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# THE CANADIAN MANUFACTURER

## DEVOTED TO THE MANUFACTURING & MINING INDUSTRIES OF THE DOMINION.

# INDUSTRIAL WORLD.

Vol. 6.

TORONTO, MAY 20, 1887.

No 10.

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# THE CANADIAN MANUFACTURER

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VOL. VI.

TORONTO, ONT., MAY 20, 1887.

No. 10.

### THE TUPPER TARIFF.

In answer to the thrice-repeated voice of the voting population of Canada sustaining the present Government in their policy of protecting Canadian manufacturers, and of building up Canadian manufacturing industries, Sir Charles Tupper, Canada's Finance Minister, in his recent budget speech has declared the future policy of the Government regarding the imposition of tariff duties upon imported merchandise, a full understanding of which can be obtained by reference to the resolutions presented to parliament by Sir Charles, printed in full in another page of this paper.

The proposed changes in the tariff are generally in the way of advances, made necessary by the experience of the Government in enforcing the old laws, and for increasing the revenue. Under the National Policy a large number of industries have sprung into existence which are supplying to a gratifying extent the demand for home consumption, but which are deserving of a still greater degree of protection to enable them to successfully contend against the cheaper similar products of older and more wealthy enterprises in other countries. This further protection, while ensuring the permanent success of our weaker manufacturing industries, assures an increased advantage in the way of remuneration to factory operatives and skilled artisans, but without unjust prejudice to consumers.

The items on which the greatest changes are proposed embrace articles of luxury, and fall the heaviest on those consumers who are the best able to bear them. Those articles which are in the greatest demand by all classes of the community, and those which are the least advanced from the conditions of crude

ness—from being absolutely “raw material”—are charged with the minimum taxation, the advancing stages in the manufacture of the imports signaling corresponding advances in the amounts charged. Of course the intention of this is to encourage the importation into Canada of the cruder materials on which but little labor has been expended, and the conversion of the same into the more costly articles of commerce, giving encouragement to the investment of capital in Canadian manufacturing enterprises, the erection of furnaces, foundries, workshops and factories, and the employment of large numbers of skilled operators and artisans. Where this is not the obvious result to be anticipated, the operation of the tariff will be to foster and build up industries of which Canada is painfully deficient, and without which she could never hope to attain that greatness and independence which is her due, and for which we all hope.

This latter remark is intended to apply particularly to the iron industry of Canada, and Sir Charles has grappled with the question in a manner which commends his fearlessness to all who appreciate the weakness of Canada in this respect, and who earnestly wish to see her lifted from her dependent position on other nations and elevated to a plane on which stands Great Britain, Belgium, Germany and the United States—the great iron producing and iron

manufacturing nations of the world. While some may argue that the additional duty of one-tenth of a cent a pound on pig iron is oppressive, and will work hardship to those industries consuming large quantities of the article, it should be remembered that similar industries in the United States are burdened with a much higher duty than Canadians have to bear. At the time of the inauguration of the Morrill



tariff in the United States in 1861, by which even a very much greater duty was imposed on imports of pig iron than now exists, the pig iron industry in that country was in similar condition to what now prevails in Canada, but the effect of the protection thus afforded has been to make the United States the largest manufacturer of pig iron in the world; and it is a fair and deducible conclusion that what will be known hereafter as Sir Charles Tupper's Canadian tariff will work similar beneficial benefit for this country. The per capita consumption of pig iron in Canada is remarkably large, and its manufacture calls for immense outlays of capital and the employment of armies of laborers. At present but a very small proportion of these are used in the development of the industry in this country, but under the Tupper tariff our rich and inexhaustible mines will be opened, furnaces will be built, coal and other fuel will be in great demand, limestone will be quarried, railroads will extend their iron arms, uncounted millions of dollars will be invested, and thousands upon thousands of workmen and skilled artisans will find remunerative employment in the development of this one industry alone.

A brighter day has surely dawned on Canada, and the answer to the question of annexation to the United States, thinly disguised under the name of "Reciprocity" or "Commercial Union," is heard in the emphatic "No" of our Dominion authorities. The Tupper tariff settles the matter. Canada will eventually become an independent nation, but never an integral part of the American Union.

#### THE RECIPROCITY FIASCO.

THE nondescript party which is so anxious to revolutionize the existing order of things in Canada and sink her individuality by annexation to the United States, and which but a few days ago sought to create the impression that Canadian farmers favored their designs, received a most emphatic backset at the meeting of the Toronto Board of Trade held last week. That meeting was an evidently cut and dried affair having a similar object in view—to create the impression that the business men of this city were strongly in favor of Reciprocity. How signal the failure is shown by the result of the meeting.

The president of the Board stated that the object of the meeting was to discuss the present and prospective commercial relations between Canada and the United States. The discussion of the question he left to others. Mr. Henry W. Darling, a wholesale dry goods merchant and a rampant free trader announced that he had a resolution to offer, but before offering it he delivered a characteristic speech in which he rung the old changes on the free trade chimes, winding up by offering the following resolution, which was seconded by Mr. Goldwin Smith:—

"That in conformity with the sentiments of the Canadian people, expressed at intervals with great unanimity for many years, this Board regards as advantageous to the mutual prosperity of the United States and Canada, the removal of every possible restriction upon international trade, and affirms that the proposal for Commercial Union between the two countries is worthy the fullest investigation and most earnest consideration of the Canadian community."

Mr. Smith in speaking to the resolution repeated the arguments with which we are all familiar, and assured his hearers that he abhorred the word "annexation."

Mr. David Blain, President of the Imperial Bank of Toronto, created consternation among the free traders by offering the following amendment to Mr. Darling's resolution:—

"That this Board, while desiring friendly relations and fair and just dealings with all nations, especially with our neighbors and kindred people to the south of us, entertain the opinion that an agreement establishing free ports and unrestricted trade between the United States and Canada, and the adoption by both countries of a uniform high protective tariff against all other nations and countries would not conduce to the welfare of the Canadian people. This Board, therefore, venture to hope that some other mode, honorable and equitable to both countries, of adjusting any disputes now existing, so as finally to dispose of them, may be found in the near future."

In speaking to this amendment Mr. Blain said that he had not yet lost hope that the English people would come to their senses and do away with free trade. Commercial Union could not possibly benefit Canada, for the American markets were glutted with such manufactures as we could produce.

Mr. Joseph Simpson, textile manufacturer, protesting against the proposed relation with the United States, said that he would prefer annexation. He thought that if the people of Canada had an opportunity of giving a free and full expression of opinion it would be:—"We don't want Annexation. We don't want Commercial Union. We are doing very well now as it is. We are on the high road to prosperity, and what more do we want?" Speakers were inconsistent when they spoke of the tariff favoring the manufacturers and yet wanted to adopt a tariff nearly four times as stringent as Canada's. He said that when he first came to Canada in 1854 the conditions here were not very inviting, but that since then we had made rapid progress, not only without reciprocity, but in spite of it. The United States were the fat kine and Canada the lean kine, and with Reciprocity, or Commercial Union, they would swallow us up.

Mr. George A. Chapman, a grain and commission merchant, moved another amendment to the original motion to the effect that "Canada should once more make overtures to the United States for reciprocal trade relations in the products of the field, the forest, the mines and the fisheries; and that fishermen have reciprocal rights to catch fish in the waters of both countries," his arguments being in line with his resolution.

Mr. R. W. Elliott, manufacturing chemist and an ex-President of the Canadian Manufacturers' Association made a brief but very pointed speech, viewing the question from the farmers' standpoint, in which he showed by authentic statistics and figures that while the aggregate of Canada's exports to the United States amounted to \$29,000,000 the exports to Great Britain amounted to \$30,000,000.

Mr. D. R. Wilkie, cashier of the Imperial Bank, viewed the question from a financial standpoint, and showed that under Commercial Union the trade of the Niagara district of Ontario would inevitably go to Buffalo, that of the western part of the Province to Detroit, that of the eastern part to New York and other American cities, while Toronto would probably hold Muskoka, but that would be all. He then moved the following as a third amendment:—

"That in the opinion of this Board of Trade Commercial Union with the United States of America would be injurious, if not disastrous to Canada, and that an Imperial Zollverein between Great Britain and her colonies and dependencies with

discriminating tariff in favor of its members is the true, natural and most desirable future for the Dominion."

At this point the proceedings had evidently lost all interest to the projectors of the meeting. The subject had widened so rapidly that it had gone beyond their control, and as there appeared to be more bombshells with burning fuses lying around it was determined to adjourn the meeting for a week. And it was so adjourned.

### CANADIAN IRON MINES.

INFORMATION comes from New York to the effect that an immense combination is being formed there which aims at owning all the known valuable deposits of iron ore in Canada; the Central Ontario railway, extending northward from Trenton, on Lake Ontario, and all the iron interests connected therewith, being embraced in the scheme. This road, it is said, is to be extended through the iron district 150 miles to a junction with the Canadian Pacific Railway at Lake Nipissing. The syndicate, it is expected, will own more than a hundred different iron ore properties in Canada, the more valuable and available of which are to be immediately operated, the capital of the combination being \$10,000,000.

If this information is correct, and \$10,000,000 is to be invested in Canada for the development of Canadian resources, it is to be hoped that Canada will be benefitted thereby. Canada would be greatly benefitted if in the proposed development it was intended to consume the whole, or any considerable portion of the iron ore that might be produced from these mines in the manufacture of pig iron in Canada; but it is questioned if the exportation of these ores to the United States would be of any material benefit to this country, and if it would not rather be to our ultimate disadvantage.

Canada possesses numerous and vast deposits of iron ores which are exceedingly rich in metallic iron, and of that peculiar character which makes them of special value in the manufacture of certain qualities of iron. There are but few deposits of equal peculiar value in the United States, as rich as that country is in its mineral wealth, and with the exception of the rich ores found in the Lake Superior region, we believe there are no mines being operated there which produce such ores in abundance. But such ores are in strong and constant demand at the furnaces there, as is evinced by the exceptionally high prices obtained for those from Lake Superior, and it is through a desire to multiply their sources of hematite supply that our American friends are casting about for new and convenient deposits of the coveted ore.

The importation of ores of this description into the United States from Spain is largely on the increase, the article being consumed in furnaces contiguous to Atlantic ports, and it is probable that those furnaces will continue to draw their supplies from Spanish mines for some time to come. But the most prosperous and flourishing iron and steel manufacturing industries in the United States—those requiring iron made from ores of the character under discussion—are located west of the Allegheny Mountains, and these naturally draw their supplies from Lake Superior mines. The phenomenal increase in the manufacture of steel and steel goods in the United States within the past few years has created a demand for hematite ores which that country is not able to supply, and little wonder that

discerning ones are seeking to own or control the extensive deposits of Canada.

It is for Canada to say whether these ores are to be exported to American furnaces and contribute to the increasing importance of American manufactures, the only visible benefit to us being in the employment of the cheap, unskilled labor necessary to bring the material to the surface; or whether the exportation should be discouraged. The latter policy might be said to resemble that of the dog in the manger, but we do not so view it. These ores should be manufactured into iron and steel in Canada, and there are no sufficient reason why this should not be done. It might be urged that there are no known large deposits of coal contiguous to the iron mines, which could be used as fuel in the blast furnaces, and that to either bring the coal from where it is abundant to the ores, or to take the ores to the fuel would involve a prohibitory expense; and also that the manufacture of iron in Canada having heretofore and frequently proved an expensive and unsatisfactory experiment, it should not be undertaken again. It is true that the relation of the various attempts to make iron in Canada presents a sad record of loss and disappointment, but it would be erroneous to conclude that the failure is attributable to economical conditions adverse to the successful prosecution of the industry. As Mr. James Herbert Bartlett stated in his interesting pamphlet issued a couple of years ago, "The true cause of the past and present unsatisfactory position of the iron industry of Canada lies, not in any natural defects, not in the want of the necessary ways and means, but rather in the defective and unsound legislation against which this particular industry has for so long had to struggle. Our iron manufacturers have been far less favorably dealt with than many other industries not more important; and it is to the very scanty measure of protection hitherto accorded that the persistent ill success of this industry may be attributed."

But some of the branches of the industry in the United States are permanently subjected to disadvantages quite as great as those which have proved so disastrous in Canada. According to Mr. James M. Swank, certainly good authority, "The wages paid in the United States are much higher than in other iron making countries, and the raw materials of production, rich and abundant as they are, are in the main so remote from each other that a heavy cost for their transportation is incurred to which no other iron making country is subjected." Under these advantages the United States has risen to be the largest pig iron producer in the world, and as the circumstances surrounding the industry there were no less formidable than those which beset the industry here, we fail to see why Canada, instead of exporting its rich ores to the United States, should not convert them into iron and steel at home. Certainly when Lake Superior ores can be carried a thousand miles to Pennsylvania furnaces; when Connellsville coke can be hauled six hundred miles to furnaces in Chicago and seven hundred and fifty miles to furnaces in St. Louis, and when the average distance over which all the domestic ores consumed in the blast furnaces in the United States is transported is not less than four hundred miles; and when the average distance which the fuel used to smelt them is hauled is not less than two hundred miles, it does not appear why similar prosperity should not attend the industry in Canada, where the materials are not more remote from each other.

## THE PROTECTIVE TARIFF POLICY OF THE UNITED STATES.

HON. JOHN SHERMAN, United States Senator from Ohio and at one time Secretary of the Treasury, recently delivered an address in Nashville, Tennessee, in which he devoted a portion of his time to an explanation of the protective tariff policy of that government. He said:—

"The domestic production of manufactured articles in the United States for the year 1886 is roundly estimated at \$5,500,000,000, of which amount about half, or \$2,500,000,000, are domestic articles which compete with foreign productions. The amount of importations from abroad in 1886 was of the value of \$625,000,000. The revenue received from the duties on these articles amounted to \$188,000,000, making an average rate of duty of 30 per cent.

"Of the \$625,000,000 of goods imported, \$211,000,000, or more than one-third, are now admitted duty free. The remaining \$414,000,000 are subject to duties varying from 10 per cent. to over 100 per cent. It is the general policy of the law to admit free of duty all articles of foreign production that cannot be produced in this country, for which we have not the natural soil and climate, and yet which are in common use, such as tea, coffee, and similar articles.

"The second rule is to admit free of duty all raw articles which cannot be produced in this country and are the necessary basis of domestic manufactures. Such articles as chemicals, indigo, sulphur, india rubber, raw silk and the like are admitted free of duty. Under this provision perhaps 500 articles are admitted free of duty.

"On the remaining articles of import, embracing probably more than one thousand in number, the whole customs duties are collected, amounting to \$188,000,000. These are classified into: First, luxuries, consisting of wines, liquors and cigars, articles consumed mainly by the rich, which pay duty at a rate approaching or above 100 per cent. These are articles which cannot be readily smuggled, can be certainly described and yield a large revenue. Jewelry, diamonds, and the like are articles of luxury upon which the highest duty is levied that can be collected, but as they are easily concealed on the person, and therefore, easily smuggled, rates of duty are imposed upon them as high as experience shows can be collected. There are also classed as luxuries a large amount of expensive dress goods, such as silks, fine cloths, satin or furbelows and the like, which also pay a high rate of duty, and are purely articles of luxury or ornament consumed by the rich.

"The next class of articles are those which enter into competition with domestic manufactures, such as cotton goods, linen goods, woollen goods, and innumerable articles made of metals, and also raw articles like iron, coal and similar natural products. Upon these articles are such a duty levied as will, without destroying competition, give to the domestic manufacturer of similar articles what may be called a protective duty ranging from 25 to 75 per cent., sufficient to encourage their manufacture in this country, and thus to increase and diversify our products.

"There is a third class of duties on a great variety of articles which come into competition with the production of the farmer and the planter. Among these are wool, live animals, wheat and various forms of grain, sugar, rice, and other similar productions. On these such a duty is levied as will encourage our farmers in producing every article of agriculture suited to our climate and soil.

"In 1860 the total manufactures of the United States were estimated at \$180,000,000, including every variety of product of mechanical employment. As I have already stated, these have increased to over 5,000,000,000 in value and nearly five-fold in quantity, and they include almost every article essential for human life. In the production of all these articles

there is now free trade, and close competition in the United States, and the price has been greatly reduced on all of them. They embrace almost every article used on the farm, in the workshop, and in nine-tenths of the families of the United States. Our industry is now so diversified that there is hardly an object of desire outside of luxuries of the rich that is not produced in the United States, and our home industries are rapidly displacing the foreign article of similar character and quality.

"Formerly manufactures were confined to a small region of the country, mainly in New England and the East, but now they are diffused all over the United States. In this way we bring together the producer and the consumer of nearly all the articles necessary to human life and happiness. We give to the farmer a home market for home products, so that now of all the products of the farm over 90 per cent. is consumed in this country and less than 10 per cent. exported abroad, though the aggregate of exportations of food products amounts to nearly \$500,000,000.

"In this way also we secure to the laboring man far better wages than are paid in any country of Europe, enable him to be self-reliant and self-respecting, to educate his children, and to enjoy the substantial comforts of life. It is this system by which our industries have been increased and diversified, which makes this country, compared to others, the strongest, the richest, and happiest among the nations of the world."

## THE CHARGE SUSTAINED.

In the last issue of this paper there appeared two articles, respectively entitled "Labor Agitators" and "A National Disgrace." The first referred to the evils attendant upon the aggressive methods of certain demagogues whose noisy diatribes have brought them into transient prominence, and the second dealt with an item clipped from the *Toronto News*, which instanced the case of a poor young fellow unable to obtain work in consequence of non-ability to pay his dues to a labor organization.

Our exposé evidently probed so tender a spot on the verru-cose body politic of labor organizations that the *Labor Reformer* devotes nearly three columns of editorial to a reply, and supplements it by a personal attack on the editor of this paper, which, like most personal allusions, was ill considered and of questionable courtesy.

We do not propose to descend to this level and prostitute these columns in a similar manner. Our references were to the utterances which appeared in a public journal, and which, consequently were a fair mark for criticism. No personal allusions were made, and in a spirit of fair play, with which the *Labor Reformer* appears to be totally unacquainted, we reproduced in its entirety, the whole of the article criticised, preferring this course to the method adopted by our contemporary, of first establishing false premises and thereon basing its arguments. Probably, however, our contemporary is so accustomed to the denial of personal liberty of thought and action to the members of labor organizations that our presumption in discussing its utterances has aroused its ire as effectually as it appears to have taken away its ability to rationally discuss the points at issue, judging from the verbiage of invective it hurls at us. But will our respected, albeit wrathful contemporary kindly inform us if it has ever inserted its dexter editorial fore finger into a basin of water and looked for the hole after that useful member had been withdrawn? If in the pursuit of harmless recreation, as a relief from the mental effort necess-

sary to the production of its excruciatingly funny "Spoke-shave" column, it has ever indulged in such an experiment in natural phenomena it will, within the time it usually occupies in the fructification of an idea, have some conception of the effect it has produced. Our contemporary challenges us to produce a single instance of a working man being prevented from obtaining employment because of being in arrears for labor dues, and says:—

"In its desperate anxiety to make the manufacturers regard it as a zealous and devoted champion of their interests, the *Canadian Manufacturer* seizes hold of one of the Khan's fanciful sketches in the *News*, in which the Salvation Army was credited with having paid up the dues, amounting to \$10, which one of their converts was represented as being in arrears to his union. In order to make the true goodness of the army appear to the best possible advantage, the versatile, though somewhat erratic Khan made it appear that, until these dues were paid, the man could not go to work, whereupon the *Manufacturer* proceeds to froth and fume about "hypocrisy," "tyranny," "national disgrace," "terrorism," "nefarious practices," "Labor agitators," and so on, till its vituperative vocabulary is exhausted. It does not appear to have occurred to it that it would be well to verify such a paragraph before wasting half a page of valuable space in commenting on it."

