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# THE CANADIAN MANUFACTURER

## And Industrial World.

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### FIRE AND BURGLAR PROOF SAFES.

The trite proverb, "Prevention is better than cure," is never better exemplified than when a merchant or manufacturer is shrewd enough to invest part of his capital in the purchase of a safe of a sufficient size to suit his requirements. Let us suppose, for an instance, the case of a man who insures his premises and stock, but trusts to providence for the protection of his books of account, valuable papers, documents, &c., and wakes up some morning, not like Lord Byron to find himself famous, but to find that whilst he has been slumbering in the arms of Morpheus, the fire-fiend has been at work, and his place of business is a thing of the past—a heap of smouldering ruins taking the place of what but a few short hours ago was a handsome structure of brick and mortar. Although the building and stock may have been insured, the loss of the records of business transactions is irreparable, and all this might have been avoided by a moderate outlay for a safe that would have been a perfect protection to what is now a few charred cinders.

We fancy then, when such a man makes a fresh start, about the first piece of office furniture he invests in will be a FIRE-PROOF SAFE, and to aid him in his selection we tender a few words of advice.

Although a safe may be perfectly fire-proof under ordinary conditions, it is impossible to foretell how far it may drop in case of fire, or what may fall upon it, therefore, the strength of a safe as well as its resistance to heat, becomes a serious consideration.

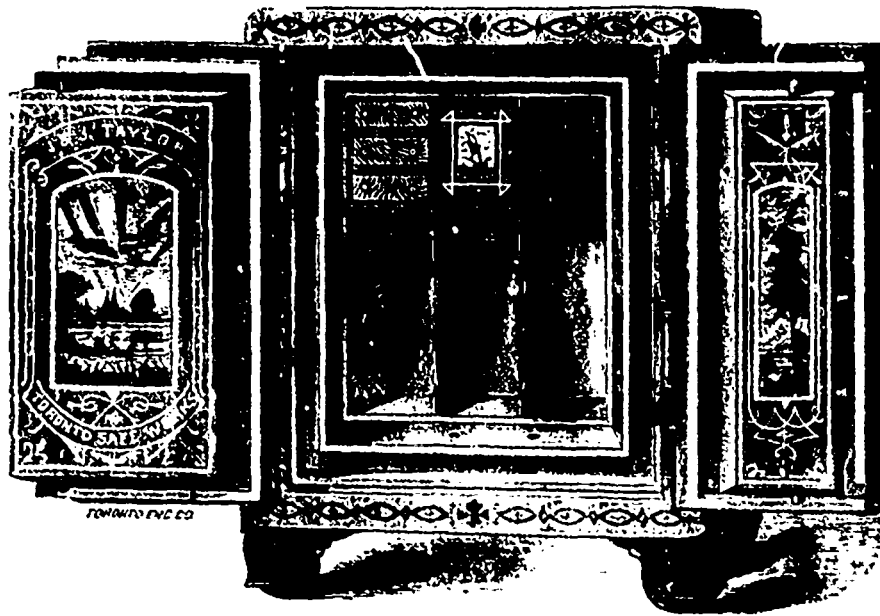
For this reason, as well as for purposes of resistance to the efforts of burglars, as few joints as possible should happen on the outside, and what joints there are should be made strong beyond a peradventure, and so close, if such a thing can be,

as to forbid the insertion of the finest steel wedge; for the wedge once in, it is only a question of time as to the burglars being in and the cash being out.

Another important consideration in the construction of safes is the lock, and probably in no direction has mechanical science made greater progress than in the manufacture of bank and safe locks.

Most individuals remember the time, and it is not in the very distant past, when, as a general rule, the size of the key was an index to the strength of its lock, and no little inconvenience was involved in the carrying of the key of a safe in one's pocket. More than this, the large keyhole furnished an excellent opening for the insertion of the skeleton keys of the burglar, or of a charge of gunpowder or other explosive, with

which to shatter the lock, and render access to the contents of the safe or vault a comparatively easy matter. At the present time all this is changed. A man can carry the key to a powerful lock in his vest pocket with as little inconvenience as he carries his watch-key; or, by the use of the modern combination locks, he can carry it in his head. As a mat-



ter of fact, every first-class safe is now furnished with a combination lock, and the man who retains his mental faculties always carries a key to it that cannot be lost or stolen.

As we have now given for the benefit of intending purchasers, a few valuable hints as to the two great requisites, strength, and a good lock, the next question that presents itself to the inquiring mind is where to purchase such a desideratum.

Probably the best known manufacturers of Safes and Safe Locks in Canada, are MESSRS J. & J. TAYLOR of *Front-St., Toronto*, who have a Dominion reputation for the excellence, durability, and also the skill displayed in the manufacture of

their goods, and who combine with all the latest improvements several special features that are their sole property. One of these, which is of vast importance, is their "*Non-conducting steel flange*" for safe doors. This invention is patented, and its advantages are given below in the maker's own words:—

"During the past twenty-five years it has been our constant aim to improve the fire proof character of our safes, and we have patented from time to time these improvements.

The new Non-conducting Flange is the latest of these. It has been adopted by us, after careful and severe practical tests as to its fire resisting qualities. This change in the construction of our Safes is intended to meet the case of exceptional fires, like those of Chicago and St. John's, where for weeks together, safes were in the burning ruins. The weakest part of all safes is the door, the difficulty being to prevent the heat from passing through between the door frame and the jambs. For all ordinary fires we accomplished this with our Triple Flange of cast iron. But it has been found that in the course of years, the ordinary cast iron becomes weakened by corrosion from the chemical action of the filling, and in case of fire, when suddenly cooled with water, is liable to crack. Not only do we get rid of this drawback by the new flange, but we also secure more complete protection from fire: for instead of cast iron we now use Galvanized Homogeneous Steel, which is much stronger and tougher. The door is constructed with a tongue and groove, within the walls of which is inserted a non-conducting material, which completely breaks the connection between the outside and inside of the safe, and so effectually shuts out the heat, no matter how intense or prolonged.

Another advantage of this improvement is the lessening of the outside measurement and weight of the safe, both of which are very desirable so long as the security is not impaired or the inside capacity curtailed. While our new safes therefore will be the same size inside as before, and be still more fireproof, they will neither take up as much room nor weigh so heavy; at the same time the internal construction of the door is so arranged as to leave an air-chamber behind the filling, and by simply unscrewing the covering plate, access can be had to the lock and bolt work, which may be thus cleaned without having as heretofore to send the entire safe or door to the factory at considerable cost and inconvenience. This new style of safe having so many practical advantages can be recommended as the best now in the market."

From the above it will be seen that this improvement renders a safe as perfectly fire-proof as the ingenuity of man can accomplish, but as we have before drawn attention to the necessity of strength, in case of being subjected to unusual strains such as heavy bodies falling on it from above, we would remark that this firm make their safes with round corners, and the outside casing is made from one continuous plate, which is bent by special machinery, and the ends joined solidly together, thus doing away with the possibility of the springing of any joints: and as any joints that occur in other portions of the framework are planed very smooth, they fit together so closely as to leave no chance for the "enterprising burglar" to insert the smallest wedge, or to pump explosives into the chamber.

Messrs. J. & J. Taylor are sole manufacturers in Canada of *Combination Locks*, and in this department they turn out some beautiful specimens of workmanship. They also manufacture any other description of lock, and are the inventors and makers of the *Prison lock* adopted by the Provincial Government of Ontario.

As an example of some of the larger orders entrusted to them, we may mention that they received the contract for the Fire and Burglar-proof Vaults of the new Canada Life Insurance Co's. building at Hamilton, in competition with a number of firms both in Canada and the United States. This immense job is just completed, and weighs between nineteen and twenty tons. The doors are fitted with four patent Burglar Proof Combination and one double Chronometer Time



Locks, and are perfectly impregnable and powder-proof. They have also lately shipped to Winnipeg similar Vault and Doors for the offices of the Assistant Receiver-General at that place, and have now ready to load, no less than five cars of safes, ordered by parties in the different towns of Manitoba.

Some idea of the extent of the works may be gleaned by giving their dimensions, which are as follows:—The main building is built of red brick, four stories high, 100 x 220 feet. At the rear of this are several accessory buildings, such as Foundry, Blacksmith Shop, Paint Shop, Filling Rooms, Furnace, Bending Room, Stables &c., which extend from the rear of main building a distance of nearly 200 feet. The cellars of the main building are stored with raw material, coal, &c., and there is also a boiler used for heating the building.

The ground floor is used principally as a show-room, and a handsome array of every description and size of Safes is in

view, the bright colors, landscape views, &c., used in their decoration, presenting a very bright and showy appearance. Vault doors, Combination Locks, Chronometer Time Locks, etc., are also on view, and the intricate machinery with which they are fitted, is quite a study to any one with even the slightest mechanical turn of mind. The offices are on this flat, and in the rear is also the Burglar-proof Department.

On the first floor is the Fire-proof Department and Lock Room, where the Combination and other Locks are made, while the second floor is devoted to the cabinet-makers, who manufacture all the inside fittings, partitions, etc. A hoist reaches from cellar to top of building, and as it has a capacity of six tons, the heaviest parts are easily forwarded up or down as required.

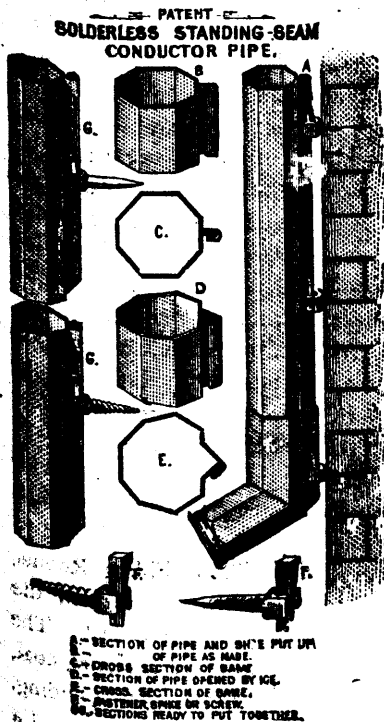
In the various departments from 110 to 120 skilled mechanics are employed, who are all instructed by the firm to pay the minutest attention to every detail of their work, "perfection," not gain in time and consequent loss of quality, being the aim, as the intention is not to place in jeopardy the well-earned reputation they have secured, after years of learning "how to labour and to wait." A great many interesting particulars have been crowded out for lack of space, but we may, at some future period, give minuter details as to the technicalities of the manufacture of these safes, and in the meantime, Messrs J. J. Taylor will be happy to furnish all particulars required.

**SOLDERLESS STANDING-SEAM CONDUCTOR PIPE.**

The ordinary round pipe, with soldered seams, as many householders know, to their serious inconvenience and damage, is very liable to burst, whenever ice is formed within.

To overcome this difficulty various forms of expanding conductor pipes have been devised, the theory upon which they are all constructed being that, if the pipe is made so that it will expand to the same degree that the water expands when freezing, it will not burst.

We illustrate herewith a pipe, which is manufactured by the Solderless Standing-seam Conductor Co., office, 47 Federal Street, Allegheny, Philadelphia. This company owns, and manufactures under, the patent of Irwin & Reber, issued in June, 1879. As will be more clearly seen by referring to the sections marked B and C, which give a sectional view of



the pipe, in its normal condition, it is octagonal in shape. This form, since it gives a smaller area from a given quantity

of metal than the cylindrical, gives an opportunity for each one of the eight sides to expand before a breaking strain is produced upon them.

The parts marked D and E show how the metal is joined by an outside seam, a device which obviates the necessity of using solder, and gives this pipe its distinguishing characteristic and name. These sections also show the manner in which this seam allows the pipe to expand, without at all affecting its integrity. By means of the octagonal shape and the solderless seam, it is claimed that the liability of bursting is reduced to its minimum, and they are certainly correct scientific designs.

The standing-seam, in addition to affording an opportunity for expansion, furnishes a secure hold for the fastener, and prevents the conductor from being placed close to the walls of the building, thus keeping them dry, in case of an overflow caused by obstructions in the pipe. The "Secret" fastener, as it is called, marked F in the engraving, requires no solder to fasten it, inasmuch as it is secured to the standing-seam by means of a wedge, as clearly shown in the section of this cut marked G. By this method of fastening, the conductor is perfectly secured to the wall, and is rendered easy to be put up by any mechanic.

These pipes are made in 6 ft. lengths, which does away with the necessity of numerous cross-seams, and the sections are so constructed that the end which has the bevelled seam is made to slip into the other end of a corresponding section which is opened at the end to receive it. In this method of joining no soldering is necessary in the cross seams either, so that the whole pipe is absolutely solderless.

These conductors are made of cold rolled charcoal iron, galvanized in five regular sizes of 2, 3, 4, 5 and 6 inches. They were awarded a medal at the Massachusetts Charitable Mechanics' Exhibition, and it is claimed by the manufacturers than they are cheaper, more durable and make a more handsome ornament to a building than any other in the market.

The above company have taken out a patent for the Dominion of Canada, on their invention, and desire to sell rights to manufacture under same, or exclusive rights for localities or territories in the Dominion.

