in this direction.

SIMPLE BELT LACE.

In lacing a belt, says an experienced machine man, the lacing should never be crossed on either side. To lace a belt in the manner illustrated herewith make one more hole in one end than in the other so there will be



a hole in the middle of one end, which is the place of beginning. Draw the lacing to its middle through this hole, lace each way to the edge and back to the middle again, and you will have a smooth joint.

COMPLETE MILLS EASILY KEPT SO.

WE find, as a rule, says a milling writer, when a new mill is completed and ready to start that something is always lacking in the mechanical construction. It will not require very close inspection to notice many points about the mill that lack finish. This is particularly noticeable where the finish on the various machines, elevators, spouting, etc., is very elaborate, causing a great contrast to the rough edges here and there. It is surprising why these things should be overlooked and suffered to go unfinished. It is perhaps owing to the miller's and mill builder's extreme gratification over getting a mill successfully started and making superior results, that these little things are entirely overlooked.

Operating millers will certainly take much more pride in keeping up a mill that is properly finished, to a standard of perfection. This might well be compared to the man who buys a new suit of clothes. If the suit is a perfect fit he will naturally take good care of it, and will brush it carefully. He will have it repressed and cleaned occasionally. On the other hand, if the suit does not fit him properly, he will be very careless with it, regardless of the price of the material. It is pretty much that way with the miller and the mill he is to operate. It is not alone that he will exert himself to keep the mill looking well, but he will strive to have every machine and all bearings run smoothly. He will see that belts

run properly, without running to one edge of the pulley. By keeping the mill a model of neatness, he will necessarily keep it clean, and will observe at a moment's notice, any leaks in machines, elevators or spouting. He will not be content to resort to a piece of old ticking to temporarily plug up a leak, but will make every effort to make all joints perfectly tight by means of the same material that the millwright should have used. It often happens, as a matter of course, that millwrights are not always at fault when leaks present themselves. In a well regulated mill of this kind will always be found a chest, well stocked with tools, and they will always be found in their allotted place when not in use somewhere in the mill. It is not likely that one will find a scrap pile under every stair landing, of trash consisting of old pieces of packing, scraps of hose, belts of all sizes, elevator cups, bolts of all kinds, etc., all mixed up in a heap. One would naturally infer, therefore, that it will take a very small outlay to make a mill complete, when compared to the great advantages to be gained thereby.

HOW OFTEN THE SAME COGS MEET.

IN former years, when wooden cogs were used in all kinds of gearing, and in wooden wheels as well, the makers were anxious not to have the same cogs come together too often, because, if both happened to be soft they would wear out the more rapidly, or if one was very soft and the other very hard the soft one would wear very rapidly; either way the wearing would be very uneven, and to secure an even wear on the cogs a frequent interchange of relations was desirable and sought after in the construction of wheels. The matter is not so important now, as iron or iron and wood are used for the purpose. Still, undoubtedly, frequent interchanges of relations between the passing teeth or cogs, is of more or less benefit in securing even wear. The rule for determining the frequency of this interchange, or how often the same cogs will meet, is to divide the cogs or teeth of the pinion into the cogs or teeth of the wheel. If the result is even, without a remainder, as four divided into sixteen, the same cogs will meet at every revolution of the wheel. If there be a remainder, divide it into the teeth or cogs of the pinion. If even the quotient shows how often the wheel will revolve between the meetings of the same cogs. If, however, there be a remainder, the wheel will revolve between meetings as often as there are teeth in the pinion; and that is the greatest difference that can be obtained under any circumstances. The rule is curious, if not very useful.

THE HEAD MILLER.

EVEN to be a successful head miller, says Milling, qualities must exist in his make-up of sufficient quality and kind to render him equal to the occasion, and the quality must be genuine. He need not be a great scholar and fluently speak a half dozen languages, but of necessity he must possess a pretty sound knowledge of the English language and mathematics, together with the principles and uses of the draughting board. The day of large margins is past and exactness becomes an expedient; the guess business is supplanted by perfect knowledge of, first, what is required, and in the next place how to produce. Capacity, yield and percentage are the milestones along his daily route, pointing their fingers before and behind, loudly guiding onward to full attainment or lamentably distancing the required goal. Education is a requisite in such a position or some one has to do the figuring, and oftentimes chagrin takes the place of confidence, and morbidity is its companion. Guessing at results is one thing, but figures never lie when naturally applied, and old Davy Crockett used to say, "If you want a thing well done, do it yourself."

An old adage says very pointedly, "You can't make a silk purse from an old sow's ear." Neither can a successful miller be made of gas and buncombe. Progression without pretence, individually far removed from copyism, perseverance, observation, aptness for position, firmness, penetration and the like accompanying virtues are essentials requisite for an ideal composition of a head miller, and when unaccompanied by the natural vices of bad, dissipating and despoiling habits, the individual goes from success to success naturally.

VIEWS AND INTERVIEWS.

Busy Men

We have all met the busy, busy man, so busy that he has scarcely time to eat his meals, and sleep is a matter of indifference to him. He is, in his own judgment, burdened with work, and yet, placed alongside of a neighbor who, seemingly, has leisure for many things, he does not get through in any one day more than a tithe of the actual work accomplished by the quiet going neighbor. The difference between the two men is in methods of work. A writer on this line has well said: "There is a vast difference between the systematic, methodical, regular, steady going business man and the one who flies off the handle, and never gets time to properly oil up. The true business man never finds time too precious to waste in frivolous things, but he has always time for a pleasant word for those around him. He works like clock work, and takes time to get around before he runs down. He keeps his hands busy as well. He never wastes time in long stories and useless talk argument. He works easily and smoothly because he is systematic. He finds time to eat his food with a relish, to sleep and rest, to get acquainted with his wife, and play with his babies. He never says 'I had no time to attend to that little matter,' because he is punctual to the stroke. He is like a time-piece well regulated. If he does go on tick he is punctual to the hour. He strikes 'while the iron is hot.' He keeps all his appointments and engagements to the letter, and those with whom he deals know that they can trust and depend upon him. He is a good time-piece, and all men look up to him with confidence, that they will never be too late for the train."

Early Milling in Scotland

In vol. 23 of the proceedings of the Philosophical Society of Glasgow, now in the press, there is an interesting paper on "The Rural Economy of Scotland in the Time of Burns" (1759-96) a period which may be regarded as practically co-extensive with the latter half of the eighteenth century. The author is James Colville, M.A., D.Sc., Edin., and in the course of his paper, which was communicated to the society last session, the author makes a number of references to the milling and baking and cognate features of the "rural economy" of the people in that most interesting period of the history of Scotland. He makes quotation of a couplet from "The Two Dogs" of the national poet -

"Our land gets in his racket rents,
His coals, his kaim, and a' his stents" (dues) -

and he goes on to say that the Earl of Aberdeen had a granary at Tarbat, in eastern Ross, which held 600 bolls of corn yearly. In the dearth of 1782 the people of Tarbat stopped a ship laden with teind corn for Greenock. As regards multure, he says that at Rutherglen, near Glasgow, by 1793 the burgh lands were thirled one-fourth, with bank-meal to the miller and to his knave or man. Kilwimming, in Ayrshire (an important place in the early history of Scottish freemasonry), was thirled to the Abbey, and to Lord Eglinton, whose family-seat is near by. Paisley was thirled to the Abbey one-twentieth, besides knaveship. In Nithsdale, Dumfriesshire, multure was held to apply to wheat (one-seventeenth), though the laird had no mill to grind it. It has been an ancient obligation to take all the corn to the baronial or Abbey mill; hence the farm was said to be "thirled" or astricted to this mill, and had to pay a vulture or portion of the meal to the miller, sometimes as high as one-twelfth. Horse and seed corn were excepted. The portion of corn taken to the mill each time was called a "melder." Tam o' Shanter's wife Kate complained

"That ilka melder wif the miller
Thou sat as lang as thou had siller."

Dr. Colville says that in consequence, no doubt, of these exactions, the quern, or primitive hand-mill, was in constant use, and in reference to this ancient mechanical contrivance the poet Robert Jamieson wrote -

"The cronech stills the dowie heart,
The jorum stills the bairnie,
The music for a hungry wame
Is grindin' o' the querne."

He also states that in the north querns are still in use, and that a livelihood is earned by making and selling them. They cost 3s. 6d. to 5s. each.

Obedying Orders.

Everyone does not heed the injunction of Holy Writ, "Servants be obedient to your masters." Sometimes this disobedience is the out-come of a spirit of insubordination, a determination to have one's own way and to resist dictation from others. But with some it is an exercise of personal judgment, believed to be justified by the circumstances of the case, and in the interests of the one served. Nevertheless, it is a violation of instructions from one in authority, and where in one case it might prove beneficial, it might at another time prove disastrous. We have this feature of the case very forcibly illustrated in a story that is told of the Rothschilds. Several years ago these wealthy Hebrews had a large quantity of cotton in New Orleans which they instructed their agents to sell when cotton should reach a certain price. The agent, believing that the price of cotton would go beyond the figure named by his employers, held on till he was able to sell at a price that netted \$40,000 more than he would have got for it if he had obeyed his orders from London. He joyfully informed his employers of his success, supposing they would share his satisfaction at the result. Imagine his surprise and chagrin when he received a reply saying in substance: "The \$40,000 you made by disobeying your instructions is not ours. It is yours. Take it. Mr. X., your successor, starts for New Orleans to-day." It may seem difficult at first thought to understand this action. With the greed for gold that influences many men, and which was a strong characteristic with the Rothschilds, there are perhaps few who would have acted as did these millionaires. But as has been remarked by one commenting on this case, supposing, instead of making the \$40,000 by disobeying instructions, that amount had been lost. That was probably the view taken. It was not because of the gain or loss in this particular instance, but because of the loss of dependence in their employe, and the possibility of results from a future disobedience of instructions. It is always well to follow instructions, for, in that case, no blame for consequences is possible. The printer's rule to "follow copy, if it goes out of the window," is a pretty good rule to adopt in any business, and, if the agent follows instructions, he is safe in the event of any trouble which may be the result.

COOLING A HOT BEARING.

WE found an engineer the other day hard at work over a hot crank-pin. Not an uncommon thing to find by any means, but this engineer declared he had run engines just like this one before, but this engine was the only one of the lot that would give him trouble. Every time there was a considerable change in the load this pin commenced either to develop an ugly pound or to heat, and while it was cured of the pound by relieving the load, the heating of the crank-pin needed more heroic measures. His assistant had a stream of water on it, but he suggested kerosene and plumbago as better and states that it is the only thing that will cool that bearing down without difficulty. It isn't a permanent cure, however. But to judge by what was said there was nothing like kerosene and plumbago for a hot box.

Another engineer that we know of always asserts that the only thing that will cure a bearing that gives him trouble is white lead and cylinder oil mixed. Black lead and plumbago and oil, he declares, is of no earthly use. In fact, he so treats all of his bearings, gives them a coat of white lead and cylinder oil. He says it makes the bearing look, after a little while, just as if it had been running all right for years. He was painting some bearing one day when a hand asked him what he had, and was told white lead and oil. The helper concluded that was just what he wanted to do, a little painting on his own account, so he quietly appropriated the can of white lead and oil at the first opportune moment. That painting job hasn't dried yet, and the engineer doesn't think it ever will, but the helper hasn't ceased to wonder what was the matter with that paint.

It is a very common thing to find mechanics in mills who will insist that there is nothing like soft soap to cool down a bearing when its gets hot, and most of them keep a barrel of soft soap handy for the hot box that is always showing up. "I can have a room full of smoke from a hot bearing," remarked one, "and when I get up

on a step ladder and pour some soft soap on it that settles that hot bearing." We remember hearing a cotton-mill engineer telling once how he got deceived on this soft-soap question. The bearing was smoking pretty badly when he sent a boy to the soft-soap barrel, but, unfortunately, next to the soft-soap barrel was one filled with "blackstrap and oil," used to soak the picker straps in, and the boy brought some of this mixture. It looked like soft soap, and numerous attempts were made to mix it with water, but they didn't succeed, and finally the whole was poured on the bearing as it was. It took a long time to cool down that bearing, and every one waiting seemed to make it longer, and at the end it dawned upon the mechanic what the trouble was. Next time he will go after the soap himself, or remember that soft soap ought to mix with water.