Our answer to the above is that the paragraph we quoted appeared in the *Toronto News*, a paper supposed to be an authority on labor matters, and which, if we are not misinformed, has amongst its literary staff, several members of the Knights of Labor, including the editor and proprietor. Were the paragraph as fanciful as the *Labor Reformer* asserts, should not some member of the staff of the paper which printed it, anxious to vindicate the fair fame of his Order, have indignantly repudiated it? Should not the editor who has avenues of information in this connection, which are not open to us, have been careful in a future issue to refer to the falsity of the paragraph? We frankly admit that we were at first incredulous that such despotic tyranny could exist in our midst, and watched the columns of the *News* for a denial. None such appearing we were justified, considering the *personnel* of the *News* staff, in believing the item to be a correct citation of an admitted fact. This presumption was, and still is, apparently warranted, for, notwithstanding the ingenuous explanation of our contemporary, we are able to cite a more recent case of similar coercive action on the part of our labor friends.

At the present time a strike is in progress at Firstbrook Bros.' mills in this city, not because the men are dissatisfied with their treatment at the hands of the firm; not in order to secure higher pay or shorter hours, but because the firm *refused to discharge an employee who was in arrears for dues to a labor organization*. Our information is derived from a letter written by Firstbrook Bros., which appeared in a local daily paper, and which we have not seen questioned. It reads:—

"We desire to correct a mis-statement in your issue of this day relating to the strike in our factory. We never discharged any man because he was a Knight of Labor, or a member of any other society, whether national, political, social or religious. We have refused to discharge an employee, whom the organization claim is a member in default. Our offence is that we decline to be made parties to differences within the pale of the order. It has always been our aim to treat our workmen with due consideration and the respect their own conduct demands. As in the past, so it will be in the future."

For the further benefit of our contemporary we give another

instance—and such instances can be multiplied almost *ad libitum* did space permit—of a case in which a wage earner was refused the right to act and think according to the dictates of individual desire. Evidently the motto of the leaders of the labor party in reference to its rank and file, is:—

"Their's not to reason why,  
Their's not to make reply—"

otherwise they would try and increase and control their membership by other and less drastic methods than proselyting by means of the boycott.

A young woman, Nellie Newell by name, was a stitcher in a shoe factory at Gardiner, Me., and the following account of her infamous treatment at the hands of labor reformers whose motto (on paper) is fraternity and equality, is vouched for by the *Buffalo Express*:—

"Though solicited to do so she preferred not to join the Knights of Labor when an assembly was started in the town, and not being a member naturally declined to pay an assessment which was levied upon her by the organization—presumably for the support of some striking bricklayers or tanners of whom and for whom she cared nothing. Then the Knights of Gardiner notified the shoemaking establishment that they would quit work unless Nellie Newell was discharged."

From our quotations it will be seen that making a scapegoat of the "Khan" is not sufficient to clear the order from the charge of outrageous tyranny which was based on information gleaned from the *Toronto News*, certainly a source friendly to the cause of labor. We have not seen a correction above the signature of the "Khan," who is charged by the *Labor Reformer* with the authorship of this "fanciful sketch," nor have we seen that the paper in which it appeared has yet repudiated the truthfulness of its contributor, a task which is gratuitously undertaken by our ireful contemporary, with or without authority it best knows. But the *Labor Reformer* is not satisfied with attacking the veracity of a confrère; its expurgatory process is not complete. Journalistic usage and common decency have no place in its code, and consequently it is not super-sensitive to certain proprieties which every reputable paper in the country is careful to observe. Under a *nom de plume* the editor of the *Labor Reformer* indulges his spleen by scurrilous allusions to Mr. Nicholls, of this paper. Its personal references are unworthy of reply, but as one paragraph appears to have been penned in a lucid moment immediately preceding a mental relapse—for which it is entitled to and receives our sympathy—we reprint it as a refreshing oasis in the desert of a disordered imagination. Mark the subtle sarcasm!

"It was hardly fair of Fred to allow Powderly, Trevellick, McNab and the other fellows, to go so far and spend so much time building up the organization, if he had determined to withhold from it his august countenance and approval. Of course, now that we know that we cannot expect his sanction, we will have to give it up, but I think he should have told us sooner, just to have saved us trouble."

Dear *Labor Reformer*, you can go ahead without hesitation as Messieurs. "Powderly, Trevellick, McNab and the other fellows" have already established a precedent for your taking the bull by the horns without our sanction or even of those with whom you are identified, and whose interests you are supposed to serve. For your benefit allow us to relate that the General Executive Board of the Knights of Labor, purchased with the



funds of the general organization, a palatial Philadelphia mansion as their head quarters, and paid therefore the sum of \$45,000. Can you deny that this was done without first obtaining the sanction of the members of the order? Can you deny that the transaction was completed before the members of the order knew anything about it? Can you deny that when the transaction became known that there was just as vigorous a protest from the district assemblies as when the members of the Executive Board voted to increase their own salaries? We venture to say that our contemporary cannot instance a single case of such luxuriously and extravagantly furnished offices being occupied by a company or an association of bloated monopolist manufacturers. So sensible are the Executive Board of their extravagance that they absolutely refused permission to an artist of an illustrated paper to make a sketch of the elegant interior. They, naturally enough, were none too anxious to have illustrated the immense pier glasses extending the whole length of the reception room and mounted in richly carved mahogany frames. It was quite within the bounds of probability that back country assessments might not be so freely forthcoming were a descriptive notice published of the rich Axminster carpets which cover the floors, and of the doors hung with Persian tapestries of unique designs.

Surely after this precedent established by the highest authorities of the order, the mere matter of withheld sanction by members or outsiders should not deter our friends from building up whatever they chose, so long as the assessments are adequate. Evidently Messieurs. "Powderly, Trevellick, McNab and the other fellows" are of the belief that "organization" is a noun of multitude, signifying many, but not amounting to much.

More space has been devoted to our contemporary than we had intended, but if it should lead it to advocate less coercive measures in recruiting for labor organizations our mission will have indeed been praiseworthy. Let the *Labor Reformer* warn hot headed agitators that the way to the head is through the heart, and it will not only earn the thanks of the community but it will place itself in a position to understand by sweet experience the following maxim, "He who does good to another does also good to himself—not only in the act, but in the consciousness of well doing is his reward."

#### "COMMERCIAL UNION" AND "RECIPROCITY."

FOLLOWING will be found several letters regarding "Commercial Union" and "Reciprocity," which were unavoidably omitted from our last issue. The publication of this symposium of views of Canadian manufacturers on this important subject continues to excite much comment, and not only the class from whom these letters come, but also those who favor Reciprocity are keenly awake to the importance of the question. Perhaps no question of equal political importance ever received such immediate and earnest attention, and it is safe to say that already the public mind is about fully made up regarding it. Those who are in favor of Reciprocity continue very active in their endeavors to favorably commit as many classes and elements of the community as possible to their views, for the purpose of manufacturing public opinion, as is shown by the at-

tempt to so commit the Toronto Board of Trade last week, but which, we are pleased to say have, thus far failed.

The opponents of Reciprocity, particularly Canadian opponents, have no control of telegraphs and are unable to flash press dispatches over the wires to all quarters of the United States and Canada for the purpose of creating the impression that Reciprocity is gaining in public favor, but it is evident, judging from the tone of the newspapers of New York and elsewhere, that such use of the telegraph is being made, and that the creation of such sentiment is being assiduously worked up.

But the leaven thus being mixed with the meal ferments and leavens the mass faster and more obviously than is intended for general observation, for while the advocates for Reciprocity in Canada are proclaiming their loyalty to the British Crown and declaring that annexation to the United States is the thing farthest from their thoughts or wishes, the impression has become very firmly fixed in the United States that annexation is to be the result of the agitation, and that neither Reciprocity, Commercial Union nor a Zollverein will receive any favorable consideration there—nothing but annexation, pure and simple. As an evidence of this assertion, and an instance of the drift of public sentiment on this subject in the United States, we reproduce the following from a leading editorial in the *New York Sun* of May 16:—

"We tell the Canadian statesmen that nothing short of a political union under the constitution of the United States will give them what they want, viz., perfect free trade between the Canadas and all the States of the great Republic. We assure them in all candor that this is a settled principle with our people of all parties, and the sooner our neighbors across the border recognize it, and sensibly set about considering the advantages which may be secured by its adoption, the sooner will they obtain with us that political happiness and prosperity which they so ardently long for, and which, whether it comes peaceably or not, is their manifest destiny. The idea of a Commercial Union or a Zollverein is futile; it has no real place in our ideas, and will never be seriously considered by our people. It is equally certain that the course of petty annoyance which seems to have been inaugurated, whether originating in England or Canada, can have but one conclusion, namely, an absolute back down on the part of its authors or conquest on ours."

Canadians, is this what we want? Is this the ultimate destiny of Canada—"political union under the constitution of the United States?" Do we "ardently long for it," and whether it comes peaceably or not, is this our "manifest destiny?" As the *Sun* says, the idea of Commercial Union is futile. Shall we follow the *ignis fatuus*.

From MR. W. H. STOREY, *Acton, Ont., manufacturer of gloves, and First Vice-President of the Canadian Manufacturers' Association.*

"The move in the direction of commercial union, by what is known as the Butterworth bill, having as its advocate Mr. Erastus Wiman, and looking towards the control of Canadian commerce by the United States, I regard not only as impracticable, but adverse to every Canadian interest.

"At this juncture of our national existence we cannot afford to trifle, or make experiments, especially when the surface indications are so evident as to presage ultimate failure.

"In this matter, which is ostensibly a move to settle the fishery dispute, it is very much like "baiting with a minnow to catch a shad," the ultimate design being annexation. Whatever hopes such political agitators as Mr. Wiman may hold out to the American people, towards its accomplishment, this

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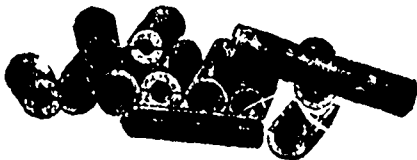
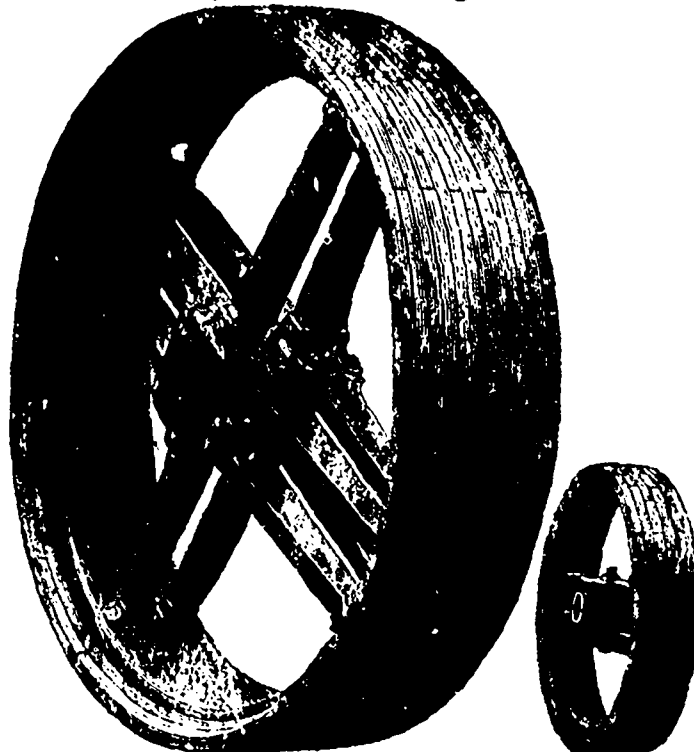
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*Gentlemen:* You are who use the Dodge Patent Pulley. I answer because we consider them the best, most convenient and satisfactory in all particulars.  
Yours truly,  
S. R. SIMMONS, General Manager.

C. L. RICE, AGENT, CHICAGO, ILL.  
*Dear Sir:* Replying to your favor, will say that after using the Dodge Wood Split Pulley for a year or more we are satisfied they are a good thing, if not the best Pulley made, and shall use them hereafter in preference to any other we know of.  
Yours truly,  
NEWTON WAGON CO.

Office of NEWTON WAGON CO.,  
BATAVIA, ILL., FEB. 17, 1886.  
We have sold these pulleys for one year, and they have been put to every kind of service, and their popularity is wonderful. We refer to the following users for proof of the above statements: Pillsbury & Hulbert Elevator Co., Minneapolis; R. M. Pratt & Co., Elevators; Northern Pacific Elevator Co.; The Pacific Elevator Co.; Minneapolis Harvester Works; Minnesota School Furniture Co.; M. & St. L. R. R. Co.; Willford & Northway; Washburn & Crosby & Co.; St. Paul Electric Light Co.; St. Paul Roller Mill Co.; Minneapolis Brick Co.; N. W. Mfg. & Car Co.; Stillwater, Minn.; and very many others.

THE WORLD'S INDUSTRIAL AND COTTON CENTENNIAL EXPOSITION,  
NEW ORLEANS, MARCH 19, 1885.  
W. H. DODGE, PRERT.  
*Dear Sir:* I have a number of your Patent Wood Split Pulleys in use here at the World's Fair and Cotton Centennial Exposition, driving Dynamos for Electric Lighting. They are doing heavy work, and are held upon the shaft by the compression of wood on iron. They hold firmly and do not slip. I have watched with a great deal of interest the many Pulleys of your make running at this Exposition; and I think them the best Pulley I have ever seen. I believe them to possess the following points of merit over any other Pulley: All Pulleys being split or in halves; best belt surface; best shaft fastening; best method of utilizing Pulleys to shafts of different sizes; best balance; lightest on the shaft; strong, and I believe durable. I heartily recommend them.  
Yours very truly,  
S. H. GILMAN,  
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**TORONTO.**

country is sufficiently loyal to British institutions, and British connections, to maintain them at all hazards.

"I submit that the fishery question should be treated on its merits. The fisheries are either ours, or they are not. If any reasonable doubt exists as to the right of this country to control them its settlement becomes a question of diplomacy, and should be forever settled by a joint commission of the two nations. We have no right, for expediency's sake, to sacrifice the interests of the Maritime Provinces by allowing the Americans free access to our fisheries under the guise of commercial union. We are not an unreasonable people, and are therefore open to an equitable adjustment of the fishery question. But we are not so servile as to be bullied into a humiliating settlement by threats of retaliatory measures, which is the favorite method of American politicians to accomplish their designs.

"It is said commercial union does not necessarily imply annexation, and that the United States does not want political union with Canada. Admitting this to be the case at present, would not the situation be materially changed, if the arrangement in years to come proved essential to American commerce and a continuation of it desirable. Let the advocates of this scheme put their case squarely in the shape of annexation, which is its true intent, and we do not fear the result.

"The thinking population of this country have no sympathy with commercial union, so called. To superficial minds and viewed in the abstract, I admit the question may have its advocates. But to sober-minded people, possessing ordinary prudence, and to whom the future of this country is everything, this movement is regarded with distrust. Admit if you please that Great Britain would present no objections to the scheme, are we so insensible to national feeling and pride as to abuse her liberality by discriminating against her for the benefit of the Americans? I am not a Free Trader, but if Free Trade has to be granted to the United States, by all means place Great Britain on the same basis. To do otherwise would be unpatriotic, and I trust we yet retain some vestige of this sentiment so common to humanity.

"We have no desire for any scheme which points to national extinction, and which would certainly eventuate were we to become a party to this one. We desire Canada for the Canadians. If Uncle Sam's children choose to cross the line and take up their abode with us we will welcome them, so long as they contribute to the support and development of the commonwealth.

"The question forces itself upon us, *What of the future?* Is this country to be forever troubled with political agitators, whose purport seems to be the pulling down what loyal, patriotic spirits are trying to build up? Have we not sufficient internal agitation, the result of scheming politicians and designing demagogues, to claim our serious attention, without having this new one thrust upon us from abroad? surely we have. I look upon commercial union as fraught with danger, and one that should be pronounced upon by our people without delay. Let it go unchallenged that reciprocity in manufactures is in the near future, and further enterprise on this side of the line will receive a check, while new industries now in contemplation will wait the course of events.

"That this country has prospered since the abrogation of the former reciprocity treaty admits of no contradiction.

"Since those days a National Policy has been given us. The construction of public works requisite to secure a consolidation of the Dominion have been carried out. The great North-West has been opened up by that work of startling magnitude, the Canadian Pacific Railway, and to which we look with hope as an outlet for our manufactures and commerce in years to come. I ask, is it just to the people of this country, who have borne the taxation requisite to the development of it, now that we have consummated our hopes, to allow a nation of sixty million people who have not contributed a cent, not only to share in the result of our labors but to deprive us of our patrimony? What we need at the present time is loyal, patriotic, true men;

men who regard the capabilities of this country and its free institutions, as a boon to be prized and worth striving to retain.

"To enumerate in detail the injury such a scheme would entail on our farmers, manufacturers, merchants and mechanics, and the various channels through which their interests would be affected, suggests material for a volume. Suffice it to say we stand to-day a people as prosperous and free as any on earth's footstool, and we had better let well enough alone."

*From MR. JAMES GOLDIE, Guelph, Ont., miller, and ex-vice-president of Canadian Manufacturers' Association.*

"I cannot find much in the scheme of commercial union or reciprocity with the United States to commend it to the favorable notice of the Canadian people. While it may possibly be to the advantage of some to have free intercourse between the two countries, yet I think that to the great bulk of the farming and manufacturing community it would mean utter extinction. It is a well-known fact that where goods are manufactured wholesale as they are in the States, such small concerns as we have in Canada would have but poor chance to hold their own with them. And this applies to our farm products as well as to those of the mill and factory. We see a practical illustration of this fact in the Eastern States, where the immense competition of the West has practically swept out of existence the growing of wheat and other grains and greatly reduced the value of farming lands; and this no doubt would be our experience very soon if the Western farmer were allowed full access to our markets, aided, of course, by the very low freights on his produce given by the railway companies. I confess I cannot see any great advantage to be derived by us in this commercial union. At one time no doubt it would have been more desirable, but now that the Americans have their business system so thoroughly perfected, and working on such a large scale, it would be very difficult for any Canadian farmer or manufacturer to long withstand the competition.

"I cannot but think that the best way to increase the prosperity of our country is to seek other markets as well as those of the United States for our surplus products, such as the West Indies, Australia, etc. Our experience of late years seems to point out that we will get no treaty or favor from the United States without paying pretty smartly for it, and they will take good care that the best of the bargain is with them.

"I look upon it as very degrading as well as very poor policy to be continually clamoring for reciprocity with the United States, as if our very existence depended upon getting it, and that we could not do without it. The country is fairly prosperous now, as much so as any country in the world, if a few visionaries would but leave it alone and look at the prosperity we are enjoying, instead of continually harping about something that at present at least is quite unattainable, and might do us more harm than good if we had it.

"I should like to see some explanation as to how commercial union with the United States would affect our connection with Great Britain. Of course we would have to put on the same duties on English goods as the United States do, and I would like to know what effect that would have. Would it not mean that eventually we would be thrown overboard by Great Britain and absorbed politically as well as commercially by the United States and become one with them."

*From MR. D. R. WILKIE, Cashier of the Imperial Bank, Toronto.*

"As to the probable effect of 'Commercial Union' or 'Reciprocity in Manufactures' with the United States upon Canadian industries, I have no hesitation in saying that the effect would be disastrous to Canada, but proportionately beneficial to the United States.