**CONTINGENCIES IN PROSPECT.**

There is a certain contingency which may very probably turn up before long, one for which the Canadian Government would do well to be prepared. The contingency we refer to is that of a considerable reduction of the American excise duties on beer, spirits, and tobacco. Were this to take place, our duties on these articles would have to be correspondingly reduced too, otherwise there would be smuggling and loss of revenue on a large scale. In the articles named there is at present no smuggling to speak of, the duties being nearly the same on both sides of the border. There are reasons, however, for believing that a large reduction of the American duties is among early probabilities.

The long tariff debate now going on at Washington is not likely to be wholly without results. There is a considerable majority in favor of thoroughly revising the tariff, in some complete and systematic way, though what particular method

of doing the work will be adopted remains to be seen. A measure now pending, for revision by a committee of members of Congress and business men together, is most probably what will be determined upon. That there will be a large reduction in the revenue collected is certain beforehand. The national debt is being rapidly paid off; and, unless the United States should become involved in war, the present revenue will not be required. While protectionists all over will stoutly resist any lowering of the duties on manufactured goods, the South will almost as one man insist on a large reduction of the duties on tobacco and spirits. This, again, cannot be agreed to except on condition that the duty on beer be reduced too. Whenever the revised tariff comes up for adoption, the Southern members will make it a *sine qua non* that the excise duties be reduced, ere consenting to pass any tariff measure at all. Those protectionists who do not feel specially interested in excise duties will be obliged to concede the point, in order to carry their own, and the South will have along with it the majority of Western votes, too.

It is quite on the cards that all this may be accomplished ere the Congressional work of next year shall have been completed. The South is now largely converted to protectionism, what before it was opposed to, and the imposition of duties to promote home manufactures is rapidly becoming as popular there as in the North. But none the less will Southern members, and Western members too, make the reduction of the excise duties a condition of their support.

Should this prove to be the course of events over the border, Canada will most unquestionably have to follow suit. Our six millions or so of revenue from excise duties would have to come down by half at least. Besides this, there may probably be a popular demand for a reduction of the sugar duties. Not that the protection given to refining at home is to be impaired, but merely that the sugar duties may be reduced in proportion all round, the protection to the home industry still remaining. A considerable reduction might be made without injuring the prospects of the beet sugar industry, for twenty-five or thirty per cent. protection in this case ought to be ample. And there seems no good reason why so necessary an article as sugar should be burdened with an average impost of from forty to fifty per cent. The abolition of the tea duties is one step forward, and it foreshadows another step in the same direction, which must be taken ere long. We are seeking to create a direct trade with the tropics—with countries whose productions differ greatly from those of our own. This northern land of ours on one hand, and southern countries on the other, are naturally customers to each other and not competitors. On the true principles of protection, we cannot have too much of free trade with the tropics.

All this is but a mere forecast of probabilities, of things which may or may not happen. But on the whole they are more likely to happen than not, and it may be none too soon to draw attention to them and to keep them in sight.

#### WAGES, AND THE COST OF LIVING.

Both in Canada and in the United States the year has opened with a time of strikes. With ourselves the trouble has so far been chiefly among railway men and in the building

trades, but other occupations have also been affected. In Hamilton the tailors employed by the wholesale clothing trade carried a point or two in their own favor,—and the trouble is now over. Some concessions are likely to be made to the sewing girls in the Toronto shoe factories, probably before the present week be past. In the case of the bricklayers and their helpers the difficulty was easily arranged, the former getting their pay advanced from \$2.50 to \$2.75 per day, and the latter from \$1.50 to \$1.60. This was what they asked for, and they appear to have acted wisely in not asking too much. The carpenters, it is to be regretted, were not as well advised. They demanded the increase of from \$1.50 to \$2.00 per day, which the masters still refuse to concede. It is thought that had they asked for only 25 cents advance instead of fifty, they would have got it; and even now the masters might do worse than to make this offer. The Grand Trunk authorities refuse to concede anything to the men employed in handling freight, and traffic is blocked in consequence. In mills and factories generally, and in the iron trades, matters have so far remained quiet.

The increased cost of living is, of course, the main reason given for these demands for higher wages. It becomes a question of very practical interest to determine in what department of family expenditure the increased cost of living is to be found. It certainly is not in clothing, to any extent sufficient to affect greatly the expenditure of working men and their families for their every-day clothing. Among dry-good and clothing stores competition is so lively that people can get as good "bargains" now as they could some years ago. Nor is it to be found in tea, coffee, or sugar, which articles are positively cheaper now than they were three years back. Admit that here coal is dearer by 50 cents per ton because of the duty, the difference to the majority of working men would not exceed \$2.50 for the season, or say the price of two days' work. The number is but few of *bona fide* working men who consume more than five tons of coal per annum. Rents have probably advanced somewhat, but it cannot be said that ordinary working people's houses are at much higher rents than before.

The increased cost of living must be located somewhere, however, and the thing is not difficult to do, after all. The advance which most runs away with working men's wages is in meat, butter, eggs, and cheese; and the farmers are getting the difference. The great demand for these articles of sustenance in Great Britain, also in the manufacturing districts of the United States, is the plain and visible cause. Further, since the times have improved working people have raised the prices of those articles against themselves by their larger purchases. It is quite a likely supposition that a workman's family may in good times consume half as much again of meat and butter as when times are hard, and work scarce. In both the United States and Canada the demand for meat, butter, eggs, cheese, and fish must have greatly increased among working men since the times became better; while Great Britain is every year increasing her purchases of these articles abroad. Cheese, for instance, now retails here at sixteen cents; but for the English demand it would be plentiful at ten or twelve cents. Butchers tell their customers no more than the truth when they say that good beasts are scarce and high, because so much of the pick of the market is sent to England. All this must be putting money in the farmers'

pockets, but the working man's small purse has to suffer for it. The higher prices for bread and potatoes also makes an appreciable difference in the working man's weekly expenses.

Having got so far we have next to inquire whether high prices for provisions be a good to be rejoiced in, or an evil to be deplored—in Canada. Would it be a benefit to Canada were wheat selling at seventy-five cents, and beef and pork by the quarter at three or four cents? We can scarcely say that it would; to do so would be revolutionizing all Canadian traditions as to what makes good times in these Provinces. Free traders, who blame the tariff for increasing the cost of living, argue that the better times are due almost wholly to the larger aggregate of money received for produce exported. Admit this meantime to be correct, and still higher prices for produce would make the country still more prosperous. If flour were eight dollars a barrel, and beef twenty cents a pound, the average of crops remaining the same, farmers would have more money, and Canada would be still better off than at present. We cannot argue that high prices of bread and provisions are bad for Canada, without rejecting all Canadian traditions as to what is best for the country.

But can we discover any probability that prices of bread and provisions will be permanently lower in time to come? The answer must be that, though the price of bread may come down, and even stay down for a while, no such turn is likely to occur in the market for meat and provisions. In England, all the vastly increased import of meat and cheese from America fails to lower prices. There the butchers sell American meat for English, and at the highest English prices, too. The poor man cannot see a half-penny per pound difference in the price of meat for all the ship loads of fat cattle and of bacon coming from America, for, be the supply ever so great, the demand absorbs it all.

From all these facts what is the practical inference to be drawn? This, namely, that the increased cost of bread and provisions, but of the latter especially, must be balanced by some increase of wages generally. This is what must come, and we have no oracle of wisdom to tell us how it can be avoided. There remains for employers nothing else than to look the prospect in the face, and prepare for it. We may have cheap clothing, cheap groceries, and even cheap bread in time to come, for a while. But prices of meat, butter, eggs, cheese and fish will not come down. If anybody can show us any other prospect we shall be glad to pay all due attention to the proofs given.

#### WATER POWER.

The original source of the power obtained from a water wheel is the heat of the sun. In fact nearly all the power made use of on this globe, whether animal, steam, water, or wind power, has its origin in the same great light-giving, life-sustaining source.

The power obtained from a water wheel is derived from the weight of the water while descending from a high level to a lower. This descent is constantly going on in all the rivers and streams on earth, and were there not some external power maintaining the supply it would soon become exhausted and

all the rivers be dry, and the whole water of the globe accumulated in the oceans.

The evaporation which takes place, caused by the heat of sun, is the external force which maintains this supply.

The amount of power thus given out daily by the sun in the form of radiant heat must be enormous, and far beyond our comprehension. But a very small fraction of it reaches our globe, and yet when the attempt is made to estimate the amount of even that small fraction, our arithmetic is too limited.

Those who live in great cities and pay water rates have some little practical acquaintance with the cost of pumping up to a slight elevation a few million of gallons of water per day.

The rain-fall in the neighborhood of Toronto is not excessive, and yet to raise the amount of water which annually falls here to the elevation of low rain clouds, would require on each square mile an engine doing over 200 h.p., and working 20 hours a day all the year through.

The water descending Niagara Falls has been estimated to be 670,250 tons per minute, and would require over seven millions horse power to pump it back again. The Falls would yield that amount of power were it possible to apply machinery to intercept it, yet the supply for this immense fall is constantly maintained, and the water is not merely lifted up the 150 feet or so which it tumbles over at Niagara, but is raised up into the cloud region.

From these illustrations some idea can be formed of the immense amount of power stored up in our running streams and water-falls. The total power of any fall, is simply measured by weight of water multiplied with the distance fallen. This total amount can never all be made available, as losses occur from various causes.

There are three ways by which the power may be obtained from the falling water, and all water wheels come under one or other of these three, viz., by weight, by pressure, or by impulse.

Which kind should be used in any given case must be determined by circumstances. In no case can any kind of machine be made to yield more power than the amount due to the weight of water and the distance fallen, but there may be a very large loss, and one kind of wheel being substituted for another frequently diminishes the loss so much as almost to lead one to believe that the wheel itself was a source of power.

To diminish the necessary losses to the smallest amount possible is the aim of the skilful maker of water wheels, and the difference between the old-fashioned overshot straight float wheel, so often introduced by painters in their picturesque landscapes, and one of the modern turbines, is about as great as between a steam engine of the last century and an automatic expansion engine of the present day.

#### RAILWAYS AND MANUFACTURERS.

It will be allowed that the railway question has something to do with manufacturers. It has so for this reason, that whether any certain manufacture shall or shall not succeed depends not so much on the natural adaptabilities of the place

where it is located as upon the freights which may be imposed by a railway company.

This is something which ought not to be. Say that at a certain place there are natural advantages for a certain manufacture, what hinders? This, namely, that a railway company controlling the district may impose such conditions as shall render the manufacture unprofitable. Then, it may be said, the idea of manufacture there will be given up. But this is not always the truth of the matter; the enterprise is sometimes entered into, and a heavy adverse fight against freights undertaken. After a time the company collapses, or seeks some other location, and then it is said that the N. P. has failed.

The truth of the matter is, that railway companies have it in their power to make or mar the fortunes of many manufacturing establishments. You start at a certain point, a railway company makes freights, and you are ruined. The consequence is, that points exposed to ruin are shunned by manufacturers. This much may be said, the railways will gain nothing in the end, but only lose. Manufacturers will seek competing points. It is an important fact that machinery can be moved. So can capital, and enterprise, and labor. Railway companies should consider this. Take the country all over. There must be many valuable locations, valuable by reason of natural circumstances, and wonderfully well suited for this or the other manufacture. But nobody dares venture upon it, and why? Because the only railway touching there imposes exorbitant freights. Consequently, the manufacturer goes somewhere else, against natural advantages, but where railway advantages are greater. Let us imagine a case which will do to make the point with, though it is rather unlikely to happen. Somebody proposes to start a paper mill at Cobocok. Were the natural advantages of the place ever so much before those of any other place in Canada, he could not do so except on permission of the company owning the only line that touches there. In other words, the railway companies are dictating the location of manufactures. But they do not gain, because the manufactures are removed to competing points. And to these points they are going very fast.

#### TRANSMISSION OF POWER BY BELTING.

##### IV.

For main driving belts it is seldom that in practice less than about four-tenths of the circumference of the smallest pulley is in actual contact with the belt. The diameter of the smallest pulley should be as large as can conveniently be used, if a double belt is to run on it, as the bending of the leather in turning over the small circumference both absorbs power and injures the belt. No definite rule can be laid down to determine the smallest size of pulley, but it no doubt bears some relation to the thickness of the belt, and the thicker the belt the larger should be the pulley. The writer ventures to suggest that the pulley for a single belt should be not less in diameter than 72 times the thickness of the belt, and for a double belt not less than 96 times the thickness of the belt.

To apply the principles already explained to practical use, the following steps have to be taken:—

1st. Determine the average horse-power to be transmitted by the belt.

2nd. If it is a single engine, multiply this amount by  $1\frac{6}{10}$ , and if the main pulley is driven by two engines with cranks at right angles, multiply by  $1\frac{1}{10}$ . This will give the *greatest* amount of power likely to pass through the belt at any time.

3rd. Multiply the circumference of the main pulley by the number of revolutions per minute, in order to get the speed of the belt in feet per minute.

