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# THE CANADIAN MANUFACTURER

## And Industrial World.

Vol. I.

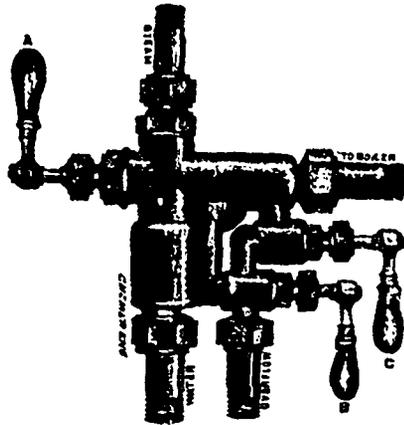
TORONTO, ONT., MARCH 17, 1882.

No. 6.

### THE "DUPLEX" INJECTOR.

We present below an illustration of the "Duplex" Injector. Not very long since an Injector of any description was looked upon with distrust by the average engineer in charge of the motive power in most of our mills and factories, but that day is past, the Injector is now a recognized necessity, and it has to a large extent superseded the steam and force pump for the purpose of boiler feeding.

This is not to be wondered at, since its economy in actual use has been so fully demonstrated by practical application, and the use of this appliance is becoming universal. One great recommendation, in our opinion, is the delivery of the water hot to the boiler, thus doing away with the old-time steam heater, with its coils of enclosed pipes that seemed always to get out of order on the slightest pretext and at the busiest moment. (We have had experience ourselves with this description of heater, and the memory evoked is not a happy one.) As the Injector is now an accessory to almost every engine-room, and as several patterns are made, all makers claiming that their particular style is the best, it behoves the



purchasers of such appliances to see that they really secure the best in the market, and in aiding them to this end, we reproduce below, in the makers' own words, some of the special points claimed for the "Duplex."

The Duplex Injector is, as its name implies, a double Injector—one draws water from a well or from a tank, and the other forces it to the boiler, at any steam pressure from 5 to 150 lbs. It requires no adjustment for varying pressures, or for hot or cold water, and is one of the easiest handled Injectors made.

It is one of the best appliances known for feeding boilers, as it always delivers the water hot to the boiler, and all the steam used in operating it is returned to the boiler, there being no loss of heat except by radiation; and, if pipes are covered, practically no loss whatever.

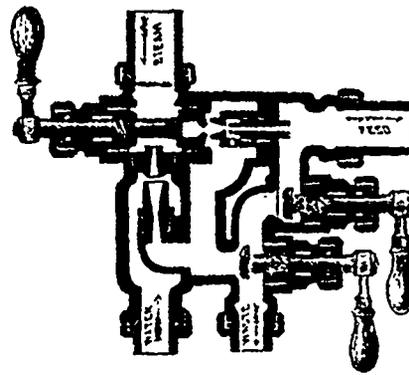
There are no movable parts for adjustment, no valves to

wear, so as to impair the working of the Injector, and it can be safely said that no Injector-made is so little liable to get out of order.

It is superior in design, material and workmanship. It is made with the best improved machinery and tools, so as to duplicate each size perfectly in each particular part, and is furnished as low as a reliable boiler feeder can be made.

When parties use a pump, they, as a rule, have trouble with it, and are satisfied to fix it or spend time in getting it to work; but if an Injector ceases to work for any reason, they will not investigate the cause, but condemn the Injector, when, in ninety-nine cases out of a hundred, the fault is in piping, or some cause outside the Injector.

Messrs. Rice Lewis & Son, Toronto, are the sole agents for this Injector in the Dominion, and they will be pleased to furnish intending purchasers with all particulars that may be re-



quired. Messrs. Rice Lewis & Son also carry a very extensive line of mill and factory hardware supplies, and manufacturers can secure from them any such articles in the shortest time possible. We mention a few of the many other specialties noticed in their handsomely illustrated catalogue, and which are in daily

requirement by manufacturers generally—Machinists' Tools, such as Taps, Dies, Drills, Reamers, Lathe Chucks, Callipers, &c.; Vices, Screw Wrenches, Drilling Machines, Portable Forges, Belt Hooks and Rivets, Safety Globe, Check, and every description of Valves; Steam Whistles, Lubricators, Steam Pumps, Judson Governors, Sturtevant's Blowers, Band Saws, and in fact everything in the way of regular factory supplies.

### THE "WANZER" SEWING MACHINE.

What a revolution in its special branch has the sewing machine caused, since Hood's famous "Song of the Shirt" was written. To-day there are but few households, however humble, but what can boast of the ownership of a sewing machine, and rich and poor alike count it as one of their most valuable posses-

sions. When Elias Howe first gave his invention to the world, his achievement was a grand conception, but the improvements since added to the machines of the best makers, place the machines of to-day almost as far in the van of Howe's first model, as that was in advance of the hand-sewing so graphically described in Hood's immortal lines.

The method and terms at present in vogue of selling sewing machines places the purchasing power in the hands of the million, and few are so poor that it is not an actual saving for them to buy one and pay for it in small instalments. The difficulty lies not in the being able to purchase, but in the ability to select a machine that will give every satisfaction; and when one is approached by half-a-dozen smooth-tongued agents, representing as many manufacturers, each and every one claiming to have the best in the world, the difficulty of selection is by no means lessened. The high standard of excellence attained by the "Wanzer" machines, whilst causing much jealousy amongst rivals, should be a source of congratulation to Canadians, inasmuch as we have in our midst, in this young country, a manufacturer that has been successful in competing against the world, and has received the highest honours wherever his machines have been exhibited, and, as a crowning triumph,

It has a reversible feed, enabling the operator to fasten threads at the beginning and ending of seams, and also to strengthen any part liable to extra strain by sewing backwards and forwards over them without stopping. The manufacturers claim that the following improvements place it ahead of all competitors:—"All working parts made of hardened steel; light running (a six ounce weight will turn it), noiseless; self-threading shuttle; positive take up large and roomy arm, so as to give plenty of space for large pieces to be handled with ease; automatic bobbin winder and loose balance wheel; triangular needle bar; all parts adjustable; no gear—no heart-motion—no cams." The above is a pretty formidable list of improvements, but this firm believe in keeping in the front rank, and eagerly avail themselves of all the latest improvements and inventions.

The other machines made by this firm are designated as follows:—

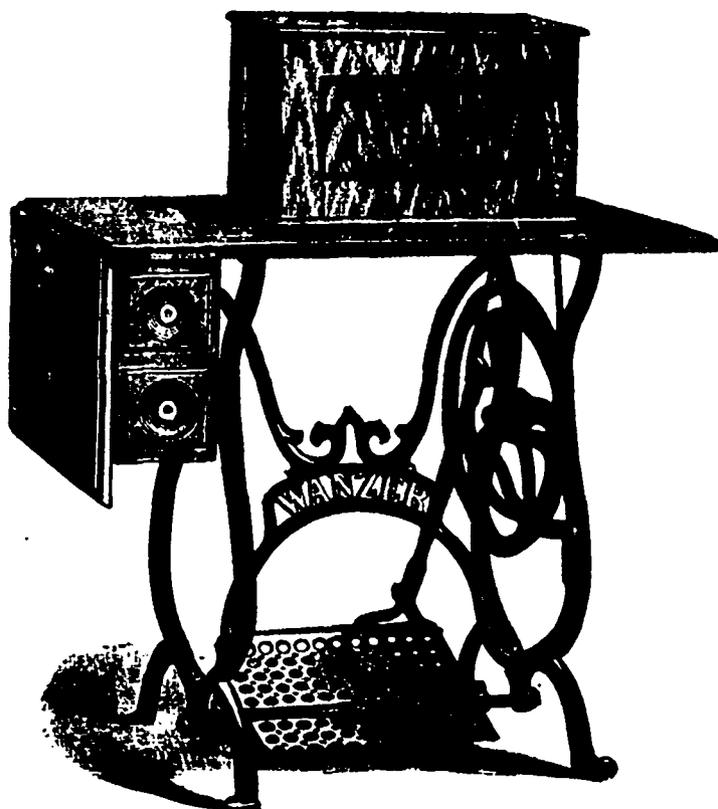
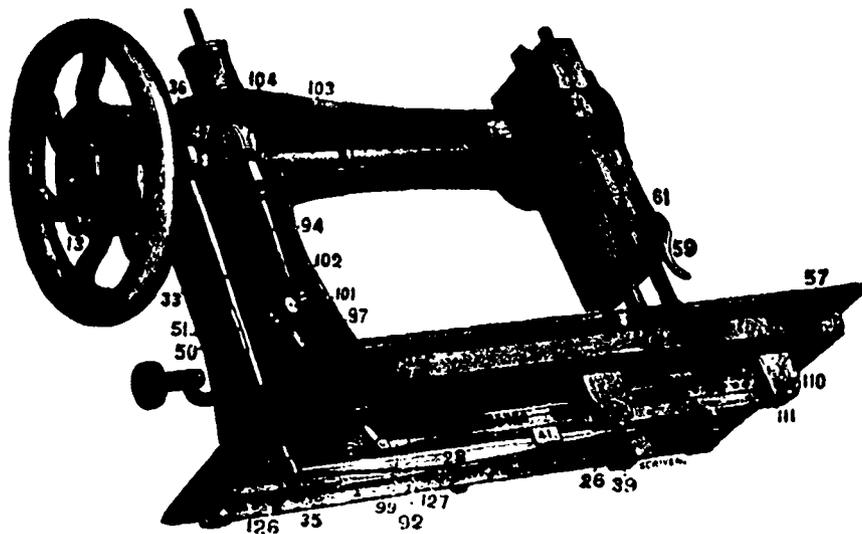
The "Little Wanzer" lock-stitch, to work by hand or foot.

The "Wanzer A" lock-stitch straight race, to work by hand or foot.

The "Wanzer C," light running for families.

The "Wanzer D," for tailors and manufacturers of heavy goods.

The "Wanzer E," with wheel feed, for leather work and heavy manufacturing.



THE WANZER SEWING MACHINE.

was knighted by the Emperor of Austria with the order of Francis Joseph the First, and was further decorated with the Iron Cross conferred upon him by the same hand. We illustrate one of the best known machines made by the firm—the Wanzer "F" for family use and light manufacturing work.

Messrs. Wanzer & Co. ship their machines to all parts of the civilized world, and give employment in different capacities to hundreds of hands.

Their factory at Hamilton is a hive of industry, and we say again that Canada may well be proud of such an establishment.

### CONFIDENCE IN THE FUTURE.

In connection with the Finance Minister's Budget Speech of this year there is one thing to be noted, of great importance to manufacturers generally. It is made clear to all concerned that the Government is determined, not merely to maintain the general principle of protection to home production upon which the tariff of 1879 was framed, but also to strengthen and to extend it in detail from year to year, as further experience may suggest. The maintenance of the original principle was pretty strongly affirmed in the budget speeches of 1880 and 1881, but now it is made to appear more clearly and more strongly than ever before. All the changes made are in the direction of promoting home interests as opposed to foreign interests. The duties on tea and coffee, articles which we cannot produce at all in Canada, are abolished. Some raw materials, or materials partly manufactured, which are raw material to Canadian factories, are either placed on the free list or at lower duties. On other articles, again, which it has been shown can be made here, the duties have been raised. All these changes constitute a further carrying out of the protective system established three years ago; they show that the original policy is being not merely maintained but extended. It is in course of being improved as more enlarged experience dictates, but always upon the same general principle as at first laid down; and year by year it is becoming stronger and more coherent.

This firm adherence to the original principle is producing effects of vast importance. The valuable element of certainty with regard to the future, as far as our national trade policy is concerned, is being more and more substituted for the uncertainty which before prevailed: a fact the importance of which can scarcely be over-estimated. As things go, business men have quite enough of uncertainties to deal with, without having uncertainty with regard to commercial legislation added to the number. The numberless contingencies of the market, arising out of causes which Canadian legislation, at all events, cannot control, are sufficiently troublesome without uncertainty as to that coming in, to make business more hazardous still. To remove all business hazards and uncertainties is beyond our power; but it is a very great and beneficial work done to remove as far as possible uncertainties connected with our own tariff policy. This is a work which it is within our power to do, and to the extent that we do it we are benefiting Canada. The result so far is seen in such a diffusion of confidence with regard to manufacturing enterprises as has never been witnessed in these Provinces before. The starting of new establishments and the extension of old ones is now going on at a rapid rate; the growth and diffusion of confidence among men of means and enterprise never was so conspicuous before as it is to-day. In some branches, chief of all in that of iron production, we still lag behind; we have not yet been able to see our way to a thorough, consistent, and comprehensive re-adjustment of the iron duties, at once practical and systematic. But that, there is every reason to believe, will come before long. Meantime the eagerness with which every available opening for a new manufacture in Canada is seized upon testifies to the diffusion of confidence in the future among men of business. Confidence is a plant of slow growth, so it is said; but under the genial sun of the National Policy

it is certainly growing up amongst us with commendable rapidity; and the value to the country of this particular growth is beyond all ordinary estimate.

### COAL v. WOOD AS FUEL.

In many sections of the country where wood was almost the only fuel used by manufacturers, it has recently become so scarce and so dear that many are using coal instead, and it is an interesting question to determine at what relative prices coal and wood are of equal value as fuel.