As touching on the use of soft soap, an engineer showed us the other day a bearing on a calico printing machine upon which bearing a very heavy load was occasionally placed, and the shaft becomes almost at a low red heat so that it would seem that it must bend. The "only thing" that will cure this bearing is a bar of common soap laid upon it. It seems to take the heat right out of it and allow the machine to run without heating so long as the soap is in contact. It is not safe, of course, to say that a certain remedy is the only one for any particular box, but engineers evidently think so sometimes, and their experience would seem to bear them out. We remember an old engineer once telling how stupid some people were to put cold water on a bearing. "What they need," he said, "is soapy water. He will find his hands don't slide over one another very well, because there is no lubricating property in the water. Put in a little grease and you not only take hold of the dirt but you will find out that the soap is a lubricant." And yet another engineer told us of his experience as averse to soap. He said that after using it a little while it cut the brasses. Our own preference is in favor of graphite and oil mixed, though we have used soft soap and water to cool down a bearing quickly. When kerosene is used with the graphite the kerosene gives to the mixture a penetrating quality that allows it to work under narrow spaces.

PRACTICAL NOTES FOR MILLERS.

Never fail to have the burrs in perfect face, evenly dressed, well balanced and in good running order in all other respects, or poor work will result.

Bran should be packed in sacks as fast as made, the stream running to the packer continuously. If allowed to fill up in bulk the packer handles it but poorly, because it lodges and chokes so easily.

Mills of large capacity and making more bran than can be disposed of at the mill, should be provided with a good bran packer. Large quantities of bran can thus be compressed into common size sacks and quite convenient for shipping.

All makes of water-wheels cannot be the best; there is certainly some difference, and some must be better than others; but there are many real good ones, and from the old and well-tried wheels but little risk is to be run in making selections.

Water-power millers might find it to their advantage to put in a heating plant that could be utilized for heating both the office and other parts of the mill, and heat the wheat at the same time when wheat-heating is required. It would be an economical combination.

It may or may not be conducive to the general health of the people to leave germ, bran and other impurities in the flour, but the miller that separates all such impurities from his flour and makes it as pure as possible, will have much the largest and most prosperous trade. The people will be in the fashion, and regardless of health, and so must the miller.

Cloth neither makes nor unmakes flour. Its functions are purely and only that of making separations. It cannot take from flour any of its bread-making qualities, nor can it add any to it. Very fine bolting cloth may increase the color of the flour because it separates from it a greater quantity of fine impurities than coarse cloth would do, and for the same reason a whiter loaf of bread might result, but otherwise no change would be made.



DIGGING through a lot of exchanges lately I came across the following letter in the New Era, of Clinton, Ont. The letter is written by a well-known resident of that town, who at present occupies the position of freight-conductor on an American road. Perhaps some reader of the MILLER can throw light on the subject. The epistle reads: "By the way, one night, not long ago, I picked up a cask of flour at Staunton, Ill., a small mining town about 38 miles east of St. Louis, for a large biscuit firm in Toronto, Ont. Now, I have always been of the opinion that there was no better flour made than in Ontario. How is it that they buy flour (and of course have to pay the duty on it) in the United States. The mill where the flour was made is about the size of the Clinton flour mill and do a local business, that is buy only local wheat, same as the Clinton mill. I would like to be enlightened on the subject, and it may also prove of interest to some other reader of your paper."

"Flour trade don't look up much," said Mr. J. L. Spink, the newly elected treasurer of the Toronto Board of Trade, and one of the best known millers in the province. "Trade is quiet and prices low. I am of the opinion that Canadian millers will not make a very great display at the World's Fair. I held this opinion from the start and opposed the proposition at the meeting of the Dominion Millers' Association. Our people do not enthuse very much over the coming exhibition. And it would be better to make no show at all than a poor one."

The subject "Grading of Wheat" gave rise to an interesting discussion at a recent meeting of the Brandon Farmers' Institute. MILLER readers will be interested in the views expressed by a number of the speakers. Mr. Charles Braithwaite advocated more grades and numbering them from one to ten without other names. By increasing the grades farmers would get better prices for wheat as the drop in price between the grades would be less and wheat that was say two cents in milling value below any grade would not have to be sold at ten cents below. A very different view was taken by Mr. J. S. Thompson, president of the Melita Farmers' Institute, who condemned the system of grading as a fraud and said that it was neither advantageous to farmer or buyer. Mr. Kenneth Campbell, a grain-buyer of Brandon, read a paper in which he went very fully into the subject. He was convinced that buyers could not manage without the grading system, nor did he agree with Mr. Braithwaite in increasing the number of grades. We were in a different position to any other wheat-producing country as we produced so many different grades which was not the case in other countries and this made it difficult to perfect a system of marketing. Various other views might be summarized thus: "Farmers were often to blame for marketing dirty wheat, and it was quite right to reject smutty wheat." "Did the men who made the grades understand anything about wheat?" "Should be more grades and they should be permanent." "Farmers should be equally represented on the board of grain examiners with the grain buyers."

President J. A. Mitchel, of the Winnipeg Board of Trade, lays considerable stress, in his annual address, copy of which has come into my hands since the January MILLER was issued, on the excessive cost of exporting grain from Manitoba, on account of high freight rates, which in view of present low prices for cereals, renders the production of coarse grains for export unprofitable and leave but a small margin of profit on wheat. He showed by statistics the high value of water transportation and dwelt upon the great advantage which it would be to Manitoba to have a deeper navigable channel from Lake Superior to the seaboard. The difficulties in the

way of exporting crops via New York were also dealt with. The Manitoba crop comes to market too late to permit of its export via Montreal to any great extent. A good deal goes to New York via Buffalo in bond, and its identity has to be preserved, which causes it to be discriminated against in transit, thus increasing the cost of export. There is increased cost of exporting in bond, besides numerous delays and annoyances which have to be endured, which are very trying to the shippers. The transportation companies discriminate against the Canadian grain, because of the trouble of handling in bond and preserving its identity, and when there is a rush of traffic our shipments have to suffer from being obliged to ship through a foreign port. Commission men at ocean ports also demand something extra for handling our wheat, on account of the extra trouble connected therewith. Another point referred to is the fact that the holder of Manitoba wheat in New York can not take advantage of any rise in price above export values. Being held in bond it can not be sold on local account at any United States point. What the president wished to show is the necessity existing for the improvement of the Canadian canals so as to admit of the export of a larger part of the crop via our own port of Montreal. The removal of the duty from wheat imported into the United States would, of course, do away with all the difficulties of export via New York, Boston, etc.

The Executive Committee of the Dominion Millers' Association is anxious that Canadian millers should make a creditable display at the World's Fair in Chicago. Secretary C. B. Watts says "that 240 square feet of space at the Fair have been secured for the members of the Association. This is an opportunity such as has never before been afforded us of bringing our flour before the importers from various parts of the world, and we trust that every miller who does now, or hopes to do, an export business will prepare an exhibit that will assist this object. As the United States have, during this last year or two, been making strenuous efforts to extend their export trade with Great Britain, the West India Islands, and the various parts of South America, a large number of buyers will undoubtedly be present who have never visited any former exposition, thus affording us an unparalleled opportunity of bringing before them the fact that Canada could cater to their needs in all lines which our southern neighbors can do, and to some of them to even better advantage. The committee would suggest that flour, mill offal, oatmeal, etc., be only sent for exhibition in export packages, such as are suited for the various countries of which the exhibitor wishes to secure the trade. For instance bran and mill offal should be put up in sacks of 112 pounds; flour, in 140 or 280 pounds; flour in barrels for the West Indies trade should have round hoops, and a barrel of small size, similar to that used in the United States. Any millers preparing a special exhibit, in fancy style, will be given as advantageous a space as possible to show the same. The Provincial and Dominion governments have collected a magnificent exhibit of grains, which will probably surpass anything exhibited at the Fair, and it will be to our interests as millers to show the numerous visitors that we have the facilities for converting these grains into the finest of flours, that are equal to any made in the world." Exhibits must be ready for shipment by the 25th inst.

The mill-furnisher is frequently the butt of considerable irony at millers' conventions and wherever millers congregate in any numbers. I am not so sure that there was not a sprinkling of irony mixed with the catholicity of view which caused the Dominion Millers' Association to broaden their act of incorporation so as to admit the mill-furnisher as well as the miller to membership in that excellent organization. The mill-builder is blamed when the mill doesn't run right. That is human nature. We all throw the blame on some one else, whatever the work. None of us make mistakes ourselves. But let the agents of mill-building houses meet and "talk matters over" and mill-owners are likely to hear another side of the story. Such a conversation occurred recently between a mill-furnisher's agent and a competitor. The one was asked why it was that he

had so much trouble with a certain mill started but a few days before. The other made answer that it was all the fault of the mill-owner, and gleefully remarked that the latter also had to pay the bill. Then he explained that the man for whom the mill was built was in a great rush to have it finished. Anything like delay made him nervous. "He would get the fidgets on the slightest suspicion of provocation," continued the agent, and all I could do was to rush things along at the mad gallop which seemed to suit him. If we needed a certain kind of lumber that we could get the next day he wouldn't listen to it. 'Use the kind you have,' he would order, so we did, demolishing material right and left. I think we wasted not less than \$300 worth of lumber, not to mention the extra cost of wages, hardware, etc., occasioned by his impatient desire to see the job finished 'at once.' And he is not the first one of that sort that I have met they are more numerous than most folks think. I have always held the belief that if a man can afford to build a mill he should do himself the justice to do it properly. There is no need of devoting a year to the task, but I'd rather do so than throw one together in a few weeks. And another thing I'd do if I had a contract with a responsible mill-builder who guaranteed results, I'd let him alone and permit him to build the mill as he planned it, for no man can afford to change plans at random; good mills are not built that way."

We learn from one another: and the information imparted by a man who has an experimental knowledge of the subject he talks about is worth heeding. This man may be one's next door neighbor, or he may claim an allegiance to another flag. Knowledge knows no territorial bounds. I say this much in giving to MILLER readers some sensible remarks made by Mr. John Metherell, head miller of Union Mills, Nashville, Tenn. He is talking of success in milling and who does not wish to reach that goal? "Primarily in this particular," says Mr. Metherell, "is the selection of grain. Good flour was never produced by the use of poor wheat; still, cupidity, in many instances, induces the buyer, and when such is the case, the miller has a hard time in trying to work out an impossibility, and, if he is not familiar with the nature of given varieties of wheat, he, himself, will always be in hot water and keep it steaming, to affect all others who come under his command, and what is worse, be himself subject to insult from his superiors and still be powerless to controvert the attack. No spring wheat miller who expects a heavy percentage of middlings from which to produce his patent flour would enter the granary of soft wheat for purchase. If he did so and expected his head miller to produce his requirements he would either be a fool or a knave, a fool in not possessing the necessary knowledge for purchase, or a knave in trampling on the credulity of an honest miller, though void of information. The same mill operated on various kinds of grain produces results as varied as the grain submitted to operation. No miller, however great his egotism, can counteract the effect of the natural composition of the grain submitted to his use. Yellow wheat will produce yellow flour in spite of every attempt to remedy, and white wheat of various varieties will produce something far removed from white flour. Suitable for the grades required must be the attendant wheat supply, and the knowledge of purchase must essentially govern, by possession, the purchase of the buyer. The qualities of flour produced from Lost Nation wheat, raised in the Northwest, compared with its sister varieties of hard Fife, etc., will present quite a contrast in comparison, percentage and dollars and cents. Likewise, is found a disagreement between the results effected in winter wheat mills, where an interchange exists between Mediterranean and sister varieties, compared with Fultz and its class. Even if the desired wheats are not to be procured, the knowledge of attendant results must be known to render a composed mind and courteous disposition. 'Knowledge is power,' and 'a little learning is a dangerous thing,' but in order for a miller to mill with economy he certainly has to possess full knowledge of the effects of his wheat supply, and when his requirements are met in this direction his battle is half won, and it is left for his mill and his knowledge of milling to produce just what his office expects of him."