4th. Multiply the greatest number of horses-power by 33,000 and divide by the speed of the belt in feet per minute, which will give the number of pounds pull on the belt necessary to transmit the horse-power.

5th. Double that amount, so as to get the probable gross tension on the tight side of the belt.

6th. This gross tension has to be divided by an amount depending upon the thickness of the belt, in order to determine the breadth necessary for the given horse-power. For extra thick, say  $\frac{3}{4}$  inch strong double belting, the divisor may be 240, for ordinary double belting 180, and for single belting about 90.

The following formula puts the foregoing into smaller compass:—

B = Breadth of belt in inches.

H.P. = Average horse-power,

V = Speed of belt in feet per minute.

Then for a single engine and ordinary double belt,

$$B = \frac{3\frac{1}{10} \text{ HP} \times 33,000}{V \times 180} = \frac{586 \text{ HP}}{V}$$

and when the breadth and speed of belt are known, and the horse-power required,

$$H P = \frac{B V}{586}$$

In the case of the belt being used on a double engine with cranks and right angles, substitute the number 404 for 586 in these formulæ.

For single belting of average strength running on pulley driven by a single engine, the formula becomes

$$B = \frac{3\frac{1}{10} \text{ HP} \times 33,000}{V \times 90} = \frac{1180 \text{ HP}}{V} \text{ and } H P = \frac{B V}{1180}$$

These formulæ give, as results, broader belting for the amount of power than is frequently found in actual use, but the quality of leather varies so much that an exact rule can only be given when the actual strength of the leather belt at its weakest part is known. Further, a belt running constantly under a load which never exceeds the elastic limit will last for many years, whereas one strained beyond that limit will very soon wear out.

(To be continued.)

TO PREVENT BURSTING OF WATER PIPES.—With the view of avoiding the bursting of water pipes by freezing, make them elliptical in section. As the water expands to form ice, it will alter the shape of the pipe, causing it to become circular in section, and therefore giving more room for the ice. It is proposed to squeeze the pipes into their original shape, when by a succession of frosts they have been rounded.—*American Manufacturer.*



To Mill Owners and Manufacturers.

USE

**F. E. DIXON & CO.'S**

PURE BARK-TANNED

**Star Rivet Leather Belting !**

**FIRST PRIZE FOR  
LEATHER BELTING**

—AT

Provincial Exhibition, Ottawa, - 1875.  
" " Hamilton, 1876.  
" " London, - 1877.  
Industrial Exhibition, Toronto, - 1879.  
" " Toronto, - 1880.

**EXTRA PRIZE FOR  
Genuine Oak Tanned Belting.**

—AT THE—

Provincial Exhibition, Hamilton, 1876.



**INTERNATIONAL MEDAL**

—AT THE—

Centennial Exhibition,  
PHILADELPHIA, 1876.

FIRST PRIZE FOR

**BELTING LEATHER**

AT THE

Industrial Exhibition, Toronto, 1879.  
" " " 1880.

Our Belting is **Short Lap**, and is warranted to run straight and even on the pulleys, and certainly cannot be surpassed in quality by any other Belting in the market at the same prices.

Our **Leather is of Pure Bark Tannage**, and consequently is much more durable than the chemical tanned leather of which most of the American Belting imported into Canada is made, though sold under the name of **Oak Belting**.

To accommodate those who desire to have a really genuine article of **Oak Belting**, we beg to say that we keep in stock a quantity of

*Oak Leather of the Celebrated Tannage of J. B. HOYT & Co., of New York,*

and as the duties on imported rough Leather are much less than on the manufactured Belting, we are thus enabled to sell the Belting made from this quality of Leather much cheaper than it can be imported.

**LARGE DOUBLE BELTS A SPECIALTY.**

Please note that our Price List averages **Twenty to Twenty-five per cent.** lower than the American Price List at which all American Belting is sold in Canada.

Lace Leather of the very best quality always on hand.

*All Work Warranted.*

*Orders Solicited.*

**F. E. DIXON & Co.,**

**81 Colborne Street, Toronto.**



AMERICAN  
LEATHER & RUBBER BELTING

---

**W**E do not attempt to compete in price with some makers, who, in order to effect sales, offer such large and extra discounts that the quality has to be reduced, but we furnish Belting at a fair price that will run straight and even, and such a quality that cannot fail to do good service. We keep on hand a larger stock than any other makers or dealers in Canada. We fully warrant every belt we sell.

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ORDERS SOLICITED.

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**H. L. FAIRBROTHER & CO.,**  
Manufacturers.

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Canadian Warehouse, 65 Yonge St.,  
TORONTO.  
**Geo. F. Haworth, Manager.**

THE  
**Canadian Manufacturer**  
AND INDUSTRIAL WORLD.

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**Editorial Notes.**

A noticeable feature of the strike in which the Toronto female boot and shoe operatives are engaged, is the ready assistance that has been extended them by other trades-unions. The age of chivalry has certainly not passed, when we find that men at work at other trades are voluntarily assisting, with money that they can ill spare, the girls that are striving to redress what they consider a grievance.

The Welland *Telegraph* has, for several issues, devoted considerable space to reports of the progress made by the different industries in that town and vicinity. From the accounts given, it appears that the various industries are flourishing apace, and are not only much busier, but employing a large aggregate number of extra hands. The *Globe* commissioner had better pay a visit to that locality.

The Mears Chlorination Co. of Philadelphia have kindly sent us a neatly-bound book of over 100 pages, entitled "Industrial Progress in Gold Mining," which is a review of the Gold Mining industry in the United States. It contains, amongst others, interesting articles on the first finding of gold in that country; the present areas of the precious metal in the United States and in the Old World; the different methods of working the auriferous ores, their advantages and disadvantages; the Mears improved Chlorination process; and is, in fact, replete with valuable information for those engaged in gold mining.

We have to thank Mr. J. M. Allen, President of the Hartford Steam Boiler and Inspection Company, for a handsomely bound volume of *The Locomotive* for 1881. *The Locomotive* is a monthly journal, issued by the Company, and devoted to circulating information as to the cause of boilers exploding, and many other facts and theories in regard to the use of steam, which are of great value to those interested. The work is exceedingly well illustrated, and, finding its way into the hands of engineers, and others in charge of boilers, is certainly an effective means of preventing casualties, as the information given in its pages is calculated to excite its readers to extra vigilance and care of boilers in their charge.

Not long since we read a good deal of the influence the extensive shipments of potatoes from Great Britain to the United States was likely to have on the carrying trade between the two countries. There is now a possibility of another scare in this direction, as the great influx of emigrants from Europe will severely test the carrying capacity of the ocean steamers. It is not unlikely that the freight rates to this country, which are at present high, will be increased, as there is sure to be an immense emigration from the Old Country to the North-West during the coming summer, and the Canadian lines will have all they can do to accommodate the expected rush of passenger traffic.

Mr. Thomas Galbraith, Junr., Financial and Commercial Editor of the *Globe*, has again issued this year his Financial and Trade Review of the City of Toronto for 1881. The most prominent features of the Stock Exchange, Wholesale Trade, and Manufactures, are given in a concise form; and also some valuable statistics, as to increased volume of business transacted, comparisons of prices, &c., which must have entailed a great deal of work on the compiler. By a table before us we find that there are three hundred and twenty-two manufacturing establishments in Toronto, with a capital invested amounting to \$5,546,000, and turning out annually products to the value of \$15,735,000.

The town of Peterborough has for some time past been excited over the Car Works By-Law, to enable the town to take stock to the amount of \$20,000 in that enterprise. The fight, which has been bitter on both sides, culminated at the polls on Thursday of last week, the advocates of the By-Law gaining a signal victory by a majority of two hundred and sixty-four. The necessary two-fifths of the total vote was 330, and as 391 were cast for the By-Law, it was carried by 61 votes in excess of the limit. The result was due in a great measure to the efforts of the workmen, who voted *en masse* for the By-Law. It is now safe to assume that work on the buildings will be shortly commenced, and another "tall chimney" added to the list.

On the 6th inst., a number of gentlemen engaged in the importation of coal, met the Montreal Board of Harbor Commissioners for the purpose of discussing the scheme proposed by Mr. Keith Reid for the more speedy unloading of colliers in the port of Montreal, with a view of its being taken in hand by the harbor board. Mr. Keith Reid laid on the table plans, and explained the proposed schemes. He adverted to the delay sometimes occasioned under the present system, alleging it to be productive of unnecessary risk and cost to the coal importers, and proceeded to explain the proposed remedy, which consisted of the erection of a sufficient number of movable steam cranes and the reservation of certain portions of the wharf for "dumps." Under his scheme he claimed that work which now took thirty-five hours could be done in fifteen; he said that the plant would be so arranged that the wharf would be available for general cargoes, and concluded by saying that the scheme had the general approbation of the trade. After some time spent in discussing the proposal, the Chairman stated that it was the feeling of the Board that they could not undertake the scheme, and intimated that if any proposals as to a company being formed to carry out the work were made in black and white to the Board, they would be fully considered at their next meeting.

## Manufacturing Notes.

The CANADIAN MANUFACTURER will be pleased to receive items of industrial news from its readers in all parts of the country, for publication in these columns.

Notes of new machinery, improvements, increase in capacity, &c., will be of special interest. All communications must be accompanied by the writer's name as a guarantee of good faith.

The Kingston Knitting Mill Company have ordered an 80 horse power Corliss engine at Toronto. All the machinery will be ready to ship by the 15th of June.

Corriveau's new silk factory at Montreal, costing \$100,000, will be ready to commence work on 1st May, and will give profitable employment to 300 operatives.

Marked progress is now being made in the work at the St. Croix Cotton Mill. The machinery is rapidly arriving and being put in place. It is stated by the managers that the mill will commence operations by the first of May.

The Ontario Toy Company is the name of a new industrial enterprise recently started at London. The company has erected a large brick factory on King-street, and is employing fifty hands, who are working night and day to fill orders. They manufacture children's carriages, swings, &c.

A company is being formed in Winnipeg for the purpose of building a large dam across the Little Saskatchewan at Rapid City, the cost of which is estimated at \$50,000. The object the company has in view is to lease water power to parties who wish to erect mills in Rapid City. It is said that the dam will have sufficient head to run 50 mills with six run of stones each.

The Humberstone Iron Works have about completed an artesian well boring machine for Messrs. Sherk & Bros., capable of boring a six-inch hole. This same type of machine has been tested, and does its work satisfactorily. The proprietors, Messrs. Neff & Misener, are enterprising, and the work done at this establishment is giving entire satisfaction in every respect.

During the past week fifteen car loads of machinery have been delivered at the Thorold Knitting Factory, and there are four or five car loads yet to be delivered. The freight alone on the machinery amounted to \$1,600. The machinery is being rapidly put up under the superintendence of a machinist from the works where it was made—Tatham's, of Rochdale, England.—*Thorold Post*.

Mr. E. G. Woods, formerly of Sherbrooke, but late of Cornwall, has leased the interest of Mr. Fletcher Thompson (of Thompson Bros.) and will engage in the manufacture of bobbins, spools, &c., such as they have been doing, the firm name not to be changed. Mr. F. Thompson is compelled by poor health to give up, for a time at least, indoor employment. This firm have been doing a good business, and we hope will continue to do so.

Mr. Rufus Stephenson received the other day a telegram to the effect that a large manufacturer of stove bolts hitherto carrying on his works on the American side of the river, had removed his entire stock and machinery to the Canadian side with the intention of establishing his factory at Wallaceburgh. He has taken this step in the anticipation of an export duty being placed on elm logs, as requested by the Canadian manufacturers.

The Maritime Draw Cut Mower Company has leased for a term of years a building near the Amherst, (N.S.) Railway station, for a factory, and purchased nearly \$3,000 worth of machinery, which is expected here in a few days. A manager for the works, who is well recommended for experience and skill, has also been engaged in the United States, and every preparation is being made for manufacturing the mowers.—*Amherst Gazette*.

The Thorold Pulp Mill is having certain improvements and additions made to it, to meet the largely increased demand for its commodity. The first is the insertion of another water wheel, 12 feet in diameter, which will give 20 feet head additional of water. The two sets of stones in the

mill, which were recently broken, are to be replaced by stones of the latest improved kind. These improvements, it is claimed, will almost double the capacity of the mill.

A meeting was held at Winnipeg, recently, to organize a joint stock company to manufacture paper in Rapid City. A number of Toronto capitalists were present. Mr. W. C. Copeland, formerly of Mr. Riordon's paper mill, Merriton, is one of the principal movers in the enterprise. Mr. Balkwell, of Rapid City, agrees to furnish the necessary land and water power. The capital stock of the company is \$10,000, and half of the amount has been subscribed.

It has been some time since much was said about Mr. Malcolm of the Scotland Woollen Mills coming to Norwich with his business. He has evidently not abandoned his purpose to come. He offers now to do so in consideration of the same bonus that was given the Ruhl Bros., that is \$2,000 for two years without interest, and this amount has, we believe, nearly been subscribed by private citizens. John Pollock has offered him a free gift of a suitable site.—*Sentinel-Review*.