A boiler furnace, arranged for wood burning, is not adapted for the proper combustion of coal, and any attempts to use coal without making the necessary changes in the furnace, would only lead to unsatisfactory and disappointing results.

The object aimed at in the consumption of the fuel is, of course, the conversion of the water inside the boiler into steam.

To compare one boiler fed with water at 60° temperature, and supplying steam of 60 lbs. pressure, with another boiler fed with water of 40° temperature, and supplying steam of 80 lbs. pressure, would be manifestly unfair.

The amount of heat required for the production of steam depends upon the temperature of the feed water, and the temperature or pressure of the steam into which it is to be made, and to make a fair comparison between the performances of two boilers, or of two kinds of fuel, there must be some uniform standard of measure both for the water temperature and the steam pressure.

It is usual among engineers to consider the weight of water in pounds, at 212° temp., converted into steam of the atmospheric pressure as the standard to be used for this purpose, and it is spoken of as so many "pounds of water evaporated from and at 212° temp." per pound of fuel used. American coal varies very much in quality for steam-making purposes, but may be divided into three classes: these were a number of years ago very carefully analyzed and tested at Washington for the United States Navy Department, with the following results:

Anthracite coal contained on an average 3.97 per cent. volatile matter, 86.2 per cent. fixed carbon, and 6.28 per cent. of ash.

Free-burning bituminous coals contained on an average 15.11 per cent. volatile matter, 73.21 per cent. fixed carbon, and 10.27 per cent. ash.

Bituminous coking coals contained on an average 29.43 per cent. volatile matter, 58.29 per cent. fixed carbon, and 10.9 per cent. ash.

Although the volatile gas in coal, when actually consumed, gives off a great amount of heat, yet in actual practice the difficulty of consuming it is so great that most of it escapes up the chimney, and the steam-making capacity of coal is almost in direct proportion to the amount of fixed carbon contained in each kind.

The composition of the different kinds of wood used as fuel is so nearly the same that, when equally dry, the same weight of pine, tamarack or maple will yield the same quantity of heat, and produce the same quantity of steam. Wood, when newly cut and green, contains about 45 per cent. of moisture,

and in the ordinary air-dried condition of firewood, still retains at least 25 per cent. of moisture. Whatever moisture is contained in firewood has to be evaporated in the furnace, and absorbs just as much heat as if the water had been inside the boiler, but no good result comes from it. Wherever wood is used as fuel it should be kept under cover, in order to keep it dry as possible, especially in the winter, when snow and ice are so apt to accumulate on it. Wood is sometimes thrown into boiler furnaces with so much of snow and ice adhering to it that all the heat from the stick is used in evaporating its load of ice and snow, and there is none left for the boiler.

The evaporative power of good coal in a suitable furnace may be taken, at a fair average, to be 10 pounds of water evaporated from and at 212° per pound of coal. In many trials this has been far exceeded, but much depends upon the condition and proportions of the boiler, rapidity of combustion, and the skill of the fireman.

The evaporative power of air-dried firewood in sound condition cannot be taken as higher than 3½ pounds of water evaporated from and at 212° per pound of wood. A cord of sound, dry pine would weigh about 2400 pounds, and would be equal to about 8.10 pounds of good coal. Hardwood as usually supplied for consumption under factory boilers may be taken as equal to about 2800 pounds of "dry" wood per cord, and therefore equal to about 98c pounds of good coal; so that one ton of coal would be equal to 2½ cords of pine, or about 2 cords of maple. To put it in another way: Coal at \$6.50 per net ton, would be equal to sound pine at \$2.70 per cord; or to maple at \$3.20 per cord.

#### MANUFACTURERS AND THE RAILWAYS.

Produce dealers and shippers have the largest direct interest in the railway question of any class in the community, and we should say that next after them in this respect come the manufacturers. First, they have freight to pay on the raw material they use, and afterwards they or their customers have to pay freight on finished merchandize sent to its destination. In some branches the item of freight is a very large one in the year's expenditure, especially in the heavy iron and machinery trades; the paper trade, too, pays a large sum for freight both ways. So important has the freight question become that the location of new manufacturing establishments is now determined by the presence or absence of railway competition, even more than by the existence of water power or other local advantages. Quite recently a new paper company, formed in Toronto, found a most suitable and really a "splendid" site, as the word goes, somewhere along the line of the Northern Railway, and had almost decided to put up the factory there. But the best terms that could be made with the railway company for freight were deemed too high, and another site had to be chosen. We have no wish to make mention of one railway company more than another in this connection; we cite this particular case merely because it is one of the latest and most remarkable. The freight question is of more than usual importance these times from the fact that we have fairly entered upon a railway revolution in Canada. The opening up of the Northwest, the building of the Canadian Pacific Railway, and the accession of the Syndicate to the front rank of railway powers—these are the events which have precipitated the rail-

way revolution we speak of. It would be taking a very insufficient view of the situation, and a very misleading one besides, to imagine that in expediting the construction of the Pacific Railway we are merely providing for transportation to and from the new provinces of the Northwest. We are doing far more than this; we are revolutionizing the railway system of the old provinces besides. When we have got through with the railway revolution now going on, we shall find, perhaps many of the smaller business centres left out of place and many new ones established, while of the larger centres some may gain and some may lose by the rush of railway changes. The pushing forward of the Pacific Railway, we say, is in fact the one great event which is precipitating these changes and forcing them upon the country. A feature of the time, which now very distinctly appears, is the almost total failure of competition by the small local lines of railway, and their absorption by the great through lines. The process has already gone too far to be checked; there is nothing for us to do now but to take such measures as we can for developing and perpetuating competition between the great railways. These are the Canadian Pacific, the Grand Trunk, and the Great Western, with their connections either already existing or soon to be constructed. In this view the selection of sites for new establishments becomes a matter at once more difficult and more important than before, and even the continuance of old establishments in present locations may come up for serious consideration in some cases. We might give details at great length, showing why these things are so, and why they must be so; but for the present we merely suggest such a general view of the situation as every business man can follow up and verify from his own knowledge of what is going on. We would say to manufacturers generally, that they cannot too soon take special note of the many and various changes, which must follow in the course of the great railway revolution to which we invite their attention.

#### TRANSMISSION OF POWER BY BELTING.

##### II.

The reduction or acceleration of the angular velocity or speed of shafts by means of belting is inversely as the diameters of the pulleys.

When a large pulley drives a small one, the number of revolutions is increased, and when the small one drives the large one the number of revolutions is decreased. It is usually assumed that the increase or decrease in the number of revolutions is in exact proportion to the diameters of the pulleys, and that if a pulley, of any given diameter, making 100 revolutions per minute, drive another pulley one-third that diameter, then the small one will make 300 revolutions per minute assuming that the belt is fit for its work and does not slip. This, however, is not quite correct, and for more exact calculations the thickness of belt must be taken into account and the diameters of the pulleys measured to centre line of the belt. Suppose a pair of pulleys, twelve inches and four inches diameter, to be connected by a leather belt two-tenths of an inch thick, and that the large pulley makes 100 revolutions per minute, how many revolutions will the small one make? The ordinary way of reckoning would be to multiply the diameter

of the large pulley in inches, that is, 12, by its number of revolutions, 100, and divide by the diameter of the small pulley, 4, giving 300 as the answer. But the more correct way is to add the thickness of the belt to both, making the figures 12 2 10, multiplied by 100 and divided by 4 2 10, giving 290 4 10 as the number of revolutions instead of 300.

Beltng should not be used where very exact velocity ratios are required, as there may be some amount of slip, and the relative velocities may be changed by the belt becoming thinner as it is stretched.

It is not a good arrangement to make too great a change of speed by means of only one pair of pulleys; the increase of speed can be better obtained by the use of intermediate shafting. If required to drive one shaft nine times faster than the driver, two pairs of pulleys, in the proportion of 3 to 1, with an intermediate shaft, would be better than only one pair of pulleys in the proportion of 9 to 1.

When the pulleys are connected by an open belt, they will revolve in same direction, and when the belt is crossed their rotation is in opposite directions.

A crossed belt should have a half-twist upon it, so as to make same side of the leather come in contact with both pulleys. the stiffness of the belt when thus put on the pulleys makes the flat sides come in contact at the crossing point, and thus tends to diminish the friction at that point. A crossed belt takes a greater grasp of a pair of pulleys than an open one, that is, the "arc of contact" is greater, and where there is an intermediate shaft, the direction of the rotation of which may be either way, the two belts may be crossed, so as to increase the "arc of contact" on all the pulleys and yet keep the direction of rotation the same. The "arc of contact" means the proportion of the circumference of the pulley actually touched by the belt, and may be conveniently measured by the angle made at the centre of the pulley by two lines drawn from the points in the circumference where the belt ceases to touch the pulley.

Let there be two shafts, fourteen feet apart, connected by a belt on pulleys four feet and two feet in diameter, then the "arcs of contact" will be the same as if the pulleys had been twelve feet and six feet in diameter, and with the same tension on the belts the adhesion will be the same, but, as the belt on the larger pulleys would move at a higher velocity, it would be capable of giving off more power.

The statement is often made that, with the same tension on a given belt, and the same "arc of contact," a belt will slip on a pulley eight feet diameter just as readily as on one but four feet in diameter. This statement is quite correct, but it should be remembered that if two shafts be connected by a belt running on pulleys four and two feet in diameter, the belt will require twice as much tension on it for the same amount of power as would be required if the pulleys were eight and four feet in diameter.

The adhesion of the belt increases as the "arc of contact" increases, so that a crossed belt will drive a greater load on a pair of pulleys than an open one.

The "arc of contact" is sometimes increased by means of a tightening pulley, which has the effect of increasing both the tension and the "arc of contact," but it should not be forgotten that it also increases the friction, and sometimes by appliances of this kind the tension is so great and so liable to

sudden jerks upon the belt, that the elasticity of the leather is soon destroyed and the belt breaks.

(To be continued.)

### THE MANITOBA "BOOM."

At present the Manitoba "boom" shows no signs of abating. Companies are forming for the purpose of getting hold of large tracts of North-west lands, while in almost every city or town in Ontario lots in mere paper towns are daily offered for sale by auction. The greater portion of a vast territory is beyond all doubt good farming land, and will at an early day be settled and producing immense crops, of wheat especially. As for the paper towns, the greater part of the money paid for lots in them will inevitably be lost. It is not possible that the country should support half the towns that are being laid out on paper merely. It must be remembered that in Manitoba and the North-west there cannot be any manufacturing to speak of—flour milling excepted—for a long time to come. In the towns and villages which are yet to be, there will be found, of course, storekeepers, blacksmiths, waggon-makers, tailors, shoemakers, bakers, butchers, doctors, clergymen and school teachers, more or less—and, we had almost forgotten to add—lawyers. But waggons, farm implements, iron work of all kinds, boots and shoes, and ready-made clothing, and in fact almost everything that can be finished and sent there for sale, will continue to be supplied from the Eastern Provinces, so that any great expansion of manufacturing or mechanical industry need not be expected, until some time pretty far on in the future. And this brings us to an important point.—the value to manufacturers in the old Provinces of the rapidly-expanding and almost boundless market of the great North-west. Had our tariff remained as it was three years ago and before, then beyond all doubt the trade of the Canadian North-west would have been seized upon by American manufacturers and Chicago and St. Paul would have taken the business which Montreal, Toronto, and Hamilton are now doing. It seems almost providential, in fact, that the change in our policy came just in time to keep this vast Canadian trade in Canadian hands, and to retain, for the good of our own country, what would otherwise have been appropriated by foreigners. Nor is there any injustice in this to North-western settlers, present or prospective. If Ontario did not supply them with reapers and mowers, they would have got these necessary articles from the States, and not a cent cheaper, either, than the prices paid to our own manufacturers. As regards clothing and other manufactured articles, those who take the opposite view are welcome, if they like, to follow it up to its logical conclusion, and to affirm that such goods are obtained by the farmer cheaper in the States, where the duties range from forty to one hundred per cent., than in Canada, where the duties are only about half the American average. There is no injustice to the people of the North-west in the circumstance that the older Provinces may profit by their large demand for goods. If the Provinces did not take this trade, the neighbouring States would; not a cent's worth better off would the people of the North-west be for the substitution of foreigners instead of our own people to deal with. Further, the millions of money that

the old Provinces are spending on the development of the new country must be considered. Some go so far as to say that Ontario is now being bled most unmercifully, in various ways, through the rush of people to Manitoba, carrying their money and goods and chattels with them. We do not take this view; the loss is apparent merely, and not real. The people who go remain customers to our manufacturers still; nay, they will certainly be larger customers there than they were here. Some people again, are taking fright at the number of Ontario farms alleged to be in the market and for sale; which is held to show that the Province is being deserted. But if they were asked to point out a single Ontario farm—anything worth calling a farm—now actually vacant and uncultivated because the former occupier had gone west, they would be unable to do so. Let any man follow up any such supposed cases, and this is what he will find. He will find, on tracing up the facts, that in every case where an Ontario farmer has left his farm and gone west, there is now *somebody else* on that identical farm, working it very much as it was worked before. We would like to see the Ontario Government offer a reward for the actual discovery and positive proof of a case in which any farm in this Province worth tilling is now left untilled, in consequence of emigration to the North-west. Our conclusion is that the supposed loss is merely imaginary, while the gain from the development of the new country now going on is vast, and real, and substantial; and, further, destined to be permanent and long-enduring.