"Commercial Union means Canadian Disunion. The policy would denationalize our country and destroy its present business centres, the trade between Ontario and Quebec on the one

hand and the North-West Provinces on the other would become the monopoly of St. Paul and Minneapolis, and the vast sums invested in the Canadian Pacific Railway for the very purpose of developing new markets for our manufacturers and traders would be forever lost; and, in the end, the political as well as the commercial control of our great North-West would be in the hands of those who are not in sympathy with us, and who are not liable for a farthing of the immense debt incurred for the construction of the great national highway, and for the liquidation of which we in the olden provinces will be obliged to provide the greater part.

"Under Commercial Union the trade and manufactures of Toronto and Montreal would fare badly; Buffalo and New York, Detroit and Chicago, would drain the country from Suspension Bridge to Sarnia; Boston and Ogdensburg would be powerful rivals for the trade of the Brockville and Ottawa district, Quebec, Nova Scotia, New Brunswick and Prince Edward's Island would be over-run by the representatives of the New England States, and that lone star Newfoundland would sink forever below our horizon. What would we have left? And who amongst us would gain by such a policy? Certainly not the farmers, those of them near to American cities might find a ready market for their butter and eggs, wool might bring a slightly higher figure; but, against this, there would be the flooding of the markets of Ontario and the other provinces with American wheat, flour, oats, cheese, pork and other products, our home market for home products would be destroyed, our milling interests would be annihilated, and in the train of the policy would follow the closing of factories, the depopulation of our country, a high duty upon tea and coffee, direct taxation, denationalization, and a broken hearted, soulless, unambitious race of disappointed speculators. What this Dominion wants is an Imperial Tellverein with a discriminating tariff in favor of its members. Great Britain can consume every bushel and pound of our surplus products, her other colonies and dependencies can give employment by their requirements of our manufactured goods to every laboring man and employer of labor. And what is the market of the United States compared to the markets of the British Empire? On the one hand with Commercial Union our people would have the run of a market, already well supplied, in competition with another people having almost identically the same products and industries as our own, and who, with greater wealth and numbers, would, in return, have the opportunity of swamping our industries and under-selling our merchants. On the other hand, with an Imperial Tellverein, we would have thrown open to us, to the exclusion of foreigners, the greatest markets of the world; it would then be found profitable to till every available acre of land in the Dominion, our North-West would teem with immigrants, a solution of the Irish problem would be arrived at without any out-cry for coercion or Home Rule, our mineral lands would be developed, our fisheries would be the sole perquisite of our own people, the output of our coal mines would be quadrupled, the products of our forests would find a profitable home market, our manufacturers and laboring classes would be happy and contented, and we would have the satisfaction of being one of a great brotherhood of nations, having a practical and profitable bond of union, under one imperial crown.

"What recourse or satisfaction would we have, if, after entering into a Commercial Union with the United States to the disadvantage of Great Britain, as such a policy certainly would be, that country should enter into a similar arrangement with the United States to the exclusion of Canada, and such a course of events would be by no means improbable, what would then be our position? We would find ourselves out-casts, abandoned by those whom we had deserted, despised by those whose friendship we had endeavored to purchase."

*From MR. J. WATSON, of the Strathroy Knitting Co., Hamilton.*

"I notice that a 'Canadian Manufacturer,' in writing regarding Reciprocity, says that if we cannot compete with the United States in the manufacture of goods we had better shut

up our factories. The writer forgets or loses sight of a great many points involved in deciding this question. I am able to compete with Americans in the manufacture of goods, but I have to contend with many more difficulties than they. In the first place, it is very much more difficult to get hands to work than in the United States. We have no surplus labor, and we have no centres to draw from as in the Eastern States. Often when we lose hands we have to wait weeks before we can get others, or we have to employ green ones and train them to our work; and we have this experience continually, causing expensive delays in manufacturing, and frequently bad work. Our fuel is higher, as we are further from the coal fields, and our machinery costs us more, as we are not sufficiently developed to be able to make all classes of machinery within ourselves. But supposing we have succeeded in making goods at the identical cost of the American article, and we have Commercial Union, we have to sell our goods. It will be admitted that the Americans would succeed in selling a certain portion of their goods in Canada, and that at the moment the treaty was made, their sales would displace our manufacture to the extent of their goods sold, and we would find that we would require to sell exactly the same amount in the United States as they do in Canada. Can this be done? I say no, as the Americans are much more clannish than we are, and would still give the preference to American manufactures, and to the development of their own country. If it is necessary for us to accept Commercial Union, are we not admitting that we have failed in advancing; that we have not sufficient force of character to lean upon ourselves; that we covet the almighty dollar more than we do patriotic ideas, and that we are willing to sell our country for a mess of pottage? During the last twenty years our country has made rapid progress and gained ground every day in wealth and in power, although certain of our politicians and the press are trying to destroy the country. Party politics are eating up our vitality. Are there no true and honest men who will rise up and lead Canadians against the miserable politicians who only hunt for office? Shame on those Canadians who have not sufficient intelligence to protect their country, nor sufficient brains to see where they are going to. Commercial Union will annihilate Canadianism. The farmer is as much interested as the manufacturer in opposing Commercial Union, as he would lose a large portion of his home market. He would lose the duty on flour, Indian corn, cheese, butter, eggs, fruit, vegetables, etc., and gain nothing but the privilege of selling wheat at the same price as he sells it at now, as the price is always regulated by the English market. About the only gain would be an extra price for barley, malt, lumber, and perhaps horses. The supposed production of farmers in Canada is about \$400,000,000, and of this \$40,000,000 is exported, making the consumption of Canada some \$360,000,000. Now if the home market is destroyed by Commercial Union, the farmer will suffer quite as much as the manufacturer. I hope that the people of this country may realize that there are two sides of this question, and the view I hold strongly is that Commercial Union means total destruction to Canada's national interests.

"We should remember that we are much further from the markets of New York, Boston and Philadelphia than the Eastern manufacturers are, and that the railways would make our rates of freight higher than Eastern goods could be carried for. Such of our industries as machinery and tool making would in all probability be closed, as the larger works in the United States which make special lines and make in large quantities, could undersell us in our market, and preference would be given to the American make. We are a small but growing country, working our way up, and as we advance we will be able to supply all these things for ourselves, but that day has not yet come. We have also to remember that the inducements for capitalists to invest more money in Canada after Commercial Union is adopted is very doubtful. Commercial Union would be likely to cause the stoppage of all expansion of Canadian industries, and should we show a decrease in that respect our population would commence to leave us."

◇ THE ◇  
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FREDERIC NICHOLLS, *Editor.*

J. J. CASSIDEX, *Managing Editor.*

ED. D. McCORMICK, *Secretary.*

This Journal has won for itself an acknowledged position amongst Trade Journals and is recognized as the representative industrial paper of Canada. All the various industries of the country are represented in its columns, and it has been for years the fearless and consistent advocate of those reforms which were indispensable to the success of the Manufacturers. It now reaches nearly every mill and factory in the Dominion, and its influence is constantly increasing. As a medium for advertisements of machinery, steam appliances, mill and factory supplies, etc., it is unequalled, and our rates will be furnished on application. Communications from Manufacturers, Exporters, and others, are respectfully invited.

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**Editorial Notes.**

MR. FREDERIC NICHOLLS is Secretary of  
The Canadian Manufacturers' Association,  
The Woollen Manufacturers' Association, and  
The Tanners' Association.

His Office is the Publication Office of  
THE CANADIAN MANUFACTURER,  
6 Wellington Street West, Toronto.

For any association of manufacturers who may desire to hold meetings for organization or other purposes, are invited to avail themselves of the meeting room adjoining the office of THE CANADIAN MANUFACTURER.

At an adjourned meeting of the Toronto Board of Trade, held in their rooms in this city last night, the Reciprocity, or Commercial Union resolutions offered at the Board meeting last week (talked to elsewhere), were voted down, and the following substitute resolution, offered by Mr. John Macdonald, wholesale dr. goods merchant of Toronto, was adopted almost unanimously.

"That the true policy of enlightened nations in their commercial intercourse is the maintenance of a friendly and generous spirit, avoiding all causes of disquietude by discouraging the enactment of irritating conditions, and seeking in a spirit of fairness where those conditions exist to have them removed.

"That this Board is of opinion that neither in its trade or other relations should any cause of strife exist between Canada and the great nation with which, geographically and commercially, it is so closely connected.

"That it believes that a commercial treaty, creditable and advantageous alike to both parties, can be framed in such a spirit of fairness as could afford the best guarantee for its perpetuity.

"That this Board is in favor of the employment of all laudable means to secure an end so much to be desired, but that in the consideration of such a subject it disapproves of any proposal to discriminate against Great Britain, whose protection we enjoy, and under whose watchful and fostering care we have come to be the people we are, and occupy the proud and enviable position which we do to-day among the nations of the earth."

This is the judgment and determination of the business men of Toronto concerning the question at issue, and may be considered as being the quietus of Reciprocity, or Commercial Union, between Canada and the United States. The autonomy of Canada will be preserved, and she will never become a part of the Yankee nation. Canada reserves herself for Canadians.

It is said that the Toronto Board of Trade numbers more than nine hundred members. At the meeting last week gotten up specially to endorse reciprocity, or commercial union, there were only forty-five gentlemen present. Of this number there were sufficient loyal Canadians to prevent the passage of the resolution prepared beforehand intended to commit the Board to the said and impracticable theory desired. Out of the more than nine hundred members Mr. Goldwin Smith and his adherents, after all their preparation, could not assemble a majority of forty-five to vote in favor of the resolution. It is perfectly safe to infer that the Toronto Board of Trade is not in favor of reciprocity.

THE labor troubles at London, Ont., have brought business there to a standstill, the employers refusing to negotiate with the strikers except as individuals, entirely ignoring their unions. Bishop Walsh, of that city, has written a letter to the local press in which he suggests that arbitration be resorted to, the contending parties binding themselves in writing to abide by whatever decision the arbitrators may arrive at. It does not seem to occur to His Lordship that there is nothing to arbitrate. The employers say that they cannot afford to grant an increase of wages, and that they will give employment to workmen only as individuals, and not as Knights of Labor. If the men are willing to return to work on these terms, the work is ready for them, and if they are not, there is no work for them. What is there then to arbitrate?

SAYS the *Hamilton Times* :—

“Notwithstanding the earnest protests to the contrary of the Tory orators in the recent local and Dominion elections, contract labor has not been abolished in Kingston Penitentiary. The report of the Minister of Justice as to penitentiaries has this paraeraph :—“The contract for convict labor at lock-making, with Mr. L. B. Spencer, expired on the 30th of June. He has been permitted to employ about ninety convicts on the piece price plan, in order to finish work which had been incomplete on the expiry of the contract.”

The *Times* is far astray, and we charge that it has made the statement in order to deliberately mislead its friends. We admit that the report of the Minister of Justice contained the paragraph referred to, but the *Times* is well aware that the report in question was for the fiscal year ending June 30th, 1886. At present there is no contract labor allowed in any Dominion institution, and there has not been for some time.

WE reproduce extracts from a few letters received at this office from business men, indicating the esteem in which the CANADIAN MANUFACTURER is held by them. Messrs. Theo. H. Eaton & Son, Windsor, Ont., manufacturers and importers of dye stuffs, etc., write us :—“We are quite glad to renew our advertisement in the CANADIAN MANUFACTURER for another year,” and as an expression of their approval of it as an exponent of the views and interests of Canadian manufacturers they enclosed the money to pay for their advertisement for a year in advance. Messrs. T. S. Simms & Co., St. John, N.B., manufacturers of brushes, etc., say :—“We like the tone of the CANADIAN MANUFACTURER. We manufacturers need just such an able advocate of our interests, and it ought to be so well supported by them as to enable it to issue every week.” Messrs. Louis Coté & Bro., St. Hyacinthe, Que., write :—“We have such a fancy for the CANADIAN MANUFACTURER that we desire a half-page advertisement in it. We wish it great success.”

“THE Singer Sewing Machine Company have taken a twenty years' lease of the large building on Notre Dame street west, for many years occupied by the Messrs. Gilbert, and are fitting it up as their new factory. The building has a frontage 500 feet and a wing 160 feet in length. A 600 horse power engine has been put in, and manufacturing the machines and necessary woodwork will begin about the first of June. When under full

operation 1,200 operatives will be employed, and the manufactory will be able turn out 1,200 machines each week.”—*Montreal Star*. So much for the N.P. With Reciprocity is it at all likely that the Singer Company would make so large an investment as here indicated, when the “1,200 machines each week” which they will produce in Montreal could have been made more cheaply at their extensive factories in New Jersey? The 1,200 operatives who are to be employed there, together with all those who will be dependent upon them, will live on Canadian soil, wear clothing made in Canada of textiles woven in Canadian mills, and subsist on food and farm products produced by Canadian farmers. The N.P. is a grand thing for building up manufacturing industries in Canada, and providing consumers at home for the products of Canadian farmers.

#### OUR CARD BASKET.

THE following is a list of those who have favored us with a call since the date of our last issue :—

F. Crompton, of the Crompton Corset Co., Toronto and Berlin; A. E. Kemp, of McDonald & Kemp, tinware manufacturers, Toronto; J. F. Ellis, of the Barber & Ellis Co., manufacturing stationers, Toronto; W. G. Hemming, of Hemming Bros., fancy goods manufacturers, Toronto; E. A. Dalley, of F. F. Dalley & Co., blacking manufacturers, Hamilton; C. A. Birge, of the Canada Screw Co., Dundas; R. W. Elliott, manufacturing chemist, Toronto; John Cowan, of the Oshawa Malleable Iron Co., Oshawa; Geo. Booth, coppersmith, Toronto; E. J. Davis, tanner, King; W. H. Cross, tanner, Barrie; B. Rosamond, of the Rosamond Woolen Co., Almonte; — Laidlaw, of Inglis & Hunter, engine builders, Toronto; Fred Doty, of the Doty Engine Works, Toronto; C. J. Miller, tanner, Orillia; Charles Warren, wholesale grocer, Toronto; R. L. Patterson, of the Miller & Richards Co., Toronto; E. J. Lennox, architect, Toronto; J. B. Bickell, of Bickell & Wickett, tanners, Toronto; Thomas Cowan, President Canadian Manufacturers' Association, Galt; Theodor Heintzman, of Heintzman & Co., piano manufacturers, Toronto; James Watson, President Strathroy Knitting Co., Hamilton; P. W. Ellis, of P. W. Ellis & Co., manufacturing jewellers, Toronto; Wm. Bell, organ manufacturer, Guelph; Robert Crean, of the Ontario Straw Goods Manufacturing Co., Toronto; Henry New, of the Campbell Sewer Pipe Co., Hamilton; J. D. Chaplin, of the Welland Vale Manufacturing Co., St. Catharines; Wm. Christie, of Christie, Brown & Co., biscuit manufacturers, Toronto; W. D. Beardmore, leather merchant, Toronto; W. T. Cockshutt, of the Cockshutt Plow Co., Brantford; W. K. McNaught, of the American Watch Case Co., Toronto; James Worthington, Pres. Ontario Bolt Co., Toronto; Charles Knees, tanner, Milton; H. E. Clarke, M.P.P., of H. E. Clarke & Co., trunk manufacturers, Toronto; C. D. Massey, of the Massey Manufacturing Co., Toronto; Joseph Simpson, knit goods manufacturer, Toronto; John Bell, of the Ontario Cotton Mills Co., Hamilton; John C. Copp, of the Toronto Silver Plate Co., Toronto; S. N. Hearle, soap manufacturer, Montreal; H. Bryant, of Bryant & Gibson, pickle manufacturers, Toronto; O. Wilby, of the Weston Woolen Mills Co., Weston; Chas. G. Pease, of the American Rattan Co., Toronto; J. B. Armstrong, of the Guelph Carriage Goods Co., Guelph; W. H. Storey, glove manufacturer, Acton; James Goldie, miller, Guelph, Jno. Langley, of Langley, Neil & Co., hat manufacturers, Toronto; W. G. Dunn, spice mills, Hamilton; S. Collinson, of the Whitman & Burnes Manufacturing Co., St. Catharines; Samuel May, billiard table manufacturer, Toronto; P. Freyseng, cork manufacturer, Toronto; J. H. Huckland, of the Grand River Knitting Mills Co., Paris; Edward Gurney, stove founder, Toronto.

## TARIFF CHANGES.

WE give below a complete list of tariff changes, carefully revised, and including all amendments up to the time Parliament adjourned, on Wednesday the 18th inst.

1. Resolved.—That it is expedient to repeal the following items in Schedule "A" of the Act 49 Vic., Chap. 33, intituled "An Act respecting the Duties of Customs"—Consolidated Statutes, 1886, viz.:—Numbers 7, 31, 32, 37, 39, 44, 51, 72, 83, 101, 125, 126, 133, 137, 138, 144, 145, 146, 147, 154, 161, 181, 192, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 233, 237, 238, 240, 241, 244, 245, 246, 248, 251, 252, 254, 255, 275, 278, 282, 317, 318, 329, 330, 331, 333, 339, 346, 352, 354, 356, 365, 366, 368, 383, 403, 404, 406, 409, 439, 447, 453, 455, 456, 458, 462, 473, and 475, and to make other provisions in lieu thereof as follows:—

1. Blacking, shoe and shoe makers ink, thirty per cent. *ad valorem*.  
Harness and leather dressing, twenty-five per cent. *ad valorem*.

2. Blueing. Laundry blueing of all kinds, thirty per cent. *ad valorem*.

3. Advertising pictures, pictorial show cards, illustrated advertising periodicals, illustrated price lists, advertising calendars, advertising almanacs, and tailors' and mantle-makers' fashion plates, a specific duty of six cents per pound and twenty per cent. *ad valorem*.

4. Advertising pamphlets not illustrated, a specific duty of one cent each.

5. Braces or suspenders, thirty-five per cent. *ad valorem*.

6. Buttons of vegetable, ivory, horn or composition, a specific duty of ten cents per gross and twenty-five per cent. *ad valorem*.

Buttons—all other not elsewhere specified, twenty-five per cent. *ad valorem*.

7. Buggies of all kinds, farm waggons, farm, railway or freight carts, pleasure carts or gigs and similar vehicles, costing less than fifty dollars, a specific duty of ten dollars each; costing fifty dollars and less than one hundred dollars, a specific duty of fifteen dollars each, and in addition thereto in each case, twenty per cent. *ad valorem*.

7a. All such carriages costing one hundred dollars each and over, thirty-five per cent. *ad valorem*.

8. Cotton sewing thread on spools, twenty-five per cent. *ad valorem*.

9. Jeans and coutilles, when imported by corset makers for use in their factory, twenty-five per cent. *ad valorem*.

10. Printed or dyed cotton fabrics, not elsewhere specified, thirty-two and a half per cent. *ad valorem*.

11. Earthenware and stoneware, namely, demijohns or jugs, churns and crocks, a specific duty of three cents per gallon of holding capacity.

12. Earthenware and stoneware, brown or colored, Rockingham ware, white, granite or ironstone ware, C. C. or cream colored ware; decorated, printed or sponged, and all earthenware not elsewhere specified, thirty-five per cent. *ad valorem*.

13. Flag stones, sawn or otherwise dressed, a specific duty of two dollars per ton.

14. Glass carboys and demijohns, bottles and decanters, flasks and phials, of less capacity than four ounces, thirty per cent. *ad valorem*.

14a. Flasks and phials of four ounce capacity and over, telegraph and lightning rod insulators, jars and glass balls, and cut, pressed or moulded tableware, a specific duty of ten cents per dozen pieces, and thirty per cent. *ad valorem*.

15. Gold and silver leaf, thirty per cent. *ad valorem*.

16. Sewing machines whole, or heads or parts of heads of sewing machines, a specific duty of three dollars each and twenty per cent. *ad valorem*.