Mr. J. B. Smith recently received a communication from a celebrated American glucose manufacturer which he handed to the Mayor, asking if there was an available site on the Welland Canal where one hundred and twenty horse power could be had. He purposes to establish a factory employing seventy-five to one hundred hands. His Worship is in a position to say that there is such a site available, and right in the town of Thorold. Steps are being taken to secure the factory here.—*Thorold Post*.

The Brantford *Courier* says: Mr. Snider photographed a fire-proof Champion Engine No. 5, which has just been turned out by the Waterous Engine Works Co. This Engine is one of unsurpassed excellency, comprising as it does durability with lightness. This firm has obtained notoriety not only on this continent but in Europe—where they have been making large shipments of their machinery lately—for the quality of their work, and the present engine is a still further example of how the work is conducted.

The Ontario Cane Sugar Co., of Tilsonburg, it appears, has a new President, who, it seems, has infused new life into that concern, and it has been announced that preparations have already commenced for next season's crop, and they will pay cash for cane delivered at their factory, provided it comes up to the standard, that is, the juice of the cane must stand 10° Baume, which they say is low. If the farmer does not understand the "Baume" business, it will be satisfactorily explained to him who grows amber cane.

We understand a practical gentleman has been corresponding with Moncton parties in regard to the feasibility of establishing a rolling mill in Moncton. Correspondence has been had in regard to the cost of a suitable plot of ground for the purpose, and it seems quite probable, if the necessary encouragement is held out, the works will be established here. Moncton is looked upon as a favorable place for the location of an enterprise of this nature, and we hope yet to be able to chronicle the establishment of extensive works.

Things are going on merrily at the paper mill. Just now the engine is being taken down to admit a new foundation being placed under it. Mr. F. Smith, who had charge of the engine some years ago, and who has since been employed on several of the steamboats running to Lindsay, has been engaged to take charge of this part of the work. On Thursday a quantity of square timber for sills, &c., arrived, and will in a few days be framed and placed in position. The estimates for the machinery have been received by Mr. McKay, and forwarded to the company at Montreal for approval.—*Peterborough Review*.

Belleville carriage makers are beginning to share in the benefit of supplying the great market which the N. P. has opened for them in Manitoba and the North-West. Mr. W. J. Baker shipped for Manitoba on the 5th inst., 25 buckboard waggons, 5 open Dexter Queen waggons, 1 skeleton wagon, 1 democrat wagon, 1 open end spring buggy, and 1 top-end spring buggy. These articles are the produce of Mr. Baker's factory, and are of excellent quality, the buggies especially being first-class. This consignment will give a favorable opinion to purchasers of the excellence of Belleville manufactures, and will doubtless lead to further extension of Mr. Baker's enterprise.

The Perth car shops, the *Expositor* says, are progressing rapidly. About 50 men are employed on them. The third building, 140 x 100 feet, is about completed. On the fourth building, 240 x 66 feet, the sills are laid and a large portion of the heavy frame erected. The engine house, a separate building, will be built thirty feet west of No. 3. It will be 31 x 42 feet, and will contain four boilers and an engine of 120 horse-power. A dry-kiln house, 22 x 68 feet, will be placed near the river, and there will

also be a building between the paint shop and No. 2, 30 x 45 feet, for storing iron, &c. The buildings are being roofed with Sparham's cement roofing, which is made with two layers of thick felt, covered with a composition of coal tar, mixed with ground mica, soapstone and plumbago, with a light top dressing of sand. It is claimed that this roofing is superior to gravel roofing, as it will not run or crack with the heat of the sun. A second siding has been laid down on the south side of the building.

On Tuesday last our reporter paid a visit to Wylie & Co.'s mill, which has been in running operation for several weeks, and was courteously shown through the various departments by the manager, Mr. J. W. Wylie, and the superintendent, Mr. Ab. Proud. We found the old furniture factory—better known, perhaps, as the "bonus" factory—transformed into a neat one-set woollen factory, and fitted with the most improved machinery for the manufacture of shawls. The weaving and finishing departments are on the lower floor, the carding and spinning departments occupying the upper one. The machinery is run by steam, a first-class 40-horsepower engine and boiler filling the engine room. The water for the boiler is supplied through a pipe from a well a short distance from the building, and is pumped into a large elevated tank, a powerful force pump doing the work. 100 feet of hose, attachable to the pump, is on hand in case of fire. The shawls manufactured by this firm are of excellent quality, and are in good demand. About thirty hands are employed, the sum paid out in wages amounting to between \$350 and \$400 per month. We understand Messrs. Wylie & Co. intend adding more machinery in the course of a month or two, and will make it a two-set mill.—*Almonte Gazette.*

The Queen City Refining Company of Toronto are about to erect a glucose factory and sugar-house at the foot of Dufferin-St., where they have secured a two-acre lot, with a water lot of about three acres in front. The building will be about 60 x 125 feet, and four or five stories in height, with a boiler and engine-house adjacent. The factory will have a daily capacity of about 600 bushels of corn, but can be worked as high as 1,000 if necessary. It is expected the work of manufacturing will be in full operation by next fall, and will then employ between thirty and fifty hands. The plans are now being completed. Glucose is a thick, tenacious syrup, almost colourless, or of a yellowish tint, and for confectioners' use is entirely deprived of colour by filtration through bone-black. It and grape sugar are the same substance; it is also called starch sugar, the greater part of it being made from that article. Among dealers, however, the term glucose is used to designate the syrup made from starch, while grape sugar is employed to denote the solid product made from the same source. An intimate relation exists between the different kinds of sugar and starch, the difference being the amount of water in each, cane sugar containing more water than starch and less than grape sugar. Thirty pounds of glucose can be obtained from a bushel of corn, the average profit being upwards of 35¢ per bushel. A similar factory in Buffalo has proved a grand success, and there is every prospect that this one will be the same.—*Toronto Mail.*

Last Saturday, says the *Albert Maple Leaf*, we had the pleasure of being shown through the Petitcodiac Spool Factory by Mr. Robert Robertson, the manager and proprietor, who kindly explained the working of the various machines and the number of hands assigned to each branch of work. The plant of the factory and the mill at Penobsquis, cost \$30,000, outside of working capital. The mill at Penobsquis manufactures the wood ready for use at the factory at Petitcodiac, and sends to it, on an average, about 9,000 or 10,000 feet, daily, for use, besides a large quantity of choice wood for shipment to England in squares. The output of this mill averages about 13,000 sup. ft. per day. The mill employs thirty-two hands besides twenty-five men and sixteen teams and teamsters in the woods. The factory at Petitcodiac is a four story building, 85 ft. long, 40 ft. wide, and 45 ft. high. In addition to the factory proper is the engine room and boiler house, 40 x 40. The engine is of 100-horse power, and is a finely finished, accurately working mechanical structure. The engineer is Mr. Benj. Tucker. The boiler not only furnishes the necessary steam for the engine, but also directly supplies the steam for the dry houses, entire factory, and offices. The factory uses on an average 50,000 sup. feet of wood per week, which will yield an average output of 10,000 gross of finished spools and blocks. In the yard are three dry-houses, heated by steam, using over a mile in length of pipe. The houses cover about 2,600 sq. ft., and are capable of kiln-drying 25,000 sup. ft. in ten days. There are several large sheds capable of air-drying 100,000 sup. ft. There are lofts over the dry-houses and sheds which can hold 12,000 gross of blocks furnished by the Scotch blocker. Also in the yard is a storeroom which will hold a ship's cargo. Several men are constantly employed in the yard piling the squares taken from the cars, in cross piles on skids. There is at present about 140,000 ft. piled in the yard. One order received, to be filled by the factory this year, will take all of 3,000 tons measurement. Fifty-two hands find employment in and around this factory. The foreman, Mr. John Barbour, formerly of Paisley, Scotland, thoroughly understands his business, having had eight years' Canadian experience in addition to his previous experience. Eight of the employees are Paisley men who have been, since their earliest boyhood, engaged in this business. Three or four improved finishers will be added this season.

## THE APPRENTICE-SHIP QUESTION.

In no respect, says a New York contemporary, have trade-unions failed more completely than in dealing with the apprenticeship question. The rules of many of the societies which have been a long time in existence provide explicitly and with much care for the admission of members from the rank of apprentices. A young man not yet receiving journeyman's wages and not a member of a union must file a petition with its officers when asking to be admitted to membership. Three members must vouch for him as a person of good character, and as one who has served a full term of apprenticeship at his trade. In shops and factories under union control there must be only a certain proportion of apprentices to journeymen—generally about one to eight. These rules work well enough until a strike takes place. Then apprentices find out that there is for them a short cut to the standing of full hands. The employer owning the shop or factory at which the strike occurred, being embarrassed for help, and seeking in every quarter, employs even those who can do the work of but half a hand, and will do so until his troubles with the union are at an end. Apprentices in the trade generally, being restricted by no contract with their employers, offer their services to them and are employed. Next they begin negotiations with the union. They will strike, too, if the union grants them full membership at once. The officers of the union, who are making strenuous efforts to "carry the strike," consent to their proposals. The apprentices quit the shop, become members of the union, and while on strike are pensioners on the bounty of their fellow-workmen. After the strike is over—in most cases lost—old journeymen who served, perhaps, four or five years' apprenticeship, are disgusted at finding themselves working side by side with youngsters who have only worked at the trade as many months, and, moreover, they are obliged to assist in enforcing the union scale of wages for the benefit of all alike. The union, which was to have "elevated the standard of efficiency," has been the cause of woeful degeneracy in its own ranks and has swelled its list of members to an extent that has weakened it. The strike—the weapon with which the working men were to have destroyed the power of the tyrannical capitalist—has left the men disheartened and demoralized.—*N. A. Manufacturer.*

## HOW WHITE LEAD IS MADE.

The uses of white lead are now so numerous that its manufacture has become one of the important industries of this country. The interesting process of manufacture generally followed was introduced from Spain, years ago, and is known as the "old Dutch process." The prime requirement in a white lead manufactory is pure pig lead, which is first melted into large flat pieces having numerous holes, and are called "buckels." A dozen of these are put into an iron pot containing twelve ounces of diluted acetic acid. The pot is then covered with a layer of tan-bark, and so on until there are about ten layers of pots. In a few minutes the tan-bark commences to ferment, evolving heat and carbonic acid. By this means the acetic acid is evaporated and, combining with the thin film of lead oxide on the surface of the buckels, forms a sub-carbonate of lead, which is decomposed by carbonic acid, and acetate of lead is formed. This process continues about one hundred days, when the buckels are transformed into carbonate of lead, which latter substance, after screening to separate the worthless portions, is ground, mixed with water, again ground, and then mixed with distilled water. Finally it is allowed to settle, in which stage the acetate of lead and acetic acid is removed from the white lead, which is obtained from this last chemical action, and is dried by means of indirect steam heat. The use of pure white lead in painting is considerably less than in former years, but it is the foundation of all coloured paints of the day, and its manufacture was never greater.—*Ex.*

# The Iron Trade.

## PITTSBURGH.

### SCALE OF WAGES FOR EMPLOYEES IN IRON WORKS—STRIKE OF COAL MINERS AROUND PITTSBURGH—ANNUAL MEETING OF THE WESTERN IRON ASSOCIATION—QUOTATIONS.

(From Our Own Correspondent.)

PITTSBURGH, April 10, 1882.

On the 1st of June each year, the iron manufacturers of Pittsburgh are required by their skilled employees to sign a series of wages' scales for the ensuing year. A refusal to sign these would result in a general strike. When changes of any kind in the scales are proposed by the employees at the close of the year they notify the employers, and each interest appoints a committee of conference, which committees usually come to an agreement, as a strike is dreaded by both sides. The iron-workers are already discussing the different scales at their lodge rooms: and it is believed that a few modifications in some of the scales will be proposed. There are scales for boiling (puddling), bar and nail plate, guide mills, sheet mills, plate and tank mills, scrapping and busheling, heating slabs and shingling, knobbling, tin and block plate mills, and for nail cutting. It would require entirely too much space to print all these scales, but three of them, namely, the boiling, the bar and nail plate rolling, and the nail cutting scales, will doubtless be of sufficient interest to the readers of the CANADIAN MANUFACTURER to justify the use of the space they will occupy. They were adopted for the year which will close with May, and are as follows:

#### BOILING OR PUDDLING SCALE.

When Western Iron Association card rates are	Boiling per ton of 2240 lb. shall be	When Western Iron Association card rates are	Boiling per ton of 2240 lb. shall be
2.5c.	\$5.50	3.8c.	7.10
2.6c.	5.60	3.9c.	7.25
2.7c.	5.70	4c.	7.40
2.8c.	5.80	4.1c.	7.57
2.9c.	5.90	4.2c.	7.75
3c.	6.00	4.3c.	7.92
3.1c.	6.10	4.4c.	8.10
3.2c.	6.25	4.5c.	8.30
3.3c.	6.37	4.6c.	8.50
3.4c.	6.50	4.7c.	8.70
3.5c.	6.65	4.8c.	8.90
3.6c.	6.80	4.9c.	9.10
3.7c.	6.95	5c.	9.30

#### BAR AND NAIL PLATE ROLLING.

Card.	Rolling and heating per ton.	Card.	Rolling and heating per ton.
2.5c.	70c.	3.3c.	83c.
2.6c.	71½c.	3.4c.	85c.
2.7c.	73c.	3.5c.	87c.
2.8c.	74½c.	3.6c.	89c.
2.9c.	76c.	3.7c.	91c.
3c.	77½c.	3.8c.	93c.
3.1c.	79c.	3.9c.	95c.
3.2c.	81c.	4c.	97c.