#### BOILER LEGISLATION.

The bill regulating the manufacture and use of steam boilers in Ontario was withdrawn by the Government before the close of the session, but will in all probability be brought forward again next year. Manufacturers of boilers, and all boiler owners, ought to make themselves acquainted with the measures proposed by the Government, and have eliminated from the bill of next session whatever will unduly hamper or interfere with their business. The proposed bill was on the whole favourably received, but was too important a measure, and one affecting too many interests, to be hurriedly placed on the statute book and enforced. It was wise to give time for the general public fully to consider the subject in all its bearings, and all interested should, during the coming year, prepare to comply with the requirements of the law when it comes into force.

#### THE OTHER SIDE.

We published lately a summary of the argument on the plaintiffs' side in the great trade mark case of *Morse vs. Martin*. The plaintiffs, who belong to the States, are manufacturers of the "Rising Sun" stove polish, and they claim that the label of the "Sunbeam" stove polish, made by Mr. Charles Martin, of Montreal, is an infringement of their trade mark. Mr. Martin writes a long letter to the *Star*, complaining that the report in that paper (from which we took our statement of plaintiffs' argument) is garbled and unfair throughout, and in fact all on one side. His contention of course is that his "Sunbeam" stove polish is neither offered by him nor taken

by the public as the "Rising Sun" stove polish; and that his polish sells on its own merits, and only by dint of his own advertising, and not at all on either the merits or the advertising of the American article. This view has been taken by the Court, the great trade mark case having been decided in Mr. Martin's favour on February 28th, when the plaintiffs' suit was dismissed with costs. Plaintiffs claimed that they had advertised their stove polish years ago in Montreal, but were unable to prove this, and Mr. Martin says in his letter:—

"The facts are, that neither the *Witness*, the *Star*, *Herald*, or *Gazette*, as proved in court by the representatives of these papers, ever contained a single advertisement of Morse Bros. or their stove polish, previous to the institution of this lawsuit, *i. e.*, 30th January, 1880. The fact of the matter is, that Morse's stove polish was not known at all in the Provinces of Ontario and Quebec previous to the registration of their trade mark, *i. e.*, 20th December, 1879, while I, by the registration of my trade mark in October, 1876, as is distinctly set forth in the judgment just rendered, have acquired the right to the exclusive use of this, my trade mark, for my 'Sunbeam' Stove Polish, and, therefore, if any of us had cause for complaint about infringement, it could be only myself."

#### THE EXPORT OF HEMLOCK BARK EXTRACT.

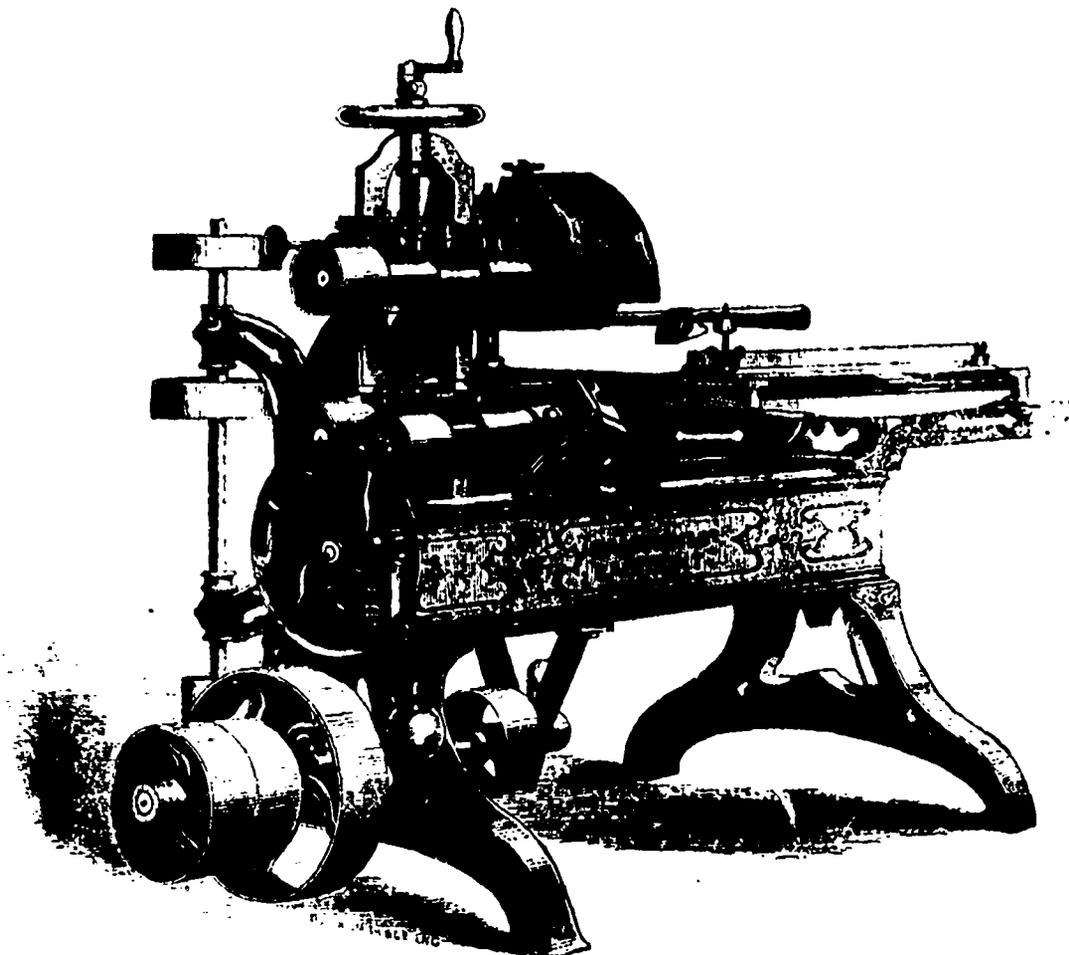
(From the *St. John, N. B., Daily News*, March 6.)

The discussion or conversation that took place last week in the Legislative Council in connection with Mr. Jones' motion for papers relative to the hemlock land sale, showed that the weight of opinion in that body was opposed to the course pursued by the Local Government on that matter. In the course of that discussion, two points were brought out very clearly, of which one was that the policy of stimulating the destruction of our hemlock forests for the maintenance of a great export trade in hemlock bark extract, was a most wasteful and short-sighted one, and the other of which was, that whether that policy was wise or no the land disposed of had been sold at a price far below its value.

There seems to be no doubt as to the soundness of these conclusions. It is plain to every intelligent observer that the tanning industry is one which the world can never dispense with. Its importance can never be lessened, but rather increased age after age. But the materials needed for use in the tanning process naturally become scarcer and scarcer. The trees whose bark furnishes the best tanning material grow slowly, and are destroyed quickly. The hemlock is one of the best of the tanning-bark bearing trees. It has been plentiful in this Province. But it is being rapidly destroyed, and as it grows scarcer it becomes more and more valuable. It would pay the Province well to guard it carefully. The rapid destruction of tanning-bark bearing trees elsewhere will surely enhance the value of such trees in New Brunswick. There is not the slightest probability that the use of tanning-bark will be superseded by any discovery or device whatever. Where it cannot be obtained in sufficient quantity, inferior tanning material will have to be depended on. Where it can be got it will always command a good price. But any one can understand that as the supply of such bark is limited, the country would profit far more in the long run from its use in tanning factories at home, than by its exportation in any shape for use in tanning factories abroad.

The exportation, however, may be found difficult to stop altogether; but henceforward the Government should be careful to part with no hemlock lands in large quantities, and with none in any quantity below their real value. The Government should be made to understand that the hemlock forests of the Province are sources of wealth to be jealously guarded and husbanded for the general good.

# THE "GALT FOUNDRY" ENGINE & MACHINE WORKS



The above cut represents our **No. 1 Tenoning Machine**, with Double Cutter Heads. It weighs 1300 lbs., and cuts 8 inches at one cut, or 10 inches at two cuts.

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All our Machines are built from New Patterns, with good heavy Iron Frames, and every Machine is tested before leaving the Works.

We devote special attention to Wood-working Machinery, and Engines and Boilers, Shafting, Hangers and Pulleys.

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AMERICAN  
LEATHER & RUBBER BELTING

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WE 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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FREDERIC NICHOLLS,

*Managing Editor*

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 Toronto, Ont.

### Editorial Notes.

The Woodstock rattan case, in which an American patentee tried to stop Messrs. Hay & Co., furniture manufacturers, from using a certain machine for preparing cane for chair-seats, &c., has been decided in favour of the latter and against the patentee. In the Queen's Bench, sitting in Osgoode Hall, Toronto, plaintiff's motion to prevent defendants from using the machine has been dismissed with costs.

The *Thorold Post* makes the remarkable statement that on the new canal, within the town or in its immediate vicinity, there are fourteen locks, with an estimated water surplus of one thousand horse power each. If this estimate be correct, then, as the *Post* says, the Thorold people have fourteen thousand horse power going to waste every day at their very doors. Our contemporary believes that all this wasted power would soon be utilized if the Dominion Government would only grant the privileges, and calls upon the town council to take action.

We have received a pamphlet entitled, "Waste of Fuel in Manufacturing Establishments, as illustrated by the Results of Engineering Tests. By George H. Barrus. Boston. Rand, Avery & Co." This appears to be a really valuable little pamphlet, giving in compact and condensed form the results of many costly and scientifically conducted experiments. It is well got up, and beautifully printed on fine paper, giving it the appearance of something to be kept for reference, and not merely to be glanced over and thrown aside. We should think all manufacturers using steam ought to have it.

In connection with recent shipments of machinery from the Waterous Engine Works, Brantford, to the North-west, elsewhere referred to, the remarkable fact is mentioned that the freight on a 25 h.p. sawmill to Sydney, Australia, going *via* New York, including insurance and all charges, is one-third less than to Brandon, in the Canadian North-west Territory. Of course it must be remembered that part of the distance between Winnipeg and Brandon is without railway facilities as yet, but still it looks strange that shipping to the other side of the globe should be so cheap in comparison.

It may be observed that in our American letters prominent mention is made of an important fact—the rapid extension of manufacturing capacity in the United States, both in the iron trades and in textile fabrics. The time is evidently drawing near when importations from Europe, in both these branches of trade, will have to take their chances in a highly-protected market, already almost sufficiently supplied with goods of home production. We are almost certainly on the eve of important new developments in this respect, which may greatly modify or even reverse opinions based upon a state of things which is now in course of passing away.

We print in another column a most valuable compilation—the annual statement of the production of pig iron in the United States for the year 1881, taken from the Bulletin of the Iron and Steel Association. The figures showing comparative production for three years back, the number of furnaces in and out of blast, and their location in various States, are of great value for future reference. In view of the efforts now being made to establish in Canada the production of iron and steel on the large scale, also of the certainty that the iron question will be prominently "up" before the Dominion Parliament for settlement next year—these details of American experience are of great and permanent interest on this as well as on the other side of the border.

In another column we print an article from the St. John, N. B., *Daily News*, on the subject of the rapid destruction of Canadian hemlock forests, caused by the demand for bark and bark extract to supply American tanneries. Both in New Brunswick and in the Province of Quebec, along the Maine and Vermont border, men of influence have been trying for fifteen years and more to stop this destruction, but still the thing goes on: and a really valuable raw material, belonging to Canada, is sold for a song and exported to build up American manufactures. We hesitate not to say that, in accordance with the true principles of Protection, now adopted as the policy of the Dominion, the Government should put a good round export duty upon bark and bark extract: also upon iron ore, as we have before suggested.

On Thursday of last week an important announcement was made in the House by Sir John Macdonald. Replying to a motion for correspondence between the Government of France and that of Canada respecting the entry of Canadian vessels in France, he said that there was no such correspondence, all negotiations being conducted through the Imperial Government. But he added that Sir Alexander Galt had gone to Paris accompanied by an officer of the British Foreign office, to make arrangements specially applicable to the trade of Canada with France, inasmuch as all hopes of a treaty between France and England had vanished, he believed. Our most direct interest is, of course, in the result of Sir Alexander's special negotiations on the part of Canada; but we cannot avoid seeing that the definite failure of the attempt to make a new Anglo-French treaty must prove a commercial event of the first magnitude.

We have thought it our duty to warn manufacturers generally that there is a sound of factory legislation in the air, and that they had better take note of the fact, and prepare for what is coming. A Toronto daily paper recently had the following on this subject: "The Toronto women's literary and social progress club report that to 111 circulars sent to firms employing the labour of men and women, urging on them the necessity of providing in their establishments separate conveniences for each sex, they have received nine replies. Those nine state that they have all proper provision named in the circular. This is satisfactory. But is it left to be assumed from the silence of the 102 others that so very large a proportion have not yet attended to the health and comfort of their employees? If so, the sooner the factory acts' bill comes to be law the better."