17. Leather, sole, a specific duty of three cents per pound.

17a. Leather, belting leather, and all upper leather, including kid, lamb, sheep and calf, tanned or dressed, but not colored, waxed or glazed, fifteen per cent. *ad valorem*.

18. Japanned, patent or enamelled, twenty-five per cent. *ad valorem*.

19. Liquorice root, paste extract of, a specific duty of two cents per pound.

20. Oil cloth, floor, a specific duty of five cents per square yard, and twenty per cent. *ad valorem*.

21. Oil cloth in the piece, cut or shaped, oiled, enamelled, stamped, painted or printed, India rubbered, flocked or coated, not otherwise provided for, a specific duty of five cents per square yard, and fifteen per cent. *ad valorem*.

22. Paper hangings, or wall paper in rolls, the following specific duties on each eight yards of the following descriptions, viz.:

a. Brown blanks, two cents.

b. White papers, grounded papers and satins, three cents.

c. Single point bronzes, seven cents.

d. Colored bronzes, nine cents.

e. Embossed bronzes, eleven cents.

f. Colored borders, narrow, eight cents.

g. Colored borders, wide, ten cents.

h. Bronze borders, narrow, fifteen cents.

i. Bronze borders, wide, eighteen cents.

j. Embossed borders, twenty cents.

23. Paper of all kinds not elsewhere specified, twenty-five per cent. *ad valorem*.

24. Manufactures of paper, including ruled and border papers, papetries, box paper, envelopes and blank books, thirty-five per cent. *ad valorem*.

25. Pickles in bottle, a specific duty of forty cents per gallon, sixteen half pint, eight pint, or four quart bottles to be held to contain a gallon: In jars, bottles, or other vessels the quantity to be ascertained and the same rate of duty to be charged thereon, the duty to include the bottle and other packages.

25a. Pickles in bulk, in vinegar, or vinegar and mustard, thirty-five cents per gallon, and in brine, twenty-five cents per gallon.

26. Sauces and catsup, in bottle, a specific duty of forty cents per gallon, and twenty per cent. *ad valorem*; sixteen half-pint, eight pint or four quart bottles to be held to contain a gallon.

27. Plated cutlery, namely, knives plated wholly or in part, costing under three dollars and fifty cents per dozen, a specific duty of fifty cents per dozen and twenty per cent. *ad valorem*.

27a. All other plated ware, electro-plated or gilt of all kinds, whether plated wholly or in part, thirty per cent. *ad valorem*.

28. Plumbago, ten per cent. *ad valorem*.

28a. Plumbago, all manufacturers of not elsewhere specified, twenty-five per cent. *ad valorem*.

29. Salt, coarse, ten cents per one hundred pounds (not to include salt imported from the United Kingdom or any British possessions, or salt imported for the use of the sea or gulf fisheries, which shall be free of duty).

29a. Salt, fine, in bulk, a specific duty of ten cents per one hundred pounds.

30. Salt in bags, barrels or other packages, a specific duty of fifteen cents per one hundred pounds, the bags, barrels or other packages to bear the same duty as if imported empty.

31. Sand paper, glass, flint and emery paper, thirty per cent. *ad valorem*.

32. Slates, school and writing slates, a specific duty of one cent each and twenty per cent. *ad valorem*.

33. Cigars and cigarettes, a specific duty of two dollars per pound and twenty-five per cent. *ad valorem*. The weight of cigarettes to include the weight of the paper covering.

34. Trunks of all kinds, and pocket books and purses, thirty per cent. *ad valorem*.

34a. Valises, satchels, carpet bags, and cases for jewels, watch cases, and other like articles of any material, a specific duty of ten cents each and thirty per cent. *ad valorem*.

35. Varnishes, lacquers, japans, japan driers, liquid driers, collo-dion and oil finish, not elsewhere specified, a specific duty of twenty cents per gallon and twenty-five per cent. *ad valorem*.

36. Potatoes, a specific duty of fifteen cents per bushel.

37. Tomatoes, fresh, a specific duty of thirty cents per bushel and ten per cent. *ad valorem*.

38. Vegetables not elsewhere specified, including sweet potatoes, twenty-five per cent. *ad valorem*.

39. Watch actions or movements, ten per cent. *ad valorem*.

40. All fabrics composed wholly or in part of wool, worsted, the hair of the Alpaca goat or other like animals, not otherwise provided for, twenty-two and a half per cent. *ad valorem*; on all such goods costing ten cents per yard and under fourteen cents, twenty-five per cent; costing fourteen cents and over, twenty-seven and a half per cent. *ad valorem*.

41. Barrels containing pork or other salted meats, a specific duty of twenty cents each.

42. British gum, dressine, sizing cream and enamel sizing, a specific duty of one cent per pound.

43. Collars of cotton or linen, a specific duty of twenty-four cents per dozen, and thirty per cent. *ad valorem*.

44. Cuffs of cotton or linen, a specific duty of four cents per pair and thirty per cent. *ad valorem*.

45. Gas metres, thirty per cent. *ad valorem*.

46. Glue, sheet, broken sheet and ground, a specific duty of three cents per pound.

47. Mucilage, thirty per cent. *ad valorem*.

48. Newspapers, partly printed and intended to be completed and published in Canada, twenty-five per cent. *ad valorem*.



49. Photographic dry plates, a specific duty of fifteen cents per square foot.
50. Shirts, of cotton or linen, a specific duty of one dollar per dozen and thirty per cent. *ad valorem*.
51. Veneers of wood, sawn only, ten per cent. *ad valorem*.
52. Colored fabrics, woven of dyed or colored cotton yarn, or part jute and part cotton yarns, or other material, except silk, not elsewhere specified, twenty-five per cent. *ad valorem*.
53. Withdrawn.
54. Macaroni and vermicelli, a specific duty of two cents per pound.
55. Oranges and lemons, in boxes and capacity not exceeding two and one-half cubic feet, twenty-five cents per box; in one half boxes capacity not exceeding one and one-fourth cubic feet, thirteen cents per half box; in cases and all other packages ten cents per cubic foot holding capacity; in bulk, one dollar and sixty cents per one thousand oranges or lemons; in barrels not exceeding in capacity that of the one hundred and ninety-six pounds flour barrel, fifty-five cents per barrel.
56. Paper, tarred, a specific duty of one-half cent per pound.
57. Spectacles and eye-glasses, thirty per cent. *ad valorem*.
- 57a. Parts of spectacles and eye-glasses, unfinished, twenty-five per cent. *ad valorem*.
58. Withdrawn.
59. Axes of all kinds, adzes, hatchets, hammers, not elsewhere specified, thirty-five per cent. *ad valorem*.
60. Picks, mattocks, blacksmiths' hammers, wedges, crowbars of iron or steel, one cent per pound and twenty-five cent. *ad valorem*.
61. Axles and springs of iron and steel, parts thereof, axle bars, axle blanks or forgings for carriages other than railway and tramway vehicles without reference to the stage of manufacture, one cent per pound, and thirty per cent *ad valorem*.
62. Hay knives, two and three pronged forks of all kinds, and hoes, five cents each and twenty-five per cent. *ad valorem*.
63. Shovels and spades, and spade and shovel blanks, a specific duty of one dollar per dozen and twenty per cent. *ad valorem*.
64. Mowing machines, self-binding harvesters, harvesters without binders, binding attachments, reapers, sulky and walking ploughs and all other agricultural machines and implements not otherwise provided for, thirty-five per cent. *ad valorem*.
65. Grape vines costing twenty cents and less, three cents each.
66. Gooseberry bushes, two cents each.
67. Raspberry and blackberry bushes, one cent each.
68. Peach trees, four cents each.
69. Rosebushes, five cents per plant.
70. Seedling stock for grafting, viz.:—Plum, pear, peach and other fruit trees, ten per cent. *ad valorem*.
71. Manufactures of iron and steel, viz.:—Wrought iron, scrap iron and scrap steel being waste or refuse wrought iron or steel that has been in actual use and is fit only to be re-manufactured, two dollars per ton.
72. Ferro-manganese, ferro-silicon, speigel, steel bloom ends, and crop ends of steel rails, for the manufacture of steel, two dollars per ton.
73. Iron in pigs, iron kentledge and cast scrap iron, four dollars per ton.
74. Iron in slabs, blooms, loops, puddled bars, or other forms less finished than iron in bars, and more advanced than pig iron, except castings, nine dollars per ton.
75. (a) Bar iron, rolled or hammered, comprising flats, rounds and squares, and bars and shapes of rolled iron, not elsewhere specified, thirteen dollars a ton.
76. (b) Comprising round iron not less than three-fourths of one inch in diameter, and square iron not less than three-fourths of one inch square, thirteen dollars per ton.
77. (c) Comprising flats less than one inch or less than three-eighths of one inch thick; round iron less than three fourths of one inch, and not less than seven-sixteenths of one inch square, fifteen dollars per ton.
78. Rolled round iron in coils or rods less than seven-sixteenths of one inch in diameter, and bars and shapes of rolled iron, not elsewhere provided for, twenty-five per cent. *ad valorem*.
79. Withdrawn and elsewhere provided for.
80. Iron and steel wire, galvanized or not, smaller than number five gauge and not smaller than number fourteen gauge, twenty per cent. *ad valorem*.
81. Wire of spring steel, coppered or tinned, number nine gauge or smaller, not elsewhere specified, twenty per cent. *ad valorem*.
82. (a) Boiler or other plate iron, sheared or unsheared, skelp iron, sheared or rolled in grooves, and sheet iron, common or black, not thinner than number twenty gauge, not elsewhere specified, fourteen dollars per ton.
83. (b) Sheet iron, common or black, smoothed or polished, and coated or galvanized, thinner than number twenty gauge Canada plates and boiler plate of iron or steel not less than thirty inches wide, and not less than  $\frac{1}{4}$  inch in thickness, twelve and a-half per cent. *ad valorem*.
84. (a) Hoop or band or scroll or other iron, eight inches or less in width and not thinner than number twenty gauge, thirteen dollars per ton.
85. (b) Hoop or band or scroll or other iron, eight inches or less in width and thinner than number twenty gauge, twelve and a-half per cent. *ad valorem*.
86. Iron or steel railway fish plates, twelve dollars per ton.
87. Iron or steel bars, girders, joists, angles, channels, special sections, rolled eye bar blanks, made by the Kloman process, and building forms, together with all other structural shapes of iron and steel, sixteen dollars per ton; when imported by manufacturers of bridges for use exclusively in their own manufactures, twelve and a-half per cent. *ad valorem*.
88. Iron bridges and structural iron work, one and a quarter cents a pound.
89. Forgings of iron and steel, or forged iron of whatever shape or in whatever stage of manufacture, not elsewhere specified thirty dollars per ton, provided that the duty shall not be less than thirty-five per cent. *ad valorem*.
90. Steel ingots, cogged ingots, blooms and slabs, by whatever process made, billets and bars, bands, hoops, strips and sheets of all gauges and widths, all of above classes of steel not elsewhere provided for, valued at four cents or less per pound, thirty per cent. *ad valorem*, but not less than twelve dollars a ton, except ingots, cogged ingots, blooms and slabs, upon which the specific duty shall be not less than eight dollars per ton.
91. When of greater value than four cents per pound, twelve and a half per cent. *ad valorem*.
92. Plates of iron and steel combined, and steel not specially enumerated or provided for, thirty per cent.
93. Provided that on all iron or steel bars, rods, strips or steel sheets, of whatever shape, and on all iron or steel bars of irregular shape or section, cold rolled, cold hammered or polished in any way in addition to the ordinary process of hot rolling or hammering, there shall be paid one-sixth of one cent per pound in addition to the rates imposed on the said materials.
94. Provided further, that all metal produced from iron or its ores, which is cast and malleable, of whatever description of form, without regard to the percentage of carbon contained therein, whether produced by cementation, or converted, cast, or made from iron or its ores by the crucible, Bessemer, pneumatic, Thomas Gilchrist, basic, Siemens-Martin or open hearth process, or by the equivalent of either, or by the combination of two or more of the processes, or their equivalents, or by any fusion or other process which produces from iron or its ores, a metal either granular or fibrous in structure, which is cast and malleable, except what is known as malleable iron castings, shall be classed and denominated as steel.
- And provided further that all articles rated as iron or manufacture of iron, shall be chargeable with the same rate of duty as if made of steel, or of steel and iron combined, unless otherwise specially provided for.
95. Malleable iron castings, and steel castings not elsewhere specified, twenty-five dollars per ton, provided the duty shall not be less than thirty per cent. *ad valorem*.
96. Cast iron vessels, plates, stone plates and irons, sad irons, hatters' irons, tailors' iron and castings of iron not elsewhere specified, sixteen dollars per ton, provided the duty shall not be less than thirty per cent. *ad valorem*.
97. Cast iron pipe of every description, twelve dollars per ton, provided that the duty shall not be less than thirty-five per cent. *ad valorem*.
98. Withdrawn and elsewhere provided for.
99. Engines, boilers and machinery, viz.:—  
(a) Fire engines, thirty-five per cent. *ad valorem*.
100. (b) Locomotives and other steam engines, boilers and machinery composed wholly or in part of iron or steel, not elsewhere specified, thirty per cent. *ad valorem*, provided that any locomotive which, with its tender, weighs thirty tons or over, shall pay a duty of not less than two thousand dollars.
101. Portable machines, portable steam engines, threshers and separators, horse powers, portable saw mills and planing mills and parts thereof in any stage of manufacture, thirty-five per cent. *ad valorem*.
102. Withdrawn and placed on free list.
103. (a) Boiler tubes or flues or stays of wrought iron or steel, fifteen per cent. *ad valorem*.

104. (b) Wrought iron tubing, plain, not threaded, coupled or otherwise manufactured, over two inches in diameter, fifteen per cent. *ad valorem*.
105. (c) Other wrought iron or steel tubes or pipes, one cent and a half per pound.
106. Safes, doors for safes and vaults, scales, balances and weighing beams of iron or steel, thirty-five per cent. *ad valorem*.
107. Skates, twenty cents per pair and thirty per cent. *ad valorem*.
108. Wire rope of iron or steel, not otherwise provided for, twenty-five per cent. *ad valorem*.
109. Screws, commonly called wood screws, two inches and over in length, six cents per pound; over one inch and less than two inches, eight cents per pound; less than one inch eleven cents per pound; other screws of iron, brass, or other metals thirty-five per cent. *ad valorem*.
110. Hardware, viz.:—Builders, cabinet makers and carriage hardware and locks, thirty-five per cent. *ad valorem*.
111. Muskets, rifles and other firearms and surgical instruments, twenty per cent. *ad valorem*.
- Items 112 and 113 are consolidated, and read: Nails and spikes and brads, galvanized or not, horseshoe nails, hob-nails and wrought nails of all kinds, and horse, mule, and ox shoes, one and a half cents per pound but not less than thirty-five per cent. *ad valorem*.
114. Cut tacks, brads or sprigs not exceeding sixteen ounces to the thousand, two cents per thousand.
- Exceeding sixteen ounces to the thousand, two cents per pound.
115. Iron or steel rivets, both with or without threads, nuts or bolt blanks less than three-eighths in diameter, one and a half cents per pound and thirty per cent. *ad valorem*.
116. Cut nails and spikes of iron or steel, one cent per pound.
117. Street railway bars or rails weighing not less than twenty-five pounds per lineal yard for purposes other than railway tracks, six dollars per ton.
118. Manufactures, articles or wares not specially enumerated or provided for, composed wholly or in part of iron or steel, and whether partly or wholly manufactured, thirty per cent. *ad valorem*.
119. Labels for fruit, vegetables, meat, fish, confectionery and other goods, also tickets, posters, advertising bills and folders, fifteen cents per pound and twenty-five per cent. *ad valorem*.
120. Printing presses of all kinds, folding machines and paper cutters ten per cent. *ad valorem*.

The undermentioned items will in future be admitted free of duty:—

1. Articles imported by and for the use of the Dominion Government or any of the Departments thereof or by and for the Senate or House of Commons, and the following articles when imported by and for the use of the army and navy, viz.:—Arms, military or naval clothing, musical instruments for bands, military stores and munitions of war.
2. Brick, fire.
3. Coal, anthracite.
4. Cotton yarns finer than No. 40, unbleached, bleached or dyed for use in the manufacture of Italian cloths, cotton, worsted or silk fabrics.
5. Gannister.
6. Gums, amber, arabic, Australian, copal, damar, mastic, sandarac, shellac and tragacanth.
7. Quills in their natural state or unflumed.
8. Steel rails, weighing not less than twenty-five pounds per lineal yard, for use in railway tracks.
9. Steel valued at two and one-half cents per pound and upwards for use in the manufacture of skates.
10. Scrap iron and scrap steel, old and fit only to be re-manufactured, being part of or recovered from any vessel wrecked in waters subject to the jurisdiction of Canada.
11. Steel bowls for cream separators. Steel for the manufacture of files, when imported by file manufacturers for use in their factories.
12. Veneers of ivory, sawn only.

The following items have been removed from the free list, and those of them which have not been included in the above list of tariff changes will in future be classified in the unenumerated list, the duty being twenty per cent. *ad valorem*:—

1. Articles imported by and for the use of the Dominion Government, or any of the departments thereof, or for the Senate or House of Commons.
2. Arms, clothing, musical instruments for bands, military stores and munitions of war for the use of the army, navy and Canadian militia.
3. Books, bound, which have been printed more than seven years at the date of importation, except foreign reprints of English copyrighted books, which shall remain subject to the copyright duty.

4. Cotton yarns finer than No. 40, unbleached, bleached or dyed, and not finer than No. 60, for the manufacture of Italian cloths and worsted fabrics.
5. Gums, amber, Arabic, Australian, British, copal, damar, mastic, sandarac, shellac and tragacanth.
6. Iron and steel, old and scrap.
7. Medals of gold, silver and copper.
8. Moss, seaweed and all other vegetable substances used for beds and mattresses, in their natural state or only cleaned.
9. Steel, imported for use in the manufacture of skates.
9. (a) Locomotive tires of Bessemer steel, in the rough.
10. Steel railway bars or rails, not including tram or street rails.
11. Veneers of wood and ivory, sawn only.
12. Wire of spring steel, coppered, for the manufacture of mattresses, No. 9 gauge and smaller.

The following additional tariff changes have also come into effect, viz.:—

3. Resolved,—That it is expedient to repeal item No. 816 in schedule "E" of tariff of customs duties, and to substitute the following in lieu thereof, viz.:—

1. Shingle bolts of pine or cedar, and cedar logs capable of being made into shingle bolts, one dollar and fifty cents per cord of one hundred and twenty-eight cubic feet.

4. Resolved,—That it is expedient to repeal section 8, chapter 33, 49 Victoria, consolidated statutes, and to enact the following in lieu thereof:—

Except in cases otherwise specially provided for in the schedules to the tariff, packages manufactured of glass, tin, iron, or other metals, crates, barrels or other packages containing earthenware, china, porcelain, crockery, glassware, glass or other brittle goods, cases containing bottled spirits, wines, malt liquors, or other bottled goods, together with all articles used as first receptacles or packages for goods of any kind in which such goods are packed for purposes of sale or not solely for exportation, except as hereinafter provided, shall be chargeable with the same rate of duty as the goods contained therein, if such duty be *ad valorem*; but if such duty be specific, or *ad valorem* and specific, or if when *ad valorem* alone, such named duty would be less than that to which such receptacles or packages would be liable under the tariff in force at the date of importation if they were imported empty, or if the goods therein be free of duty, then the duty shall be that to which such receptacles or packages would be liable if imported empty; but all other packages being the usual and ordinary ones in which goods are packed for exportation only, according to the general usage and customs of trade, shall be free of duty.

5. Resolved,—That it is expedient to provide that the foregoing resolutions, and the alterations thereby made in the duties of customs on the articles therein mentioned, shall take effect on and after the 13th of May instant.