#### NAIL CUTTING.

When card price of nails is—	Cutting rod shall be—	When card price of nails is—	Cutting rod shall be—
\$2.50	21c.	5.25	27c.
2.75	21c.	5.50	30c.
3.00	21c.	5.75	30c.
3.25	21c.	6.00	30c.
3.50	24c.	6.25	30c.
3.75	24c.	6.50	33c.
4.00	24c.	6.75	33c.
4.25	24c.	7.00	33c.
4.50	27c.	7.25	33c.
4.75	27c.	7.50	36c.
5.00	27c.		

This is the sliding scale for cutting tennennies only, upon which the price for cutting other sizes is based. To print the entire list would require too much space.

All the wages' scales throughout the West are based upon the Pitts-

burgh scales; at some points they are the same, at others higher. In the East, ironmakers' wages are lower than they are west of the Alleghany Mountains. The manufacturers here could make iron at less cost than it could be made in the East if wages were equal, and the working men, knowing this, compel the former to pay higher wages. That is, the advantages here are almost wholly "absorbed" by the working men.

About two weeks ago, the Railroad Coal Exchange of this city, composed of operators whose mines are on the railroads centering here—decided to reduce the pay for mining from 4c. a bushel to 3½c., the reduction to take effect on the 1st inst. Against this reduction the miners have struck. Some weeks ago the operators in Ohio reduced the wages of their miners, and this makes it difficult if not impossible for the operators in this vicinity to compete with the former in the lake markets. The miners here realizing this fact, have issued an address to their Ohio brethren asking them to demand the wages paid them before the late reduction. The address is a very able and temperate document. It remains to be seen what the Ohio miners will do about it.

There has been no improvement in the iron trade within the last fortnight. New orders still come in but slowly, but the works are all running, having orders to fill that were booked before the lull. Manufactured iron still commands card rates, but pig, muck bar, steel rails, scrap iron and old iron rails are lower.

**Pig Iron.**—There has been no improvement in demand, and prices are weaker and lower. Neutral mill, from native ore, \$25; cinder-mixed red-short (mill), \$26; Bessemer, \$28 to \$29; No. 1 foundry, \$27 to \$28; No. 2 do., \$26.50 to \$27.50 (all four months). **Muck Bar** continues to decline; sales have been made at \$40 and \$42 per ton. **Scrap Iron.**—There is very little sale for scrap. Business has been done in No. 1 wrought, wrought turnings and cast borings, at \$33 to \$36, \$22 to \$24, and \$15.50 to 16.50, respectively, per gross ton. Sale of car-wheels at \$30 cash. **Old Iron Rails.**—American ties are quoted at \$30, foreign ditto, \$29, and double heads at \$31. **Manufactured Iron.**—New business scarce, but mills all running, with no changes in quotations; bar 2.50c. per pound. No 24 sheet, 4.30c.; tank, 3.30c.; C. H. No. 1 boiler plate, 5½c.; homogenous steel do., 6½c.; hoop iron, for common barrel hoops, 3.10c. to 3.30c.; lighter sizes, 3.20c. to 5.10c. All 60 days or 2 per cent. off for cash. The Western Iron Association held its annual meeting on Wednesday last, but made no changes in card. **Nails.**—It is stated in some quarters that manufacturers are well supplied with orders, but this should be received with several grains of allowance. Prices unchanged: 10d. to 60d., \$3.40, 60 days or 2 per cent. off for cash, with an abatement of 10 cents per keg on lots of 250 kegs. **Pipes and Tubes.**—Gas and steam pipe lower, but boiler tubes and oil-well tubing and casing are lower. Discount on gas and steam pipe, 60 per cent. on small and 62½ per cent. on large lots; discounts on boiler tubes 42½ to 45 per cent; oil-well casing 67½c. net, and tubing 20c. net. **Steel Rails.**—Works well supplied with old business, but new orders scarce and prices lower; \$55 to \$56 on cars at works. **Railway Track Supplies.**—No improvement in demand and no changes in quotations; spikes, 3.1½c. per lb. 30 days; splice bars 2½c. per lb.; track bolts, 3½c. to 3¾c. for square nut and 4c. for hexagon, cash f. o. b. Pittsburgh. **Lead.**—Unchanged; bar, 6½c. with 4 per cent. off; pipe 6½c., 10 per cent. off; sheets, 6½c., 10 per cent. off; drop shot, 7c., 1 to 4 per cent. off; buckshot, 8c., 1 to 4 per cent. off. **White lead.**—No change; 7c. to 7½c. per pound. **Linseed oil.**—Lower; 55c. per gallon by the barrel; boiled, 62c. **Connellsville coka.**—Without change; \$1.75 to \$2.00 per ton of 2,000 pounds, f. o. b. cars at the works.

## PHILADELPHIA.

DEMAND FOR PIG IRON SOMEWHAT FIRMER—OUTPUT OF BLAST FURNACES SOLD WELL AHEAD—WESTERN COMPETITION FELT—IMPORTS INCREASING—THE TARIFF COMMISSION.

(From Our Own Correspondent.)

PHILADELPHIA, April 13, 1882.

The declining tendency in iron and steel referred to in last letter has not produced any serious results, because of the necessity buyers are

under to purchase for immediate and pressing wants. All along they have been limiting purchases under the impression that lower rates were inevitable, and quite a number of the larger consumers are now meeting requirements with 50 and 100 ton lots of pig until they can see their way a little further along. The situation is interesting, and for this reason: It is barely possible the declining tendency may change for an advancing one. This is not an accepted belief or opinion in iron circles, but it is entertained by a few far-seeing men. The general cry has been that expanding production and lessening demand and increasing imports would pull prices to dangerously low limits. This result would certainly follow if all these causes acted. True, imports are large and increasing, but not on fresh orders. True, produce is increasing, but not very fast. Demand, instead of falling off, is creeping up again, especially since it has been demonstrated, as it has been during the last three months, that prices can not be driven below \$24 for No. 1 Foundry at furnace, \$23 for No. 2, and \$22 for Gray forge of fair quality. Sellers hang these prices. Buyers want a drop of a dollar or two. Spring demand is presenting itself. Stocks in foundries and mills are low, and foreign supplies are only beginning to be replenished. This is the pig iron situation east. Furnace men are stubborn. Buyers are indifferent. Consumption drives them to buy, and hence there is not such an accumulation of stocks here or any where else in the country which would make a decline a probability.

English is dull. There are larger arrivals of Scotch, and buyers expect a drop.

Bessemer is held at \$23.50 to 24.50, though sales are still limited to small lots. Large buyers hold out and refuse to order. Foreign markets are weak, and a further decline is said to be inevitable.

Your correspondent deferred the mailing of this letter perhaps too late to ascertain some facts which will very likely have a strong influence on the market in a short time. They have reference to future prices and the right course to be pursued by consumers. Nothing tangible, however, was developed after all at to-day's informal meeting.

Merchant bars are in improving demand. The hanging back policy is to be departed from. Summer is coming on, and supplies will be somewhat scarce. The western railroad managers have tested the strength and weakness of the iron market, and orders went out this week for a renewal of purchasing for some western lines, an improving demand is therefore said to be probable. Among the smaller consumers, jobbers, store-keepers and others, a better feeling was developed and at this writing orders are on hand for good round lots of finished iron, steel rails, sheet and galvanized, which men hardly expected a month ago. Still this is not taken as a sign of a general bracing up of markets. It is simply a prudential movement among far-seeing buyers who do not want to be caught with low stocks in May or June when the markets may possibly harden.

It should be remembered that with all the talk about restricted operations, that blast furnaces are fairly sold ahead, orders are not badly needed, but are accepted at quoted prices. Mills are not running out of orders, nearly every one has business for a month ahead, some for two months; orders are coming along satisfactorily, everything works right. A few manufacturers get scared at their shadow and cut rates for business. This took place ten days ago. It resulted in a pulling down of the store price of iron to 2.8, the mill price. Since then, mill price has weakened in some places to 2.7. Western competition was felt here this week. Pittsburgh re-affirmed the 24 card, and sent iron here at \$2.65. It is uncertain whether prices will remain steady or sink during the next thirty days. If a few buyers bought largely it would start the rest, and the market would be stronger. As it is, prices fluctuate within narrow limits, liable to go up or go down. If the rumored falling off in railroad operations should be greater than counted on, a weakness would overtake prices in every branch, but, as time wears on, the trade is coming to the sensible conclusion that the harm is not half so bad as anticipated. Too much building was started without money in hand, counties and towns voted money, and on this paper basis the projectors rushed into the market, bought rails, locomotives, cars and all else needed.

Western mills suffered more than eastern, but legitimate enterprise is benefited by a return of prices to the normal limits.

Railroad managers and agents will be in the market before prices take an upward tendency. Just now nothing is being done. Summer deli-

veries for rails are high, \$56 to \$58; Winter, \$55 to \$58. Iron, \$46 to \$47.

The imports are swelling to unusual proportions. Last week's arrivals will exceed twenty thousand tons, all kinds. New orders are not going abroad, but would if ocean freights declined. Construction iron is unchanged, and demand is, if anything, better. Requirements are being pushed in, and bridge works and structural iron establishments have abundant orders. Plate is active—orders covering several thousand tons have been placed within a few days. It may be said that if prices are at a satisfactory basis, demand for iron is, and will be, very heavy. Investors and capitalists are not inclined to take fright at shadows. A surfeit of railway bonds was precipitated on the market, and the public appetite was not equal to the task. The accumulation of capital at financial centres points to a revival of the fever for investments. Immigration is going on at an unprecedented rate. Disturbing causes have been removed. The Trunk lines are at peace. Legislation at Washington promises to take the direction designed by the controlling interests in such matters.

Old rails are dull. Tees are offered at \$28.50 to \$29. Doubles at \$80 to \$80.50. Sales are light because buyers cannot afford to pay, they say, over \$28. Last week's arrivals were encouraging, and several lots are on the water. A decline is expected. The local supply is increasing. Holders are satisfied the best they can do is to let them go at \$28 to \$29. Negotiations are on hand for three or four thousand tons, and a few orders are being sent abroad for shipment. Summer delivery—Lower prices than \$29 must be offered before the large buyers will touch them, especially as there is so much said about declining prices.

Scrap is decidedly weaker. Two thousand tons sold this week, in lots from 50 to 200 tons, at prices varying from \$32 for No. 1 to \$28 for medium. Several large lots were imported, and more are coming. Steel blooms are coming in very freely, and are quoted at \$41 to-day.

On the whole, the iron and steel market, while it has not improved materially during the past two weeks, has a better outlook. Unexpected developments may change this, but the improving demand incident to the summer months will prevent any serious decline. Sellers and makers think the chances are in their favor. Our cable despatches up to to-day show there is less firmness in prices, but a good steady demand.

The free traders in and out of Congress are making an unusual amount of noise and dust. The tariff commission will take charge of the whole matter, and the orators and prophets and professors who can hardly tell the difference between a pig of iron and a pig of pork, can hold their enthusiasm in check for better use in some other direction.

## MONTREAL.

SCARCITY OF PIG IRON—ENGLISH PRICES SOMEWHAT EASIER  
—OCEAN FREIGHTS CONTINUE HIGH—REDUCTION OF TIN  
PLATE STOCKS—GENERAL HARDWARE BRISK—METAL  
MARKET QUOTATIONS.

(From Our Own Correspondent.)

MONTREAL, April 11th, 1892.