A cable telegram, dated London, March 11th, says that the shareholders of the new Liverpool Cotton Exchange, an enterprise which was started because of dissatisfaction felt by merchants at the members of the Cotton Brokers' Association undertaking to do business as merchants instead of confining themselves to brokerage, on Thursday formally organized the institution, which embraces all the leading features of the New York and New Orleans Cotton Exchanges. An influential board of directors, numbering fifteen, was chosen with F. Muir as President, B. F. Babcock as Vice-President, and W. D. Heyne, as Treasurer. Among the directors are Thomas Baring and other well-known gentlemen. The first issue of 200 shares have all been allotted, and additional applications have been received for 150 shares. The leading firms of Liverpool and Manchester are among the shareholders.

A New York paper not long ago stated that nearly all the plate glass used in the United States is imported from Europe. To this Mr. N. T. De Pauw, manager of extensive plate glass works at New Albany, Indiana, replies that there were more than a million and a half feet of polished plate glass manufactured in America during the year 1881, while according to customs' reports the annual importations have averaged about two million feet for several years past, showing that over 40 per cent. of the consumption was made at home. Add this fact to what we have elsewhere stated as to iron and textile fabrics, and the importance of a certain rapidly approaching event—the overtaking of American demand by American production in several leading branches of manufacture—becomes still more evident. Nor is this prospective event without interest to Canadians either, in view of what is going on in the same direction amongst ourselves.

We would direct attention to the prospectus of the Chatham Manufacturing Company, which will be found in our advertising columns. There are two main points which should commend this enterprise to investors. One is the large and practically unlimited demand for waggons in the vast territory of the North-West, which must continue far beyond any time that we need take note of in present calculations. And the other is the existence in the district within easy reach of Chatham, and comprising portions of the counties of Kent and Lambton, of large supplies of oak, ash, hickory and cotton-

wood, just the material wanted for waggon-making. Circumstances are in fact so much in favour of this enterprise, that exceptionally bad management would positively be required to prevent its being a success. It need scarcely be added that, with the reputation enjoyed by the firm of D. R. Van Allen & Co., the best management is what may be confidently expected.

If it be true that the fuel problem has been solved for Dakotah, as below affirmed, we may consider it as solved also for the Canadian North-west, in extensive regions of which lignite and coal exist in quantities larger than the public are generally aware of. The St. Paul *Pioneer-Press* says:—"General Manager Haupt, of the Northern Pacific, is now satisfied that the fuel problem of Dakotah has at last been solved. The feasibility of burning the lignite coal of the Bly mines has been amply demonstrated. That it can be used for all heating purposes is no longer an equivocal proposition. Superintendent Hobart, of the Dakota division, is testing the coal in a base burner. One day recently, with a high wind and unusually low temperature, the room was perfectly warmed with the consumption of between four and five scuttles of coal in the twenty-four hours. The same amount of the best Pennsylvania coal has often been consumed under like circumstances, showing a saving of at least 55 per cent.; when the difference in cost and weight is taken into account, this is much cheaper than wood."

#### CONSUMPTION OF FOREIGN IRON.

The December statement of the Bureau of Statistics contains, in addition to its usual data, a summary of the principal commodities remaining in United States bonded warehouses at the close of 1880 and 1881. With the aid of these figures, we are enabled to present the following data, which give a fair idea of the consumption of the more important descriptions of foreign iron in this country during the year ending December 31, 1881:—

	Stock in Bond Dec. 31, 1880.	Imports in 1881.	Stock in Bond Dec. 31, 1881.	Apparent Customs' Importation in 1881.
Pig iron, gross tons ..	164,403	464,430	10,000	618,833
Bar iron .....	10,071	42,696	3,103	54,664
Band, hoop, and scroll iron .....	2,240	738	218	2,760
Iron rails .....	35,636	12,233	5,094	42,715
Sheet iron .....	2,272	7,206	1,162	8,316
Steel rails .....	34,267	222,597	10,180	246,684
Old scrap iron .....	172,510	134,917	8,772	296,655
Anchors and chains ..	42	1,257	41	1,359
<b>Total .....</b>	<b>428,441</b>	<b>886,174</b>	<b>40,570</b>	<b>1,274,045</b>

—N. Y. Com. Bul.

Several large shipments were made recently by the Waterous Engine Co., Brantford, all within one week. First there was a portable saw-mill of 20-horse power, and a 20-horse power fire proof Champion engine on wheels, with shingle-mill, planing and matching machine, for the Morton Dairy, Farming and Colonization Company, Brandon, N.W.T. This machinery occupied two cars, and is taken out by the Company to prepare lumber for the buildings of the colony. The second shipment was a complete twenty horse power saw-mill and grist-mill for the Toronto, Manitoba and North-West Colonization Company. Its destination was also Brandon, from whence it will be teamed some twenty or thirty miles south to the site of Souris city. This company is composed entirely of Toronto capitalists, and from the energetic way in which they are pushing matters bids fair to become an important factor in the settlement of the great North-West. The third shipment was a 25-horse power grist-mill, of two run of stones, shipped via New York to Sydney, New South Wales. This is the sixth grist-mill the Waterous Co. have sent to the Australian colonies. They have also done a large trade there in saw-mills, and have now on their books two cable orders from Sydney for one thirty horse power double circular saw-mill, one twenty-five horse power saw-mill, and one twenty horse power saw-mill. Their next shipment to Manitoba is a complete machinery outfit for the Cochrane Rancho Company, of Bow River, N.W.T.

## 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.

Woodstock, N. B., has a new woollen mill enterprise. The capital is \$50,000 in shares of \$10 each.

We understand the Messrs. A. & G. Holland, of Ottawa, are constructing a pulp factory at Buckingham, and intend having it completed early in the spring.—*Lachute Watchman*.

The knitting factory started some time ago in Colborne by Mr. A. King is doing a prosperous business, from twenty to twenty-five hands being employed, and the weekly pay-sheet foots up \$125.

Smale & Hazleton are manufacturing two thousand iron harrows at their forge works on Flora-street. They have recently shipped a car load of harrows to Manitoba, and also a consignment to Dakota.—*Journal, St. Thomas*.

The rebuilding of the Globe Works, London East, is being pushed forward rapidly, and the new machinery is being placed in position. The company expect they will be able to get up steam and resume operations early next week.

THE COTTON INDUSTRY.—The desire for manufactures has struck Three Rivers. At a special meeting of the Town Council, called for that purpose, it unanimously voted a bonus of \$25,000 to the first cotton factory erected within its limits.—*Montreal Gazette*.

The Great Western railway car shops in London East are unusually active at present, and the men are working overtime every night. There are now employed in the works nearly 100 men more than were engaged a year since, and the increase is gratefully ascribed to the N. P. boom.

HAMILTON, March 2.—A well-known gentleman in this city has just completed the sale of twenty-four lots in the west end to a company composed of Toronto capitalists and a practical Hamilton manufacturer, on which a large foundry and machine shop are to be erected during the coming season.

We are glad to assure our readers that there is no doubt of the Government granting the request of the town in regard to water power. We have received the most positive assurance that the Government intends taking the matter in hand, and there is no doubt of the work being performed by them.—*Welland Telegraph*.

MAMMOTH BELT.—Messrs. F. E. Dixon & Co., belt manufacturers, Toronto, have just completed for a Belleville firm the largest leather belt ever manufactured in Ontario. It is thirty inches wide, double thickness, and one hundred and six feet long. It required fifty carefully selected whole steer hides to get leather enough to make it.

The Campbellford *Herald* states that there are now about 70 hands employed at the Trent Valley Woollen Mills, at that place. An excellent sample of flannel manufactured at these mills was shown a few days ago. The machinery throughout the buildings is now in active daily operation. The number of hands will be increased as the necessity demands.

The Winnipeg *Sun* announces that the Oshawa Cabinet Company's agent in that city has leased the Phoenix Skating Rink, to be used as a warehouse for the sale of furniture during the coming spring and summer. This company finds the demand for their furniture in Winnipeg so great that they require very much larger space necessary to hold the immense stock they intend placing in this.

Another new manufacturing industry is projected in Montreal, the "Canada Jute Bag Manufacturing Co.," being about to apply for letters patent, authorizing their incorporation with a capital of \$50,000. Messrs. John McDougall and G. A. Drummond are among the first directors. The jute will be imported uncalendered, being on the free list, the finishing of the material and the making of the bags being done there.

Messrs S. Lennard & Sons, Dundas, have just completed a large addition to their knitting factory. The building is of red brick, 53x36, and two storeys high. A large number of new machines of the most improved patterns are on their way from England, and when they are set up the firm will be able to turn out a finer class of goods than has heretofore been attempted in Canada. This increase of facilities will give employment to about thirty additional hands.

Messrs B. Greening & Co., of the Victoria Wire Mills, Hamilton, have just had erected a most valuable addition to their works, in the shape of a tower sixty feet high. It is to be used for the purpose of facilitating the painting and drying of their wire cloth, and this system is calculated to much improve the quality, the colour being laid on with great evenness. Although for practical purposes, the addition is a very ornamental one, and is surmounted by a ventilator of very neat design.

The capital of the Merritton cotton mill is to be \$200,000, in 2,000 shares of \$100 each; and the following names are quoted among the list of stockholders:—Toronto—Hughes Bros., T. C. Flannery. St. Catharines—James Norris, P. Larkin, Thos. R. Merritt, J. C. Rykert, M.P., T. Healey, R. Woodruff & Co. Merritton—Richard Leeson, Daniel Leo, James McLean. Thorold—Wm. Bull, James Munro, A. Dobbie. Collingwood—Thos. Long, M.P. Durham—J. H. Hunter. M. P.

The Town Council of Sherbrooke has unanimously resolved to exempt from taxation for five years and grant a bonus of \$5,000 to any company which would erect and run a cotton factory of 20,000 spindles in the town before the first of May, 1883. It is said that a number of Sherbrooke and Montreal capitalists are about to form themselves into a cotton company. It is also rumored that a large cotton firm of Cholet (Department of Marne and Loire), France, is about to erect a factory for the manufacture of colored cottons and ginghams in Sherbrooke.—*Montreal Gazette*.

Somebody writing to the *Welland Telegraph* advises that the people of that town should offer inducements to Mr. E. A. C. Pew to invest some of his capital in manufactures there, which it is believed he is willing to do, on conditions. Mr. Pew, who is understood to have made a good deal of money recently, formerly belonged to the Welland neighbourhood. Welland being on the Canal, has plenty of water power from an unfauling source, Lake Erie, and coal can be delivered there cheaply either from east or west. It ought to be a good site for factories of various kinds.

Mr. R. B. McPherson, of Thorold, proprietor of a stone flouring mill there, some time ago determined to convert the building, with additions, into a knitting factory, and the work is now nearly completed. The new building is four storeys, 62x71 feet, to which the old mill, 75x25, forms a wing, and there is also a large boiler house besides. Water power from the canal will be used to drive the machinery, which is now on its way from England and the States. From 100 to 150 hands will be employed, and it is claimed that the mill, when ready for operation, will be one of the most complete of its kind in Canada.

The recent snow blockade, together with the fact that the mining companies have more orders on their hands at present than they can conveniently fill, has made coal almost a scarce article in New Glasgow. Our local coal dealers have a lot of orders ahead of them. The strike at the Albion mines contributed somewhat to the scarcity and consequent demand. There are many people of the opinion that the managers of our mines might strive in the future to give better satisfaction in the matter of regular coal supply to the people of our towns at least, and thus prevent a great deal of inconvenience and distress.—*New Glasgow, N.S., Plain-dealer, March 1*.

Mr. Arthur Toomey finds it imperative that he should enlarge his factory to keep pace with orders, and he has made arrangements for doubling the capacity of his establishment within the next four weeks. Mr. J. A. Cliff has the contract for the erection of a building 30x40 feet, three stories high, to be veneered with brick. The machinery is already on the way, and is expected to arrive in about a week. A short time since, Mr. Toomey received an order from a Toronto firm for 3,000 pairs of blankets, to be delivered as soon as practicable. Business is booming with him; a fact which may be largely attributed to the excellent quality of the goods which he turns out.

The Massey Manufacturing Company, of this city, have decided to establish a reading room at the factory for the use of their workmen, who number some 300. It will be ready in the course of a few weeks. . . . With reference to the moulders whom Messrs. E. & C. Gurney brought over from Scotland, it should have been said that they joined the union at the request of the firm, and are now in their employ. There is no antagonism between Messrs. Gurney and their men, whose request for an increase of ten per cent. in wages has been acceded to. . . . The stone-cutters last night held their regular meeting at Lennox's Hall, and discussed the question of wages.—*Toronto Mail, March 11th*.

Messrs. Cowan & Co., Galt Ont., have shipped to Winnipeg during the winter some three or four car-loads of machinery, and at present are busily at work on other Manitoba orders. Messrs. Rowe & Co., of the Winnipeg *Times* have just placed an order with them for an engine and boiler, and the following Winnipeg manufacturers are at present using machinery purchased from the firm: Messrs. Brown and Rutherford, Planing Mill; Messrs. Blackmore & Codham, Planing Mill; Messrs. Chambers Bros., Manufacturers of Confectionery; Messrs. Hope & Burnley, Tent manufacturers, and others. Mr. Thos. Cowan has made several trips to the Prairie Province, the result of which is seen by looking through their order book.