The following items, which were not included in the original tariff resolutions, were added on Wednesday, the 18th inst.:

Rice one and a quarter cents per pound.

All clothing made of cotton or other material not otherwise provided for, including corsets and similar articles made up by seamstresses or tailors, also tarpaulin, plain or coated with oil, paint, tar or other composition, and cotton bags made up by the use of the needle, not otherwise provided for, thirty-five per cent. *ad valorem*.

Drain pipes and sewer pipes, glazed, thirty-five per cent. *ad valorem*.

All square pianofortes, whether round cornered or not, not over seven octaves, twenty-five dollars each; all other square pianofortes, thirty dollars each, upright pianofortes, thirty dollars each; concert, semi-concert or parlor grand pianofortes, fifty dollars each, and in addition twenty per cent. *ad valorem*.

Parts of pianofortes, thirty per cent. *ad valorem*.

Clothes wringers, a specific duty of one dollar each, and thirty per cent. *ad valorem*.

Added to the free list: Redwood planks and boards sawn but not furthered manufactured (to develop the cigar box industry).

MR. J. FITZGERALD, publisher, New York, has sent us "The Genesis of Science" by Herbert Spencer, the same being the April number of the Humboldt Library, published by him. The subscription price of this library is \$1.50 a year, which includes 12 numbers.

MR. JAMES M. SWANK, general manager of the American Iron and Steel Association, has sent us the Annual Statistical Report of that Association in which is contained complete statistics of the American iron trade for 1886 and previous years, and a brief review of the present condition of the iron industry in foreign countries.

# Manufacturing.

THE CANADIAN MANUFACTURER.

Send \$2.00 and receive it twice a month, postage paid, for one year.

A WOOD-WORKING factory is about being established at Sackville, N.B.

A ST. JOHN, N.B., manufacturer is about establishing a furniture factory at Moncton.

THE Standard Pipe and Drain Company, St. John, Que., has been incorporated.

THE Atlantic Pulp and Paper Company has been incorporated, with chief place of business at St. John, Que.

THE Nova Scotia Legislature has authorized a loan of \$250,000 for the construction of iron bridges in the province.

THE Manitoba Wire Co. of Winnipeg, find a good demand for their barbed wire, which is taken as fast as turned out.

MESSRS. H. ARMSTRONG & SONS have succeeded to the business of the lately dissolved firm of Balfour & Armstrong, Bath, Ont., carriage manufacturers.

JOHN WEILER, Victoria, B.C., has received a large boiler and an outfit of machinery for his new furniture factory at that place made by Messrs. Cowan & Co., Galt, Ont.

MR. J. H. HAMILTON of the Wellington Marble Works, Guelph, Ont., has gone to the Bay of Fundy for the purpose of purchasing a large supply of granite for his works.

A FEW days ago twelve car loads of rope ends were received at the Lachute paper mills at Lachute, Que., the weight of the shipment being considerably over 500,000 pounds.

THE machine shop of Mr. M. Harper at Whitby, near Oshawa, is now run night and day. One set of hands work during the day and another set at night. Hew's that for the N.P. ?

THE Canada Screw Company of Dundas are to remove their works to Hamilton, land for the necessary buildings having already been purchased. The company give employment to about 100 hands.

THE Brownsburg Cartridge Company have commenced manufacturing brass shell cartridge for the Snider rifle, and the Dominion Rifle Association are to test the shell on their rifle ranges at Ottawa.

THE business men of Sackville, N.B., are anxious to have a wood working factory established in that town. The place requires such an institution, and there is no reason to suppose it would not pay the investors.

MESSRS. S. B. JEUCKS & SON, Sherbrooke, Que., have recently made a boiler weighing 13 tons for the Scottstown Pulp Company, Scottstown, Que. Its capacity is for the manufacture of 1½ tons dry pulp at each boiling.

THE Royal Soap Manufacturing Company of Winnipeg, Man., are making special efforts to introduce their toilet and laundry soaps. This is said to be the only manufacturing company of the kind in the North-West.

MR. T. J. BAINE organ manufacturer of Hamilton, reports business very brisk, his factory working over time. A large number of the Baine organs are being placed in churches in different parts of the country, where they are giving great satisfaction.

THE Davy Excelsior Iron Fence Company have applied for letters patent of incorporation for the manufacture and sale of iron and steel farm and railway fences, etc. The capital stock of the company is \$20,000, and the chief place of business is Kingston.

THE Whitby correspondent of an Oshawa, Ont., contemporary says that the Mayor of Whitby has received a proposal from a firm of manufacturers of musical instruments in Toronto and Montreal, to establish a branch of their works at that place which will always employ one hundred men or more.

MESSRS. LINDSAY & SELDON, Peterborough, Ont., who established their furniture factory there only about a year ago, have received orders for their goods so rapidly that they have to call in their travelling men until they can catch up. At present this firm give employment to 25 men, but this force will probably be increased to 50 or more.

THE Canada Power Company make application to Parliament for an act of incorporation, empowering them to construct a canal and hydraulic tunnel from a point in the Welland River, near the con-junction with the Niagara River, west bank, for the purpose of supplying power to manufacturers for electric and other purposes.

A NEW style of brick chimney has been introduced by an engineering company in Boston, Mass., which can be erected for one-third less than the ordinary chimney. It can be built square or round, and there is a space between the inside wall and the outside. The chimney is from six to twelve inches larger at the top than at the base, which allows of an expansion and relieves the draft from friction. These chimneys are said to be twenty-five per cent. better than others.

THE Maritime Chemical Pulp Company, Chatham, N.B., are erecting buildings at their works there which will cover an area of 54,000 square feet. The buildings are joined together in the shape of the letter H, are eight in number, and will require about 3,000 tons of stone and 2,000,000 of brick in their construction. The floors are supported on rolled iron beams, imported from England, and the engines, boilers and machinery are now in course of construction in England, Scotland and Germany.

ARRANGEMENTS have been completed between the corporation of St. Thomas, Ont., and the firm of Essex & Co., brass founders of London, Ont., for the removal of the latter's works to that city, and an agreement has been signed that should a bonus of \$6,000, free water and exemption from taxes for ten years be granted them they will purchase land and erect a foundry in London and give employment to an average of forty hands per day for ten years. The by-law will be voted on at an early date.

A LARGE factory of Breslau, Germany, required a chimney 54 feet in height. Instead of constructing the chimney of bricks, as usual, a large number of solid blocks of paper firmly compressed were made use of. These blocks were placed carefully one on the top of the other, and joined together with a special cement. The chimney is non-inflammable, is very elastic, and is, by the nature of the material, quite secure from lightning, which so often plays such sad havoc with the more ordinary sort of factory chimney.

THE requirement of the United States last summer for tin cans in which to pack tomatoes amounted to 55,547,900 cans, which includes only those put up for the trade. As large as this aggregate it seems to be only about only one can to each inhabitant of the country; but the figures convey some idea of the extent to which tin plates are being used in pre-serving agricultural products. It is probable that the annual requirements of the country for tin cans for the preservation of fruits, vegetables, fish, milk, etc., amount to 200,000,000 cans or more.

THE statistics of the salmon packing industry in British Columbia appear almost incredible. Mr. Chisholm, M.P., who is largely interested in this industry, states that the pack last year amounted to 965,404 cases, and as each case represents an average of ten fish, the enormous quantity of ten millions of salmon must have been taken out of those two prolific rivers, the Columbia and Fraser, during one season. Last year the distribution was 463,071 cases to the Eastern Provinces and the United States, 364,600 to Great Britain and 70,744 to Australia and New Zealand.

THE Dominion Show Case Company, Toronto, are adding a new line to their products - a beautiful and well arranged closing top office desk. Some of these desks, now on exhibition at the company's show rooms on Adelaide Street, are the equal of any made in the United States or elsewhere, and embody all the desirable features of such an article of office furniture. They are made with the utmost care and nicety, in different sorts of fine cabinet woods, highly polished and beautifully trimmed, and possess an automatic locking arrangement by which all the drawers and cupboards are locked when the front is pulled down.

MESSRS. A. ROBB & SONS, Amherst, N.B., are now filling orders for ten portable saw mills with engines and boilers. Tuesday and Wednesday they shipped three car loads of machinery, consisting of a rotary mill and water wheel for Martin C. Halliday, Winchester; a rotary mill for John Stephen, Fall River, N.S.; a boiler for C. Coullard, Rockland station; a lath mill for Seth Bulmer, Sackville. They supplied a portable mill recently to James Gooden & Sons, near the copper mine, which is said to be a very excellent one. The Monarch portable boiler, the patents of which are controlled by A. Robb & Sons, is perhaps the most successful saw mill boiler yet produced, and on account of its economy in price as well as its good steaming properties, will likely supersede all others.—Sackville Post.

## Textiles.

THE CANADIAN MANUFACTURER.

Send \$2.00 and receive it twice a month, postage paid, for one year.

MR. B. WILLIAMS, woolen manufacturer, who was proprietor of the Glen William Ontario Mills, which were burned some time ago, was recently in Winnipeg prospecting for an opening in that line.

A COMPANY has made an offer to start a suspender factory in Brampton, and employ from 75 to 100 hands providing the town gives a bonus of \$5,000, half an acre of land and exemption from taxes.

THE Ontario Cotton Co. of Hamilton are now putting in their new looms, supplied partly by the Knowles Co. and partly by a Lewistown, Me., firm, and which will be devoted to check goods and fancy cottonades.

THE export of cotton goods from Great Britain last year was 4,850,030,200 yards, valued at \$250,851,170, against 4,374,516,500 yards the year before, valued at \$241,384,275. The increase has been mainly to the newer markets.

A MACHINE for removing plumage from feathers, the operation being performed by disk cutters; also a machine for reducing quills, feathers, etc., to fibre, operated by disks having square or cutting edges is a recently patented invention of Geo. R. Holden, St. Thomas, Ont.

A PROCESS for weaving cloth of mixed materials, such as jute or hemp and wool or cotton, so that they shall be inseparably woven, showing one surface of hemp or jute and the other of cotton, wool, etc., has been invented and patented by W. C. Parker, Wm. Inison and Farrer Inison, Weston, Ont.

WORK on the woolen mill is being energetically pushed. In addition to the cleaning and spinning and knitting machinery, four Crompton looms are to be set up. The manufacture of flannels and tweeds will be an important item in the list of goods to be turned out.—*Rapid City Vindicator*.

THE interesting historical problem as to what kind of clothes George Washington wore at his inauguration, has been settled. His suit on that occasion was made of cloth from the Hartford Woolen Manufactory, the first woolen mill in America, established in 1788. The color of the cloth was dark brown. The President wore white silk stockings, also of American manufacture.

A STOCK company has been formed at Camden, Maine, with a capital of \$150,000, to be called the Camden Woolen Company, to manufacture woolen fabrics. It will be a six-set mill. Camden has about 5,000 inhabitants. Protection makes it possible for little towns like Camden to have big capital invested in manufacturing industries.

THE business heretofore carried on in the town of Dundas, Ont., by Messrs. Samuel Lennan & Sons, will hereafter be under the name of S. Lennan, Sons & Bickford, the co-partners being Messrs. Samuel, S. J. and H. Lennan and H. Bickford. This concern are manufacturers of plain and fancy hosiery, and patentees of the "Elysian" seamless hosiery.

MR. DUNCAN FISHER of Paisley, has returned from an inspection of some of the large woolen mills in the United States. Besides being engaged in the saw milling and lumbering business, Mr. Fisher and his brother have recently erected large flour and woolen mills, which are fitted up with the most modern machinery. Mr. Fisher was some twenty years ago a resident of New Hamburg, where he carried on the woolen mills.—*Galt Reformer*.

THE preservative quality of sea water is shown by the fact that among the articles recovered from vessels sunk in the harbor of Vigo, Spain, in 1702, are specimens of logwood and mahogany that, notwithstanding their 184 years submersion, are in a perfect state of preservation. Dyers who experimented with logwood say that it is even better for coloring purposes than the wood now imported.

THE attempt to found a woolen manufacturing and exporting company under the auspices of the Irish National League ought to meet with success. Some years ago the Guinness family, of porter-brewing celebrity, erected mills in Dublin to give employment to the families of their workmen. The venture, originally intended only to provide work, has been a marked financial success. The

great woolen mills in Ireland have orders months beforehand for all they can supply; but prices are kept down by Scotch competition.

THE Pioneer Woolen Mills of San Francisco employ 650 hands, of whom 200 are Chinese and 100 women and girls. Woolen manufacturers say that the white girls and boys are driving the Chinese out of the business. Four years ago there were 450 Chinese employed at this factory. The mills turn out all kinds of woolen goods except hosiery, and it is asserted that within four years \$500,000 worth of its products has been sold in San Francisco as French goods. The hosiery department was suspended some time ago, but will soon resume operations. Protection makes it possible for woolen mills in San Francisco to manufacture goods equal to the best French make.

A SHIPMENT of 23,000 pounds wool went forward this week by steamer for the Canadian Pacific Railroad, to be carried by the latter to New York. This was one of the results of the Inter-State Commerce law, and is the first wool which has been taken out of this market by the Canadian road, also the first which has been shipped from this port by any water route since December 23rd last. The Canadian Pacific's late freight rate on grease wool from here to New York was 1½c. per pound—the same as quoted by the steamer line via Panama,—while the recent rate overland by the Southern Pacific was \$3.70 per 100 pounds. As the "long and short haul" clause has been suspended for 75 days, the overland movement from this centre via the Canadian Pacific is likely to speedily terminate, especially if the 1½c. rate is maintained. One or two lots more will go forward from here by same route, arrangements having been completed at the time the initial shipment was made.—*San Francisco (Cal.) Grocer*.

THE St. John cotton mill, St. John, N.B., owned by Wm. Parks & Son, (limited), after remaining idle about two years was put in operation three weeks since, and about two-thirds of the machinery with which the mill is fitted, is at present employed. Samples of the gray cotton made at the St. John mill were shown in the market only two or three days ago, yet orders are already booked from Toronto, Montreal, Halifax and St. John, which will keep busy all the machinery in this mill for several weeks. The capacity of the mill is about double the machinery with which it is now supplied. At present only one-half of the productive capacity of the mill is employed; ten days hence the force will be increased to 200 hands, and then every loom and spindle will be in use, turning out 70 bales of manufactured cotton, or about 70,000 yards per week. It is intended in the near future to double the machinery in the mill. The productive capacity of the two mills, the St. John and New Brunswick cotton mills, owned by Wm. Parks & Son, Lt., now exceeds that of any other cotton company in Canada except at Hochelaga.

A BELGIAN inventor, M. Piron, has invented a method of rendering cellulose tissues impermeable and very durable without injuring their flexibility and without much increasing their weight.—By examining the bandages of the Egyptian mummies, he inferred that the best preservative would be found in the vegetable kingdom, and he has given preference to the green tar of birch bark, which furnishes the perfume of Russian leather. The tar forms with alcohol a solution of great fluidity; but when once dried it becomes resinous and resists the solvent power of alcohol. It can be combined with the most brilliant colors. The qualities enable it to penetrate the capillary vessels of tissues, covering them with a varnish of great elasticity, which resists the corrosive action of acids, sea water, and changes of temperature. The density is very small, so that the tissues are made impermeable with a slight increase in weight. The prepared stuff can be folded without scaling. The aromatic odor drives away insects. Microscopic vegetation cannot grow, because neither air nor water can penetrate the interior of the fibres. The invention can be applied to all vegetable tissues, such as sail cloths, cordage, awnings and curtains.

MESSRS. MAGEE & PEARSON, iron founders of Merrickville, Ont., are going out of business, having sold out to Mr. R. C. Percival of Pembroke. Mr. Percival is one of Ontario's most pushing business men, and the excellence of the location and the extensive trade already established will secure for him a prosperous business.

MESSRS. G. H. NICHOLS & Co. of New York, are about commencing the construction of large acid works at the mines, Capleton, Que. These gentlemen it is said, manufacture more oil of vitrol than any other concern in the United States, and their new operations at Capleton will be of great importance to the Dominion.—*Sherbrooke Gazette*.

# Milling.

THE CANADIAN MANUFACTURER.

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THE farmers in the vicinity of Wapella, Assa., have subscribed \$1,000 as a bonus in aid of the establishment of a roller flour mill at that place, to be of not less than 25 barrels capacity.

D. JOHNSON, of the Pioneer oatmeal mills, Portage la Prairie, Man., has added machinery for the manufacture of rolled oatmeal; also pot and pearl barley. The cost of the improvements will amount to \$3,000.

A PUBLIC meeting was lately held at Killarney, Man., in the interest of securing a roller flour mill at that place. It is proposed to request the council of Turtle Mountain, in which municipality Killarney is situated, to submit a bonus by-law in aid of the project.

THE new roller mill of Mr. W. H. Lingham at Belleville, Ont., is described as being one of the best equipped in that part of the country. The machinery is driven by an 80-horse power turbine wheel, the capacity of the mill being the production of 75 barrels of flour every 24 hours.

MR. PROCTOR BAKER, well known in British milling and agricultural circles, says that Manitoba red Fyfe is unsurpassed, even if it be equalled, by any wheat in the world. He cautions the Manitobans against mixing their red Fyfe or hybridizing with other varieties, and urges the farmers of Ontario to seek for varieties that will hold their own against Manitoban wheat.

CHICAGO papers are talking a good deal about the shipment of Duluth wheat to Chicago to fill contracts. There is not the least probability of such shipments. Duluth wheat when it goes out of the elevators will go to New York, and not much of it will go there before June or July. At present there is little inquiry for tonnage for wheat shipments, and so far as we can learn no charters have been made for this season, save some contract stuff for Montreal, to run during the summer. Rates to Buffalo will open at not less than 6½ cents and perhaps as high as 7 cents. The scarcity of wheat tonnage will likely be very great during the fore part of the season. — *Duluth Daily Trade.*

A MEETING of the Canadian Oatmeal Millers' Association was held in Toronto a few days ago, the gentlemen present being Messrs. Robert Thompson, Woodstock, Secretary; D. R. Ross, Embro; E. D. Tison, Tisonburg; T. Martin, Mount Forest; J. Wilson, Fergus; P. McIntosh, Toronto; D. Spears, Galt; J. M. Archibald, Beachville; Walter Thompson, Mitchell; H. Morton, Guelph; J. D. Moore, St. Mary's; N. Boswell, Wyoming, and R. Gartley, London. The object of the meeting was to arrange for placing the export trade on a better basis and to secure better rates on American oats that are ground in transit. Committees were appointed to look after the matter.

THE cooerage business is not on a very remunerative basis anywhere, but it may well be doubted whether such a movement as that formulated by the Knights of Labor at Minneapolis is calculated to help it any. The Knights proposed not only to fix the price to be paid the coopers, but also the price to be charged the millers. Not only this, but the millers were to be required to use barrels having the Knights of Labor stamp on them, otherwise suffer a boycott. In other words, they not only wished to take charge of the entire cooerage interests of Minneapolis, but also to interfere with the rights of the millers to buy where they pleased. This scheme, it appears, has fallen through. It certainly assumed too much; but the coopers were granted their demand of fifteen cents per barrel. — *American Miller.*

To encourage the production and marketing of grain in Russia it is stated that a plan of giving State aid is being considered. The plan, which it is stated will probably be adopted, is for the State to lend money on consignments of grain, whether home or foreign, to the extent of 60 per cent. of its value on wholesale certificates to be deposited in bank. The State will further agree to refund to railroads money advanced when receipts are deposited. One per cent. commission is to be allowed railways to cover special costs of handling. Grain not disposed of after a stated period is to be sold at auction. The responsibility for loss resulting must be borne by the railroads. This system of State aid is expected to encourage railroads to handle grain. At present great quantities fail to reach markets, owing to excessive charges.