The lower freights for which buyers have so long been waiting have not yet been realized, and as the time for the opening of navigation at this port is near at hand, and the market here is bare, some are beginning to manifest anxiety about their requirements, which in a number of instances are urgent. Pig iron in this city has seldom been as scarce at this season of the year as at present, and those who are compelled to go on the market have to pay full prices for their wants. Summerlee is the principal brand of pig iron available here at present, and sales are reported of several car lots at \$26 cash, while it is said even higher figures have been taken out of buyers. Gartsberrie has also been peddled out in small lots at about the same figure. For May delivery the sale is reported of 500 tons of Summerlee at \$21.75, but some dealers refuse to take less than \$22 for futures. Shipments of about 100 tons of pig iron are being made from this city to Kingston, and 100 tons to Toronto. Several shipments are on the way to this city from Glasgow, but they are said to be chiefly on account of dealers here who have faith in the future of the market, which it appears their customers had not. The

market in England for pig iron is cabled somewhat easier, although the continued high freights from the other side prevent any better terms for buyers on this side. There are also indications of ease in the American markets. Makers' iron in England, according to latest advices, is dull, and we understand a large lot has been ordered on better terms for the buying interest. In this market, however, the feeling is steady, and sales are being made at former prices, latest transactions being reported at \$2.85 for Siemens, and at \$2.25 for Scotch, Staffordshire and equal brands. Of the latter, sales are mentioned of 300 tons, and of the former, 150 tons. In Canada plates there is little or nothing doing, as the season has scarcely commenced. The large supply of tin plates noticed here some time since is undergoing a very satisfactory shrinkage, and we have sales to report since our last review of 4,000 boxes I. C. Charcoal at \$5.50, one lot being reported at a shade below that figure. Cokes are steady at \$4.75 for round quantities and \$5 for jobbing parcels. Ingot copper is quiet but steady, with business at 18c. in round lots for English and 18½c. for Canadian. Ingot tin is enquired for, and business is understood to have taken place at 29c & 28½c. The general hardware trade has been quite brisk during the past fortnight, and some houses report extensive lines of country orders at former steady values. Shell goods have been specially active. We quote spot prices as follows:—Coltress, \$25.00 to \$26.00; Siemens', \$25.00 to \$26.00, Summerlee, \$24.50 to \$26.00; Langloan, \$24.50 to \$25.50; Eglington, \$24.00 to \$24.50; Calder, \$24.00 to \$24.50; Carnbroe, \$24.00 to \$24.50; Hematite, \$27.50 to \$28.00. Bar, per 100 lbs.—Siemens, \$2.45; Scotch and Staffordshire, \$2.25; Best Staffordshire, \$2.50; Swedes, \$4.00 to \$4.50; Norway, \$5.00; Lowmoor and Bowling; \$6.25 to \$6.50. Canada Plates, per box—Gla-morgan & Budd, \$3.25 to \$3.50; Penn, \$3.25 to \$3.50; Neutgwylt, \$3.25 to \$3.50; Hatton, \$3.25; Thistle & Clifton, \$3.50. Tin Plates, per box—Charcoal, I. C., \$5.50 to \$5.75; Charcoal, I. X., \$7.25 to \$7.50; Charcoal, D. C., \$5.25; Charcoal, D. N., \$7.25; Coke, I. C., \$4.50 to \$4.75; Tinned Sheets, No. 26, Charcoal, 10c. to 11c. Cookly K. or Bradley, 10c. to 11c.; do, Coke, 10c. to 10½c.; Galvanized Sheets, 28 best, 7c. to 7½c.; Hoops and Bands, per 100 lbs., \$2.75 to \$3.00; Sheets best brands, \$3.00; Boiler Plate, per 100 lbs., Staffordshire, \$3.00 to \$3.25; Bradley, \$4.50 to \$4.62½; do, Lowmoor and Bowling, \$7.00 to \$12.00; Russia Sheet Iron, per lb., 12½c. to 13c. Lead—Pig, per 100 lbs., \$4.50 to \$4.75; Sheet, do., \$5.50; Bar, \$5.00 to \$5.50; Shot, do., \$6.00 to \$6.25. Steel—Cast, per lb., 11½c. to 12½c.; Spring, per 100 lbs., \$3.25 to \$3.50; Tire, do., \$3.25 to \$3.50; Sleigh Shoe, \$2.40 to \$2.50; Ingot Tin, 27½c. to 29c.; Bar Tin, 30c. to 32c.; Ingot Copper, 18c. to 19c.; Zinc sheet, per 100 lbs., \$6.00 to \$6.50. Spelter, \$00.0 to \$6.00. Horse Shoes, per 100 lbs., \$4.25 to \$4.50; Proved Coil Chain, 2 in., \$5.50; Anchors, \$5.00 to \$5.50; Iron Wire, No. 6, per ball, \$1.75 to \$1.80. Cut nails are quoted as follows.—Hot Cut American or Canadian Patterns 3 inch to 6 inch, \$2.70; 2½ in. to 2¾ in., \$2.95; 2 in. to 2½ in., \$3.20; 1½ in. to 1¾ in., American, \$3.15; 1½ in., \$4.20; 1½ in. to 1¾ in. cold cut Canadian, \$3.20; 1½ in. ditto, \$3.70. Window glass is firm at the advance, and prices are—7¼×8½, 7×9, 8×10, 10×12, and 10×14, \$2.00 to \$2.10; 10×16 and 11×20, \$2.20 to \$2.40, 18×24, \$2.40 to \$2.50.

## Wool.

### PHILADELPHIA.

TRADE UNSATISFACTORY—SHADING OF PRICES RESORTED TO—REDUCED STOCKS—EARLY REACTION EXPECTED—QUOTATIONS.

(From Our Own Correspondent.)

PHILADELPHIA, April 11, 1882.

The course of the wool trade during the past fortnight has continued unsatisfactory, and a further shading of prices has been resorted to as a means of influencing freer sales. The unsettling of values, however, seems to have excited distrust rather than to have stimulated inquiry, and the

movement has been sluggish and mostly confined to moderate selections for immediate use. Stocks have been considerably reduced by means of numerous small sales, and assortments, as a general thing, are not very attractive. This condition of affairs encourages the expectation of an early reaction, as the first arrivals of the new clip are not likely to come on the market for over two months yet, and in the meantime, it is believed, the wants of manufacturers will exhaust desirable supplies of the old clip. At the moment, however, the situation is in buyers' favor, and they show little disposition to change it by a departure from the cautious policy that has governed their operations since the first of the year. Quotations are as follows:—Ohio, Pennsylvania, and West Virginia washed fleeces, X and XX, and above, 41c. to 43c.; selections 44c., do. medium, 46c. to 47c.; do. fine delaine, 46c. to 47c.; do. medium do. and combing, 49c. to 51c. New York, Michigan, Wisconsin and Indiana X and XX, 40c. to 42c.; do. medium, 45c. to 46c.; do. fine delaine, 45c. to 46c.; do. medium do. and combing, 48c. to 50c.; fine average mixed, 25c. to 26c.; do. choice do., 27c. to 28c.; choice ¼ unwashed, 27c. to 28c.; do. medium do., 32c. to 35c. New Mexican carpet, 18c. to 19c.; do. improved, 20c. to 25c. Colorado common, 18c. to 20c.; do. ¼, 21c. to 23c.; do. medium, 25c. to 27c.

## MONTREAL.

QUIETNESS IN DOMESTIC WOOLS—INCREASED ACTIVITY IN THE BOSTON MARKET—VALUES.

(From Our Own Correspondent.)

MONTREAL, April 11th, 1882.

It now transpires that some of our large manufacturers who generally are in the market by this time, laid in stocks at the commencement of the year, as there were then indications of higher prices. Some of the smaller buyers, however, who trusted to the future, are now taking a few parcels of Cape and Australian at current rates, and we have sales to report aggregating 20,000 lbs of Greasy Cape at 18½c. up to 20½c., as to quality. Australian has changed hands all the way from 23c. up to 28c., as to shrinkage. In domestic wools the same quiet features prevail as noticed for some weeks past, and we still quote Canada pulled, A super, at 33c. to 35c. B super, at 30c. to 32c., and unsorted pulled at 27c. to 28c. Stocks here are by no means heavy, and values remain about steady all round. The increased activity in the Boston market, where the sales last week were larger than for the past four weeks, amounting to 2,149,000 lbs., being an increase of 566,050 lbs. over those of the previous week. There has been considerable activity according to the latest mail advices in the South American wool trade, large transactions, at improving prices, having taken place at Buenos Ayres.

## Cotton.

### PHILADELPHIA.

VOLUME OF BUSINESS SMALL SINCE LAST REPORT—CONSUMPTIVE DEMAND SLOW—BUSINESS OF A HOLIDAY CHARACTER—QUOTATIONS.

(From Our Own Correspondent.)

PHILADELPHIA, April 11, 1882.

The speculative dealings in this staple have been of a cautious character since last report, and the volume of business has been small without any important fluctuations in prices. The bulls still move upon the theory of prospective scarcity and increased demand, that will warrant a material advance from present prices, but they make few converts in



the face of the accumulation on hand, and the unpromising reports from spinners—foreign and domestic. Exporters are doing little, and the consumptive demand continues slow. The New York Exchange adjourned over from Thursday until after Easter, and business at all points has been of a holiday character for several days past. Closing prices for spot cotton were as follows on the dates named:—

	Middlings. March 25th.	Low Middlings.	Middlings. April 8th.	Low Middlings.
New York.....	12 3-16	12 7-16	12 1-16	12 5-16
New Orleans.....	12	11 1/2	12	11 1/2
Mobile.....	11 1/2	11 1/2	11 1/2	11 1/2
Charleston.....	12	11 1/2	11 1/2	11 1/2
Savannah.....	11 1/2	11 1/2	11 1/2	11 1/2
Galveston.....	12	11 1/2	11 1/2	11 1/2
Wilmington.....	11 1/2	11 3-16	11 1/2	11 3-16
Norfolk.....	11 1/2	—	11 11-16	—
Augusta.....	11 1/2	11 @ 11 1/2	11 1/2	11 @ 11 1/2
Memphis.....	11 1/2	11 1/2	11 1/2	11 1/2
St. Louis.....	11 1/2	11 1/2	11 1/2	11 1/2
Cincinnati.....	11 1/2	11 1/2	11 1/2	11 1/2
Baltimore.....	12 1/2	11 1/2	12 1/2	11 1/2
Philadelphia.....	12 1/2	11 1/2	12 1/2	11 1/2
Boston.....	12 1/2	11 1/2	12 1/2	11 1/2
Liverpool.....	6 11-16d	—	6 1/2d	—

The woollen goods market is in fair condition, but does not show any particular activity, transactions having been chiefly restricted to a few of the most popular makes of cassimeres, worsted coatings and suitings, and overcoatings. The leading makes of all these are nearly all sold in advance of production, and deliveries in the execution of back orders, frequently forms the principal share of present business. Clothing woollens generally are firm, and supplies well in hand, but other woollen fabrics occasionally show slight weakness. Kentucky jeans remain very dull and only sell at unprofitable prices. Satinets also move sluggishly, though some hopes are indulged in of an early improvement. Flannels are being distributed quite freely in small parcels of dress and sacking styles, while carpets continue quite active, with the better request for velvets and extra super.

Imported fabrics are doing fairly, and, were it not for the cold and late season, business would probably have been in even more satisfactory shape. As it is, several of the largest importing houses are considerably ahead of last year's sales, and, with a steady continuance of the present demand, there is little fear of carrying now any large surplus of this season's importations into next year. Fine silks were taken quite freely, and medium qualities are in better demand, but costly fabrics receive the preference. In dress goods there is less doing, but laces still receive liberal attention. Liens are unchanged, being in hand-to-mouth request and steady. For woollens there is a good demand for fine qualities, otherwise there is little doing.

**Dry Goods.**

**NEW YORK.**

RETAIL TRADE MODERATELY ACTIVE—BREAK IN GINGHAMS —GOOD EXPORT DEMAND FOR BROWN COTTONS—CLOTHING WOOLENS FIRM.

(From Our Own Correspondent.)

New York, April 10, 1882.

Since last advices there is very little new to report. General trade in dry goods has been more or less inactive, irregular, and backward, owing to the unfavorable character of the weather, and the continuance of the generally cautious policy latterly adopted by the more conservative dealers. The retail trade has not responded so freely as desired, but has, nevertheless, shown a moderate degree of activity during the past two weeks, and in the interior and far West, business has exhibited some improvement, while the Southern trade continues rather unsatisfactory, and a number of small failures are reported from that quarter. For a time the market was somewhat unsettled by a break in gingham, and the disposal of a considerable quantity of cottonades through the auction rooms; while the possible continuance of the labor troubles is regarded with some apprehension. At present prices, and the common dullness of the market, there is very little profit in the manufacture of some classes of cottons; and, unless relief is obtained in some other way, recourse must be had to lower wages—a result which may be expected to meet with the usual opposition.

Cotton goods have lately been moderately active and steady. Brown cottons continue in good demand for export, and further liberal orders have been placed for the same. Medium bleached goods have also moved a trifle more freely by means of slight concessions to reduce accumulations, but bleached goods are mostly quiet. Ducks and denims rule in fair request, and of these there is a steady distribution in back orders, while prices are firm. Other colored cottons remain quiet. Cottonades have, also, been inactive since the auction sale last week of 750 cases of a popular maker, which under the circumstances brought fair prices. The demand for gingham has abated considerably, and the break of Lancaster fabrics from 10 1/2c. to 9c., which was followed by the other makers, failed to stimulate. Print cloths remain quiet and firm, the present quotations for 64x64 being 3 1/2c. at which price manufacturers are reluctant sellers. Prints sell irregularly, except the newest and most attractive fancies, suitings and a few specialties, which find a ready market.

**Leather.**

**MONTREAL.**

CONTINUED DEMAND FOR PLUMP SPANISH AND SLAUGHTER SOLE—INFERIOR QUALITIES DULL—WAXED UPPER IRREGULAR—MARKET CHANGES.

(From Our Own Correspondent.)