The public meeting at Belleville on Saturday night last with regard to the iron industry was largely attended. A telegram was received from the chief capitalists of the Ontario Steel Association stating that they are willing to continue negotiations for the establishment of their works here, and will submit a further proposition. A communication was read from the New York and Ontario Furnace Company, which is composed of capitalists resident in New York and New Jersey, proposing to erect an iron smelting furnace of the capacity of 100 tons a day, an iron rolling mill, and steel works, the whole to cost \$500,000 and to be in operation within three years, provided the city will furnish a site, exempt the works from taxation for ten years, and take stock in the enterprise. The proposition was regarded favourably, and referred to a committee for the modification of some of the details.

Toronto is to have a valuable new industry established in her midst in the shape of a silver plate manufacturing company. Letters patent have been issued to James Anderson Watts, Hamilton, manufacturer; Alexander Sutherland Murray, London, merchant; William Henry Beatty, Toronto, barrister; William Kirkpatrick McNaught, Toronto, merchant; Christian John Robinson, Hamilton, merchant, and William Henry Partridge, Hamilton, gentleman, incorporating them as the company, with a capital of \$100,000, sixty per cent. of which has already been subscribed. The company intends to go to work at once. A large brick building will be erected at the corner of King and Portland streets at a cost of \$20,000, and skilled workmen will be brought from the New England States to manufacture all kinds of silver plate and other plated ware. This will be the only factory of the kind in the country. Mr. Watts will be manager.

It has been known for some time that Mr. John Abell, agricultural implement manufacturer, intended to remove from Woodbridge to Toronto. His reasons for removing are that the facilities for shipping will be much better in the city, and communication generally facilitated. He has secured a lot containing seven acres south of Queen-street, just west of the Asylum. The building will be 350 feet in length in front, and 50 feet in width. There will be two wings, one 200 feet by 50, and the other 100 feet by 50. In the space between the wings will be the foundry and boiler shop, 350 feet by 60. The main building will be three storeys high, not including the basement. There will be used in the building 125,000 lbs. field measurement of stone; 900,000 brick, and 700,000 feet of lumber. Work is now proceeding on the foundation, but it has been hindered by the accumulation of water on the ground. An application has been made to the City Council for permission to drain into the Queen-street sewer.—*Toronto Globe*.

A strong company has been formed in Montreal, under the title of The Canadian Iron and Steel Company (limited), for the production of iron and steel from the ore by the Duryea process, in which petroleum is the fuel used. In the process the oil is fed to the furnace in the form of spray, forced forward by a strong blast. Instead of being upright, the furnace lies horizontally, rising slightly as it goes back, and is of great length. One now in use at Poughkeepsie, N.Y., is 120 feet long, but Dr. Duryea says the longer it is the better is the effect produced; and probably 200 feet may be tried shortly. The following are the names of the Directors elected at the meeting in Montreal recently: Messrs. Robert Benny, James MacLaren (Buckingham), George Benson Hall (Quebec), James H. Peck, A. C. Clark, Geo. H. Patterson, and Dr. Geo. Duryea (New York). Messrs. Robt. Benny, James MacLaren, and Geo. H. Patterson, were respectively elected President, Vice-President, and Managing-Director; Mr. Armitage Rhodes was appointed Superintendent, and Mr. John S. Hall, Treasurer and Acting-Secretary.

The directors of the Automatic Blind Awning Manufacturing Company of Canada, capital \$50,000, are to meet at the Sherbrooke House in this city on the 14th inst., to arrange for securing a charter and to consider the best point at which to establish the manufactory—Sherbrooke or Montreal. Several full-sized models are on exhibition at the Sherbrooke House now, and Mr. Chamberlin, the proprietor, has ordered enough fixtures to put on the blinds of his hotel, which will enable him to convert them from blinds into awnings whenever required, or used the same as now. A company was organized for the manufacture and sale of the awning in the United States about a year ago, and the sales have been universal. The hanger is simply and ingeniously made and will fasten the blind when shut. They have been adopted by all the leading hotels and summer resorts and are fast coming into general use in the U.S. Parties who are contemplating building the coming summer should see the model at the Sherbrooke House, and builders will consult their own interest by introducing them.—*Examiner, Sherbrooke*.

Messrs. McKechnie & Bertram, of the Canada Tool Works, Dundas, in November last supplied Mr. Manuel Rioudd, of New York, with two large lathes for export to Cuba. Last week they received a letter from him, from which we are permitted to give the following extract: "It gives me pleasure to inform you that the two machines arrived in Cuba in first-rate order, and have given eminent satisfaction in every regard. We shall be pleased if the present enquiry leads to business anew with your house; it is the outcome of the reputation which the machines have made for themselves, and we believe there is a market in Cuba for a large number of them." Signed, Manuel Rioudd, New York. It is only last issue we had to chronicle in this department a heavy shipment of agricultural machinery to Russia by Mr. David Maxwell, of Paris; Messrs. Wanzer & Co., of Hamilton, ship to all parts of the world; Mr. Bell, of Guelph, sends his renowned organs to many foreign countries, and several other Canadian manufacturers are large exporters. The time is coming when Canadian manufactures will have a reputation that cannot be surpassed by those of any other country.

## HAMILTON ITEMS.

(Continued.)

The Ontario Cotton Mills Co. have purchased the whole block on which their mill is built, so as to secure ample room for future additions.

The foundation for the extension of E. & C. Gurney's already large foundry is now being laid, giving employment to a number of men.

The new foundry of R. M. Williams & Co., on Hugbunson-St., is now rapidly nearing completion, the roof of the main building being in position.

Messrs. Kelley & Co.'s new offices on Cannon-St., are now occupied by that firm. They report a number of orders ahead for their automotive engines.

The new knitting factory on Merrick-St. is now in operation, producing knitted goods of superior quality. The proprietors also prepare and spin their own yarn.

The new worsted mill on the corner of Wellington and King William Streets, is now in operation. It is equipped with the most elaborate machinery, and is, we believe, one of the first complete worsted mills in the Dominion.

Twenty-four lots have been purchased near the fair grounds, to build an extensive new foundry and machine works, capable of employing 150 hands. Mr. Robert Hinchcliffe is the gentleman who has this work in hand, he having found his present premises too small for his rapidly increasing business.

The fact of the great scarcity of labour in Hamilton may be cited as an index of the good times prevailing. The Ontario cotton mills will be shortly needing a great number of hands, all the moulding and machine shops are sadly in want of mechanics; wages are higher than ever before, and, just as the spring advances, the men employed in several trades are out on strike.

It is said a movement is on foot to establish Locomotive Works here, with a capacity of about sixty engines per annum. Three hundred thousand dollars is the sum mentioned as required to start with. There is no doubt an excellent opening for such an industry; but it yet remains to be seen if any definite action in the matter will be taken. In the event of the scheme taking practical shape, it would add materially to the prosperity of the city.

Messrs. Copp Bros. & Barry are at present as busy as bees, their extensive machine and boiler shops being literally swarming with men. They are putting in the machinery in four steamers, one of which is the largest on Canadian inland waters, having a carrying capacity of 60,000 bushels. Her compound condensing engines are 700 horse-power, and have all modern improvements. Messrs. Thos. Myles & Sons are the owners, and she is expected to be launched from Mr. Robertson's ship-yard in June next.

The machinery in the extension of the Hamilton Cotton Co.'s mill is now nearly completed, and is expected to be in operation in a few days. The new and extensive dye house and drying rooms are being utilized, and the capacity of the mills has been increased fully fifty per cent. by the recent additions. This mill commenced to run some eighteen months since, and during the whole of that time has not had to shut down a day in consequence of any defect in machinery or other mishaps. The goods produced by this firm are of superior quality and have taken several prizes at the exhibitions held last fall.

The Iron Trade.

PITTSBURGH.

IRON PRODUCTION IN THE UNITED STATES FOR THE YEAR 1881—PITTSBURGH'S EXPORTS TO FOREIGN COUNTRIES—SLIGHT ADVANCE IN WINDOW GLASS—BOTTLES AND VIALS UNCHANGED—NAILS AS BEFORE—QUOTATIONS.

(From Our Own Correspondent.)

PITTSBURGH, March 13, 1882.

Mr. James M. Swank, the Secretary of the American Iron and Steel Association, publishes in the last issue of the *Bulletin* of the Association full statistics of the production of pig iron in the United States last year, together with the total stocks in the hands of makers or their agents at the close of the year. From these it appears that the production was 4,641,564 tons of 2,000 pounds, against 4,295,414 tons in 1880, and 3,070,875 tons in 1879. Of the total produced last year, 2,268,264 was made with bituminous coal, 1,734,462 with anthracite, and 638,838 with charcoal. Pittsburg's quota of the pig iron made was 385,453 tons, compared with 300,497 tons in 1880, and 267,315 tons in 1879. Of the 4,641,564 tons made in the whole country last year, Pennsylvania made nearly one-half—2,190,786 tons. Ohio came next, with 710,546 tons, followed by New York and Illinois, with 359,519 and 251,781 tons respectively. Pig iron was made in Colorado, California, and Washington Territory for the first time last year. At the close of 1881 there were 487 furnaces in the blast in the entire country, and 259 out, making a total of 746 furnaces. At the close of 1879, there were 446 furnaces blowing and 255 cold, making a total of 701. There were 25 new furnaces erected in 1881, and 23 commenced but not completed, while 12 were abandoned.

In connection with the foregoing, the following table of imports of foreign iron into the U.S. is of especial interest. The tons are gross:

	Stock in bond Dec. 31, 1880.	Imports in 1881.	Stock in bond Dec. 31, 1881.	Apparent consumption in 1881.
Pig iron, gross tons.....	164,408	464,480	10,000	618,838
Bar iron.....	10,071	42,696	5,108	54,664
Band, hoop and scroll iron.....	2,240	738	218	2,760
Iron rails.....	35,688	12,233	5,094	42,715
Sheet iron.....	2,272	7,206	1,162	8,316
Steel rails.....	34,267	222,597	10,180	246,684
Old scrap iron.....	172,510	134,917	8,772	298,655
Anchors and chains.....	42	1,357	41	1,358
Totals.....	428,441	886,174	40,570	1,274,045

Isabella Furnace No. 1, in this city, made 6087 tons 1072 pounds during the five weeks ended February 25, being a weekly average of 1207½ tons. The largest week's production was 1270 tons 948 lbs. The tons were of 2268 pounds, and the furnace is 20 feet across the back and 75 feet high. No furnace outside of Pittsburg ever made such a large production in the same length of time.

A great many of the products of Pittsburg find a market in foreign countries. The proprietors of the Fulton Bell Foundry say that not only are their bells rung in every state in the Union, but that they occasionally ship one abroad. Not long ago they sent one weighing 850 pounds to Chefoo, China. Before that they shipped one weighing 300 pounds to Wingpo, China. Both bells were for Presbyterian mission stations. There are five iron-hull steamboats, built by Messrs Rees & Thorn, running on the rivers of South America. Besides these, they have one ready for shipping (in sections) and another ready to go on the stocks. The first is intended for the Magdalena river trade, in the U.S. of Columbia, and the other for the Zull river trade in Venezuela. The same firm also have a man in Russia building a steamboat hull for trade on the Neva river. The machinery is being made here. Speer & Sons, makers of plows, send these implements to Germany, Switzerland, France, Spain, Portugal, Italy, Greece, Turkey, Egypt, Palestine, Australia, and other countries. Another plow firm here (a new concern) are also sending a great many plows to Cuba. Our manufacturers of glass table-ware also ship large quantities of their goods to a great many foreign coun-

tries, and the Rochester Tumbler Company (the largest concern of the kind in the world) ship tumblers even to Yokahama, Japan. Messrs. Smith & Goldthrop have a contract to light the streets and plazas of Vera Cruz, Mexico, with gas manufactured from petroleum by a process patented by one of the firm. Our refined oil goes to almost every part of the world.

The Western Nail Association, the Western Vial and Bottle Association, and the Western Window Glass Association, held meetings in this city last week. The latter association made a slight advance in prices. The others made no changes.

There has been such a prolonged quietude in the pig iron trade here that prices of some kinds have given way a little, and they may now be fairly quoted as follows:—Neutral mill, from native ore, \$25 to 25.50; cinder-mixed red-short (mill), \$26; Bessemer, \$29; No. 1 foundry, \$27.50 to \$28; No. 2 do., \$26.50 to \$27.50 (all four months). Muck bar is also lower, and \$45 cash is top price. Manufactured iron holds its own. Bar, 2.50c.; No. 24 sheet, 4.30c.; tank, 3.30c.; C. H. No. 1 boiler plate, 5½c.; homogeneous 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.—Nails unchanged, demand fair, and stocks throughout west reported small: 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.—Gas and steam pipe, 60 per cent. discount on small and 60 and 5 per cent. on large lots; discounts on boiler tubes, 40 to 40 and 5 per cent.; oil-well casing, 75c. net, and tubing 25c. net.—Steel unchanged.—Steel rails are nominally \$58, but works are full of orders up to August.—Railway spikes, 3.15c. per lb. 30 days; splice bars, 2.6c. per lb.; track bolts, 3.75c. to 4.00c. for square nut and 4½c. for hexagon, cash f.o.b. Pittsburg. No. 1 wrought scrap, \$35 to \$38 per gross ton; old car wheels, \$31; car axles, \$44 to \$45; American leaf springs, \$44; foreign do., \$42 to \$43. Lead: 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; buck shot, 8c., 1 to 4 per cent. off. White Lead, 7c. to 7½c. per pound. Linseed oil, 63c. per gallon by the barrel; boiled 66c. Connellville coke, \$1.75 @ \$2.00 per ton of 2000 pounds, f. o. b. cars at the works.