OATS AS A FOOD PRODUCER.

THE oat when considered in connection with the cereal grains, and the nourishment and value it affords to the live stock of the farm, says a writer in the Miller, of London, Eng., may be regarded as one of the most important crops produced. Its history is highly interesting from the circumstance that in many portions of Europe it is manufactured into meal, and forms an important aliment for man's consumption; one sort, at least, has been cultivated from the days of Pliny, on account of its fitness as an article of diet for the sick. The country of its origin is somewhat uncertain, though Colonel Chesney, in his exploring expedition in Mesopotamia found a kind of oat on the banks of the Euphrates, which is described as about eight inches in height and covered with fine soft hairs on the leaves, especially near the ground. About half-a-dozen spikelets formed a little terminating panicle, and each spikelet contained from two to three florets, with long intermediate dorsal awns. Another oat resembling the cultivated variety is also said to be found growing wild in California.

This plant was introduced into the North American Colonies soon after their settlement by the English. It was sown by Gosnold on the Elizabeth Islands in the year 1602; cultivated in Newfoundland in 1622; and in Virginia prior to the year 1648.

The oat is a hardy cereal grass, and is suited to climates too hot and too cold either for wheat or rye. Indeed its flexibility is so great that it is cultivated with success in Bengal as low as latitude 25 degrees north, but refuses to yield profitable crops as we approach the equator. It flourishes remarkably well when due regard is paid to the selection of varieties throughout the inhabited parts of Europe, the northern and central portions of Asia, Australia, southern and northern Africa, the cultivated regions of nearly all North America and south America. The cultivation of oats is very general throughout the whole of Scotland, Ireland, Wales, and the north and west of England. In the former two countries it forms a prominent feature in nearly every rotation of farm crops, and although less so in the districts of England referred to, yet the practice is sufficiently common to warrant us in classifying them along with Scotland and Ireland, as possessing a soil and climate adapted to the special requirements of the oat plant. Scotland, however, may be considered as the proper type of an oat-growing country. Its climate is cool, even in the warmest parts of the country, and the soil is generally well adapted to the growth of this grain. It is not without reason, therefore, that oats form the staple agricultural product in that division of the United Kingdom.

The meteorological influence which effect the growth of the oat plant differ considerably from those that control either wheat or barley, so much so that the very causes which conspire to render its cultivation more successful in Scotland and Ireland than in the south of England, give those countries a climatic character far less favorable to the growth of wheat and barley. But at the same time, it must be remembered that natural causes originating in the soil and climate can be considerably modified in their influences by proper cultivation; hence we find during the past five years that England has yielded on the average a greater quantity of oats per acre than either Ireland or Scotland.

The figures show that with one single exception, namely 1891, England stands at the head of the list in its production per acre of oats, Ireland has a slightly lower average yield than England, while Scotland has produced on the average of these five years 51 bushels per acre less than England, and Wales 8.7 per acre less.

There are three well defined groups of oats cultivated in the United Kingdom easily distinguishable by their color—white, black and gray or dunn. The greater number of varieties belong to the first class, and these are also the most valuable in an agricultural point of view. White oats are separated into two principal varieties—the early and the late—and these again into several sub-varieties, characterized by certain peculiarities of growth.

In the southern part of Great Britain, where oats are principally used for feeding horses and fattening stock,

the main object is generally to obtain as much bulk of straw, and as many bushels of grain per acre as possible, without much regard to the quality of either; and hence we find the coarser kinds, such as the Tartarian and the red sorts, principally cultivated. The straw of these coarser varieties make very inferior fodder, and the grain weighs very light in the bushel more frequently 35 lbs. per bushel than above it in consequence of the large proportion of husk to kernel developed.

In Scotland and the north of England, however, the quality of both oat straw and oat grain is a material point, as the former constitutes the principal fodder of farm live stock from Martinmas to Whitsuntide, while the latter made into meal is, notwithstanding Dr. Johnson's contemptuous opinion of it, the main article of food of the Scotch and border peasantry. The Scotch farmer, therefore, cultivates those varieties of oats which yield the greatest amount of nourishment for man and beast, and not those that afford the largest quantity of materials for swelling the bulk of the manure heap. This opposite practice accounts for the fact that the average yield of oats per acre in England much exceeds what is obtained in the other divisions of the United Kingdom, as shown in table 1.

The grain of oats consists of two easily separable parts, the husk or envelope, and the kernel or groat, as it is sometimes called. The former is hard and woody, and contains little or no saccharine, oily or albuminous matter. The kernel or softer inner portion of the grain, on the contrary, is rich in all these substances, as is shown by the following analysis:

Showing the average chemical composition of the kernel, husk, and the whole grain of oats.

	Kernel. Per cent	Husk. Per cent	Whole Grain. Per cent
Water.	4.85	1.57	6.42
Ash.	1.50	1.08	3.18
Oil	5.70	0.24	5.94
Carbohydrates.	49.96	20.41	67.37
Woody Fibre.	0.97	5.39	6.33
Albuminoids.	10.02	0.74	10.76
Total	70.00	30.00	100.00

Thus the kernel gives about 5 1/4 per cent of oil, and the husk 1/4 per cent, making a total of nearly six per cent in the whole grain.

The ash is very similar in both portions, forming just over three per cent in the whole berry.

The carbohydrates or starchy matters form nearly 47 per cent in the kernel and only about 20 per cent in the husk, equal to 67 per cent in the whole grain. The woody fibre on the contrary, is 5 per cent more in the husk than in the kernel, while the albuminoids make up 10 per cent of the kernel, only 1/4 per cent in the husk and 10 3/4 per cent in the whole grain.

One hundred pounds of oats, weighing 45 pounds to the measured bushel, commonly yield on milling, the following proportions of oatmeal, &c.

	Per cent.
Oatmeal	60
Husks	26
Water	12
Loss	2

In a good season for oats some varieties, such as potato, sandy, dunn, and late Angus, weighing 42 lbs per bushel, will yield on milling 209 lbs of meal per quarter, or 62 per cent, while a coarser and more husky variety, such as the Tartarian and red oats, which only weigh 35 lbs to the bushel, will not yield more than 130 lbs, or at most 140 lbs to the quarter. This is only on an average about 48 lbs of meal from 100 lbs of grain, or nearly a fourth less than in the other case.

If we suppose—which is not far from the truth—that the comparative yield per acre of a fine and of a coarse variety of oats sown on the same quality of land, is 8 and 10 qrs. of grain respectively; then according to the above data, we obtain the following results.—8 qrs. of oats, weighing 42 lbs per bushel, give 2,688 lbs of grain, which yield 1,672 lbs of oatmeal; 10 qrs. of coarse oats weighing 35 lbs per bushel, give 2,800 lbs, which yield 1,350 lbs of oatmeal. Here we have in the smaller crop, per acre, nearly 1.5 more meal. No doubt the finer sorts of oats when cultivated in the south of England will not weigh more than 40 lbs per bushel, but this weight could easily be attained by good cultivation, careful selection of seed, and occasionally changing it from a good oat-growing district.

In milling oats, the relation of kernel to waste products is generally about one half. Some investigations by Clifford Richardson in America show that the relation of kernel to husk averages for the whole of that country seven to three, those from the western states being a little less husky, and those from the south considerably more so. It is, however, the milled nature of the husk in the southern oats, and the fact that the glumes or outer shell is often adherent, that affects the weight per bushel more than the slightly larger size of the berry.

The extremes shown by the separated parts of the American oats were 79.28 per cent of kernel and 20.72 per cent. of husk in a sample from Washington territory; and 55.37 per cent. of kernel, with 44.63 per cent of husk, in a sample from Dakota. Washington and Oregon usually sustain their reputation for fine looking grain, whether of oats or wheat.

It may be mentioned that the proportion of kernel to husk in oat grain is greatly influenced by the period at which it is cut and harvested.

It is really disadvantageous to permit any kind of oats to become dead ripe before commencing to reap the crop, for although cut ten days before this, the ripening process will proceed perfectly well in the sheaf, and certainly with much less risk.

The proportion of kernel to husk will not only be greater in the earliest reaped samples, but the percentage of oatmeal will be higher also.

TRANSMITTING STRENGTH OF SHAFTING.

A WRITER in the Mechanical News says. The use of extremely heavy shafting is not advisable under any circumstances unless actually needed to perform the work required. Some imagine that a large shaft affording a very strong margin of safety, is the most economical to use, that, however, cannot be considered a logical and mechanical position, unless tempered with sound judgment and much wisdom, sufficient of both to select properly. That there should be ample margin of strength no one will attempt to deny, but shafting multiplies in strength so rapidly as sizes increase, that the unenlightened are apt to make the selections much too large when aiming at only ample strength margin. To show how easily unformed mechanics may make mistakes of that kind, it is only necessary to say that a three-inch shaft has nearly three and a-half times the transmitting strength of a two inch shaft. None unaware of the fact would ever guess at that difference and may fall into the error of selecting a three-inch shaft to safely do the work of a two inch. To more forcibly illustrate the difference, it can be stated that a two-inch shaft properly sustained with bearings at reasonable intervals will safely transmit 20 horse power at 100 revolutions per minute, and at the same time resist the transverse strain due to weight of pulleys and the pull of belts necessary for transmitting that much power. Under like circumstances and equally proportionate condition, a three-inch shaft will just as safely transmit sixty-eight horse power at 100 revolutions per minute. Shafting should never be so large as to make it absolutely rigid, on the contrary, it should be to a fair degree elastic, with an ability to give and take between the power and the work. When too rigid, unless above all requirements in size and strength, the liability to break is increased, especially if the work is of an abrupt and severe character. Long lines of shafting having the power at one end and the work at the other, should be graduated in size; the work and being of a size required to safely do the work and the power end larger in proportion to the length of the shaft or the distance between power and work. If such shafts be of the same size the entire length, and that of a fair working size only, there will be too much elasticity in the aggregate which will tend to gradually weaken, distort, and in the end destroy the usefulness of the shaft.

Because a man has a husky voice he is not necessarily a corn doctor. Utica Observer. Nor if he is mealy-mouthed does it follow that he is a miller. Millers' Review. Nor is the baker, who always kneads something, a beggar.—Milling World. Nor is the confectioner with a good pull a politician, necessarily.



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J. S. ROBERTSON,

EDITOR.

THE CANADIAN MILLER AND GRAIN TRADE REVIEW caters to the Miller and all his associations, and to the Grain Dealer with all his allied interests.

The only paper of the kind in Canada, containing full and reliable information on all topics touching our patrons, and unconnected with an organ with any manufacturing company, we will always be found honestly and earnestly endeavoring to promote the interests of our subscribers. Correspondence is invited from millers and millwrights on any subject pertaining to any branch of milling or the grain and flour trade.

ORIGIN OF FYFE WHEAT.

A DISCUSSION has been going on in a number of newspapers lately, endeavoring to locate the origin of Fyfe wheat. The Elevator and Grain Trade Review, of Chicago, places the origin of this wheat in Manitoba about 1858. The story is that when Selkirk brought over his Scotch colony to Manitoba about 1858, he purchased for them a supply of seed wheat from a Scotch settler named Andrew Fyfe, which was so different in character from the rest that it was kept separate and sown by itself and called after the man from whom it had been obtained. Wisconsin has come along with the claim that this famous wheat was first grown in that state in 1856, and therefore has the advantage over Manitoba by two years. Mr. G. E. Bower, of Vancouver, B.C., alleges that both these accounts are away off, and that the true story is to be obtained from Dr. James Fyfe, of Peterboro, Ont., a descendant of the original grower.