MONTREAL, April 11, 1882

Although one or two dealers report a slightly improved demand, the majority of the trade do not hold out any sanguine hopes of substantial improvement until stocks show greater reduction. The stereotyped remark regarding the exemption from dullness which characterizes the market for choice plump Spanish and Slaughter sole may be repeated, as there is still a good demand for such qualities, which, on account of scarcity, command ready sale at full rates, sales being reported of 120 sides No. 1 B. A. sole at 25 1/2c., and 200 sides of best slaughter sole, to arrive, at 28c., smaller quantities selling as high as 29c. The ordinary and inferior qualities of sole, however, are dull at easy values. Black leather of most kinds is in large supply, and the demand being of a hand-to-mouth nature, the dullness noticed for some weeks past is as marked as ever, nothing having transpired to encourage holders since our last review. Waxed upper sells slowly at very irregular prices at 32c. to 34c. for heavy, and at 35c. to 37c. for light. A lot of splits has been placed during the past week, but the price was not allowed to transpire, although it is known to be pretty low. Buff and pebbled have met with a little better inquiry, with sales of the former at 13 1/2c. to 14 1/2c., and of the latter at 12 1/2c. to 13 1/2c. Western hides are still held firmly at 9 1/2c. for No. 1 buff, but they are not working off at the advance so fast as was expected. Green butchers' hides are steady at \$8, \$7, and \$6 per 100 lbs, cured hides being quoted steady at \$9 for No. 1. In green calfskins the market has been very unsettled, prices having dropped from 15c. down to 12c., and now they are up again to 13c., this price being paid to-day. Lambskins (spring) are steady at 25c. each, and sheepskins from first hands \$1.25 to \$1.35 each. We quote prices as follows:—No. 1 Hemlock Spanish Sole, 25c. to 26c.; No. 2 ditto, 22c. to 23 1/2c.; Buffalo sole, No. 1, 21 1/2c. to 23c.; No. 2 ditto, 20c. to 21 1/2c.; Hemlock Slaughter, 27c. to 29c.; Harness, 28c. to 32c.; Waxed Upper (light), 34c. to 38c.; Waxed Upper, medium and heavy, 30c. to 31c.; Grained Upper (long), 34c. to 38c.; Scotch Grained Upper, 37c. to 40c.; Buff, 14c. to 16c.; Pebbled Cow, 12 1/2c. to 15c.; Splits, calf, per

lb., 80c. to 85c; Splits, medium, Crimping, 27c. to 30c.; Splits, Juniors, \$0.13 to \$0.25; Calfskin (light), \$0.60 to \$0.75; Calfskin (heavy), \$0.75 to \$0.85; French Calfskin, \$1.05 to \$1.35; French Kid, \$15.75 to \$16.50; English Kid, \$0.60 to \$0.70; Busses Kid, \$15.50 to \$16.50; Patent Cow, \$0.15 to \$0.16; Enamelled Cow, \$0.16 to \$0.18; Green Hides, inspected, \$9.00; Calfskins, per lb., \$0.13; Sheepskins, \$1.25 to \$1.40; Lambskins (spring), \$0.25; Sheepskins, dressed, No. 1, \$5 to \$5.75; Sheepskins, dressed, X, \$6 to \$6.75; Sheepskins, dressed, XX, \$7 to \$7.75; Sheepskins, dressed, XXX, \$8 to \$8.75; Sheepskins, dressed, XXXX, \$9 to \$9.75; Sheepskins, dressed, XXXX, \$10 to \$10.50.

## Correspondence.

### THE MARITIME PROVINCES.

NEW ENTERPRISES PROJECTED—DRY DOCK FOR CARLETON—CURTAILING LUMBER OPERATIONS—MONCTON SUGAR REFINERY AGAIN IN FULL BLAST—A BUDGET OF MANUFACTURING NOTES.

To the Editor of the Canadian Manufacturer.

SIR:—I certainly owe an apology for having been so slow in forwarding you further items from the Maritime Provinces, but absence from home and press of some other business matters have occasioned delay. I will try and be more punctual in future. Since last writing you, I have no change to report in the manufacturing "hum," which seems to be alive here at present. The factories erected and in operation are busy as can be, while new enterprises are being constantly projected. Among the latest may be mentioned an extensive rolling mill for Moncton, N. B., also a Knitting Factory for same town, of which further particulars at a later date. The manufacture of Knitting-machines is also contemplated in St. John, N. B., and will no doubt add to the prosperity of that city.

In St. John the new Cotton Mill enterprise is fast assuming practical shape under the directions of a sound business committee, who, though moving slowly, are moving surely, and ere long will be added to the features of St. John another monument to the prosperity attending the National Policy. The foundations of building are being laid, and soon tenders will be asked for erection of main building itself.

The prospects of a Dry Dock in Carleton, St. John, to be built under the management of Messrs Simpson & Co., who have earned much fame in connection with such enterprises in some of the cities of the neighboring Republic, will cause much stir if active operations begin, and the indications are extremely favorable. The result will be a large expenditure of money in the place, and add materially to the importance of St. John's shipping facilities, &c. Presuming that the necessary connections be made *via* Megantic Railway, so called, thus giving a short line to the Upper Provinces, there is every possibility of St. John being one of the most important (if not *the* most important) winter ports of Canada.

Indications are that the usual amount of lumber will not be cut this winter in New Brunswick, as stormy weather in some localities, and absence of snow in others, has had a tendency to curtail the usual supply. The average is estimated at only about two-thirds of former years. The prospects of prices ruling higher in English markets may, however, if correct, make up for deficiency in quantity.

At Sussex, N. B., the Tannery of White, Upham, & White gives employment to quite a few hands, and they are constantly adding to their premises. The trade of this concern has developed largely since the advent of the National Policy, and they send larger exportations of their manufactures to Montreal.

The Sussex Boot and Shoe Company have been in difficul-

ties lately, but, under new arrangements, will continue to be operated. This concern gives employment at present to about 45 to 50 operators, and is in a fair way of greatly enlarging its business. The various classes of goods manufactured here meet with a ready sale, and are rapidly gaining a strong foothold in the Maritime Provinces.

At Petitcodiac, N. B., a large and extensive Spool Factory is being successfully operated under the management of Mr R. Robertson, of St. John, and gives employment to a large number of laborers. They have also a branch mill at Penobscot, a few miles above Sussex, where large quantities of the spool wood is prepared ready for conversion into spools after being sent to the main factory at Petitcodiac.

At Moncton, N. B., the sugar refinery after being shut down for a short time for repairs and extension, or addition to machinery, is again in full blast, and can scarcely keep pace with the orders that are flowing in upon them. This concern gives employment to a large number of laborers.

The brass works and lock factory is doing a flourishing business, and stockholders have already had a flattering return in the shape of a dividend, which, if a guide for the future, must be very satisfactory indeed.

The new Moncton cotton mill project, with capital of \$400,000, is being pushed forward with all possible speed. The foundations are being constructed, and main building will probably be erected at earliest possible moment. The capital stock of the Company is nearly all taken up, as the most implicit confidence is had in the men who are directing its affairs, particularly the Messrs. J. and C. Harris, to whose progressive spirit and energetic action Moncton owes much. The only matter for regret is that other towns in the Maritime Provinces had not men of similar push and means among them.

Having continued this letter to quite a respectable length, I will draw to a close and in my next try and give more detailed information as to these different factories mentioned, as well as others to be treated of. In conclusion, every day seems to add to the success of the N. P., despite the groanings and croakings of our *blue ruin* friends—the free traders. If, as is supposed, the general elections are to take place next summer, I am much mistaken if the Maritime Provinces do not again endorse the N. P. as a whole, though personal party interests in New Brunswick may not make much material change. One thing is certain—that the gentleman who represents Northumberland must be as ignorant of facts as a man can well be, when he can get up in Parliament and denounce Nova Scotia coal as he did. It will be, probably, the last opportunity he may have for so doing. A man who could deliberately vilify, as did this worthy gentlemen, one of our chief industries, is not fit to represent a Maritime Province constituency.

MARITIME.

## W. & F. P. CURRIE & Co.,

100 GREY NUN STREET MONTREAL.

Manufacturers of

### SOFA, CHAIR & BED SPRINGS.

••• A large Stock always on hand •••

Importers of

DRAIN PIPES, VENT LININGS,

FLUE COVERS, FIRE BRICKS,

FIRE CLAY, PORTLAND CEMENT,

ROMAN CEMENT, WATER LINE,

PLASTER OF PARIS, &c.

## Selections.

### STRIKES AND RENTS.

A number of strikes are in progress in this and other cities at present. One or two of those have been in progress somewhat over a month, with no indications of an early termination. And no matter how they end, there are not enough working days left in the year, if all the remainder are occupied, to make good the losses to workmen for their self-imposed idleness.

It is unfortunate that these working men do not comprehend this, and also that they do not understand the simple rules which apply to and govern the payment of wages. If they did so, and acted accordingly, they would not now find themselves in their present very unpleasant predicament. A year ago when there was assurance of continued buoyancy in everything relating to business and manufactures, they might have obtained any concession it had pleased them to demand; but now and for three or four months to come, or until the harvest is gathered and marketed, there is no great promise for either working or trading people, though neither will suffer, if prompted in their action by ordinary business considerations, which is not the case with the strikers. The hardships of their tolly will, of course, fall most heavily on themselves.

Equally unjust and nonsensical is the action of real estate owners, who for a month or two past have been causing, through their agents, an advance in rentals to take effect on April 1st and May 1st. Already the rental of dwellings of all classes here exceeds that of the same class in Chicago or Cincinnati by from 20 to 40 per centum. The advance demanded is from 10 to 20 per centum, and the effect of the demand is already seen in the preparation of an unusually large number of families to be out of the city during the summer, and to board on their return in the autumn, by which time a decline of 10 to 20 per centum from present prices is more likely to be the rule, and justly so, too, for nowhere in cities of this size will real property bring average net returns so large as here.—*Age of Steel.*

### ABOUT BUTTONS.

The trade in buttons in this country is not to be sneezed at. In New York alone the button trade is estimated at nearly ten million dollars a year. During 1881 buttons to the value of \$3,500,000 were imported, and during the last four years the total value of all buttons imported reached \$13,000,000. At American rates of wages many of the imported buttons could not be put upon their cards for the price at which they are sold.

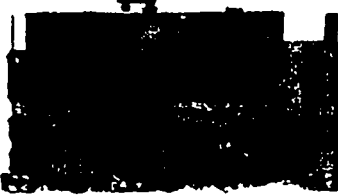
Glass buttons come principally from Bohemia, and children are largely employed there in their manufacture, doing the work as quickly and as neatly as adults. The children receive about ten cents a day for their work; the men are paid from forty to fifty cents a day, the women a trifle less.

Pearl buttons are imported from Vienna, where most of them are manufactured; the all-important shirt button comes chiefly from Birmingham, Eng., where most of the metal buttons are likewise procured. But the most extensive of all button manufacturing is that of the Parisian and Berlin novelties. In one manufacturing village near Paris, where there are some five or six thousand inhabitants, all the working people are engaged in making the agate button, which, even with thirty per cent. duty added to the cost, sell in this country at the ridiculously low figure of thirty-one cents per great gross. It is stated that the raw material alone could not be procured here for double that amount.

American manufacturers make no attempt, and probably have no desire, to compete with European producers employing hand processes, but they excel in the manufacture of bone, composition, ivory, brass, and gold buttons by machinery, and are able to export considerable quantities of these styles.—*Philadelphia Trade Journal.*

## JARVIS PATENT FURNACE

FOR SETTING STEAM BOILERS.



Economy of Fuel, with increased capacity of steam power.

The same principle as the SIMENS' PROCESS OF MAKING STEEL, utilizes the waste gases with hot air on top of the fire.

Will burn all kinds of Waste Fuel without a blast, including screenings, wet peat, wet hops, sawdust, logwood chips, slack coal, &c.

Over 1,500 boilers set this way in the United States and Canada.

Send for Circular.

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110 KING STREET (P. O. BOX 33), MONTREAL, QUEBEC.

Please mention this paper.

## ECONOMY IN FUEL!

\$3.50 per day is saved in fuel and a gain of 50 horse-power by applying

"SMITH'S PATENT FURNACE"  
TO YOUR BOILERS.

"THE WILSON GAS PRODUCER,"

for firing every description of Furnace and Boiler, also for Melting Pig-Iron, Heating Steel Ingots, Puddling, Re-heating, Annealing Iron, Steel, Copper and Brass Wire, &c., &c.

E. O. HOPKINS,

145 St. James Street, Montreal,  
SOLE AGENT FOR THE DOMINION.

## SENDALL & RICHARDS' PATENT BARLEY BEARDER.

Patented April 26th, 1881.

The Farmers of Canada have long felt the need of a practical machine that would thresh their barley, and at the same time remove the beards from it, thus making it in first-class condition for market. Several different machines have been made and tried for that particular work, but have failed, because they were not practical machines. THE SENDALL AND RICHARDS' MACHINE is a complete success. It has been in use for two years in the western part of New York State, giving unbounded satisfaction to every one using it. Two machines were introduced into Canada during the past year, which were exhibited at the Provincial Fair at London, and the Central Fair at Hamilton. They were pronounced by practical machine men and farmers who saw them a decided success. Three or four of the leading manufacturers of Ontario are now manufacturing the Bearder, and others are invited to correspond with the owners with a view to the manufacture and sale of the machine.