PHILADELPHIA.

PRICES IN FAVOUR OF BUYERS—FOREIGN MARKETS STEADY—PROBABILITIES AS TO CONSUMPTION—IRON QUOTATIONS—RAILROAD, TARIFF, AND LOCAL INTERESTS.

(From Our Own Correspondent.)

PHILADELPHIA, March 14, 1882.

Buyers still have the advantage in the iron and steel markets east. The improvement in trade has not been marked. There have been floods in the west and high water east. The correspondence to hand from buyers and travelling agents shows a generally hopeful view of the commercial and industrial situation. The dullness in trade of the past six weeks has not reduced quotations a whit, and on the contrary the actual selling prices in some branches are higher than two weeks ago.

The foreign markets are steady and firm. The imports of iron and steel at Boston, New York, Baltimore and Philadelphia do not show up as very alarming. American iron makers are better able to meet demand than at any time since last summer, as they have been keeping as clear as possible of heavy contracts in order to profit by any advance in prices which might come. Buyers have been holding off, hoping to profit by lower prices which might come from increased imports. Thus both sides have been avoiding business. Neither side has given in. Foreign imports do not help or hurt anybody, and probably will not. Domestic prices run along very evenly. The entire situation is satisfactory, although in two or three branches the satisfaction is not overflowing.

The fact is the expansion of iron-making facilities is going on at a greater rate than is comprehended. Every few days brings intelligence of another furnace going in blast or a new mill projected or starting up. The latest is one fifteen miles above the city. Several blast furnaces will add their product to the April supply. The effect of this expansion, sooner or later, will be to increase the supply and overtake the demand,

and thus intensify competition, which has for several months been only a nominal factor in the determination of prices.

This condition will be postponed longer because of the extraordinary activity in British and colonial markets. There, it seems, the activity is very great, and is increasing. Even prices are advancing. With the enormous capacity available, much of which will doubtless be called into requisition, it is only a question of time for foreign demand to be caught up with, then comes international competition. Meanwhile wages have advanced both in Great Britain and here, and in the readjustment of prices which must follow, the advantages of producers will be severely tested.

The probability as to the consumption of iron this year is that more crude, merchant plate, and structural iron and steel will be used than last year, and for reasons which do not require to be detailed. As to railway construction, it is too soon to speak by the card. There may be a disposition this month to restrict construction, and next month the feeling may change. All the indications favour as much railway activity as is healthy. Steel rails are weakening from two or three causes. The chief cause is the increasing productive capacity; and another is the possibility of a sharp competition later on with foreign makers when present contracts shall have been worked up and new ones wanted. These probabilities have had their full weight in holding back a certain amount of work, and therefore the small fry in the trade get up a howl that railroad building will not be as great as last year. That is possible, but the real cause should be perceived. The accumulation of wealth, and the settlement of the west, call for increasing railway facilities. A good crop will revive the export trade. A few dozen sea-going ships will help to extend it. It is true that the rush of emigration from the east of the native population has fallen off very greatly since the general revival of good times and the decline in exports.

Pig iron is unchanged in the east. Furnace companies are not reducing prices in order to sell. Buyers have been holding off in hopes of arrival of foreign pig iron consignments, but very little has come, and that on orders only. The speculators are not about. Prices are \$24.50 at furnace for No. 1 Foundry, \$23.50 for No. 2, and 22.50 for Gray Forge. All furnaces have a fair amount of work on hand. Some orders will take the product up to July, others later. Special grades are generally sold far ahead. Bessemer is quoted at \$26, and little selling. Muck bars are selling slowly at \$45; steel blooms, \$45; charcoal blooms, \$75.

Merchant iron is in steady demand at 2:8 rates at mill. There are fewer probabilities of lower prices than two weeks ago, but so few probabilities of an advance that consumers were not buying three months ago as they were so anxious to do last fall and early winter. It is true to say that the consumption is extraordinary, and that any weakening in quotations is improbable. Consumers are always ready to buy if an advance is probable. Demand generally improves in July and August, and it is probable provision will be made for summer requirements during May.

Structural iron is stronger than at last writing. Bridge builders are sending in specifications, and the ship-yard demand for plate is heavy, though plate and tank have weakened a trifle within the past ten days. Angles are quoted at 3½; beams, 4; channels, 4½, from which slight concessions are allowed when large contracts are made. The increase in weight, cost of material, and labor is attracting attention. The Phoenixville strike is over, and the company gained by employing foreign help. There is apparently a surplus of mill labor. A few months ago scarcity was complained of.

As spring is at our doors the cast pipe men are active; orders for very large lots have been placed within a week and more are on the market. The largest contract is for one hundred miles of six inch pipe. The works will have all the business they can attend to for the season. The scarcity of foreign iron advances prices. The sheet iron mills are, as they have been for a year, over crowded. The East does not increase capacity, while in the West new mills are going up.

Nails are steady and firm at \$3.40 net. The Duncannon Works, east of Harrisburg, Pa., were burned down on Sunday night, throwing 300 men out of work. This company had orders for large quantities of nails booked, and in consequence of the loss they will transfer them to other places.

Steel rails are quoted at \$55 to \$58, with rumors of still lower prices possible. Steel rails at \$50 is not impossible. The free traders have

their eye on Bessemer steel, and will not rest content until it has a black eye.

The Advisory Board is in the city this week, and the various commercial bodies are presenting an array of statistical information designed to demonstrate the necessity not only of different management but that government control in some shape will be a necessity. Mr. Vanderbilt has already asserted that he will do as he pleases, regardless of the opinion or advice of the Advisory Committee. There is a deep hostility beneath apparent good feeling among railway managers.

The tariff legislation hangs fire. The discussion this week develops well organized opposition to protective principles. The McKinley bill has bitter foes and strong friends. What the outcome will be none are prepared to say just now, but that the protectionists will win in the end there is no doubt. The fight will not be precipitated until the friends of protection know pretty closely what the vote will be.

Local trade is improving. The banks are reducing discounts. Foreign trade is unsatisfactory. A gain of \$39,000,000 in imports in seven months and a decrease of \$9,000,000 in exports, besides a decline of \$47,000,000 net imports of specie are not favourable indications. At this rate it will take only two years to turn the balance of trade against us.

MONTREAL.

PIG IRON RATHER DULL—FIGURES FOR PIG AND BAR IN RECENT SALES—SLIGHT ADVANCE ON CUT NAILS AND WINDOW GLASS—GENERAL METAL MARKET QUOTATIONS. (From Our Own Correspondent.)

MONTREAL, March 14th, 1882.

To say the least, the market for Scotch pig is quieter if not easier, owing to the dull tenor of advices from England; and the only business we hear of is on spot at about our previous basis of values. Sales of 120 tons of Siemens are reported for Western delivery at equal to \$26.00 here, but this figure is considered exceptional as it can be bought for \$24.50 @ \$25.50 as to quantity. The sales are also reported of 100 tons of Gartsherrie at \$24.75 and of a car lot of Summerlee at the same figure. Eglinton is offered at \$23.50, and some maintain it can be bought cheaper. Messrs. John E. Swan & Bros. of Glasgow under date of Feb. 24th say: "108 furnaces in blast, as against 120 at the same time last year. The quantity of iron in Connal & Co.'s stores was 631,145 tons, an increase of 250 tons for the week. The shipments show an increase of 7324 tons, as compared with the shipments to the same date in 1881. The imports of Middlesbrough pig-iron for the same period show an increase of 10,081 tons. In bar iron we have sales to report of about 200 tons of Siemens at \$2.35, and 100 tons Staffordshire Crown at \$2.35. Owing to the removal of the duty, Tin plates are lower and we quote I. C. Charcoal quiet at \$5.50 @ \$5.75 per box, and Cokes at \$4.75 @ \$5.00. In Canada Plates there are no transactions, as the season has not yet commenced. Ingot Tin is quoted at 27½c. @ 28c., but there appears to be an undertone of weakness. Ingot Copper is scarcely a firm, and values are quoted at 18½c. @ 19c. In general hardware we have to report a steady country trade at about former prices. The advance in cut nails referred to in our last review was 10c. per keg, and prices are now as follows:—

HOT CUT AMERICAN OR CANADIAN PATTERNS.

3 inch to 6 inch.....	\$2.70
2½ " to 2¾ " .....	2.95
2 " to 2½ " .....	3.20
1½ " to 1¾ " American.....	3.45
1½ " " " .....	4.20
1½ " to 1¾ " cold cut Canadian.....	3.20
1½ " " " .....	3.70

There has also been an advance of 10c. on window glass, which we quote as follows:—

7½×8½, 7×9, 8×10, 10×12, and 10×14....	\$2.00 @ \$2.10
12×16 and 14×20 .....	\$2.20 @ \$2.40
18×24.....	\$2.40 @ \$2.50

Since writing the above we are informed there is a disposition to await future developments in the pig iron market on the part of buyers, and therefore orders for future delivery are light. We quote prices of pig iron as follows:—Colinnes, \$25.00 to \$25.50; Siemens', \$24.50 to \$25.50; Summerlee, \$24.50 to \$25.00; Langloan, \$24.50 to \$25.00; Eglington, \$23.00 to \$23.50; Calder, \$24.00 to \$24.50; Carnbroe, \$23.50 to \$24.00; Hematite, \$27.50 to \$28.00. Bar, per 100 lbs.—Siemens, \$2.25 to \$2.35; Scotch and Staffordshire, \$2.25; Best Staffordshire, \$2.50; Swedes, \$4.00 to \$4.50; Norway, \$5.00; Lowmoor and Bowling, \$3.25 to \$3.50. Canada Plates, per box—Glamorgan & Budd, \$3.25 to \$3.50; Penn, \$3.25 to \$3.50; Nentgwynt, \$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. X., \$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 100lbs., \$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 12c.; 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. Bar Tin, 30c. to 32c.; Ingot Copper, 18c. to 19c.; Zinc sheet, per 100 lbs., \$6.00 to \$6.50; Spelter, . . . to \$6.00; Horse Shoes, per 100 lbs., \$4.25 to \$4.50; Proved Coil Chain, ½ in., \$5.50; Anchors, \$5.00 to \$5.50; Iron Wire, No. 6, per bdl., \$1.75 to \$1.80.

**Wool.**

**PHILADELPHIA.**

DEMAND FAIR AND PRICES MAINTAINED—EUROPEAN DEMAND  
—GOOD FIGURES REALIZED AT THE LONDON WOOL SALES  
—AMERICAN STOCKS GETTING CONCENTRATED IN STRONG  
HANDS—QUOTATIONS.

(From Our Own Correspondent.)

PHILADELPHIA, March 13, 1882.

A fair business has been done in all seaboard wool markets during the past fortnight, but there has been no decided activity in the demand, and complaints continue general about the unsatisfactory condition of the trade. Manufacturers buy as they need supplies, and a good deal of negotiation is necessary to effect sales. Their wants are large, however, as consumption is in active progress, in all directions, and their frequent purchases in small lots swell the volume of business to liberal proportions with at the appearance of much life in the market. Concessions have been made in some instances, and would still be necessary to stimulate active buying; but the general feeling among holders is more confident than at the time of last report. The improvement is in a great measure attributed to the unexpectedly favourable reports from London, where the sales of colonial wools are now in progress. Competition at these auctions has been quite spirited, and the rates established at the November series have been well maintained. The French demand, that was expected to drag in view of the recent financial depression, has been very good. The firmness of prices abroad removes all apprehensions of importations of competing grades of clothing wools prior to the marketing of the present domestic clip, and as desirable assortments are being gradually broken and concentrated in strong hands, the market is steadier and presents a more encouraging outlook. The failure of the banking house of C. A. Sweet & Co., in Boston, had no appreciable influence on the market. Among last week's sales in Philadelphia were 10,000 lb of Canada combing fleeces at 41c. to 43c, half at each price. We quote Ohio, West Virginia, and Pennsylvania fine fleeces at 43c. to 45c., the latter for choice selections. Michigan and Wisconsin do. at 40c. to 42c., fine delaine fleeces at 46c. to 48c., and medium do. and combings do. at 49c. to 51c., chiefly 50c.

**MONTREAL.**

A FIRM AND RATHER ADVANCING MARKET—EFFECT OF THE LONDON WOOL SALES.

(From Our Own Correspondent.)

MONTREAL, March 14, 1882.