Another account is given by Mr. Robert Reed, a miller, of Snelling, California, who writes to the Milling World, of Buffalo, as follows: "I was learning my trade in 1857, and I remember well grinding that same kind of wheat. That was in Fergus, Wellington, county, Ontario, Canada. The wheat was so hard that we always ground with dull buhrs, and the millers would not buy it at all, it was so hard. They had all been used to a 'Club.' They called it a 'Genesee club,' but it began to rust so bad that the farmers could not grow it. The reason they sowed this hard or 'Glasgow' wheat, as it was called then, was that it withstood the rust. Now, judging from the amount of wheat that was grown there then, it must have been introduced some two or three years previous to that time. Then it was called 'Glasgow' or 'Fife.' We had to grind lots of it because the mill'd a great deal of gisting, and we ground every one separately. I have been away from there about 19 years, but there must be some of the old-time millers alive yet. I had an uncle there, but I don't know where he is now. There are Hostop & Arkell, of Elora, and I think there is a lot of old-time millers who could tell you that kind of wheat was introduced there several years prior to that time. I can not vouch for it. That is the earliest that I recollect. I don't know the reason it was called 'Glasgow.' I understood the first seed came from there, and I think it came as early as 1854. It must have done so, by the amount that was grown in Wellington and Grey counties at that time."

The Milling World itself, which is nothing, if not critical and sceptical, would throw doubt on any attempt to identify the name or origin of Fyfe wheat with Scotland or Scotchmen, and says: "What evidence is there to show that Fyfe wheat came from Scotland? Old farmers who have lived in those parts of Scotland in which wheat is grown, say that they never saw any of this particular grain in Scotland. What proof is there that it was not grown in Wisconsin or some other parts

of the United States before a kernel of wheat was grown in Manitoba? What proof is there that the name of "Fife," or "fife," or "fyfe," or whatever one of the various spellings may be selected, has reference to a person, or that the term "Scotch" is not, like "English" applied to walnuts never grown in England, a purely accidental name? One old wheat-grower says that the name fife was given to the wheat because the farmers' boys used to cut the stalks into small whistles, on which they produced musical, or unmusical, notes, and which they called "fifes." In that case it would be easy to account for the term "Scotch fife," although none of that sort of wheat was ever known or grown in Scotland."

The burden of evidence would seem to show that this wheat had its origin in Canada, whether in Ontario or Manitoba may be uncertain, and that its antecedents can be traced back to the Land O' Cakes. Perhaps some readers of the CANADIAN MILLER can throw further light on the question.

SPECULATION NOT GAMBLING.

THE United States Senate has finally passed the Anti-Option bill by a vote of 40 to 29, and it will likely receive the concurrence of the House of Representatives, and become law. The primary object of the bill, over which has been waged a vigorous fight at Washington, is to suppress gambling in grain.

The speculator, some one has said, is a curse. "He doesn't work, but he bets on the results of the labor of others; and that he should thrive and they suffer makes either a farce or a tragedy of life." In so far as speculation partakes of this character all honest men are, we believe, solicitous of its suppression. But speculation is not gambling. Legitimate business of whatever kind is speculation, and the man who conducts it is a speculator, but he is not necessarily a gambler.

It is perhaps the misfortune of the grain business that gamblers have entered into it and prejudiced, less or more, the entire business. The law is called upon to step in and suppress the gambler in grain, but not the grain merchant. In Toronto the authorities have the support of every worthy man in their efforts to close up the bucket shops that have endeavored to secure a resting place here at various times. But what righteous indignation would be evoked from the best men of the city were an effort made to suppress the legitimate business in grain conducted on 'Change any lawful day of the week. As a protest against this class of interference has come, in part at least, the opposition to the anti-option bill during the past few months. It is feared by some that the good will be made to suffer with the bad in its enactments.

The history of legislation bearing on the supposed restriction and suppression of improper methods of conducting business is full of interest. An old English law existed in a past century against regrating, forestalling, badgering and similar practices, which were supposed to be an interference with the free course of trade. By this law dealers in food were forbidden to purchase in one market and sell in another, to buy food on the way to market, to try and control the market by purchasing the whole stock in existence with the intention of exacting a higher price, and to resell articles which had previously been purchased in the same market. Some municipal market by-laws are not without a few of these clauses to-day. The purpose of these restraints upon middlemen was to protect consumers against artificial enhancement of price.

According to Professor Thorold Rogers, the Englishman of the Middle Ages strove as far as possible to dispense with the middlemen and to buy all his goods at first hand. He had his stock of iron for tools, and employed the smith to fashion it. If he wanted a silver cup, he purchased the silver and paid the craftsman for his labor. So, if a man resolved on building a castle or a church, he obtained the raw material and hired laborers to construct it. The whole cost of the bell tower at Merton College, Oxford, in 1448 was less than £142. The cost at present would be £5,000 or £6,000. The aim of all legislation of this class is to do away with the middlemen and save his profits to the consumer. Failures along this line have been many, more than the suc-

cesses, though this fact is not always an argument against the correctness of the position taken, no more than it is a deterrent to frequent and continued efforts to attain success in this way. The organization of Grangers, Patrons of Industry, Consumers' Supply Companies, Co-operative Manufactories, and other similar associations of citizens are all instances of effort to dispense with the obnoxious middleman. Somehow, though there are remarkable exceptions like that of the Rochdale Co-operative stores, these methods never grow into very large success, and often are far removed from the accomplishment of the object sought.

Prejudice dies hard. The Duke of Wellington's advice was to live down prejudice; and it can be lived down, but it requires time and lots of patience. Tradition has told us of the rapacity of the miller. There never seemed to be any more than tradition in the charge, though legendary song and story have given ear to the slander. Members of the Dominion Millers' Association, who were active some years ago in securing needed legislation from the Commons, had to meet this kind of prejudice, and it has been the experience of more than one miller who has taken to public life in Canada that the old slanders of a bygone age would be trotted out against him, and there were those among the farming population who believed them. Happily these strained and foolish prejudices of the farmer are, unless in a few cases, extinct. Yet this kind of ammunition was made use of by several senators in their contest over the anti-option bill. One senator reminded another senator in his reply, "that all the ancient statutes and common-law rules, from the earliest history of civilized governments, against forestalling and monopoly, and all that kind of oppression, which this bill claims to attempt to reach, had been rendered necessary by the conduct of millers, and that the 'miller's thumb' has been proverbial for a thousand years." This remark was supplemented later by the following scoffing words: "The constant trading and bartering make it impossible for the miller to manipulate the market now. No doubt he is an honest man now, and probably the reason we are approaching the millennium is that he has not the opportunity he formerly had."

So much for prejudice; and at the eve of the nineteenth century there are to be found those who have not outgrown their prejudices.

EVOLUTION IN TRADE.

IT is the case in business of any kind when conditions are new and in an embryonic state that various difficulties have to be confronted. Sometimes these are easily overcome, but usually no small amount of experimenting, partly successful and much of it ending in failure, must be entered upon before the better methods of doing things are reached. These conditions furnish one of many illustrations of the large part the principle of evolution occupies in the life of the individual and the work of the age. With all it is a case of development from the lower to the higher, from the chaos and crudity of early conditions to the larger measure of system and perfection born only of labor and time.

Sometimes we chide ourselves for the blunders that are made and we are sure we will not be tripped up in the same way again. But we will, more than likely, go and commit some other blunder and learn again by the one rule of experience—the only road to a large part of our knowledge of life.

The farmers and grain merchants of Manitoba have for some months been worrying themselves over the misfortunes that have resulted from growing a larger crop of wheat in 1891 than they were able to handle successfully, and on which losses were made at the time and continue to be made. Only within the past month the story has been told by the Montreal Trade Bulletin of a shipment of wheat made from Manitoba to that city which was eaten up in transportation charges. The freight upon the shipment (700 bushels) amounted to \$290, which was considered by the consignee the full value of the wheat. Cases of a similar nature have been referred to in these columns a number of times during the past few months. In the case in point, and in nearly all such cases, it would have paid the shipper to have kept the grain at home. The Montreal Journal

advises the farmers of Manitoba to use this low grade grain for fuel rather than ship it east. But a better use, in the opinion of the Commercial, of Winnipeg, would be to hold it for feed and market it in the shape of beef and pork. The trouble with this latter suggestion, and the Commercial recognizes it, is that while there are immense quantities of low grade grain in the country, there are comparatively few cattle or hogs to feed the grain to. Farmers might accept with profit the advice of our Winnipeg contemporary to put part of the money used in growing grain into the purchase of cattle, and in this way help to level things up.

We have no doubt that along the lines suggested by the Commercial, or in some other way deemed equally practicable, the farmers of this newer province will meet the difficulties that are just now confronting them, and in the end successfully overcome them. This will not be done, however, at a bound. They will have to grow into successful methods through the avenues of patience and perseverance, and after, doubtless, further tribulation. But in this there is nothing discouraging. On the contrary, there is everything to furnish encouragement and stimulus, on the principle that we climb the ladder not by a single bound, but we mount it, as the poet has said, round by round.

All this may seem like a homily more suited for the pulpit than the columns of a trade journal, but where more than in the daily affairs of life do we need to take a hopeful view of the conditions that surround us and be possessed of a knowledge of the environments and principles that regulate matters of life, whether they be those of morals or business?

LONGEVITY OF MILLERS.

MORTALITY statistics might be expected to have a depressing influence on men generally, and yet the anxiety of human nature to know what is in store for them in the future makes their study of more than ordinary interest. An English physician, William Ogle, M.D., has been making a study for some time of the question of mortality in relation to occupation. "Am I engaged in a business which is likely to shorten the expected term of my life?" is a problem that naturally gives concern to many men. There are vocations, certain departments—for example, the manufacture of steel and other metals where the heated atmosphere is so excessive and impure that workmen can only remain at the work for a few years and be assured of a continuance of life; and even then they, commonly, retire with constitutions so shattered that life, under the most favored circumstances and tenderest watchfulness, cannot be prolonged more than a few years.

The dust-inhaling occupations are usually looked upon as fatal to sound health, being almost certainly productive of consumption and other lung diseases. Dr. Ogle, in a ten years' research and gathering of data, touching thousands of cases in England and Wales, furnishes much valuable information regarding this class. Taking fishermen for the standard, as being less liable to dust-inhalation than any others, he has given us the following table:

MEN FROM 25 TO 65 YEARS OF AGE.	Phthisis.	Lung Diseases.	Phthisis and Lung Diseases.
Fishermen (as Standard)	55	45	100
Carpenters, joiners	103	67	170
Bakers	107	94	201
Wood-workers	130	104	234
Cotton-workers	137	137	274
Cutlers, scissor-makers	187	106	293
File-makers	219	177	396
Masons, bricklayers	127	102	229
Stone and slate quarry men	156	138	294
Pottery-makers	239	326	565
Cornish miners	348	231	579
Coal miners	64	102	166

Millers and bakers rank the same, being 172, which strikes a fair average among the various occupations. Grocers, shop-keepers generally, machine-builders, carpenters, shoe-makers, lawyers, coal-miners and a few other occupations were healthier than milling and baking, while most other mechanical occupations were less conducive to long life.

It is worthy of note that in Dr. Ogle's opinion the

dust of flour which is inspired by millers has no injurious effect on their vitality. What of the "miller's cough?"

As touching in their way two opposite ends of the pole, it may be added that clergymen head the list for the greatest longevity, whilst inn-keepers show the greatest mortality, even in excess of the liquor dealers, who rank well in this respect.

TARIFF REFORM.

THE one public question that is overshadowing all others in Canada at the present time is that of tariff reform and the battle at Ottawa this session will be over the tariff. In both of the great political parties a variety of opinions exist. Even among the government supporters, who have hitherto been solid for the N.P., there are dissenting voices, and, more serious than this, leaders within the party, like Dalton McCarthy, Mr. Davin and others, have broken away, in one case altogether, and in the others in some particular point, from the Government's policy. Nor are the Liberals a unit in their views on the question. At a caucus of the party held within a few days of the present writing a policy of free trade, as outlined by Mr. Laurier in his Hamilton speech, was adopted by the party, but not without expressions of dissent from Sir Richard Cartwright and his followers, who favor unrestricted reciprocity.

