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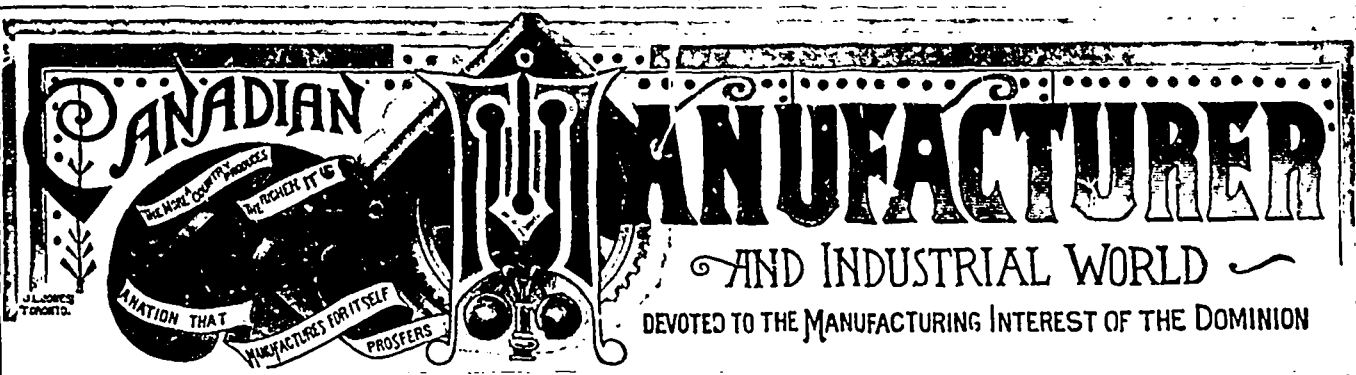
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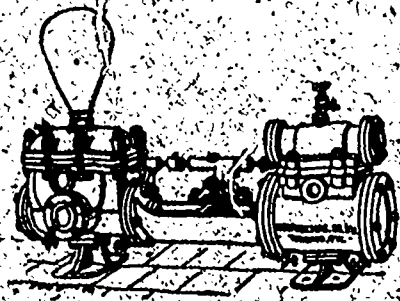
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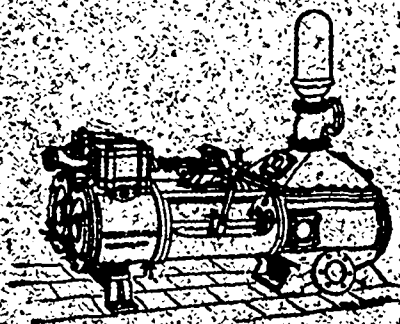
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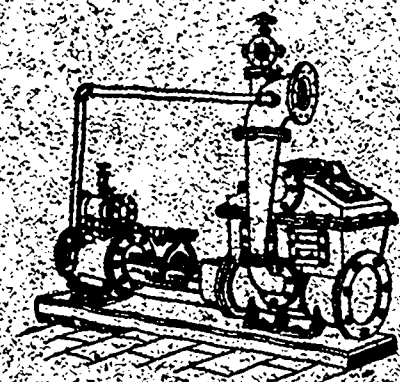
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W. H. HOWLAND.

By the death of W. H. Howland, which occurred on the 12th inst., Canada loses one of her most gifted, active, and useful sons. Born at Lambton Mills in 1844, he was in his fiftieth year, and to all appearances had as good prospect of becoming an octogenarian as his venerable father, Sir William P. Howland, who survives him.

At the early age of sixteen he was called to take up business responsibility, and at once showed marks of talent and character which have kept him a prominent figure in all the movements with which he became connected.

In 1871, as member of the Dominion Board of Trade, he commenced the advocacy of such works as were requisite to promote interprovincial trade, and from that time forward the construction of the Canadian Sault Ste. Marie Canal, the Credit Valley Railway, the Toronto and Ottawa Railway, and the enlargement of the Welland and St. Lawrence Canals found in him an earnest advocate.

In politics Mr. Howland was allied to the Liberal party, but differing from its leaders on tariff and railway policies, he became a member of the "Canada First" party, and this party started the "Nation" and the National Club. As regards the results of the labors of this small but aggressive band of patriotic thinkers, writers and speakers, it needs but to recall the fact that it was mainly their efforts that caused one hundred and fifty seats in the Canadian House of Commons to change hands in 1878. This influence developed largely during the two years of his presidency of the Canadian Manufacturers' Association, and as long as that organization exists it will be felt as a power in the politics of Canada.

None could see more clearly than Mr. Howland and his associates that the advocacy of measures opposed by former friends would estrange them, while not gaining the confidence of new allies. In fact it meant giving up the hope of political preferment, and for this reason we find that he devoted his later years to civic government, temperance, industrial education, the care of waifs and strays, hospital work, insurance matters, and last but not least to religious instruction. To these tasks he brought an earnest zeal and kindly feeling that endeared him to all with whom he came in contact. Many in all walks of life will miss his cheery welcoming smile and his ready sympathy and assistance. His bereaved family have the condolences of a very wide circle of friends in all parts of the Dominion.