A GOOD deal of talk is heard about large mills and small ones, and the small ones competing with large ones. The fact of the whole business, as we understand it, is this: There are certain places where the small mills cannot compete with the large ones, and there are certain other places where the large mill cannot compete with the small one. There are cases where the small mill operates independently of the price of wheat. There are cases where the small one can buy wheat cheaper than the large one. The position or location may influence the competitive condition favorable to the small mills. The large mill has markets which the small mill cannot touch. In the nature of things, both for mechanical and business reasons, the large mill can make the market flour cheaper than the small one. As it appears to us, both the large and the small mills have a legitimate field and there are conditions where one cannot compete with the other. — *The Millstone.*

AN American writer who visited Japan has published an interesting account of what he saw and heard. In speaking of the agricultural districts he says: "Of labor-saving implements or machines Japan has very few. Even the plow is but little used, a broad-bladed mattock being the principal tool for stirring the soil, and there is not a flour mill in the country, unless the hand-grinding machine similar to that depicted on the tombs of the ancient Egyptians can be called by that name. Wheat is for the most part hulled and eaten as rice is, that which is ground being made into unleavened cakes. There is no word in the Japanese language for bread, nor any process in the national cookery analogous to yeast fermentation. In many parts of the country the soil is extremely fertile, and the cultivation is excellent. Near Kioto, the old capital, it is not uncommon to grow seventy bushels of rice to the acre as the second crop of the year from the same land which had produced forty bushels of wheat as a winter crop. Nor is this all the year's produce, for early vegetables are sown between the rows of wheat in February, maturing with the latter in May. After the wheat harvest the land is prepared for and planted with rice, which is harvested in October. Barley and rye, like wheat, are planted in the autumn. Maize and millet is cultivated to some extent."

THE Geo. T. Smith Purifier Company's works at Stratford, Ont., consists of a two-and-a-half story main building, 50x166 feet, and a larger edition on the south side, which contains the engine and boiler room, the blacksmith shop, the foundry, the cupola room, the cleaning room and the boiler shop. The structures are of solid brick, with the exception of one, which is of frame. On the ground floor of the main building is the machine shop, 50x166 feet. Amongst the machinery there is an immense turning lathe capable of turning a wheel fifteen feet in diameter and thirty six inches face; three large cranes, each of which will lift ten tons; twenty-five lathes; four planers; one slotting machine; four verticals; one shaping machine; one centering machine; three bolt machines, etc. The wheel house is a special department of the machine shop, which contains among other important appliances, a large lathe that has capacity for turning a wheel of forty feet diameter and 6 feet face; also an immense derrick capable of handling twenty tons. The floor over the machine shop contains the wood-working and carpenter shop. In this department all the wood work on the different mill furnishings manufactured by the company is performed by skilled workmen. This department contains seven sawing machines; four planers, including a large Daniel planer; a tenoning machine; a mortising machine; two boring machines; a sanding machine, etc. The half story over the wood-working shop is devoted to the tin shop and storeroom for lumber. The engine and boiler room in the addition to the main building is 30x50 feet. The engine which furnishes the motive power for the whole establishment is a 45-horse power Brown automatic cut-off, built at the works. Over the boiler room is located a small drying room for iron that has to go through the process of japanning. Adjoining the engine room is the blacksmith shop, 45x50 feet. This is fitted out with seven forges and all necessary appliances. South of the blacksmith shop is the foundry, 50x60 feet, one of the prominent features of which is a huge crane for handling castings. The next department, situated to the south of the foundry, is the cupola room, 50x30 feet, with the necessary outfit for melting eight tons of iron at a time; and off this lies the cleaning room, amongst the furnishings of which are two large drums for cleaning castings. The boiler shop, 50x50 feet, forms the last department in this addition. The paint shop and the pattern shop, which are of frame, are contained in a separate building. The collection of patterns stored in the upper story embraces a full assortment of mill furnishings, as well as all sizes of the Brown automatic cut-off and some other engines. There is another building separate from these mentioned which is used for drying lumber, and has a capacity for 30,000 feet. The works are situated on ground embracing eight acres, so that there is plenty of room for future enlargement.

# Lumber.

THE CANADIAN MANUFACTURER.

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## PACIFIC COAST TIMBER.

THE timber resources of the Pacific Coast have been the subject of considerable comment for several years past. An erroneous opinion is even prevalent to some extent that the coast abounds in white pine, which will prove amply sufficient to supply the wants of many generations after the resources of the lake regions are exhausted. The timber resources of Oregon, Washington Territory, British Columbia and Alaska, embrace but a very slight proportion of white pine, and that, while of fair quality considered by itself, is of a very different variety from the *Pinus strobus* of Michigan and Wisconsin. It is of much denser grain, and though excellently adapted to all the uses to which our own white pine is applied, is found in such limited quantities as to be practically eliminated from the timber and lumber supply, its use being in the main confined to special purposes, such as blinds and, to a limited extent, sash and doors.

The principal finishing lumber of the coast is red cedar. It is found to the extent of 10 to 15 per cent., scattered among the forests of Douglas fir, which is the prevailing timber. This is excellently adapted to finishing purposes of all kinds, polishing *au naturel* in a manner highly satisfactory to lovers of natural finish, while taking paint equal to white pine.

The red cedar of the coast is not the red cedar of the East, either in density of grain or depth of color. It grows to a height of 150 to 200 feet, and is found of a diameter ranging from two feet to as much as ten or twelve feet. It is occasionally found in groves on the banks of streams, where a cut of 100,000 feet to the acre is not uncommon, although the extent of such localities is limited. The prevailing timber of the coast is the Douglas fir, nearly approaching the pine of the Southern States in texture and fatness. It is not unusual, in cutting it, for the saw to strike a pocket of gum from which as high as a couple of gallons of fat will exude. This is found principally in the lower logs, the upper part of the tree often appearing nearly as soft and light as white pine.

It is a peculiarity of fir that it may be placed in use after being sawed, without danger of shrinkage or warping. It has a beautiful grain and gives excellent effects as a finishing lumber, but it is open to the objection of exuding its pitch even after it is dry. Its weight, seasoned, is about three and three-quarter pounds to the foot, which would exclude it from Eastern markets until railroad rates shall be much more moderate than at present. The Douglas fir is found in vast quantities along the entire Pacific Coast, and yields from 100,000 to 500,000 feet to the acre.

The process of rebuilding the big timber raft still goes on at Two Rivers, N.S. The raft will be 600 ft. long, 55 ft. wide, 35 ft. deep, and contain 4,000,000 ft. of timber. It is expected to be ready for launching by July 22nd.

The Kingston *Whig* says Messrs. Edwards & Co., who have purchased the McLaren limits, intend to prosecute the timber business with great vigor. The desire is to cull out all the material fit for shipment in nine years. As much work will be prosecuted in one year as Mr. McLaren accomplished in three. Mr. McLaren purchased the property for \$30,000, and sold it for \$900,000.

APPLICATION has been made by the Moore & McDowall Lumbering Company (limited) for an act of incorporation, empowering them to purchase and hold timber limits and to transact a general lumber business. The capital is \$20,000 and the chief place of business Prince Albert Settlement, and the incorporators are Messrs. H. T. Moore, Prince Albert; Day Hort McDowall, Prince Albert; A. Lewden, Prince Albert; R. Blanchard, Winnipeg; A. Waldo and F. Newby, Ottawa.

The estimate of square timber made in the Nipissing and Ottawa districts during the past season is: White pine, 530,000 feet; waney white pine, 355,000 feet; red pine, 485,000 feet; total, 1,370,000 feet. The export of Canadian lumber to Michigan is expected to be heavy this year. From the Nipissing district it is computed that about 75,000 standards of logs will go to Michigan. The district lumbermen unite in protesting against the increase made by the Quebec Government in the ground rents of timber lands.

MR. ROBERT CONNORS, the well known lumberman of St. Francis, is in town to-day. He states that his lumber cut this year is about

5,000,000 feet, scarcely more than half of his last year's operation. Mr. W. F. Fowler of Grand Falls, cut 3,000,000 feet this winter. Mr. Connors says that the total quantity of lumber to be driven down from the Upper St. John this spring, is about 75,000,000 feet, this including a considerable amount hung up last season. Mr. Henry Braithwaite reports seven feet of snow in the woods on Taxis and Little Southwest Miramichi. He says that the lumber cut in that locality will fall one-third below that of last year.—*Fredericton Farmer*.

SOME time since a mention was made that a company at Buffalo, N. Y., were constructing works for "vulcanizing" lumber. The first work was done recently, the lumber being maple, and the quantity 40,000 feet. The work was well done, and if, as is claimed for the process, it greatly increases the durability of the lumber so treated, doubtless the problem of making ordinary timber proof against decay is not far from solution. It results in solidifying the sap in the wood, cementing all the fibres together, and when the pores are full the lumber will not check, shrink or swell. The sap is forcibly detained in the wood by air compression, and from 300 to 400 degrees of heat are applied. It takes from eight to ten hours. The vulcanizing tanks employed are 100 feet long by six and one-half feet in diameter, made from three-fourth inch steel, and the capacity of the plant is 100,000 feet of lumber a day.

THE lumber mill men at Keewatin, Man., which place is included in the municipality of Rat Portage, considered that they were taxed too heavily in proportion to other parts of the municipality and for the advantage they received in return. They objected to paying the taxes, and got up a petition to the Government, asking that Keewatin be formed into a separate municipality. The Rat Portage people objected strongly to the withdrawal of the mill men from the municipality, and a deputation was sent to Toronto to look after the interests of the council. A compromise has since been effected by the Rat Portage council agreeing to exempt logs and lumber from taxation; remit one-half of taxes on mill buildings, plants, etc., except school rates; and exempt all mill property from any debenture by-laws which may in future be passed by a majority of the people in the western part of the municipality. The arrangement will apply to all mill property in the township of Rat Portage.—*Commercial*.

THE policy of the Dominion Government respecting the export of logs to the United States is of doubtful wisdom. A duty of \$2 a thousand has been placed on such exportation, the effect being to check a movement of Canadian logs to Lake Huron mills, on this side, that had begun to assume important proportions. The object of the Canadians is to render it so unprofitable to export logs that American owners will erect mills and manufacture in Canada. This will increase and foster home industry, the Canadians think, and thus retain on their side much of the profit that would otherwise go abroad. But our cousins across the border should reflect that but for American enterprise and capital the lumber industry of Algoma and Muskoka would be of slow growth. The forest product of those districts must come into the States for a market either in the form of logs or lumber. Large American investments in timber limits in the Georgian Bay region have been made. It is the desire of the investors to realize on their ventures. If discouraged by the hostile or restrictive attitude of the Canadians, they will abandon for an indefinite period enterprises contemplated. Getting out the logs and shipping them over to the lake is an industry that will leave a large amount of American money in Canada, if it is allowed to go on. But if operators are barred out by a prohibitive export duty on logs, it will be many years before extensive logging, by Michigan owners, is undertaken in the Georgian Bay region—never, unless the selling value of lumber rises considerably above its present level. Besides the retaliatory measure of our Government, growing out of the fisheries question, is not encouraging to the Michigan men who might otherwise build mills in Canada. It looks as if the Dominion Government had taken an unfair advantage of American stumpage owners in selling them extensive limits, and afterwards putting an export duty on logs, that deprive them of realizing on their investment.—*Northwestern Lumberman*.

MR. E. C. McDONELL, who has fifteen men engaged in his mine at Oldham, N.S., has taken out and crushed 75 tons of quartz during the past six weeks. The clean up from the first crushing of 50 tons gave 135 ounces of gold, and that from the second crushing of 25 tons, 75 oz. of gold, making 210 oz. from 75 tons of quartz. This is good news from Oldham, and shows that the reputation of this district, as containing some of the best gold areas in the province, is based on something better than mere good prospects. Expectancy is no true test of the worth of a mine—it is the returns which prove its real value.—*Halifax (N.S.) Critic*.

# Mining.

THE CANADIAN MANUFACTURER.

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ABOUT 300 tons of coal daily are taken out at the Galt mines, Lethbridge.

RECENT colliery disasters in Europe and in British Columbia have again raised the question of the relative merits of ventilating by vacuum and plenum—that is, by drawing air from the upcast and by forcing air into the downcast shaft.

THE executors of the estate of the late R. H. Austen of Victoria, B.C., have received a medal and diploma from the Colonial and Indian Exhibition for display of anthracite coal from Queen Charlotte Island and copper ore from Howe Sound.

A REPORT received from Ashcroft states that the Foster Mining Company started crushing on April 11th. with very satisfactory results. The quartz crushed produced \$146 to the ton in gold and about 12 oz. of silver.—Victoria, B.C. *Standard*.

THE Nova Scotia Steel Company have leased the Vale Colliery from the Acadia Company and are now at work taking out coal. The Vale coal has proved the most suitable for steel manufacture, and much inconvenience arose from the attempt to use other coals.

THE Cumberland Railway and Coal Co., have contracted to ship from St. John, N.B., to Portland Me., from 30,000 to 40,000 tons of coal and Messrs. Townshend & Co., are chartering all the suitable vessels they can get to carry it. The company are also going to build a large wharf near the mouth of the river to enable them to ship coal all the year round.—St. Johns *Sun*.

THE *Marquette Mining Journal* publishes an estimate of the amount of ore the mines of the Marquette (Mich.) range will mine and place on the market this year. The output is placed at 2,195,000 tons, and does not include that of the new mines which are now being opened up. The estimates are conservative, and a comparison of the figures with those of last year will establish this fact.

At a recent meeting held in this city of the Geological Section of the Canadian Institute, the chairman said that the reports of mining products last year were as follows, as near as could be gathered:—Coal, 2,000,000 tons; gold, \$1,367,149; gypsum, 154,661 tons; iron ore, 48,600 tons; manganese ore, 2,378 tons; copper ore, 5,231 tons; silver ore, 81 tons; salt, 375,000 barrels; petroleum, 500,000 barrels; phosphate, 27,442 tons; antimony, 901 tons.

THE so-called Anthracite from Banff, in the North-West Territory is being developed. The company are about to make the first shipment of 1,500 tons of coal to Vancouver and then by sea to San Francisco. They will also as soon as the pockets are ready for work commence shipments of 500 tons to Winnipeg, daily, until they have a reserve stock in that city of 10,000 tons. The coal lies in a hillside, and a large tunnel has been driven for a considerable distance into the mountain.—*Coal Trade Journal*.

SALTRY'S method of combining molasses with small coal to form briquettes is fast coming into favor, not only in Germany, but in Belgium and France. As a cementing material molasses is, in those countries, not only abundant and cheap, but comparatively free from mineral substances, so that but little ash is introduced into the fuel. The proportion of ash is about 10 per cent. As only from 1 to 1½ per cent. of the cementing material is needed, the ash therewith added will not exceed 1½ per cent.

THE two copper companies that own the Lake Superior copper mines, and control the markets of the world in this article, have secured an act of incorporation from the Connecticut Legislature for a joint smelting company, to be called the Calumet & Hecla Smelting Company, with headquarters in Waterbury, Conn. The capital stock is \$400,000, with permission to increase to \$1,000,000. The owners of the stock are the Detroit & Lake Superior Copper Company of Waterbury, and the Calumet & Hecla Mining Company of Boston.

"THE richest lead discovery of modern times" has been made in Franklin county, Mo., according to a statement in the *St. Louis Republican*. A landslide revealed a solid vein of lead 8 feet high and at least 6 feet broad, with various branches terminating in pockets yielding massive nuggets. Three men took out 60,000 pounds in a few days, and the product sold readily at the mines for \$22 per 1,000 pounds to the smelting company at St. Clair. Ma-

chinery and smelting works are to be erected without delay by a company of which D. C. Taylor is president.

WHILE laborers were engaged in driving a tunnel near the county hospital in San Luis Obispo, California, for the increase of water-supply, they struck a body of fine-grained rock having a slaty structure, which was found to be a good quality of coal. The mineral was thoroughly tested in a blacksmith's forge and found to be suitable, not only for the purposes of blacksmithing, but for fuel as well. The coal is of a bituminous nature and burns with a red flame. In the specimens which have been carefully examined, something of a woody texture is apparent, which signifies that the coal is of later formation than the true coal era.

We have many times called attention to the magnificent mineral resources of Nova Scotia, where gold, copper, iron, coal, manganese, antimony, gypsum, and other valuable minerals are found in large deposits, easily worked, easy of access, and near together. No country in the world has greater natural advantages than Nova Scotia, and few lack less use of their advantages. The Bluebones appear to make enterprise, and are unwilling to make the investments necessary to develop mines. Were Nova Scotia a State of this Union, her output would soon make a far different showing.—*New York Mining and Engineering Review*.

AS G. B. Ratto of Irishtown, this side of Clinton, was plowing on his ranch last week, he turned up some quartz rock, which on breaking was found to be plentifully sprinkled with free gold. Further research resulted in the discovery of a vein of the same kind about three feet wide. He has extracted some two tons of ore, and all of it is said to contain free gold visible to the naked eye. He has sunk on it ten feet, and it maintains its size and richness all the way down. Indeed, it is said that there is not a piece of rock in the whole pile taken out that does not show free gold. Such rock is estimated to yield all the way from \$100 to \$500 per ton.—*Amarador (B.C.) Ledger*.

MAYOR KING of Calgary, in an interview, said:—"The Canada Anthracite Coal Company have had from 100 to 150 men employed all winter, and they have shipped several carloads to Calgary in the rough state. This coal, which is hard, burns equally well, or even better, than the Pennsylvania coal, and has given the very greatest satisfaction whenever it has been tried. The Canada Anthracite Coal Company has only been organized from six to eight months, and in that time they have expended about \$30,000. They are putting in a lot of new machinery, and will commence about the first of next month. The supply is unlimited. They have discovered one seam of four and a half feet and another of seven feet, and they expect to strike another seven feet seam almost any day."

THAT the mineral wealth of New South Wales is by no means exhausted is demonstrated in a report recently issued by Mr. Wilkinson, F.G.S., the chief government geologist. He says the Mudgee and Gulgong gold districts abound in gold, copper, silver, tin, antimony, iron and manganese. From the locality no less than 1,072,752 ozs. gold, valued at £4,162,550 have already been taken, and he has indicated a good many new spots in which precious metal will, in all probability, be found to exist profusely. The Yalwal gold reefs in the Braidwood district, are attracting fresh attention. Golden quartz has been proved to a depth of 100 feet, and there is a total area of 57 acres of payable auriferous land. Four men on one claim during four years obtained £15,745, 18s 5d worth of gold before the field was temporarily abandoned. Rich gold has also been struck on Little River Plain, Bombala, in somewhat new country.

IT is only within the past two years that mica of the best quality, known as muscovite, has been discovered in Canada in marketable sizes and in paying quantity, and recently several deposit capable of being developed into fairly productive mines are known. Two in county of Frontenac, Province of Ontario, show well-formed, large crystals at the surface, imbedded, in white quartz; another in Wakefield has been uncovered and numerous "crystals" have been exposed which, though small, are of excellent quality. In the Lake Superior and the Lake of the Woods districts good mica has been discovered in paying quantities, and a company has been formed in Winnipeg to work an important deposit in the last-mentioned locality. In British Columbia also a fairly good quality is known to exist, but no attempt has been made as yet to prove the size of the available "crystals" or the extent of the deposit in that province.—*Invention*.