The battle will likely wage between a modified National Policy on the one hand, as promised by the Minister of Finance, and the Free Trade policy of the Liberals, with, perhaps, no unimportant following of Mr. McCarthy, who stands as the champion of preferential trade with Great Britain.

Whatever the final outcome of the present battle may be, the country will, we believe, be the gainer. The best men of Canada—not the men who are politicians first and patriots afterwards, but her most patriotic citizens, her princes in commerce, leading bankers and ablest students of economic questions are writing, speaking and giving their clearest thoughts to the subject. Good, and only good, can come out of consecrated common sense, ability and patriotism exercised on these lines. National disorders and crude legislation on momentous questions come too often from indifference to these matters by the men who, though not the noisiest or most demonstrative, are best fitted by natural gifts and training to settle these problems. It is a good thing to find these men roused on the condition of the country to-day.

COOPERAGE MATTERS.

AN intimate relationship exists between the coo- perage trades and milling. In some cases millers have coo- perage shops as adjuncts to their mill and make up a large part of their own stock. But following the trend of business methods in the present day, it is found that it is well for the miller to be a miller, and to depend for his coo- perage supplies on the man who makes the manufacture of coo- perage stocks his special business.

Attention has been drawn in the current number of the CANADA LUMBERMAN to the scarcity of basswood the past season to meet immediate needs for orders in coopers' hands, the fact being used by our cotemporary to illustrate the extent to which the forests on the shores of Lake Erie have been denuded of many of their more valuable woods. This condition is emphasized in a letter to the MILLER from a large manufacturer of coo- perage stocks in western Ontario, where the remark is made that "the demand at present for dry staves is very lively and most manufacturers are not able to take care of orders coming in. High prices are maintained for shipments to the 1st of May, and all manufacturers that have dry stock find no trouble whatever in obtaining ready sale. The market is bare of dry stock, heading being so scarce that consumers find great trouble in being able to obtain sufficient to meet their daily requirements, and in many cases high figures have been paid by firms that have bought in the open market not having contracted for their requirements ahead."

Whilst the poor of our larger cities, and not a few others who are not poverty stricken, are suffering from the severe weather of the present winter, on the principle, perhaps, that it is an ill wind that blows no one good, coopers are rejoicing at the character of the winter,

which will enable the mills in Canada, Michigan, Ohio, and other points to put in full stocks of logs for running this season. Prices, however, for reasons already suggested, are likely to be high, and it is not to be expected that figures for manufactured coo- perage stocks will show any reduction in '93.

The consumption in Canada and the States of coo- pers' stocks is steadily growing year by year, elm coo- perage stocks being used for different purposes that were not thought of years ago. Manufacturers are quite hopeful of a good trade in 1893.

Commencing next month the MILLER will open a Coo- perage Department, conducted by one who has a thorough knowledge of the conditions of the trade in Canada and the States.

EDITORIAL NOTES.

A SUGGESTION comes from a Winnipeg journal that it had been better for the farmers of Manitoba to have fed the low-grade wheat of 1891 to the cattle and hogs rather than ship it to points at prices which in some cases barely covers freight. This presupposes that farmers have the cattle and hogs to feed, which is not always the case. The circumstances are suggestive, as has before been intimated by those who have studied conditions in the Prairie Province, that farmers will need to give larger attention to the raising of cattle in the future to meet possible exigencies in grain growing.

A DESPATCH from Ottawa says: "An Order-in-Council has been issued fixing canal tolls for the season. On food products the toll for a passage eastward through the Welland canal will be ten cents a ton, and for passage eastward through the St. Lawrence canals ten cents a ton also. Payment of toll through the Welland will, however, entitle the cargo to free passage through the St. Lawrence canals. It will be remembered that last year the rate was twenty cents per ton with a rebate of eighteen cents for cargoes discharged at Montreal. There will be no rebate under the new regulations, but the fact that payment of tolls through the Welland ensures the free passage of the St. Lawrence is of itself a discrimination in favor of Montreal.

THE new president of the Canadian Manufacturers Association is Mr. John Beltram, of the Canada Tool Works, Dundas, Ont. His predecessor was Mr. W. K. McNaught, whose interest is in the manufacture of watch cases. Mr. McNaught favors preferential trade with Great Britain, and he made this the keynote of his address at the annual meeting of the association a week ago. His concluding words were an appeal to the patriotism of the Canadian people, thus: "The national future of Canada does not in my opinion depend upon the good will of other countries so much so as, under Providence, what her own people make it. If we are but true to ourselves we need have no fear as to what the future has in store for us." The Government are urged to "grant a subsidy sufficiently large to guarantee the establishment of a fast Atlantic steamship service between this country and Great Britain.

THE Daily News, of London, Eng., draws attention to the large decrease in English wheat acreage within the past decade. Cumberland and Westmoreland have each lost two-thirds of their wheat area. Chester, Monmouth and Northumberland have lost one-half. In Derby, Devon, Durham, Hereford, Lancaster, Lewes, Notts, Rutland, Salop, Somerset, Stafford and the North and West Riding the diminution ranges from one-third to one-half of the acreage of 1862. In Cornwall, Dorset, Gloucester, Kent, Middlesex, Oxford, Surrey, Warwick and Worcester the decline is from one-fourth to one-third. Beds and Hants have lost one-sixth, Essex one-seventh, Norfolk one-eighth, and Hereford and Suffolk each one-twelfth; while Cambridge has suffered a diminution of only one-fourteenth. The general result is to demonstrate that during the last decade the wheat area has undergone shrinkage in every county of England, also that the relative decrease has been greatest in the outlying counties of the north and west and least in the compact group of eastern counties lying between the Wash and the Nore.



The particular purpose of this department is to create an increased market for Canadian mill products—flour, oatmeal, cornmeal, rolled oats, pot barley, horse meal, split peas, etc.—at home and abroad. The interests of the miller who grinds the grain will have thoughtful consideration. Any matter that is likely to lead to an improvement of conditions in the local market of any of the various provinces of the Dominion will be carefully considered in this department. A close study will be made of the foreign markets with the aim of further developing the Canadian export trade. The MILLER also in its columns covers the mills, the field of flour handlers and buyers of mill products, not only within the borders of the Canadian Confederation, but in New Zealand, the West Indies, Great Britain and other foreign countries. This department will be made valuable to them in discussions of the conditions of the market in this country, reliable market data, the manufacture of mill products, methods of transportation and shipping intelligence, contracts and relationship to the milling industries. We invite the assistance of millers, shippers and buyers on any matter that is of the important nature.

BRITISH FLOUR TRADE.

THE export trade in flour to Great Britain during the past season has been a constant source of anxiety to the exporting miller on this side of the Atlantic. We give expression to the sentiments of every one engaged in the business when we say that it has been a most unprofitable department of the trade. Nor has it been carried on with better satisfaction to the flour handlers in Great Britain. In a word, the market has been thoroughly demoralized on both sides. In previous issues of the MILLER we have pointed out that the cause of much of this trouble is the custom of United States millers of sending large consignments of flour to England and Scotland with little regard to the needs of the market at these points. In a recent issue of the Glasgow Herald, this phase of the question is handled with intelligence in its relations to the trade of the Scotch miller. The Herald says:

"The year now drawing to a close may truly be described, so far as the miller is concerned, as one of the most unremunerative on record. Prices ruled high at its commencement, and, with but small cessation, they have steadily declined during the entire twelve months, and now we are face to face with the lowest prices for both wheat and flour ever experienced in the annals of the trade. Several causes may be cited to account for this. Primarily, no doubt, the excessive production of cereals in America, and in the second place the diminished wants of the continental wheat-importing countries. To this may be added the excessive quantity of wheat milled in America, its shipment abroad, in many instances on consignment, and its sale, ex-quo, at prices leaving a heavy loss to the exporter, and even his representative here, it is whispered, has not escaped altogether scatheless. This slaughtering, as it is called, of consigned flour has not hit the home miller quite so hard as might have been expected, as he—fortunately for himself as it has turned out—sold pretty freely for forward delivery, certainly at exceptionally keen prices; but, he being in no wise, his first thought has been to keep his mill running full time, and so make it possible to provide continuous employment for himself and his workmen. A policy this that has proved of the wisest, an operative miller among the ranks of the unemployed being at the present moment conspicuous by his absence. Wheat and flour have steadily declined in price throughout the entire year. No northern Duluth wheat, for example, which in December, 1891, touched the comparatively high level of 42s per qr, can now be bought freely at 12s less, 31s, 30s, and millers finest Minnesota patents, which at the same time were sold at 32s per sack, can now be had at 25s. The fall has been even more marked in the case of straights. In December last as much as 30s could have been made freely, while now they are a very dull sale at 18s 6d. Patents have come so very low in price that almost every consumer can afford to buy them; hence, the lower grade has become neglected, and the disposal of their straights is now a problem to be solved by the home and foreign miller alike. As to the immediate future of the trade, it is a matter of no small difficulty to form a reliable opinion. Should the present depression in prices be relieved by some improvement in the markets, but little benefit would result

to the miller, at all events for a very considerable time. This is accounted for by the pernicious system largely in vogue of booking flour forward in a lavish manner, and, in many cases, to an absurd extent, so that, while the miller is called upon to pay a sharp advance for his wheat, he has for months to deliver flour at the very lowest point touched, so that a rise in the price is oftentimes to him more a curse than a blessing. Owing to the keen competition from abroad, as well as at home, it is somewhat difficult to see how this can well be avoided, the only possible consolation to the unfortunate miller being that if, by the force of fortuitous circumstances, he ceases to merit his old-world title of jolly, he yet can lay the flattering unction to his soul that he is performing the patriotic part of perpetual benefactor to a more or less ungrateful public.

Aside from the fault for these conditions that is to be laid at the door of the exporter of flour, it will be observed that the Scotch miller has been guilty of the same unbusiness-like practices as his brethren in London and Liverpool, of booking flour ahead with no consideration as to the fluctuations in wheat that are sufficient to dish all his profits.

CANADA AND THE WEST INDIES.

In a letter to the Monetary Times touching Canadian flour abroad, and replying to an article from the Daily Chronicle, of Georgetown, Demerara, to which some reference was also made in these columns last month, Mr. J. A. Chipman, of Halifax, N.S., has this to say:

"I quote from the Daily Chronicle: 'There seems to be an old standing prejudice against Canadian flour.' I remember the time that there was a standing prejudice in the Maritime Provinces against Canadian flour. We in Halifax were then importing American flour, and the Canadian was despised as poor stuff. To-day, place Canadian and American of the same grade, at the same price, before a customer in the Maritime Provinces and he will take the Canadian in preference; especially so if the comparison is between winter wheat flour. Why? Because the Canadian winter wheat flour has more gluten and other essential elements to make a palatable bread than the American. Moreover, offer a Provincial fisherman the best American patent in a round-hooped barrel at almost any price, and, if he has passed the age of fifty years, he will shake his head; it recalls to him the time he fed on Baltimore middlings at 5¢ per barrel.

Just as our Canadian flours have pushed their way into these provinces, so are they getting a strong foothold in Newfoundland, and year by year crowding out the American. I know whereof I speak, for I am in constant touch with the Newfoundland trade.

In the 'forties' Halifax, not New York, had the trade with the West Indies. Those were the days in which Halifax felt that she were the Hub of America. Those magnificent, palatial steamships which paddled their way from England to America made for Halifax direct. The profitable commerce of the West Indies flowed into our laps, and the banking capital of Halifax to-day was virtually created by the profits arising out of that West India trade.

I may be pardoned for quoting from Mr. Winter referred to in your article from the Georgetown Chronicle, in evidence of the fact that in the forties Halifax, not New York, held the trade with the West Indies.

"But the mode of importation in those days was very different to that by steamer. The flour then came in mixed cargoes—lumber, fish and staves. A sort of tunnel was made in the lumber, and flour, fish and other articles of that nature stowed in between the piles of lumber in a vessel's hold. I have seen the boards come out with ice upon them and have had keed drinks from it. No flour could come in good order that way. We never got American flour direct at all; it all came through Halifax.