STEEL RAILS.

A FEW days ago a delegation of gentlemen representing Toronto, Hamilton, London, Montreal, Peterborough and Ottawa, all interested in electric street railways in those cities, waited upon the Dominion Government in regard to the duty now charged upon steel rails used by such railways. The delegation was received by Sir John Thompson, Premier; Hon. George E. Foster, Minister of Finance; Sir A. P. Caron, Postmaster-General, and Mr. N. Clarke Wallace, Controller of Customs. Mr. McKay, M.P. for Hamilton, acted as chairman of the delegation, and introduced the gentlemen to the Ministers, and in his remarks called attention to the fact that one item of the tariff reads: "Rails for railways and tramways of any form not elsewhere specified, \$6 per ton," while the following item reads: "Steel rails weighing not less than 25 pounds to the yard, for use in railway tracks, free." He showed that electric street railways are now built with rails which came under the description in the free item—that these rails are embraced in the "elsewhere specified" class and not under the item imposing a duty of \$6 per ton; and that the Government had hitherto adhered to a departmental ruling levying the duty, and he desired that the ruling be changed, or that all steel rails be placed on the free list. Mr. Robert Jaffray, of Toronto, alluded to the importance of electric roads to the country, their rapid development and great possibilities. They were destined to connect towns lying close together, and to connect country villages with the nearest city, furnishing in this way a superior mode of transportation to market. In this way Mr. Jaffray led up to the proposition that the duty complained of was a direct tax on development, without operating as a protection to any industry. In further illustration of the importance of the business, he instanced its industrial

development in Toronto, Montreal, Ottawa and Peterborough, where dynamos, cars and other plant were manufactured. In reply to possible objections, he pointed out that, although electric roads in cities may pay, they were not likely to do so in towns and connecting links. These roads received no assistance in the towns, and in the cities contributed to the municipal revenue. In view of the great possibilities or the future of electric lines, it was desirable for the Government to declare its attitude as to the tariff on rails. He reminded them of the injustice of admitting rails free for steam railways, which were bonused heavily by public funds, and exacting a heavy duty on rails for roads which received no bonuses. Mr. Girouard, M.P. for Montreal, made a presentation of the legal aspect of the case, and contrasted the development of electricity and steam. He also dwelt on the inconsistency of taxing steel rails in one case and exempting the same article in the other. Mr. Martin, Q.C., of Hamilton, illustrated the subject by the case of the Hamilton street railway. He made out a case for the electric road as a public benefactor by providing rapid and cheap transportation to mechanics and others from their work in the city to comfortable homes in the suburbs and outskirts. After a few other speeches, Sir John Thompson said that the question of discrimination was one worth considering, but he believed the act provided for taxing street railway rails. However, the clause in the tariff was open to two constructions, and the Government would leave the question to be determined by the courts.

It is not surprising that the capitalists who have their money invested in street railways should desire to evade the payment of duty upon their rails: and in the instance here alluded to they have a seemingly fair argument to advance: the argument that if steel rails for steam roads are free, similar rails for electric street roads should also be free.

But to our mind two wrongs can never make a right. This journal has always contended that it was a mistaken policy to place steel rails on the free list. The aim of the National Policy party of Canada, or rather of the Government placed in power by that party, has been to build up the manufacturing industries of the country, and it has frequently been announced that it was specially desirable that a comprehensive iron industry should be established. In the formation of the present tariff Sir Charles Tupper, who was then Finance Minister, drew most vivid pictures of fiery furnaces scattered broadcast all over Canada, from which molten iron would flow in continuous streams, telling us that the industry, which was to be the largest and most important in the country, would, in its prosperity, make the country blossom, metaphorically, like the rose. As the bee upon the flower, so hung the advocates of the National Policy upon the honey of Sir Charles' eloquent tongue. Our iron and coal mines were to be developed; our forests were to be converted into charcoal; limestone quarries were to be opened; blast furnaces were to be erected, so that we would at least supply all our wants for pig iron; rolling mills, with puddling furnaces, were to make all the rolled iron we might require from home-made pig; and steel works, consuming only home products, were to give us all the steel rails and all the other forms of steel for which we could possibly have any use. And how did Sir Charles set about the development of the happy era? He said he would do it by a proper arrangement of the tariff; and how did he arrange it? He placed the duty upon pig iron so low that, considering the