THE phosphate-rock deposit of the State of South Carolina forms her most important and valuable mining interest. The rock is found in the streams and ore land. The stream or river rock occurs

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at the bottom of various streams and rivers, and is raised by hand with tongs or by powerful steam-dredges, which furnish the bulk of the supply. A royalty of \$1 per ton of crude rock is paid to the State on all rock mined in the navigable streams of the State, all such mining being done under license from the State. This royalty, amounting in 1886 to \$196,089, formed an important part of the revenue. The land rock deposits are the property of individuals or companies, and pay no royalty to the State. The rock occurs at various depths, 10 feet being the limit of economical excavations, and is obtained entirely by surface-mining. The economic excavation and utilization of river rock dates from about the year 1870; of land rock, 1867. The production of land rock has increased from 18,000 tons in 1868-70 to 294,000 tons; in 1886, of river rock, 1,989 tons to 191,174 tons. The total amount of land rock produced from 1868 to 1886, inclusive, has been 1,991,000 tons; of river rock, 1,592,256 tons; or a total production of 3,583,256 tons, which, at an average selling price of \$6 per ton, gives \$21,499,536 as the value of the product of this industry.

The report of the Nova Scotia Commissioner of Mines states that 150,406 tons more coal were mined in 1886 than in the previous year, the sales in Quebec having increased 44,845 tons, the balance of the increase being in sales to New Brunswick, the United States and the West Indies. There was a slight falling off in the sales to Newfoundland and Prince Edward Island as compared with 1885, but there was an increase in the sales for use in Nova Scotia. The facts speak for themselves and prove that the coal trade is in a most prosperous condition. Regarding the gold mining industry the returns show that 128,880 days' labor were performed, and that 29,010 tons of quartz were crushed, yielding 23,362 ozs., 5 dwts., an average of 16 dwts. per ton, the maximum yield being 17 oz., 10 dwts. per ton, and minimum 5 dwts. The yield of gold is slightly larger than during the previous year. The following is a summary of the mineral production of Nova Scotia during the year 1886:—

	1885.	1886.
Gold.....Ounces....	22,203	23,362
Iron ore.....Tons....	48,129	44,388
Manganese ore.....“.....	353½	427
Barytes.....“.....	300	230
*Antimony.....“.....	758	645
Coal raised.....“.....	1,352,205	1,502,611
*Gypsum.....“.....	87,644	123,753
Building stone.....“.....	3,827	8,000
Coke made.....“.....	30,185	31,604
Limestone.....“.....	16,429	20,265
Grindstones, etc.....“.....	2,208	1,600
*Moulding sand.....“.....	.....	200

The asterisk denotes the quantity exported. The increase in the production of coal is worthy of note. One hundred and fifty thousand tons is a considerable increase.

MANY rumors are in circulation as to the probable revival of the mining interests at the old Albert mines near Hillsboro', N.B., for Albertite. It is firmly believed that the mineral exists there in large quantities as it ever did, and only needs the required capital to develop and explore the same. The old Albert mines property is owned now by a Capt. H. Calhoun, who would willingly negotiate with men of capital for the further exploration of this valuable property. It seems simply nonsense to say that this deposit worked upon by the old Albert Mines Co. was the only body of coal in existence when the shales and conglomerates which they laid in, can be traced from Beech Hill, in Westmoreland county, running in north-easterly and south-westerly course, to Newton on the I. C. Ry., a distance of fully 50 to 60 miles. Small seams of the genuine Albertite can be found back of Penobscus, and at different intervals. It is also understood that the shales, which are highly inflammable, have attracted considerable attention from capitalists in England, who annually export thousands of tons of shales from Australia and other points. Deposits of natural gas are also known to exist on this formation, and on the Taylor village side of the old Beliveau and Albertite Oil and Coal Company's property, in sinking a shaft and in fixing a shot in the level about the outer section of an old bore-hole, gas escaped and ignited so freely that the workmen had difficulty in getting to the surface uninjured. The gas from these bore-holes was led to the pit head and engine room and used for months in lighting up the workings of the company. It is said that this gas is escaping in the same locality to this day as freely as ever. It is to be sincerely hoped the attention of capitalists may again be directed to these localities.—*Halifax (N.S.) Critic.*

A CORRESPONDENT of the Montreal Star, writing from Cow Bay, Cape Breton, says:—“Although coal is mined in huge blocks, in shearing, undermining and loading, a great deal of coal is unavoidably broken into very small particles, and much of it is even ground

to powder. This fine coal is called slack, and every tub of coal raised from the mine must be subjected to a process of riddling and sifting to get rid of the slack. What to do with the slack is a troublesome problem in mine management, as it is not readily saleable either for domestic or ordinary manufacturing purposes. Of late years in Germany, France and England, a great deal of the slack has been mixed with pitch and compressed into bricks, forming an artificial fuel which is said to be in some respects superior to ordinary coal. These bricks of coal are called briquettes, and the only machine for making them in America is at the Gowrie mine in this place. It was erected by Mr. Archibald several years ago at a cost of \$10,000, and can turn out fifty-four tons of briquettes in ten hours. The weight of each brick is about 11½ lbs., and the measurement 9x4½ inch. About 8 per cent. of coal tar pitch is used, and it is imported from Philadelphia in barrels at a cost of \$7 or \$8 per ton. The briquettes can be placed on shipboard at the rate of \$2 per ton. As yet very few have been manufactured, as the market has been limited, but several men-of-war have made large purchases. It is claimed that it is particularly adapted for steam purposes, and most convenient for fueling, as it can be passed easily on board, making no dust. It is also said to be very easy on fire bars, and to leave only fine ashes. Mr. Archibald says that one brick placed in an open fireplace or stove will burn all night unless it is broken up, in which case it burns rapidly. Mr. Carmichael, who runs the briquette machine at the Gowrie mine, says that the machine should have been erected in Montreal instead of there. We should ship the coal to Montreal as it comes from the mines without sifting out the slack. The coal dust or duff would fill in the spaces between the large lumps of coal and partly prevent breakage. As it is, so much new slack is formed before a load is landed in Montreal that a second sifting is necessary to make a clean article. If the briquette machine were in Montreal, they could do all the screening there, and thus save the cost of two or three handlings. The round coal could be graded and the slack could be manufactured into briquettes. Unscreened coal could probably be laid down in Montreal for \$2.70 per ton.”

THE new petroleum deposits of the Athabasca as described by Prof. Bell cannot fail to have a great effect for good upon the future of the North-West in general and this town and district in particular. It was formerly supposed that these deposits only existed on the Athabasca some forty or fifty miles below McMurray and about 350 north of Edmonton, and that as a stretch of unnavigable river extended from McMurray 80 miles up to Grand Rapids there was no chance of their being utilized until a railroad was built to them, which in the natural course of events could not be for very many years. It now appears that only 80 miles from Grand Rapids around the great bend of the river, only 25 miles in a direct line, and not more than 10 miles further north than the Grand Rapids, is struck the petroleum bed which visibly extends for nearly 150 miles along the river without a break—the most extensive deposit in the known world, except perhaps the similar deposits on the shores of the Caspian sea, in Russia. Prof. Bell's report on the geology of the country gives no reason to suppose that the point where the petroleum bed is first exposed by the deepening channel of the river is its southernmost extension. On the contrary there is nothing to indicate that the deposit may not extend southward to Lac la Biche or even further. At any rate there is more than a probability that a well sunk just above the Grand Rapid would strike the petroleum bed at a depth of not more than 400 feet. Prof. Bell remarks that the most likely place to strike a good flow of oil is not necessarily where there are surface indications. From Grand Rapids there is 125 miles of good steamboat navigation to Athabasca Landing, from there 90 miles of hauling over the present wagon road would bring the oil to the banks of the Saskatchewan at Edmonton, the distributing point for northern Alberta. From Edmonton at a nominal cost it could be distributed along both banks of the Saskatchewan—good agricultural country for 500 miles—to Prince Albert, or even taken to Winnipeg by water. At present the petroleum used in the settlement of Edmonton, Battleford and Prince Albert on the Saskatchewan is brought by rail over 2,000 miles from Pennsylvania and Ontario, and then hauled in carts and wagons across the country 200 or 250 miles; so that in the matter of transport over present routes the Athabasca oil would be on at least an equal footing at these points with eastern product. Of course as soon as a railway reached the Saskatchewan either at Battleford or Prince Albert the Athabasca oil would be at a disadvantage there; but on the other hand if the work of development were once commenced no doubt the first railroad to touch the Saskatchewan would do so at Edmonton and would stop short of Athabasca Landing, which would at once give the Athabasca oil the advantage throughout the North-West and British Columbia, if not all along the Pacific coast.—*Edmonton Bulletin.*

## Miscellaneous.

THE CANADIAN MANUFACTURER.

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A NEW American industry is about to be undertaken in the manufacture of enamelled iron plates or tablets for advertising purposes. These are already in general use in England, France, Germany and Belgium.

A FLOATING dock, capable of accommodating the biggest war ship, and of propelling itself from port to port where its services may be required, is to be constructed as an experiment for the British Government, at a cost of \$500,000.

RECENTLY a house was moved from Egmont Bay to Summerside, N.B., a distance of nearly twenty miles in less than two days. The first day was occupied in moving the house overland some two and a half miles to the ice, where it was placed upon suitable runners and the balance of the distance was accomplished next day.

THE most important article of foreign export from the port of Bangor, Maine, is box shooks—orange and lemon box shooks—to Sicily and Italy. The trade began in rather a small way years ago but has now so developed that from 500,000 to 700,000 shooks or boxes, are shipped every season. The thicker boards, or ends, are sawed, while the thin boards, or sides, tops and bottoms are peeled from the circumference of the log. They are sent to Palermo, Messina, Naples, Sorrento, etc.

THE measuring of the candle power of a light is accomplished by comparing the shadow cast by a rod in the light of a standard candle with the shadow cast by the light to be tested. By moving the latter toward or away from the rod a point will be reached at which the shadow cast by both lights will be of the same intensity. The intensity of the two lights is directly proportioned to the squares of their distance from the shadows, i.e., suppose the light to be tested is three times the distance of the candle, its illuminative power is three times as great.

It was expected that the Labor Commission would have commenced its work of enquiry before now, but it is now announced that it will not get to work until the new department of Trade and Commerce is established. The delay will be an advantageous one as its labors will be more carefully directed from the new department than could be expected from the Finance Department, the work of which is already too large. The commission will have power to enquire and report on the subject of labor in its relation to capital, the hours of labor, the earnings of laboring men and women, and the means of promoting their material prosperity as well as to enquire and report on the practical operation of arbitration in the settlement of disputes between employers and employees.

COLONEL WHITE'S report of his experiments on the resistance of snow to bullets, in connection with the recent Nordenfeldt gun experiments before the Gov.-General and Lord Alexander Russell, has just been made public. He says that the Martini bullets fired into a bank of well packed snow were completely spent after traversing a distance of not more than four feet from the point of compact. Snider bullets, in hard packed snow mixed with ice, but not hard enough to prevent digging into it with a sheet-iron shovel, did not penetrate more than about four feet; in perfectly dry snow, packed by natural drift, but capable of being easily crushed in the hand, a bullet penetrated about four feet, and in loose drifted dry snow less than seven feet, though fired from points only twenty or thirty yards distant.

A CONTEMPORARY prints the following regarding accidents from running machinery: Wear close-fitting clothes. Have a blouse or jacket buttoned tight around the waist or body; have the sleeves to fit the arms closely as far up as the elbow. Never wear a coat around machinery. Never approach a pair of gears or pulley from the driving side. Never attempt to save time by putting or trying to put on any fast-running belts without slacking up or stopping entirely to do it. It is cheaper to stop to put on a belt than to attend a funeral, perhaps your own. Never allow an inexperienced hand to go through the mill without an attendant. Never allow a woman to go through a mill—no matter how many attendants—while in motion. Never attempt to go through a mill in the dark. You may forget the exact location of some dangerous object, and seek to avoid it, but it is still there noiselessly awaiting a chance to wreck you. Never allow any dangerous place to be unguarded. Keep your eyes open while oiling. Never relax your vigilance for an instant; it may cost you your life. Cold cast iron

has a total disregard for human flesh, and the safest way is to acknowledge its power and avoid a test of strength. Many people need no telling to "grab a post" or anything that you can hang on to, but if you feel a gentle tug at your clothes, grab, and grab quick, and don't let go till the cloth does. We always thought that we were as careful as a man could be, nevertheless we have been "caught" more than once, and only an instantaneous effort saved us from injury and possible death. We have been an unwilling witness to many a mill and factory accident, and have seen some victims escape with the loss of their clothes, while others have been torn and mangled by the merciless machinery. One cannot be too careful. Too much cannot be done to lessen the dangers of machinery. Experience seems to give no absolute safety. Nothing can. Your own carefulness will be your greatest protection.

AN improved belt has recently been invented composed of two or more layers of textile fabrics, united throughout its length by a series of pointed tacks driven through the layers and clinched. Heretofore it has been customary to unite the layers of leather or other material, composing a belt by means of rivets; but in their use it is necessary to punch or pick out holes for the passage of the rivet-shanks, in which operation the threads or fibres from which the fabric is woven are cut through and torn, thereby seriously impairing the strength of the finished belt. The use of pointed tacks for uniting the textile layers avoids not only the necessity of punching or picking out holes, which operation involves time and expense, but the tacks in penetrating the material push or force the threads or fibres to one side without cutting or tearing them. As a considerable number of tacks are employed in uniting the layers, the belt, in reverse to being injured, is rendered more sound by the lateral compression of the fibres or threads in the fabric. In addition to impairing the strength of the belt, rivets render the same more liable to slip on the pulleys, owing to the fact that the large heads, which must be employed to fasten the shanks, form large depressions whereby a considerable portion of the available frictional surface is removed. If the heads of the rivets come into contact with the pulley, the percentage of slip is not decreased, as but a small amount of friction is obtainable between the two metallic surfaces. The numerous large heads also render the belt less pliable, and in rounding smaller pulleys is liable to slip, which reduces the possible power that can be transmitted through the belt. The small portion of the tack which is clinched sinks into the material of the belt and forms but a very small depression, and consequently does not influence the efficiency of the belt. By the use of these clinched tacks a belt is provided which presents all, or nearly all, of its frictional surface to the pulley, and one which is as pliable and strong as the leather belt usually employed, while its production involves less expense.

*Fire and Water* speaks quite strongly in favor of the use of tiles for roof covering, instead of slate, which is in this country almost the only material employed for pitch roofs in cities, or elsewhere in cases where shingles would be objectionable. As that excellent journal truly says, a slate roof under the action of fire, and particularly if water is thrown on it while hot, cracks and flies in all directions, opening crevices through which a strong draught is set up, increasing the fury of the flames in the building which the roof is supposed to protect. On this account even cedar shingles are preferred to slate for roofing by many experienced fire engineers, for the reason that, inflammable as they are, the shingles do not fly to pieces when a cinder falls on them, but char, and, until burned through, at least, serve to prevent fire inside the building from breaking out of the roof. Tiles, unlike slates, never crack or fly, but keep their places even when red hot; and their thickness and non-conducting property enables them to keep the heat from cinders or burning brands for an indefinite time from affecting the boarding beneath them. The main objections to the use of tiles in this country have hitherto been their cost, and the difficulty of laying them so as to keep out fine, drifting snows, but with a little effort, particularly if architects and insurance managers could act in concert in the matter, both defects might be overcome. A considerable demand would soon make tiles here as cheap as they are in England or France, or Germany, where they are the universal roof covering, and roofs laid with them might easily be made, not only impervious to snow, but proof against the shaking of winds or earthquakes by laying them in mortar or cement. This, with cheap tiles, would not be an expensive matter, and while a slate roof constantly needs repairs, tiles in cement, laid on a roof of simple form, are almost indestructible. Thousands of roofs in France and Germany, laid in this way four or five hundred years ago, are still in good condition, and they not only are really solid and enduring, but look so, presenting an appearance of substantial comfort which architects well understand. —*American Architect.*

The following patents were granted by the United States Government to Canadians since our last issue:—W. S. Burn, and E. Schultz, Hamilton, Ont.—tubular lantern. J. H. Chase, Montreal, Que.—mechanical musical instrument. L. A. Desy, Winnipeg, Manitoba—ditching machine. A. G. Hill, Prescott, Ont.—wheel harrow. Thomas Lees, Toronto, Ont.—shovel or scoop. J. B. Riley, Toronto, Ont.—knife polisher and cleaner. C. A. Clark, St. John, N.B.—hay and straw cutter. James Cochran, Derby Township, County of Grey, Ont.—wagonbox. G. S. Conover, Georgetown, County of Halton, and W. W. Conover, Toronto Township, County of Peel, Ont.—watch-key. Charles Dawson, Peterborough, Ont.—rotary engine. J. H. Elliott, Montreal, Que.—dining-coach. Robert Gaskin, sr., Portland, N.B.—sight for fire-arms. Robert Gaskin, Fairville—rotary saw-sharpener. James Huxtable, Horning's Mills, Ont.—bolting machine. J. F. Lash, Toronto, Ont.—metallic pigeon-hole case. John Maguire, Toronto, Ont.—drain-tile trap. Robert McLaughlin, Oshawa, Ont.—fifth wheel (two patents). J. W. Provan, Oshawa, Ont.—hay fork. Hiram Rushton, Toronto, Ont.—steam boiler-cleaner. J. L. Wiseman, Montreal, Que.—head-rest for railway-cars. R. B. Ashley, Walkerton, Ont.—harness and trace buckle. Thomas Bellaire and J. Bousha, Belle River, Ont.—grain tally. William Damer, Toronto, Ont.—manufacture of boots or shoes. John Dittrick, Perth, Ont.—fire escape. Herman Frasch, London, Ont.—manufacture of soda by the ammonia process. (2 patents.) J. R. Smith, Brockville, Ont.—bolt cutter. David Tapley, Woodstock, N. B.—railway signal. George Harvey, Winnipeg, Man.—car-seat. George Valiant and J. Nesbitt, Toronto, Ont.—leather cutting and embossing machine. E. H. Bissett, Winnipeg, Man.—mail-cutting machine. Antoine Lucier, Winnipeg, Man.—motor. William Barr, Windsor, Ont.—addressing-machine. W. J. Copp, Hamilton, Ont.—fire-place-grate. T. S. Evans and F. R. Jackes, Winnipeg, Man.—knife-cleaning machine. John Fee, Montreal, Que.—alarm bell and lock. John Fensom, Toronto, Ont.—hydraulic elevator. William McShane, St. John, N.B.—injector. William Norris, Toronto, Ont.—grape-trellis. James Tyzick, St. John, N.B.—car-coupling. George Campbell, Toronto, Ont.—pulley. Elizabeth H. R. Hall, Brockville, Ont.—moccasin. J. P. Roberge and L. P. Timmons, Wickham, Que.—railway-station indicator. W. H. Rodden, Toronto, Ont.—mucilage or liquid glue bottle. H. J. Seymour, Niagara, Ont.—animal-trap. Richard Smith, Sherbrooke, Que.—apparatus for cleansing shower-pipes, (three patents). Levi Walker, Delhi, Ont.—harness.