Now this is the prejudice against flour, lasting since the forties. Whereas it was not Canadian flour that creates the prejudice, but American flour shipped via Halifax, and making a two months' passage sandwiched between frozen or wet lumber.

To further quote, the conclusion of the chairman of the committee, Hon. A. Weber, was that "there was no great difference between Canadian and American flour; that if Canadians would send good brands and pack it

suitably for that market, their flour would go down as well as that from the States.

In my opinion there is no good reason why Canadian flour should not work its way in upon the West India Islands, just as it has in the Maritime Provinces of Canada, New England and other places. But in order to maintain the West India markets, we must be particular as to quality and packages, and owing to the equatorial situation of these markets, we must get at the consumer as nearly as possible, instead of shipping in quantities to agents who have been for a long time and still are agents for New York and other American houses. Those agents cannot be expected to give due attention to Canadian consignments, especially where it requires a good deal of effort to overcome old-time prejudices.

Individual effort must necessarily remain desultory in action, and more or less disappointing in results. And the only satisfactory way to develop an interchange or exchange trade between Canada and the West Indies is to form a strong association in Canada, including producers, manufacturers and others. We must ship assorted cargoes, and a combination of all the different Canadian and West India interests centered in one co-operative body will alone secure success. Such an association could learn, at a minimum of cost, the different articles which we and they produce which could be disposed of in the respective countries to best advantage."

A NEW BILL OF LADING.

Steady droppings wear away the hardest stone, and United States millers are congratulating themselves, that after years of hard fighting they are likely to get somewhere with an improved bill of lading. What is known as the Porter bill of lading has been adopted by the senate committee on commerce and it is fully anticipated by millers that it will pass the two houses of legislation to afterwards receive the signature of the president, when it will become law. When this bill becomes a law, it will be unlawful for the shipowner to insert in any bill of lading any clause whereby he shall be relieved from liability for loss or damage arising from negligence, fault or failure, in proper loading, stowage, custody, care or proper delivery of any merchandise committed to his charge. Any and all words or clauses of such import inserted in bills of lading or shipping receipts shall be null and void and of no effect. By its provisions, it will be impossible to shift the responsibility which is the chief curse of the document now in use. Between the insurance company and the steamship's responsibility, the shipper and receiver will be fully and adequately protected. This bill makes it the duty of the shipowner to issue a shipping document, stating, among other things, the marks necessary for identification, number of packages or quantity, whether it be carriers' or shippers' weight, and the condition of the merchandise covered by it. This document shall be prima facie evidence of the receipt of merchandise described therein. It provides that for a violation of the provisions of the act, the shipowner shall be liable to a fine not exceeding two thousand dollars; that the amount of the fine and costs shall be lien upon his vessel, which may be libeled therefor, in any district court of the United States within whose jurisdiction the vessel may be found.

HUNGARIAN MILLING.

Commenting on the annual summary of the Hungarian milling trade of 1892 which is given very fully in the Pester Lloyd, our English contemporary, the London Miller, says "Taken altogether 1892 was a bad year for Hungarian merchant millers. Several causes conspired to this end. To begin with, during the first three months of the year the Budapest wheat market was in an inflated condition relatively to the prices ruling in the rest of the world's exchanges. The great fall in the price of the principal cereal which took place at the end of 1891, as soon as it became clear that America was in a position to more than make up for the deficiency of Russia, did not, for some reason or other extend to Budapest. This refusal to recognize facts cost the Budapest and large country millers very dear, as paying extravagant prices for their raw material, they were naturally in no condition to compete with the millers of the United States, who, as far as prices go, are nearly always at an advantage. It is noteworthy that,

whereas in 1888 the mills of the Hungarian capital exported 770,000 metercentners of 220.46 lbs. to Great Britain, their exports last year had shrunk to some 410,000 metercentners; the same items in the exports to France are written as 170,000 and 100,000 metercentners respectively; in the exports to other lands another fall is observable, the former item being 415,000 as compared with 150,000 metercentners. The closing of the foreign markets was to a certain extent compensated by a brisk demand from Austria, in which other half of the empire a long-continued drought had put many mills out of "the running," as the saying is. Doubtless it is due to this exceptional home demand that the last month of 1892 closed at Budapest with relatively low stocks of all the higher grades of flour. The loss of the British market is keenly felt, and strenuous efforts are being made to induce the government, which owns the railroads, to assist the mills in winning back the ground lost in the United Kingdom by such a reduction of rates as shall enable the agents of Hungarian mills to undersell at any rate the American patent flours. Whether the authorities will see their way to carrying goods at a loss is, of course, another matter."

THE FLOUR MARKET.

It is much the same story of the flour market this month as last month, and for some months back no large measure of activity prevails. Prices have not advanced as some millers thought they might when wheat showed a tendency to advance slightly. The fact is, there is nothing to warrant a steady upward tendency in wheat. British markets, as we have taken occasion to remark in another place this month, are as demoralized as ever. A good deal of competition exists in local markets in almost any part of the Dominion, and this is keeping prices down at home, though the fact that some of the smaller mills are frozen up is helpful to prices in some localities. Millers are still hopeful, however, that as the crop year comes to a completion prices will improve.

PRICES OF FLOUR AND MEALS.

Toronto: Straight roller is offered at \$3.15 to \$3.25. The Flour and Grain Trade Bulletin of the Dominion Millers' Association reports Ontario flour and mill products as follows: "Straight grades at \$3.10, \$3.20, \$3.30; patents at \$3.40; 80° patents \$3.50 per barrel f.o.b. for Lower Provinces. Bran and shorts in good demand and apparently scarce." Oatmeals are in good demand; Gold Dust \$3.20 per barrel.

Montreal: Prices are fairly steady. We quote: Spring patent \$4.25 to \$4.50; winter patent \$4 to \$4.25; straight roller \$3.55 to \$3.75; extra \$3.20 to \$3.25; superfine \$2.65 to \$2.90; city strong bakers \$4.10; Manitoba bakers \$3.90 to \$4. Oatmeal: Granulated, bris., \$4 to \$4.10; rolled oats, bris., \$4 to \$4.10; standard, bris., \$3.90 to \$4.00; granulated, bags, \$2 to \$2.05; rolled oats, bags, \$1.95 to \$2; standard, bags, \$1.90 to \$2.

Manitoba: Prices are locally: Patents \$1.95 to \$2; strong bakers \$1.75, \$1.80; XXXX 75 to 95c.; superfine 60 to 70c. Bran \$8 to \$9 per ton; shorts \$10 to \$11.

WHEAT AT PRIMARY MARKETS.

The following table, compiled by the Cincinnati Price Current, gives the receipts of wheat at the points named for the 32 weeks ended Jan. 28, with comparisons:

	1892-3.		
	1892-3. bu.	1891-2. bu.	1890-1. bu.
Chicago	47,325,000	39,711,000	10,572,000
Milwaukee	10,299,000	8,151,000	4,976,000
Minneapolis	46,298,000	41,986,000	33,579,000
Duluth	33,705,000	35,489,000	12,052,000
Totals	137,628,000	126,697,000	61,179,000
	1891-2.		
	1891-2. bu.	1890-1. bu.	1889-0. bu.
St. Louis	23,000,000	22,668,000	8,554,000
Toledo	20,201,000	17,982,000	4,444,000
Detroit	6,485,000	5,892,000	3,124,000
Kansas City	21,559,000	11,203,000	4,053,000
Cincinnati	1,451,000	1,836,000	757,000
Totals	72,916,000	59,561,000	20,932,000
Spring	137,628,000	126,697,000	61,179,000
Totals	210,544,000	185,258,000	82,111,000

It will be noticed that Cincinnati and Duluth are the only points not showing an increase in receipts over those of last year.



Office of the CANADIAN MILLER,
February 15, 1893.

THE GENERAL SURVEY.

A TORONTO newspaper, that decorates its commercial page daily with a cut of a bull and a bear constantly in conflict with one another, either being on top according to the condition of the wheat market of the day, has been obliged to make the bull play the 'under dog' the greater part of the past month. The market keeps decidedly bearish and despite the severity of the weather the bear has been able to keep out of doors and control affairs pretty generally ever since the first of the year. No one, of course, looks for any great measure of activity in the early part of the new year, but we do not know that it was expected that the situation should remain so thoroughly one sided for so long a time.

The situation abroad has continued heavy, and this fact has not helped the market on this side of the Atlantic. This too, despite the temporary brush that was given to May wheat by the bull element a few weeks ago. A bullish coloring has also been given the situation by the Chicago Economist, a paper that is credited with being usually careful in any commercial calculations it makes. The statement made is one that comes into sharp conflict with the bureau of statistics of the United States, and ends with the declaration that not more than 70,000,000 bushels of wheat will remain in farmers hands on March 1st. A fortnight of time will probably settle the question with more satisfaction than any speculation that we may enter into here, but it is to be observed en passant, as we had occasion to note in these columns a month ago, that statisticians are a good deal at sea, as to the actual amount of wheat that is being held in farmers' hands.

Looking ahead until July 1st Bradstreets makes the following calculation: "The indicated total quantity of wheat on hand January 1, 1893, is 287,000,000 bushels, from which we may subtract 170,000,000 bushels, as calculated requirements for food and seed for six months ending June 30, 1893, leaving 117,000,000 bushels for exports and reserves to July 1 next. Should our shipments abroad continue as heavy on the average as 3,000,000 bushels (flour included) each week, concerning which opinions vary, the current half-year would call for exports amounting to 78,000,000 bushels, and this subtracted from the 117,000,000 bushels point to 39,000,000 bushels as the indicated total of wheat reserves on July 1, 1893, which is about 4,000,000 bushels more than we carried over on July 1, 1891."

Interest is manifested in the foreign crops that have already been harvested and those which are under cover of the frosts and snows of the present winter. The reports that reach us are sufficiently conflicting to render it unsafe to prognosticate their likely influence on prices of the future. Patience is the virtue that must needs be exercised, albeit that some will assume to possess more wisdom than the rest of mankind and present a picture in their own colors of what the future will reveal.

CURRENT PRICES OF BREAD STUFFS.

WHEAT.—Toronto: Dull, weak and inactive, fall and red lying outside, said to have been obtainable at 67c.; and certainly to be had readily at 68c.; but no demand heard; spring nominal at about 62c.; rouse at 60c. outside. Manitoba weak; No. 1 hard offered to arrive, at 87½c., with 84c. bid; No. 2 hard sold outside, at equal to 84c., Montreal freights. Montreal: Very little trade doing. Prices: No. 2 hard Manitoba wheat 82 to 84c.; No. 3 ditto 76 to 78c. Chicago: A despatch to John J. Dixon & Co., of Toronto, says: "The market for wheat again lower, ranging from 76¼ to 76½c., closing at the outside price with July about 1½c. discount. At 76½c. there was for a time considerable support from the so-called clique brokers, but even that failed to prevent a weak closing. Outside news continues to be bearish.

Exports this week were only 308,000 bushels, which is a million less than last week and the visible supply on Monday will probably show an increase. It looks now as if the extent of our stock of No. 2 wheat would be largely a matter of storage room. One concern is at ready arranging or rather building new cribs with a capacity of four million bushels that it will be made "regular" and in case of an emergency plenty more room can be made. Weather reports from the winter wheat districts are all favourable. Current prices: May wheat 70½ to 76½c.; July 75½ to 75½c. St. Louis: Cash 67½c.; February 67½c.; May 71½ to 71½c.; July 72½c. Duluth: No. 1 hard, May 73½c.; July 75½c.; No. 1 northern, May 70½c.; July 73c. Milwaukee: Cash 64½c., May, 68½c. Foreign: Beerholm Liverpool Futures, wheat and maize, dull, red winter 58 9/16d. for March, 58 10/16d. for April, 58 11/16d. for May; 68 0/16d. for June; 68 0/16d. for July. Paris: Wheat and flour, slow flour, 47f. 90c. for February, was 48f.; 48f. 10c. for March was 48f. 20c. English country markets very slow, occasionally cheaper. English farmers deliveries of wheat for the past week, 53,447 qrs., average price, 25s. 7d., was 26s. 3d.