The firm and active tone of the London wool sales now in progress has had its influence upon this market, and all the finer grades of foreign are held with greater firmness. During the week there have been sales of Greasy Cape at fully ¼c. per lb. better figures than could have been obtained a week or a few days ago. Sales of 100 bales of Cape are reported at from 19½c. to 21½c., and 50 bales of Australian at 24½c. Fine Combing Australian is quoted at 28c. to 30c. In domestic kinds there is very little doing, and we quote prices as follows:—Australian Greasy, 28c. to 30c. for fine combing, and 22c. to 25c. for common Greasy Cape, 19½c. to 20½c.; extra fine qualities, 21c. to 21½c. Canada Pulled—A. Super, 33c. to 34c. B. Super, 31c. to 32c. Unassorted, pulled, 28c. to 29c.

**Cotton.**

**PHILADELPHIA.**

DEMAND GOOD FOR ACTUAL CONSUMPTION, BUT NOT FOR SPECULATION—PRICES HARDENING—DECREASED RECEIPTS AT THE PORTS—MARKETS STRONG AT THE CLOSE.

(From Our Own Correspondent.)

PHILADELPHIA, MARCH 13, 1882.

A better feeling has been developed in all American and Foreign Cotton markets during the past fortnight. Speculation in futures has been only moderately active, but the demand both for export and consumption has been decidedly more active, and prices have been gradually hardening all around. The English short-time movement, as generally expected when first threatened, has been abandoned. Receipts at the ports have continued to run very small—the total for the year to date showing a decrease of 684,648 bales, as compared with the same time last year. Spot stock has been in good demand, but the volume of business has been light owing to the unwillingness of holders to part with it except at a further advance. A large part of the available supply is held against contracts for future delivery. During the past week prices have advanced ¼ to ½c. per pound in New York and Philadelphia, and ¼c. in most of the Southern markets. At Liverpool "spots" are ¼d. per lb. higher—closing firm with a good spinning demand at 6½d. for middling uplands, and 6 13-16d. for New Orleans. All markets at the close are strong, and the weight of opinion among operators is in favor of higher prices. The following were the closing prices of spot cotton on the dates named:—

	Middlings.	Low Middings.	Middlings.	Low Midd.
	February 25th.		March 11th.	
New York	11 11-16	11 5-16	12 1-16	11½
New Orleans	11½	11	11½	11½
Mobile	11½	11	11½	11½
Charleston	11½@11½	11½@11½	11½@11½	11½@11 11-16
Savannah	11½	10½	11½	11½
Galveston	11½	10½	11½	11½
Wilmington	11½	10 15-16	11½	11 1-16
Norfolk	11½	—	11½	—
Augusta	11	10½	11½	10½
Memphis	11½	10½	11½	11½
St. Louis	11½	10½	11½	11½
Cincinnati	11½	10½	11½	10½
Baltimore	11½	11½	11½	11½
Philadelphia	11½	11½	12½	11½
Boston	11½	11½	12½	11½

**Dry Goods.**

**NEW YORK.**

DEMAND NOT AS GOOD AS AT THIS TIME LAST YEAR. CUSTOM FROM THE SOUTH FALLEN OFF--EFFECT OF THE FLOODS THERE UPON TRADE--WESTERN DEMAND ALSO DECREASED--LARGE NUMBER OF NEW FACTORIES, AND PROSPECTS OF OVER-PRODUCTION--AUCTION SALES OF FOREIGN GOODS COMMENCING.

(From Our Own Correspondent.)

NEW YORK, March 14, 1882

Our dry goods market is certainly not in an entirely satisfactory condition; and, notwithstanding there has been some improvement since last advices, yet there are unmistakable signs of disappointment and unfulfilled expectations. With the South trade is very backward, and the late disastrous floods have effectually dispelled any hopes for the better in that quarter. Collections from there are indifferent, and the repeated small failures are not at all assuring. The Western trade, though likewise backward, has been fair, but considerably below the proportions of this time a year ago. Commission houses, representing the leading makers of cottons and woollens, received a moderate aggregate of orders; and a considerable distribution in the execution of back orders was effected. City jobbing houses, also, distributed a few fabrics rather more freely; but the inclement weather served to check what might otherwise have proved a satisfactory week's business in this branch. Taking a general view, the situation presents a decided contrast with this time twelve-month. Then, all productions were largely oversold; our market was in many cases free of stock, and prices rapidly advancing, while manufacturing property appreciated to an unequalled degree. Following this came a mania for building new mills, far more extensive than that you are experiencing. These are now in course of construction, and must soon be active competitors for a market. Meanwhile, demand and prices have fallen; symptoms of overproduction are admitted, and mill stocks have suffered a very heavy decline, with indications of a still further movement in that direction.

Staple cotton goods showed little animation during the last two weeks, and slight concessions have been in order on some makes. Plain and coloured cottons sold to a moderate extent, but buyers are cautious, and confine their purchases to positive requirements. The supply of the best productions is moderate; while low and inferior grades are in abundance and weak, the tendency being towards a further reduction in price. Print cloths ruled quiet and steady, now being 3,11-16c. for 64 x 64s, and 3½c. for 56 x 60s. The movement in prints is very unsatisfactory at first hands, and a general curtailment in productions will shortly be enforced. Jobbers are disposing of fair quantities of ginghams and wash fabrics; but agents report business in these as dull, and slight reductions have been made in some instances to stimulate the demand.

The woollen goods market is in fair condition, but similar to the above. The most popular makes are doing well, others showing more or less weakness. Most relative activity was noticed in all-wool cassimeres, suitings, chevots, and worsted coatings, which received fairly satisfactory attention from clothiers; and at times fair orders were placed for cotton-warp cassimeres, overcoatings, and cloakings; the demand, however, for the latter is irregular. Jeans continue to move slowly, and the production of these is attended with very unsatisfactory results. Flannels are quiet, as is usual at this season, but for ladies' dress flannels there is still a steady inquiry for reassortments. For worsted dress fabrics the request is also good for small parcels. Blankets rule dull. Carpets have again been active: several of the leading makes and styles are largely sold in advance of production.

In foreign goods there was some improvement, but the business accomplished was below anticipations, and trade remains in a backward condition. The auction season has commenced, and several attractive sales were made, but the results were very indifferent, and buyers appeared indisposed to take the goods (silks) at any price. An improvement in this respect, however, is looked for, as the excessive imports must necessarily force large quantities into the auction rooms. Staple and fancy dress goods are selling moderately. Plain and fancy silks, such as Rhadames, satins, and moires, were moderately active, when offered at prices meeting buyers' views. For linens and white goods there was rather more inquiry, and these sold freely at auction.

**Leather.**

**MONTREAL.**

THE LEATHER MARKET--NOT IN THE BEST CONDITION, BUT SHOWING IMPROVEMENT IN SOME LINES--QUOTATIONS.

(From Our Own Correspondent.)

MONTREAL, March 11, 1882

Although the leather market is far from being in a healthy condition, there is noticeable a little better volume of business. The demand for good plump No. 1 B. A. Sole and best Slaughter, which has been good all along, continues, and sales of such descriptions are made readily, as soon as the goods arrive from the factories, at full figures. The inferior class of Sole, however, is in large supply, and prices are easier. We have sales to report of 1,200 sides of No. 1 B. A. Sole, at 25c. to 26c. as to quantity, and 300 sides of prime Slaughter, 28½c. to 29c. There has also been some movement in Waxed Upper, the sale being reported of 600 sides of heavy, at 33c. We also learn of two transactions in Buff. amounting to 1,500 sides at about 14c. Splits are very dull, and prices are easy. In other lines there is no particular change, and we quote as follows:--

Spanish Sole, No. 1, B. A., \$0.24 to \$0.26, Spanish Sole, No. 2, B. A., \$0.22 to \$0.23; China, No. 1, \$0.21½ to \$0.22½; China, No. 2, 20½ to \$0.21; English Sole, \$0.44 to \$0.50, American Oak Sole, \$0.15 to \$0.50; Buffalo, No. 1, \$0.22; Buffalo, No. 2, \$0.20½ to \$0.21, Slaughter, No. 1, \$0.27 to \$0.29; Rough (Light) \$0.27 to \$0.29; Harness, \$0.29 to \$0.33; Waxed Upper (Light) \$0.34 to \$0.38; Waxed Upper, medium and heavy, \$0.31 to \$0.34; Grained Upper (Engl.) \$0.36 to \$0.38; Scotch Grained Upper, \$0.37 to \$0.40; Buff, \$0.14 to \$0.16; Pebbled Cow, \$0.12 to \$0.15; Splits, calf, per lb., 0.30 to \$0.35; Splits, medium, Crimping, \$0.27 to \$0.30; Splits, Juniors, \$0.18 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, \$1.75 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., \$0.10 to \$0.12; Sheepskins No. 1, \$1.25 to \$1.40; Lambskins, \$1.20 to \$1.30; Sheepskins, dressed, No. 1, \$5 to \$5.75; Sheepskins, dressed, X, \$6 to \$6.75; Sheepskin, dressed, XX, \$7 to \$7.75; Sheepskins, dressed, XXX, \$8 to \$8.75; Sheepskins, dressed, XXXX, \$9 to \$9.75; Sheepskins, dressed, XXXXX, \$10 to \$10.50.

**DETAILS OF THE PRODUCTION OF PIG IRON IN THE UNITED STATES IN 1881.**

(From the Bulletin of the Iron and Steel Association.)

STATES.	CHARCOAL.		
	Make of Pig Iron in Net Tons (tons of 2,000 pounds).		
	1879.	1880.	1881.
Maine.....	1,240	3,578	4,409
Vermont.....	625	1,800	2,796
Massachusetts.....	5,010	9,862	12,310
Connecticut.....	16,759	22,533	23,383
New York.....	18,129	27,844	30,367
Pennsylvania.....	35,895	43,374	51,968
Maryland.....	19,734	33,050	27,626
Virginia.....	7,703	14,043	19,038
North Carolina.....	—	—	800
Georgia.....	4,133	7,277	13,301
Alabama.....	31,991	37,737	41,221
Texas.....	400	2,500	3,000
West Virginia.....	200	3,245	1,200
Kentucky.....	12,736	21,174	16,778
Tennessee.....	7,567	16,675	19,045
Ohio.....	43,445	69,190	66,162
Indiana.....	—	2,000	—
Michigan.....	101,539	154,424	187,015
Wisconsin.....	31,430	42,913	47,702
Missouri.....	17,837	15,769	43,211
Minnesota.....	—	3,520	7,142
Utah.....	—	—	—
Oregon.....	2,500	5,000	6,100
California.....	—	—	4,414
Washington Territory.....	—	—	1,200
<b>Total.....</b>	<b>358,873</b>	<b>537,558</b>	<b>608,635</b>

**BITUMINOUS COAL AND COKE.**

STATES. Make of Pig Iron in Net Tons (tons of 2,000 pounds).

	1879.	1880.	1881.
New York	632,299	801,817	925,625
Pennsylvania	2,277	6,387	6,703
Maryland	11,170	15,891	64,673
Virginia	16,240	20,044	24,000
Alabama	17,850	39,453	53,860
West Virginia	70,601	67,093	65,209
Kentucky	35,989	36,534	29,195
Tennessee	33,908	51,198	68,360
Ohio	404,306	605,017	644,377
Indiana	11,303	10,500	7,300
Illinois	78,143	150,556	251,781
Michigan	—	—	—
Wisconsin	58,092	53,929	54,327
Missouri	66,800	89,786	66,558
Colorado	—	—	6,396
<b>Total</b>	<b>1,438,978</b>	<b>1,950,205</b>	<b>2,268,261</b>

**ANTHRACITE.**

Massachusetts	394	9,155	5,958
New York	220,927	367,517	322,319
New Jersey	96,908	170,049	171,072
Pennsylvania	939,569	1,237,930	1,213,353
Maryland	15,226	23,000	21,130
<b>Total</b>	<b>1,273,024</b>	<b>1,807,651</b>	<b>1,734,462</b>

**TOTAL PRODUCTION.**

Maine	1,240	3,578	4,400
Vermont	625	1,900	2,796
Massachusetts	5,404	19,017	18,318
Connecticut	16,759	23,583	28,483
New York	239,056	395,361	359,519
New Jersey	96,908	170,049	171,072
Pennsylvania	1,607,763	2,083,121	2,190,786
Maryland	37,237	61,437	48,756
Virginia	18,873	29,931	83,711
North Carolina	—	—	800
Georgia	20,373	27,321	37,404
Alabama	49,841	77,190	98,081
Texas	400	2,500	3,000
West Virginia	70,801	70,338	66,409
Kentucky	48,725	57,708	45,973
Tennessee	41,475	70,873	87,406
Ohio	447,751	674,207	710,546
Indiana	11,303	12,500	7,900
Illinois	78,143	150,556	251,781
Michigan	101,539	154,424	187,043
Wisconsin	89,522	86,842	102,029
Missouri	84,637	105,555	109,799
Oregon	2,500	5,000	6,100
Minnesota	—	3,520	7,442
Utah	—	—	—
Colorado	—	—	6,396
California	—	—	4,414
Washington Territory	—	—	1,200
<b>Total</b>	<b>3,070,875</b>	<b>4,295,414</b>	<b>4,641,564</b>