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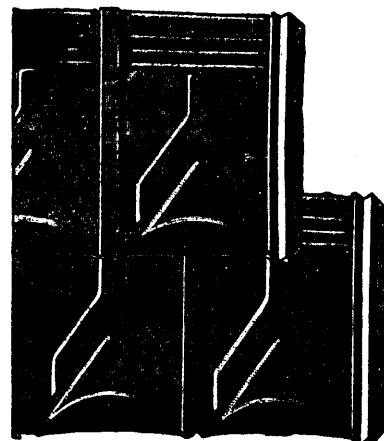
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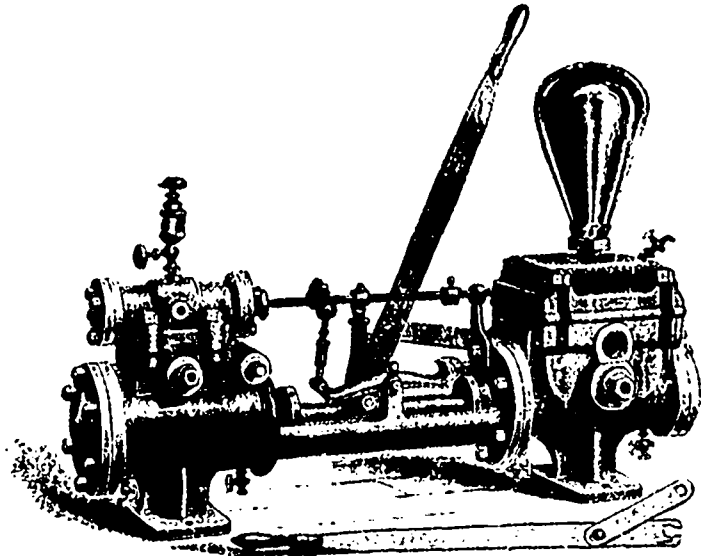
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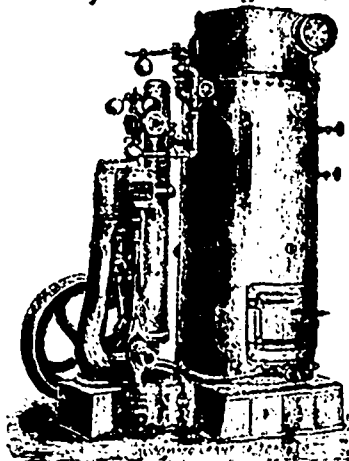
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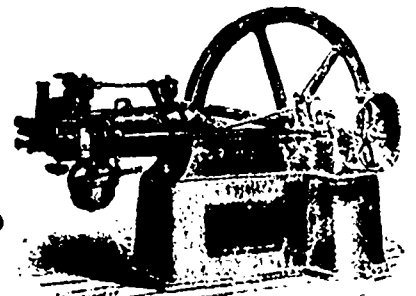
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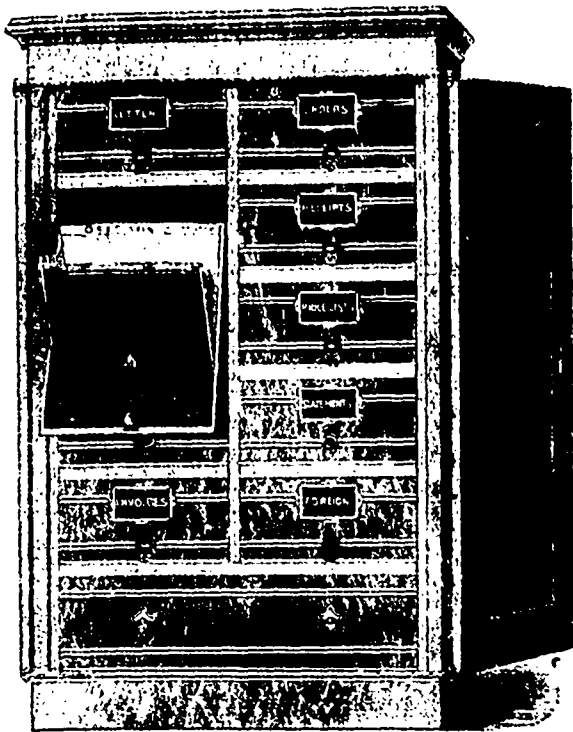
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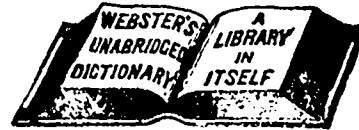
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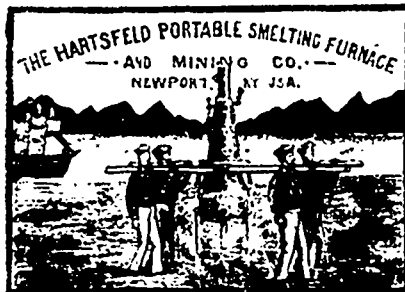
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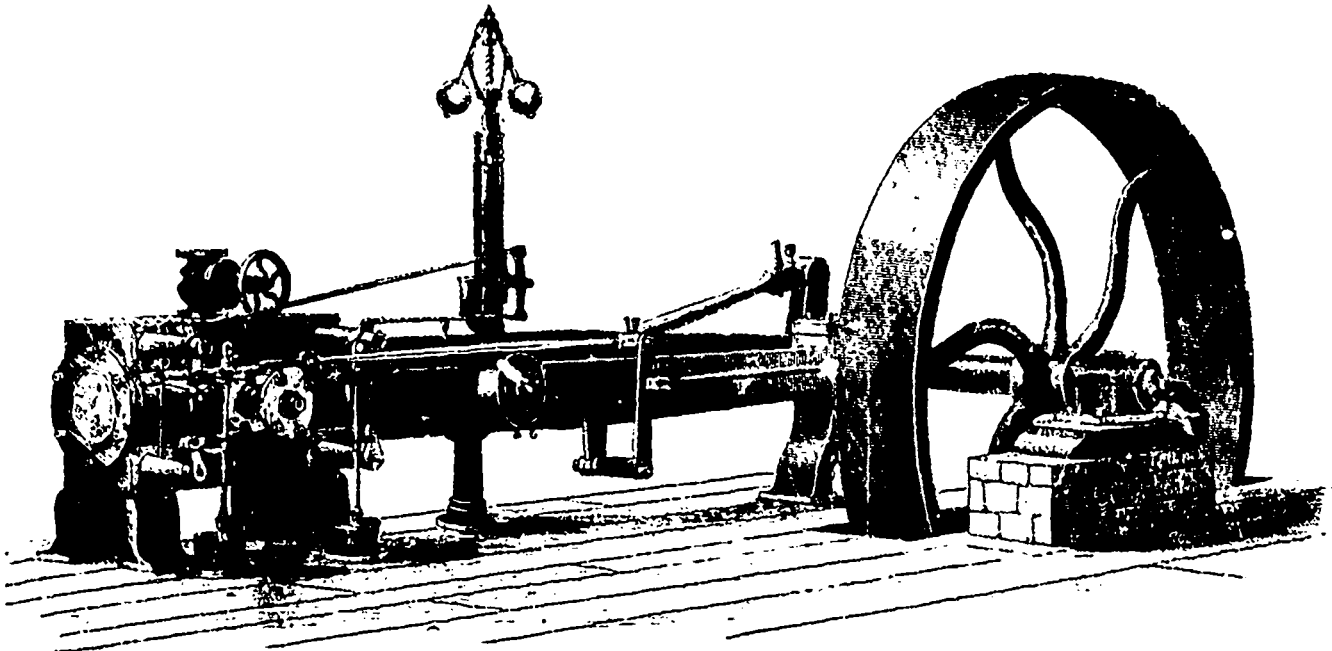
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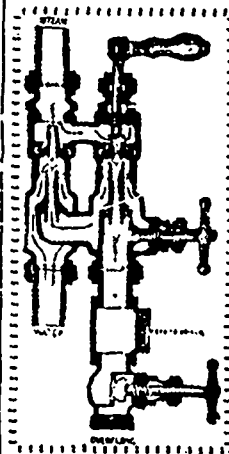
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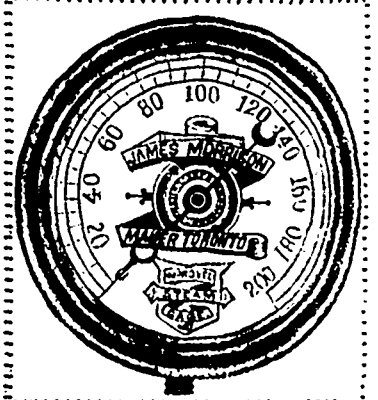
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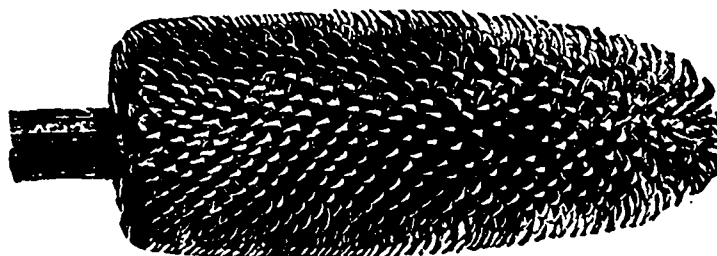
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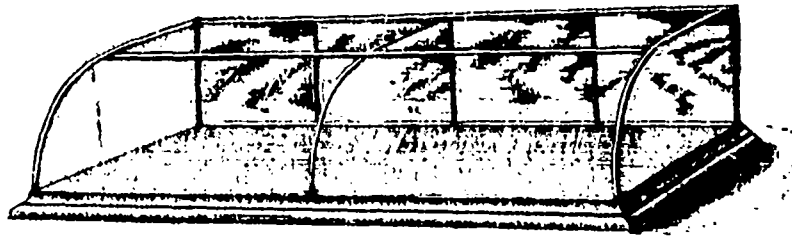
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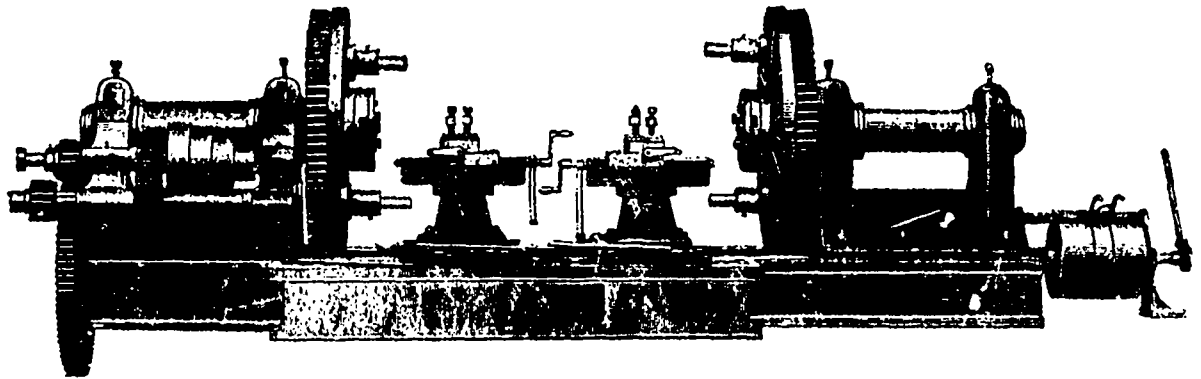
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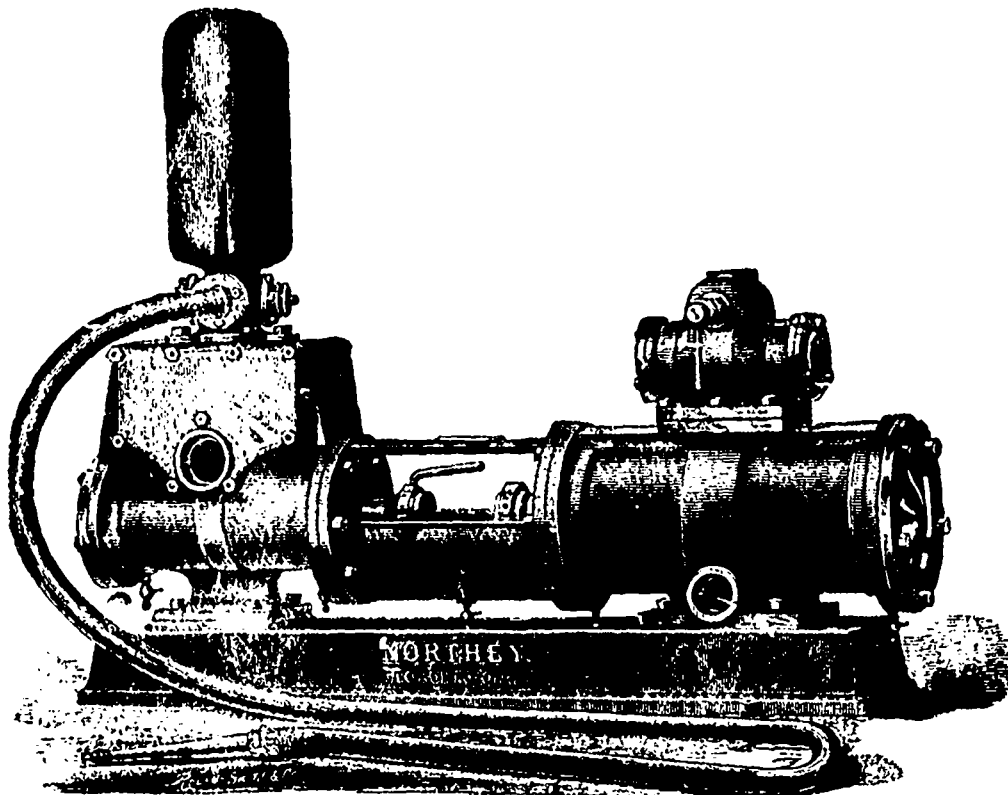
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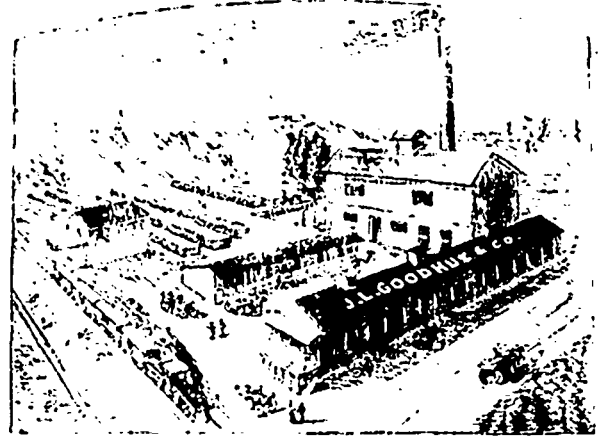
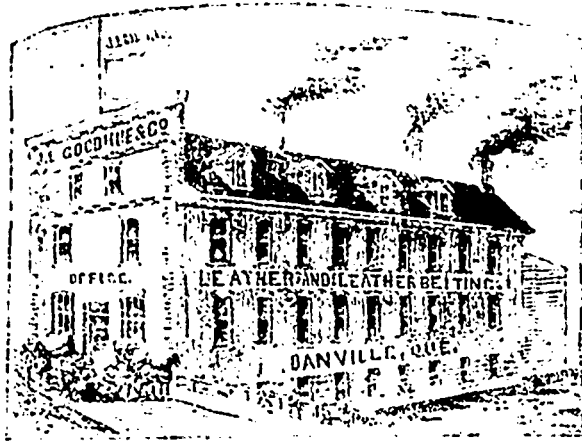
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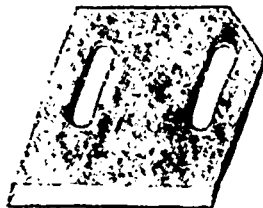
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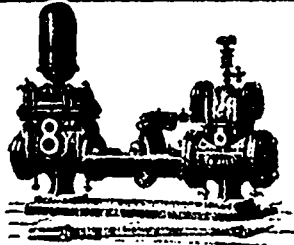
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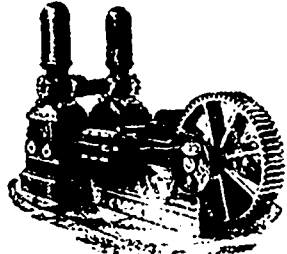
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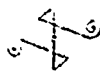


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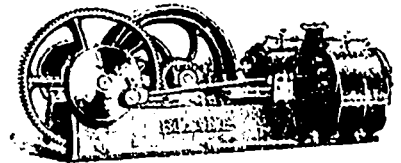
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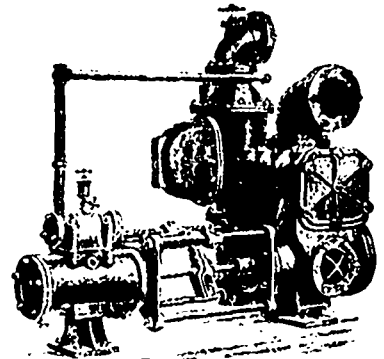
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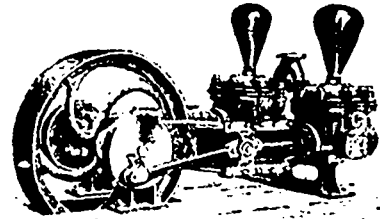
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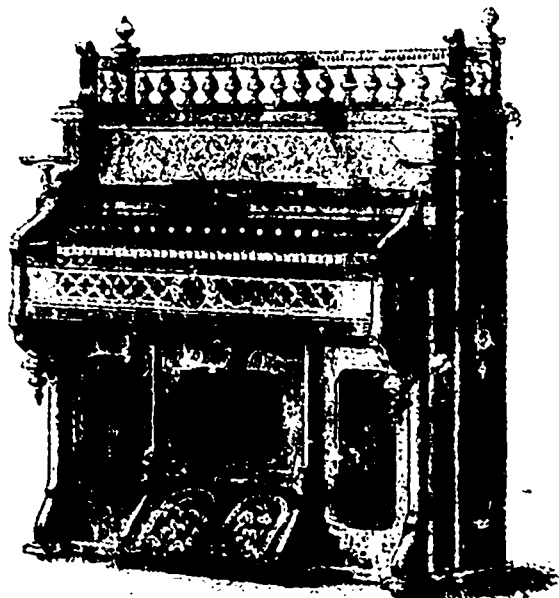
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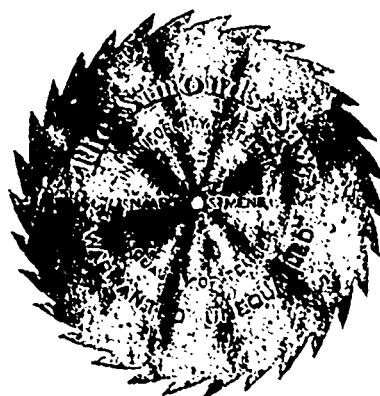
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Lake Winnipeg	Wednesday, April 20	
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Lake Nepigon	" " May 4	
*Thanemore	" " 11	
Lake Ontario (new)	" " 18	

FROM MONTREAL:		
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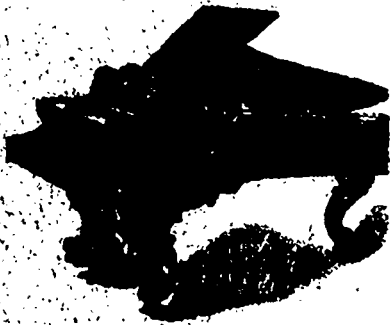
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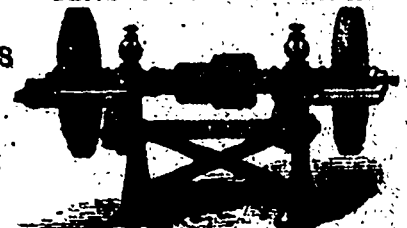
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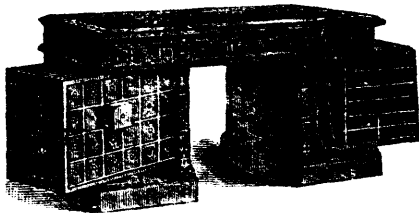


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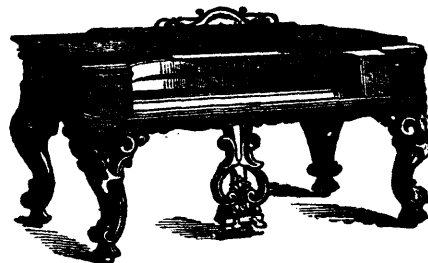


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