BARLEY.—Toronto: Demand slack and prices unchanging; No. 2 lying outside sold at 40c. Buffalo: Dull and nominally unchanged. Quoted: Stee, 68 to 75c.; No. 2 Western, none offered; No. 3 extra, 71 to 72c.; No. 3, 60 to 65c.; No. 4, 53 to 58c.; Michigan, 60 to 66c.; Canada, No. 1, 83c.; No. 2, 77 to 78c.; No. 3 extra, 75c.

PEAS.—Toronto: Demand slow; holders asking 58c.; buyers offering 57c.

OATS.—Toronto: Quiet and irregular; worth about 32c. outside; mixed sold well at 32½c. and on spot at 34½c.

RYE.—Toronto: Export, nil; for home use 55c. was paid cash.

BUCKWHEAT.—Toronto: Scarce and in demand at 46c.

PRINCIPAL WHEAT CROPS OF 1892.

IT is now possible to compile a thoroughly reliable statement of the production of wheat in all the important countries, says the Corn Trade News. Official reports have been published of the twelve chief wheat-growing countries, and we produce the results in a tabular form, omitting all the minor countries and only showing what has actually been officially estimated. The crops of the southern hemisphere we omit altogether in the present table, as they come to maturity in the middle of the ordinary cereal season, and render comparisons difficult or misleading.

It will be noticed that many of the previous season's estimates have been revised for the second and third time, in the light of after-information. The remaining countries not included in the tabular statement grow about 10 per cent. of the world's total crop, as known to the trade. The totals of the three years now under review represent, therefore, 90 per cent. of the total product. Any variation in the yields of the unreported crops would not affect the grand total more than 1 or 2 per cent. We now give the crops of the twelve chief countries:

	1892 bushels.	1891 bushels.	1890 bushels.
United States	515,000,000	611,000,000	399,000,000
Russia and Poland	260,000,000	170,000,000	210,000,000
Ontario & Manitoba	43,000,000	50,000,000	37,000,000
France	312,000,000	212,000,000	328,000,000
India	216,000,000	275,000,000	280,000,000
Germany	97,000,000	85,000,000	91,000,000
Austria	46,000,000	39,000,000	42,000,000
Hungary	134,000,000	135,000,000	150,000,000
United Kingdom	61,000,000	75,000,000	76,000,000
Italy	111,000,000	138,000,000	128,000,000
Siam	79,000,000	72,000,000	75,000,000
Rumania	58,000,000	56,000,000	72,000,000
Total	1,929,000,000	1,928,000,000	1,842,000,000

* Very unreliable statistics.

A GEOGRAPHICAL DOWT.

DON'T say that the compass points to the true north, for it doesn't, except in certain places. The compass points to the magnetic north, which is a point is considerably west of the north pole. When Lieutenant Greeley was at Lady Franklin bay the declination of his needle was found to be very great, the needle pointing to the magnetic pole in a direction nearly southwest



CANADA.

—At Methven, Man., twenty loaves of bread may be bought for \$1.

—Roblin & Co. will build an elevator at Austin, Man., next summer.

—The Royal mill, of the Ogilvie Company, Montreal, Que., is to be increased to 2,000 bls.

—A sorting elevator with a capacity of one million bushels will be erected at Winnipeg in the spring.

—Martin & Warnock, of Ottawa, Ont., are averaging shipments of two hundred barrels of flour daily.

—The grist mill at Young's Point, Ont., is in charge of Mr. Ed. Young; a nice business is being done.

—Shipments of grain to Quebec from the Northwest are reported quieter this month than during January.

—The McKay Milling Co. of Ottawa, Ont., are making large shipments of oatmeal daily to various points.

—The new mill at Edmonton, Man., is nearly ready for operation. The head miller will be Mr. Bell, of Regina.

—With a first-class miller in the person of Mr. G. Pearson, the farmers' mill at Osprey, Man., is doing a large business.

—The farmers of Lumsden, Man., are considering the advisability of building a grist mill, there being none in the district.

—A grain exchange has been organized at Fort William, Ont., with Chas. Braithwaite, president and O. H. Cooper, secretary.

—Ed. Kaddler, aged 23, was caught in the machinery of Ogilvie's elevator at Minnedosa, Man., on 1st inst., and instantly killed.

—British Columbia is sending 241 samples of grain for exhibition at the World's Fair, Chicago, and the Imperial Institute, London, Eng.

—A flour mill is being erected at Oxbow, Man., under the direction of Mr. Leech, who superintended the construction of the Killarney mill.

—A despatch from Winnipeg says that Geo. A. Thompson, leading grain merchant of Montreal, Que., has purchased several million bushels of Manitoba wheat.

—J. Spandlow, of Cookstown, Ont., has leased his mill to W. Farr. Mr. Spandlow has been in ill-health for some time past and is now retiring from active business.

At a meeting of the Farmers' Elevator Co., of Indian Head, S.W.T., it was resolved to proceed at once with the building of Indian Head Farmers' elevator.

The Ogilvie Milling Company, of Winnipeg, Man., have made a shipment of flour to the Royal Agricultural and Commercial Society, of British Guiana, South America.

—Fred. Fry, miller at John Asken & Son's mill, Leamington, Ont., received an ugly blow on the cheek a week ago, while changing one of the belts with a long pole.

Port Stanley, several miles from St. Thomas, Ont., is considering the establishment of a 300 barrel flour mill. A stock company with a capital of \$40,000 will be organized.

—37,000 bushels of grain have been delivered by farmers at Pilot Mound, Man., this season, and dealers expect that the quantity will be increased to 400,000 before the winter ends.

The flour mill at Killarney, Man., is running night and day. Mr. Huck, an experienced miller, and one of the proprietors, is assisted by Mr. Tracy, a first class miller from Ontario.

—Macdonald & Cameron are the proprietors of the new flour mill at Balfour, Man., on the Morris Brandon branch of the Northern Pacific. The mill has been bonded to the extent of \$3,000.

—The grain elevator at Alexandria, Ont., was burned down on the 4th inst. About 15,000 bushels of grain were stored in the building. Nothing was saved but the books and two desks, in saving which Mr. J. E. McGregor, the lessee, nearly lost his life.

The North American Mill Building Co., of Stratford, Ont., are considering seriously the matter of erecting branch works at some point in Manitoba. The proposal is to erect buildings at a cost of \$100,000, and employ about 70 men the year round.

—The farmers of Hamiota, Man., are petitioning the Local Government, protesting against certain restrictions that are

held to by the Great Northwestern Central Ry. in the matter of handling grain through the Company's elevator. The railway is looking for further financial aid from the government and it is asked that this be refused unless they will remove the restrictions complained of.

Senator Boulton, who has come out as an advocate of tariff reform, says the farmers of the Northwest realized last year only 13 cents a bushel on oats, while it cost them 20 cents a bushel to ship them via the C.P.R. to Montreal. Wheat, which sold at from 40 to 50 cents a bushel, cost 80 cents before it reached the markets in the east.

In the autumn of 1887 Schmidt & Edt began business as saw and grist millers at Mildmay, Ont. In the following July a fire destroyed about \$20,000 worth of property, which they had insured for only \$5,500. This crippled them very much and the firm dissolved. H. N. Schmidt then borrowed money from his father and expended \$8,000 rebuilding. Now he suspends payment on liabilities upward of \$30,000. It is now proposed that the creditors form a joint stock company, putting in their claims as capital.

On what is purported to be a Montreal telegram, President Van Horne is reported as saying a large company would doubtless erect an immense mill at Keewatin next season the same as the Lake of the Woods. The company might be induced to locate in Winnipeg, but he thought the water power would attract it to Keewatin. The C.P.R. was preparing plans for a large sorting elevator at Winnipeg with a capacity of about a million bushels to be erected on the company's track at Point Douglas. Construction will likely be commenced early in the spring so that the building will be ready for next season's crop.

The result of the elections of the Toronto Board of Trade is as follows: President—D.R. Wilkie (acclamation.) First vice-president—Hugh Blair (acclamation.) Second vice-president—S.F. McKinnon. Treasurer—J.L. Spink (acclamation.) Council—William Christie, John I. Davidson, W.R. Brock, D. W. Alexander, H.N. Baird, W.D. Matthews, G.M. Bowworth, Arthur White, Michael McLaughlin, George H. Bertram, A. A. Allan, Warring Kennedy, William Ince, Robert Jaffray, Barlow Cumberland. Representatives on Harbor Commission—W.A. Geddes, J.T. Matthews. Board of Arbitration—Wm. Gallraith, J.H.G. Hagarty, J.D. Laidlaw, Thomas Flynn, R.J. Stark, R.S. Baird, R.C. Steele, John Earls, M.F. Brown, J.H. Sproule, Charles Pearson, S. Crane. Representatives on Industrial Exhibition—James Carruthers, M.F. Brown, W.H. Hamilton.

GENERAL.

A Winter Wheat Millers' League has been organized at Indianapolis.

Belgium imported 36,400,000 bushels of wheat in 1892, against 49,760,000 bushels in 1891.

About half the lake carrying capacity in the Chicago harbor has been chartered for storage purposes.

The stock of flour at Chicago Feb. 1st was 74,680 bls., against 83,260 bls. Jan. 1st, and 73,540 bls. Feb. 1st, 1892.

Italy imported, during the first five months of this crop year 14,480,000 bushels of wheat, against 4,944,000 bushels a year ago.

The Harris roller mill at Trendale, a suburb of Minneapolis, was burned on the 4th inst. Loss, \$130,000; insurance, \$99,000.

During 1892 the Duluth and Superior mills ground 1,422,213 barrels of flour, and the shipments from those ports footed 5,689,388 barrels.

It is estimated that the Panama scandal in France has cost that nation 2,800,000,000 francs in the depreciation of French stocks and bonds since the trouble commenced.

McManus, Farley & Co., grain buyers and elevator men, in Crookston, Minn., are in financial difficulties. Liabilities are placed at \$31,000, and assets nominally \$41,000.

The mills in St. Louis, Mo., in 1892 turned out 1,623,371 barrels of flour. Mills outside of St. Louis owned by St. Louis men ground 1,812,992 barrels. The total output of the St. Louis mill interest was 3,436,363 barrels.

A flour trust has been formed. Most of the spring wheat millers in Buffalo, Chicago, St. Louis, Milwaukee, Minneapolis and tributary points have gone into the organization. The new list of prices will go into effect after the next harvest.

Additional mills have been bought by the North Dakota Milling Association at Casselton, Cavalier and Melton, the combined capacity of which is 400 barrels per day. The association now has 32 mills under control, with a combined capacity of 3,500 barrels per day.

Some newspaper man started the report that a Brookfield girl kneads bread with her gloves on. An exchange answers: "We also need bread with our shoes on, with our pants on and with all our clothes on. We need it badly, too, and if our

delinquents do not soon pay up we will need it without any pants at all."

"That's the fellow I'm laying for," remarked the hen as her owner came out with a pan of cornmeal.

—The coldest known location in the world is Verkoyansk, Siberia. The mean temperature at that point is only 48.6 below.

It is proposed in St. Louis to pay salaries instead of fees to flour inspectors. Millers seem to favor this move if the Merchants' Exchange will reduce the inspection fee.

A bill has been introduced in the Wisconsin legislature to induce the state of North Dakota to build and operate at Superior, Wis., a terminal elevator or elevators, to be owned and operated by the state for the use of its citizens to receive their grain.

—James Johnston, who has had charge of the Irwin mill-house and elevator at Greenbush, near Albany, N.Y., for 25 years, entered a bin to fix a defective grain chute. His foot slipped into the opening and the grain from above fell upon and lurked him. When found life was extinct.

—The Nelson Milling Co., at Lisbon, North Dakota, has lately shipped three carloads of flour direct to Hull, England, and gets, as claimed, five cents a barrel more than the receiving firm pays for any other American flour. The Lisbon mill is arranging also to ship its product direct to Norway.