Descriptive Circulars furnished on application.

SENDALL & RICHARDS,  
Brockport, N. Y.

**ENTERPRISE.**

Toronto merchants are evidently determined that their city will be a central market for all classes of goods, manufactured and imported. James Robertson & Co., of King Street West, recognizing the necessity of meeting the wants of boiler makers, machinists and iron founders, are erecting a large building, at a cost of over \$9,000, for the storage of boiler plate, tubes, rivets, copper, pig iron, &c.

**EBRONIZING WOOD.**—The following is an inexpensive and effective process for ebronizing wood for cabinet purposes: Digest the wood for an hour or more in a strong hot solution of extract of logwood; then in a strong cold solution of iron sulphate (green copperas). The baths may be prepared by dissolving three-quarters of a pound of logwood extract in two gallons hot water, and one pound copperas in one and a half gallons of water. Repeat the digestions if necessary until the wood is properly stained. Light porous woods are the most easily stained, but any variety of wood may be blackened by this process.

**PROSPECTUS**

Of a proposed Manufacturing Company, to be located in Chatham, Ontario, to be called

**THE CHATHAM MANUFACTURING COMPANY (LIMITED.)**

Capital, \$100,000. . . In Shares of \$1,000 Each

The undersigned invite subscriptions for the Stock of the above proposed Company upon the following grounds. It is intended to make Waggon a leading article of manufacture, for which an abundance of the cheapest material is to be found here. It is known beyond a doubt that the demand for Waggon, both local and in our Great North-west, is almost unlimited, and that, if the Company confined itself to the manufacturing of Waggon alone, large profits would be certain; but we propose to turn over to the Company the North Chatham Saw Mills, and the extensive, but necessary, premises thereto belonging, of which we are the Proprietors, and take stock in the Company to the extent of the full value of these, to be ascertained by disinterested experts indifferently chosen. The net profits of the business of these mills last year amounted to over \$23,000.

Additional capital is required to start a Waggon Works in connection with these Mills, that will, at first, turn out TEN WAGGONS PER DAY, and add Machinery to the Mills for the manufacture of other articles of wood, or wood and iron, and for the profitable conversion of otherwise waste material.

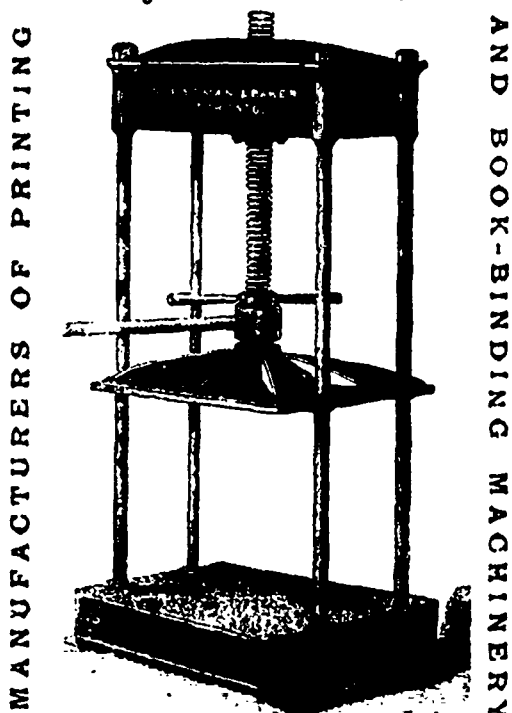
With these ends in view, Capitalists are respectfully invited to subscribe for this Stock, upon our assurance that, in doing so, they will make an exceptionally sure and very profitable investment.

So soon as a sufficient number of reliable parties shall have intimated to us, in writing, their willingness to become shareholders, we will call a meeting of those to whom Stock may be allotted, to sign Stock Book, appoint Directors, adopt steps to obtain the Charter, and settle other necessary matters of detail.

**D. R. VAN ALLEN & CO.**

Chatham, Ont., March 8th. 1882.

**WESTMAN & BAKER, 119 Bay Street, Toronto, Ont.**



MANUFACTURERS OF PRINTING

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STANDING PRESS. Size of Bed 24 1/2 x 37 1/2

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AND

KNITTING YARNS.

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— MANUFACTURERS —

Wholesale and Retail dealers in

**ROOFING MATERIAL,**

— AGENTS FOR —

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THE BEST ROOFING KNOWN.

Also put on

PITCH AND GRAVEL ROOFING,

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**LAMP BLACK,**

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DEALERS IN

SCRAP IRON

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**WELLINGTON & YORK STS.**

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FENWICK & SCLATER, Montreal.—Asbestos packing, paints, and roofing.—Send for lists. Files, &c.

### Agricultural Implements.

A. S. WHITING MANUFACTURING CO., Cedar Dale, Ont.—Manufacturers of scythes, forks, hoes, etc.

WELLAND VALE MANUFACTURING CO.—Lock No. 2, St. Catharines, Ont., Canada—Manufacturers of axes, scythes, forks, hoes, rakes and edge tools.

### Bridge Builders.

TORONTO BRIDGE CO., Toronto.—Builders of Steel and on, Railway and Highway Bridges.

### Chemicals.

JOHN MCARTHUR & SON, Montreal.—Offer at closest figures chemicals required by soap-boilers, oil refiners, paper-makers, and by manufacturers of woollens, cottons, leather, &c.

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P. BURNS, Offices cor. Front and Bathurst Sts., Yonge St. Wharf, 51 King St. East, 532 Queen St. West, Toronto.—Wholesale dealer in Coal and Wood. Telephone communication between all offices.

### Cotton Brokers.

M. WRIGHT, next Exchange Bank, Hamilton, Ont.—Sole agent in Canada for Ordway & McGuire, cotton factors, Nashville, Tenn.

### Cotton Mills.

HAMILTON COTTON MILLS CO., Hamilton.—Denims, tickings and yarns.

### Dye Stuffs.

EMIL FHOURET & CO., Montreal.—Agents for K. Oehler, Offenbach O. M., Germany.

JOHN MCARTHUR & SON, Montreal.—Supply of best quality at lowest prices. Every description of coloring materials required by manufacturers of woollens, cottons, silks, paper, leather, &c. Are sole agents in Canada for the celebrated aniline dyes of A. Porrier, Paris.

LANAN BROTHERS & CO., Nos. 71 and 73 Front Street East, Toronto.—Dye Stuffs of all kinds for Woollen and Cotton Manufacturers; Warps, Shuttles, Bobbins, Card Clothing, etc., etc.

### Edge Tools.

R. T. WILSON, Dundas, Ont.—Manufacturer of axes, picks, mattocks, grub hoes and railway contractors' supplies.

### Engines and Boilers.

G. C. MORRISON, Hamilton.—Engines, boilers, steam hammers, etc.

THOS. WILSON, Dundas, Ont.—Manufacturer of stationary and portable steam engines, boilers and machinery of every description—cotton mill calenders, hosiery steam presses and propeller wheels, all sizes.

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PHOENIX FILE CO.—Hand-made files and rasps. No machines in our factory.—Fenwick & Sclater, Agents, Montreal. Anchor Brand.

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G. OUTRAM & SON, Dominion File Works, Montreal.—Manufacturers of every description of files and rasps.

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FENWICK & SCLATER, Montreal.—Canvas hose, plain and ribbed lined, for fire departments and factories.—Write us before purchasing elsewhere.

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F. W. HORE & SON, Hamilton, Ont.—Manufacturers of hubs, spokes, rims, shafts, poles, sleigh and cutter stuff, etc.

### Iron Works.

CANADA SCREW CO., Dundas.—Manufacturers of iron and brass screws, bolts and rivets.

COWAN & CO., Galt.—Manufacturers of every description of wood working machinery.

DOMINION BOLT CO., 139 Front St. East, Toronto.—Manufacturers of every description of bolts, hot pressed nuts, railway spikes, bridge, boiler and iron rivets.

H. R. IVES & CO., Montreal.—Hardware manufacturers and founders; in nailing and ornamental iron work a specialty.

HAMILTON BRIDGE & TOOL CO., Hamilton.—Iron railway and highway bridges and iron working machinery.

McKECHNIE & BERTRAM, Dundas.—Machine tools and wood working machinery.

MONTREAL MALLEABLE IRON WORKS, St. George Street, Montreal.—Manufacturers of malleable iron, steam, and gas fittings.

THE OSHAWA MALLEABLE IRON CO., Oshawa, Ont.—Manufacturers of malleable iron castings; also patent screw wrenches.

SMITH'S FALLS MALLEABLE IRON WORKS, Smith's Falls, Ont.—Manufacturers to order of agricultural, carriage, and other malleable iron castings.

### Knife Works.

THE WHITMAN & BARNES MANUFACTURING CO., St. Catharines, Ont.—Manufacturers of mowing and reaping machine knives, sections, guard plates, cutting apparatus complete, spring keys and cutters, etc.

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S. LENNARD & SONS, Dundas.—Manufacturers of plain and fancy hosiery.

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JOHN MCARTHUR & SON, Montreal.—Afford best value in pure olive and lard oils, also in all other leading lines of vegetable, animal, and mineral oils for factory use. Invite special attention to their celebrated crown diamond "engine" and "machinery" oils.

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### Saw Manufacturers.

R. H. SMITH & CO., St. Catharines.—Manufacturers of all kinds of saws, plastering trowels, straw knives, etc. Sole manufacturers for the Dominion of Canada of the celebrated "Simond's Saw."

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C. WILSON & SON, 45 Esplanade Street East, Toronto.—Manufacturers of the Improved Wilson Scales. Designers to the Government. Received 29 first prizes, medal and Governor-General's grand diploma.

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TIMOTHY GREENING & SONS, Dundas, Ont.—Manufacturers of the strongest description of steel wire cloth, malt kiln floors and general wire weavers.

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C. T. BRANDON & CO., Toronto.—Have special facilities and machinery for the manufacture of all kinds of wooden articles. Correspondence solicited.

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WINANS & CO., Toronto.—Dealers in wools and cotton warps.

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## CARD CLOTHING LOOM REEDS, &c.

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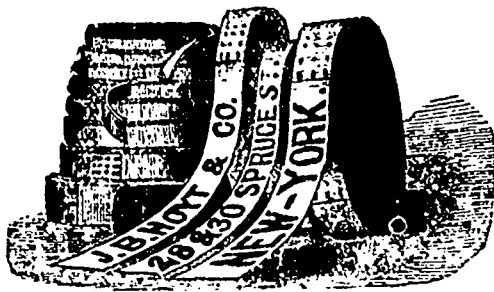
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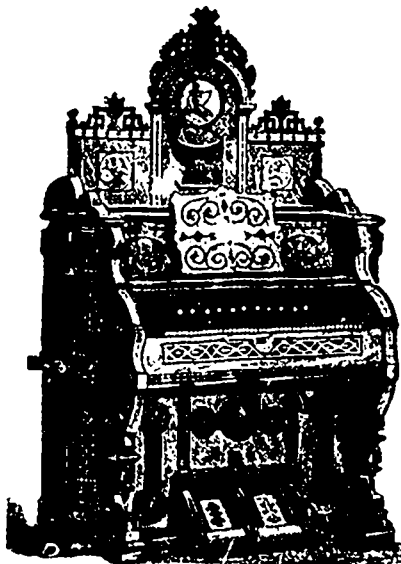
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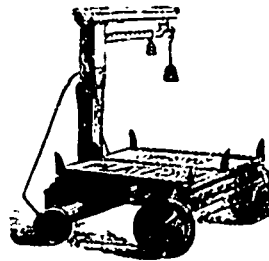
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WILSON'S IRON SCALE,  
VIBRATING AXLE.  
Every Scale Warranted.

COAL SCALES, HAY SCALES,  
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GROCER TEA SCALES.

29 First Prizes and Medal, 1880.

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*Drug Merchants, &c.,*

No. 3 FRONT ST., TORONTO.

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Importers and Dealers in Dye Stuffs, Oils, Chemicals,  
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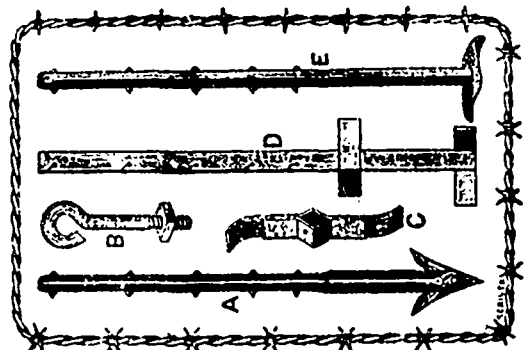
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FOR BARBED OR OTHER WIRE FENCES, THE

**Best, Cheapest and Most Durable**

FENCE POST EVER INVENTED OR USED, DOING AWAY  
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I will build Barbed Wire Fences with the Patent Iron Post at a  
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