**RECAPITULATION ACCORDING TO FUEL USED.**

Bituminous	1,438,978	1,950,205	2,268,261
Anthracite	1,273,024	1,807,651	1,734,462
Charcoal	358,873	537,558	638,838
<b>Total</b>	<b>3,070,875</b>	<b>4,295,414</b>	<b>4,641,564</b>

The following table shows the condition of the blast furnaces of the United States (whether blowing or idle) on the 31st of December, 1880 and 1881. The figures refer to the number of stacks:—

STATES.	Dec. 31, 1880.			Dec. 31, 1881.		
	In.	Out.	Total.	In.	Out.	Total.
Maine	1	—	1	1	—	1
Vermont	1	—	1	1	—	1
Massachusetts	5	—	5	4	1	5
Connecticut	8	2	10	6	2	10
New York	44	13	57	40	18	58
New Jersey	10	10	20	10	10	20
Pennsylvania	189	85	274	195	83	278
Maryland	10	13	23	12	11	23
Virginia	13	24	37	15	25	40
North Carolina	—	7	7	1	6	7
Georgia	4	6	10	4	6	10
Alabama	13	2	15	13	2	15
West Virginia	7	4	11	5	6	11
Kentucky	8	14	22	8	16	24
Tennessee	13	12	25	11	15	26
Texas	1	—	1	1	—	1
Ohio	76	27	103	79	23	102

Indiana	3	1	4	1	3	4
Illinois	8	5	13	9	5	14
Missouri	5	11	16	7	10	17
Michigan	14	13	27	17	10	27
Wisconsin	11	3	14	9	6	15
Minnesota	1	—	1	1	—	1
Colorado	—	1	1	1	—	1
Utah	—	2	2	2	—	2
Oregon	1	—	1	1	—	1
California	—	—	—	1	—	1
Washington territory	—	—	—	—	1	1
<b>Total</b>	<b>446</b>	<b>255</b>	<b>701</b>	<b>457</b>	<b>259</b>	<b>717</b>

**CERTAIN DISTRICTS.**

Pennsylvania—						
Lehigh Valley	41	9	50	45	4	49
Schuylkill Valley	28	19	47	32	16	48
Upper Sus. Valley	15	10	25	16	7	23
Lower Sas Valley	26	10	36	26	11	37
Shenango Valley	13	17	30	11	20	31
Allegheny County	11	4	15	12	3	15
Miscell. bitum.	28	8	36	28	10	38
Charcoal	27	8	35	25	12	37
Ohio—						
Hang. Rock Region	34	12	46	34	11	45
Mahoning Valley	13	4	17	16	2	18
Hocking Valley	10	4	14	12	2	14
Miscellaneous	19	7	26	17	8	25

The following table shows the stock of pig iron on hand unsold on December 31, 1879, 1880, and 1881. These statistics, collected directly from the manufacturers, represent only stocks in the hands of makers or their agents. They do not include stocks in the hands of consumers or speculators, nor foreign iron in the hands of importers:—

**STATES AND DISTRICTS.**

	1879.	1880.	1881.
New England and New York	6,601	63,649	34,275
New Jersey	3,114	20,780	7,931
Pennsylvania—			
Lehigh Valley	10,174	48,306	22,701
Schuylkill Valley	6,531	32,849	23,563
Upper Susquehanna	3,742	4,375	2,123
Lower Susquehanna	6,222	14,053	10,491
Shenango Valley	800	26,582	7,108
Allegheny County	2,000	3,553	500
Miscellaneous bituminous	7,850	25,247	1,321
Charcoal	3,166	9,273	5,614
<b>Total for Pennsylvania</b>	<b>10,485</b>	<b>161,238</b>	<b>73,424</b>
Maryland	961	9,028	2,967
Virginia, North Carolina, Georgia, Alabama, and Texas	3,541	16,428	16,124
West Virginia	308	5,271	40
Kentucky	6,715	16,215	4,506
Tennessee	7,257	11,613	4,350
Ohio—			
Hanging Rock	24,803	33,607	23,791
Mahoning Valley	6,736	12,826	—
Miscellaneous	16,307	43,804	8,846
<b>Total for Ohio</b>	<b>47,846</b>	<b>90,237</b>	<b>32,637</b>
Michigan and Indiana	7,880	18,643	16,175
Illinois	—	25,134	—
Wisconsin and Minnesota	400	3,340	1,130
Missouri	16,483	12,152	11,695
Colorado, Pacific States & Ter.	50	—	5,742
<b>Grand Total</b>	<b>141,674</b>	<b>456,658</b>	<b>210,896</b>

The following table shows in what States new enterprises have been or are being undertaken, and also in what States we have considered furnaces abandoned and have marked them off our active list:—

STATES.	Furnaces built in 1881.	Furnaces building in 1881.	Furnaces abandoned in 1881.
New York	1	—	—
Pennsylvania	6	10	5
Maryland	—	1	—
Virginia	5	2	2
Alabama	—	1	—
Kentucky	2	—	—
Tennessee	3	—	1
Ohio	1	5	3
Illinois	2	3	—
Missouri	1	—	—
Michigan	1	—	1
Wisconsin	1	—	—
Colorado	—	1	—
California	1	—	—
Washington Territory	1	—	—
<b>Total</b>	<b>25</b>	<b>23</b>	<b>12</b>

The following table shows the production of pig iron in Pennsylvania and Ohio, separated according to the various districts of those states, for the years 1879, 1880, and 1881.

STATES.	Make of Pig Iron in net tons. (Tons of 2,000 pounds.)		
	1879.	1880.	1881.
<b>Pennsylvania—</b>			
Lehigh Valley.....	456,850	544,987	560,190
Schuylkill Valley.....	191,748	306,926	309,049
Upper Susquehanna.....	125,071	168,128	125,785
Lower Susquehanna.....	165,500	217,889	218,329

Shenango Valley.....	150,861	215,313	198,968
Allegheny Valley.....	267,315	300,497	385,453
Miscellaneous bitum.....	214,123	286,007	341,104
Charcoal.....	35,895	43,374	51,908
<b>Ohio—</b>			
Hanging Rock coke.....	43,097	60,316	77,500
Mahoning Valley.....	147,844	226,877	245,737
Hocking Valley.....	51,908	85,719	88,146
Miscellaneous coke.....	161,457	232,105	232,994
Hanging Rock charcoal.....	43,445	64,854	61,487
Miscellaneous charcoal.....		4,336	4,682

## PROSPECTUS

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

**TEN**

## 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 choicest 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.

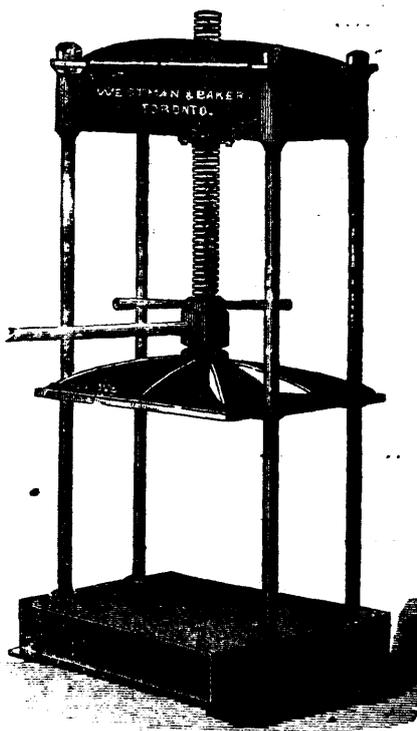
**D. R. VAN ALLEN & CO.**

Chatham, Ont., March 8th, 1882.

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MANUFACTURERS OF PRINTING



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STANDING PRESS.  
SIZE OF BED 24 1/2 x 32 1/2.

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MANUFACTURER OF

SCOTCH FINGERING,

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AND

KNITTING YARNS.

**HODGE & WILLIAMS,**  
— MANUFACTURERS —

Wholesale and Retail dealers in

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— AGENTS FOR —

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THE BEST ROOFING KNOWN.

Also put on

PITCH AND GRAVEL ROOFING.

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**LAMP BLACK,**

SHEATHING and CARPET PAPERS.

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**Iron & Metal Company,**

DEALERS IN

**SCRAP IRON**

AND

**OLD METALS.**

YARD AND OFFICE:

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**WELLINGTON & YORK STS.**  
Toronto, Ont.

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Liberal advances made on Consignments.

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### 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 Iron, Railway and Highway Bridges.

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

LYMAN 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.

C. 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, ho-very steam presses and propeller wheels, all sizes.

### Files.

PHENIX FILE CO.—Hand-made files and rasps. No machines in our factory.—Fenwick & Sclater, Agents, Montreal. Anchor Brand. FILE & SPRING CO., Cote St. Paul, Montreal.—All kinds of files and springs. Files recut. Sole manufacturers of Spauldings' patent concave spring.

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

### Fire Hose.

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

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JACOB ZINGSHEIM, Hamilton, Ont.—Manufacturer of Parlour and Bedroom Sets, Centre Tables, &c.

### Glove Manufacturers.

W. H. STOREY & SON, Acton, Ont.—Manufacturers of fine gloves and mitts in every variety and style.

### Hubs, Spokes and Bent Goods.

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; iron railing 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.

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

### 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.

### Knitting Mills.

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

### Leather Belting.

DOMINION BELT AND ROSE CO., Toronto.—Oak tanned belting, lace leather, &c.

### Machine Brushes.

ULLEY'S BRUSH WORKS, 74 Bleury St., Montreal.—Machine brushes for cotton factories, flour mills, &c. Machine brushes of every description a specialty.

### Paper Manufacturers.

JOHN FISHER & SONS, Dundas.—Manufacturers of printing and wrapping papers.

LINCOLN PAPER MILLS CO., Merritton, Ont.—Manufacturers of every variety of paper, paper bags and flour sacks.

WM. BARBER & BROS., Georgetown.—Manufacturers of book and fine papers.

### 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."

SHURLY & DIETRICH, Galt, Ont.—Manufacturers of circular and cross cut saws, plastering trowels, etc.

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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.

### Stereotypers, Engravers, &c.

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### Wire Works.

B. GREENING & CO., Hamilton, Ont.—Manufacturers of wire ropes, cloth and general wire workers.

MAJOR & GIBB, 646 Craig St., Montreal.—Manufacturers and importers of wire cloth and wire goods and dealers in railway and mill supplies.

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

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"SMITH'S PATENT FURNACE"  
TO YOUR BOILERS.

"THE WILSON GAS REDUCER,"

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.

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148 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.

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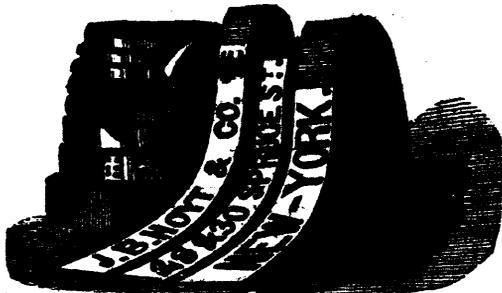
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The ONLY BELTING WORTH BUYING

Lasts at least DOUBLE the time of other makes.

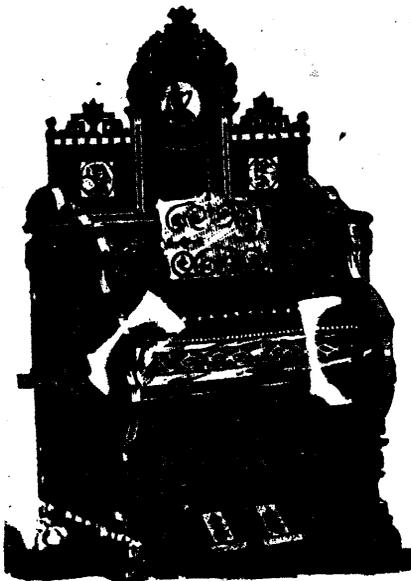
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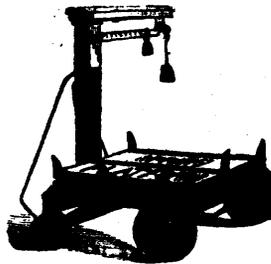
Daniel Bell,  
Sons & Co.,

MANUFACTURERS TO THE  
TRADE.

56 to 64 Bolton Street, Toronto

P.S.—NO BRANCH FACTORY AT GUELPH OR ELSEWHERE.

## BUY ONLY IMPROVED WILSON SCALES.



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

COAL SCALES, HAY SCALES,  
WAREHOUSE SCALES,  
IRON SCALES,  
PLATFORM SCALES,  
GROCER TEA SCALES.

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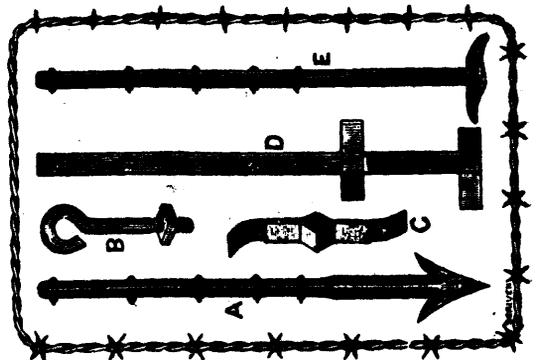
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