—There are more rumors than ever afloat in Minneapolis as to the cutting of freight rates of flour eastward-bound. The general impression obtains that all-rail rates are being made that are as low as, if not lower, than rates across lake. The fact that the Burlington and Northwestern road, which connects with the Streator route, is carrying such a large proportion of the flour out of Minneapolis, causes general comment.

—The latest milling novelty is a new scalper, the invention of a well-known miller, of Leeds, Eng. It resembles an umbrella or flat cone (with point upwards), which revolves slowly enough for the feed—which falls on its centre—not to be thrown off by centrifugal force, on the one hand, or to drop off by too slow a speed on the other. The course of the meal is thus spiral on a wire-covered surface, the "throughs" passing the mesh, while the chop overfalls at the edge of the umbrella or cone. This machine is an undeniable novelty in milling practice, and its progress will, no doubt, be watched with interest.

PERSONAL.

John Munroe, proprietor of the Globe Flouring Mill, Cornwall, Ont., died a fortnight ago. He was a native of Glenarry county.

—Mr. McCoy Clark, superintending miller for the Ogilvie Milling Company, has been on a visit to Minneapolis looking up new ideas as to milling.

Mr. Ralph Harndon, of Ross & Harndon, millers, Raglan, Ont., died on Jan. 18, aged 77. The deceased was one of the early settlers in Ontario County, a man imbued with a strong public spirit, and was an active participant in political and municipal affairs. He was a good speaker and his voice was frequently heard in the interests of good government and social and temperance reform.

The list of officers of the Toronto Board of Trade, given in our news columns, contain the name of J. L. Spink, treasurer, M. McLaughlin, a member of the Council, and Wm. Gallraith, on board of arbitration, all three creditable representatives of the milling industry, and among the chief officers of the Dominion Millers' Association. Besides these prominent grain men, to wit H. N. Baird, W. D. Matthews, Thomas Flynn, R. J. Stark, J. H. Sproule, and Jas. Carruthers were also elected to important official positions.

TRANSPORTATION TOPICS.

The Grand Trunk Ry. has notified grain dealers that roads south of the Niagara frontier have refused to accept grain consigned to New York for export unless the same is consigned to a place or firm who will take delivery or arrange for furtherance.

—The Chignecto Ship Railway Company must raise the necessary funds to complete the project before the 1st of July next or the subsidy will expire. The directors have issued preference bonds upon the railway to the amount of £350,000, and hope to obtain the needed money by the sale of such bonds.

TRADE NOTES.

As will be noticed from advertisement in another column the Dubuque Turbine and Roller Mill Co., of Dubuque, Iowa, have arranged with John Inglis & Sons, Toronto, to handle the celebrated Haeffner corrugations in Canada, operated under Canadian patents. The same firm will also supply the Canadian trade with the necessary machines for their celebrated One-Break Milling system.

FLOUR, GRAIN AND COMMISSION MERCHANTS AND BROKERS

The Canadian Miller will not knowingly publish the cards of irresponsible parties. So far as we know, the following firms are thoroughly reliable.

For Sale
MANITOBA WHEAT
 Via C.P.R. and Northern Pacific.



Wanted
BRAN, SHORTS
 AND
STRAIGHT GRADE FLOUR
 210 Board of Trade
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C. GOODE
 GRAIN and
COMMISSION Merchant
 +
 ONTARIO AND MANITOBA
 WHEATS IN CAR LOTS
 Consignments promptly attended to
 +
 64 FRONT STREET EAST
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ESTABLISHED 1859
WM. GALBRAITH
 Commission
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Flour and Grain
 48 Front Street E.
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CHAPMAN & CO.
 GRAIN AND
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 MERCHANTS
 ✪ ✪
 Manitoba Wheats
 33 SCOTT STREET . . .
 TORONTO

◀ **STARK BROS. & CO.** ▶
 BOARD OF TRADE BUILDING
 .. TORONTO ..
GRAIN DEALERS
 Specialties:
 MANITOBA WHEAT
 MILLFEED
 AND COARSE GRAINS

Peer & Company
 Flour and
 Grain Merchants
 BOARD OF TRADE
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LAWRENCE COFFEE THOMAS FLYNN
 ESTABLISHED 1846
L. Coffee & Co.
 Grain and
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W. E. TURNER
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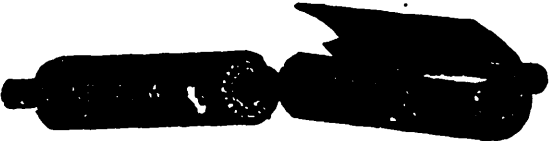
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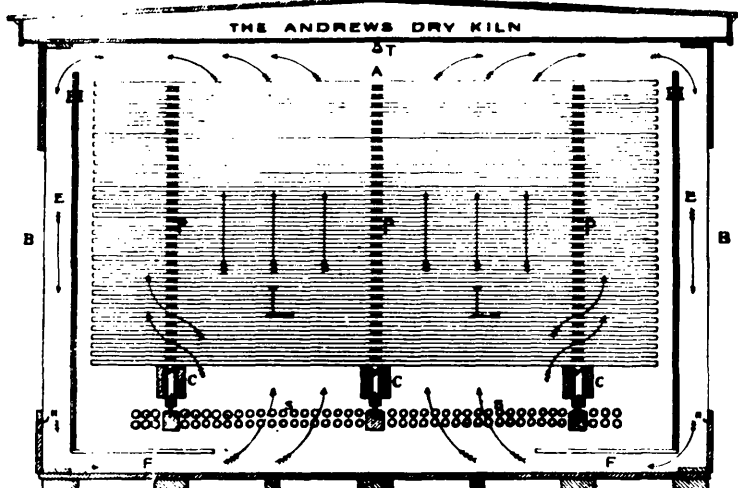
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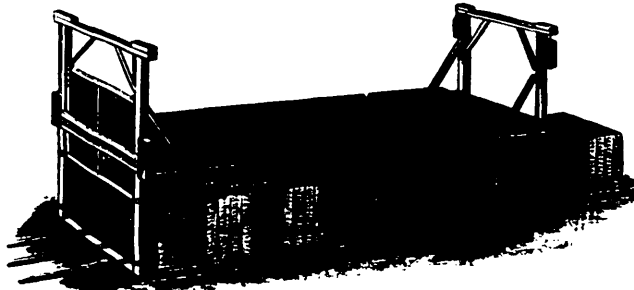
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Outside View of the Andrews Progressive Kiln, showing Lumber placed crosswise the building, on cars.

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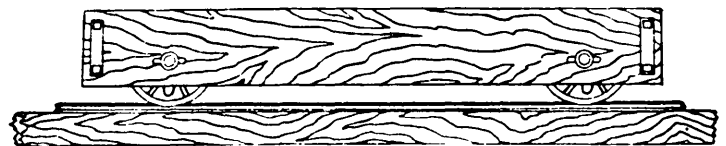
This is the verdict of a Quebec lumber firm, and we can give equal results every time.

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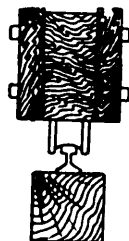
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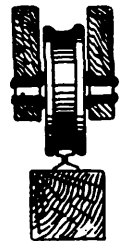
SIDE VIEW OF CAR AND TRACK.



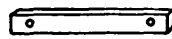
DOUBLE FLANGE WHEEL ON SINGLE TRACK



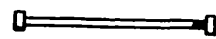
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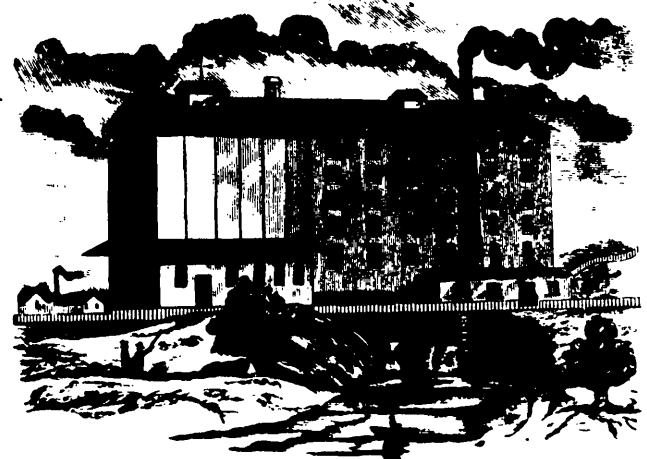
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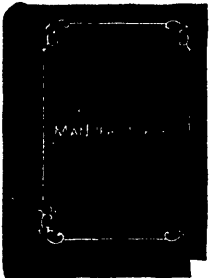
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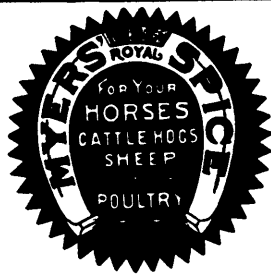
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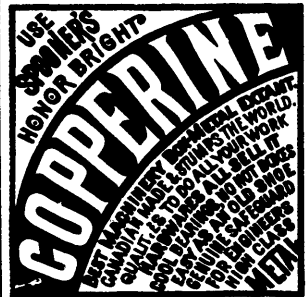
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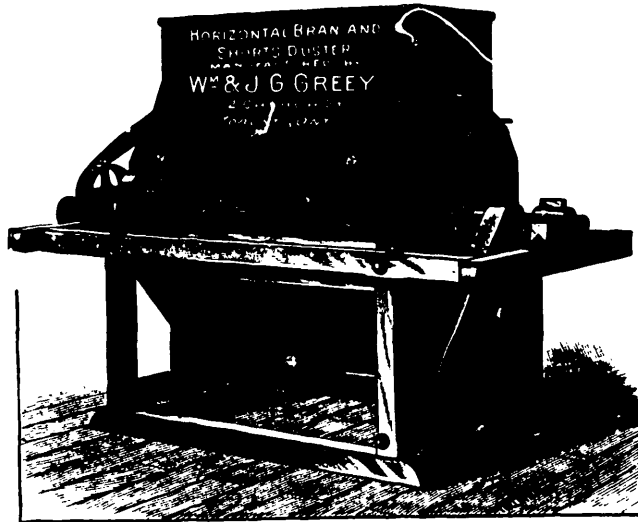
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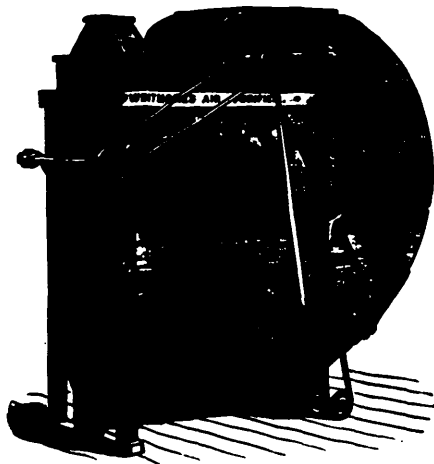
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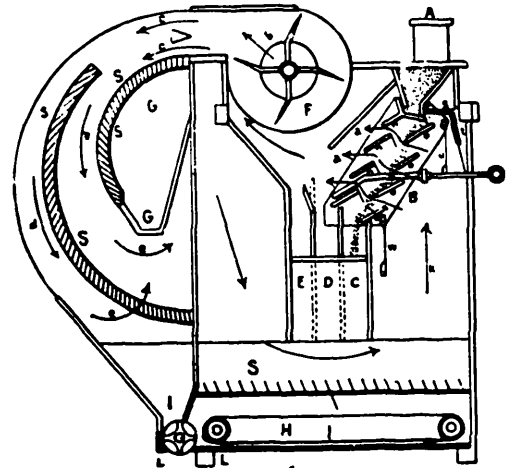
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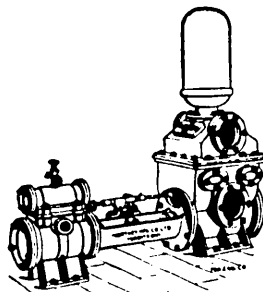
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