then weak development of our blast furnace industry, the requirements of the country for pig iron had to be supplied from abroad; and now, after years of trial of a duty of only \$4 per ton on pig iron, there has been no great development of the industry, and the duty is for revenue only, for it is not protective. That is the way he set about developing the blast furnace industry of Canada. And then he aimed to develop our puddling and rolling mill industry by putting a duty of \$13 per ton upon rolled iron, which was well enough, and a duty of only \$2 per ton upon wrought scrap iron, by which blunder he made it possible for the rolling mills then in existence to reap rich harvests of profits by consuming vast quantities of scrap iron imported from abroad, but producing never a ton of home made puddled iron. Sir Charles' rosy optimistic views did not seem to penetrate the fact that even if we had a thousand blast furnaces they could not be made profitable unless a demand for all their products could be created, and that no possible demand for mill iron could be created when a half finished product—wrought scrap—could be imported for manufacture into bar iron almost duty free. That is the way he set about developing the rolling mill and puddled iron industry of Canada. And we were to have steel works also; and how did he proceed to develop them? Why, by placing steel rails, the product of steel works, on the free list. There are more than two million tons of steel rails now in use in Canada, not a pound of which was made in Canada, and upon which not a cent of duty was paid. This is the method adopted by Sir Charles to develop the steel rail industry.

It might be asked why no duty was laid upon steel rails for steam railways, and more or less heavy duties laid upon rail- for street railways and other forms of steel, all of great importance in the industrial development of Canada, but none of which were at that time, or since, made in Canada. A satisfactory answer to the question is not easily available. The argument in favor of free steel rails was that the construction of railways was absolutely essential to the development and prosperity of the country; and the argument in favor of duties upon other forms of steel was that revenues must be raised thereby.

If it is admitted that a comprehensive iron industry is essential to the prosperity of Canada: if it is desirable that we have blast furnaces enough to produce all the pig iron we can consume; puddling furnaces for the production of all the puddled iron we require, and steel plants which can give us not only rails for steam and street railways, but girders, beams, angles, plates and all the other forms of steel for which we have constant use, the present is a good time to remodel the tariff with that end in view. To thus remodel the tariff would be to place a practically prohibitory duty upon scrap iron, to place a duty of say \$6 per ton upon all rails weighing more than 25 pounds to the yard, and to give a bonus of so much per ton upon every ton of such steel rails made in Canada. No complexity would be necessary in thus arranging the tariff.

It might be imagined from what Sir John Thompson said to the delegation of electric street railway men that the Government are not inclined to enlarge the free list as far as steel rails are concerned; and it is sincerely to be hoped that they will not. On the contrary, it is to be hoped that the steam railways may be made to bear a share of the burdens of the people by the payment of duty upon rails. Whatever argu-

ments may have prevailed when Sir Charles Tupper was framing his tariff, the day has certainly arrived when all railway corporations in the country should be made to assume some of the weight of tariff taxation. The Government must raise revenue, and a desire is manifested that the duties on some classes of merchandise should be lowered. If any very extensive lowering of the tariff is done in this direction, a deficit can be avoided by imposing a duty upon steel rails. The argument of the electric railway people that the rails of the steam railways being duty free, the rails for electric railways should also be free, is good; but the converse of the proposition is even better: for if the rails for electric roads must pay duty, the rails for steam roads should also pay duty. And there is no class or element in the community, except the railway people, but would be willing to see all the railways made to bear a fair share of the burden.

INCONSISTENT PROTECTIONISTS.

THAT was an interesting sight in Ottawa a few days ago when a lot of staunch dyed in the wool protectionists, who happened to be capitalists with money invested in electric street railways, asked the Government to allow them to bring in the rails for their roads free of duty; and it was equally interesting to observe such a staunch dyed in the wool protectionist journal as the *Hamilton Spectator* assenting to and endorsing the request. The *Hamilton Evening Times* was quite sarcastic in its remarks about the inconsistency of the delegates from that city in asking for free rails; and this is the way the *Spectator* comes to their defense:—

Mr. McKay and the other gentlemen named find that steel rails for ordinary railways are admitted free of duty. They think steel rails for electric roads should be placed in the same class with steel rails for other roads. They cannot understand why a rail for a steam car should be free, while a rail for an electric car should be dutiable. When the tariff was made electric roads were not in existence, and were not seriously thought of. Therefore rails for them were not taken into consideration. There is some doubt about the meaning of the statute as it stands. Ministers think it should be settled by the courts. But Mr. McKay's position is this: If the statute can be construed favorably to the companies, he wants it so construed. If it cannot be so construed, he wants it changed, so that electric roads will be put upon an equality with steam roads.

Further than that, Mr. McKay holds to the good doctrine of putting protective duties on articles made in Canada, and putting only revenue duties or no duties at all on articles which are not made in Canada. Steel rails are not made in Canada, and our government has not put duties on those needed on Canadian railways. Even the *Times* has advocated the putting of raw materials upon the free list. Rails are raw materials for railways.

It may become a question whether the time has not come for establishing the rolling of rails in Canada. The *Spectator* is inclined to think that the industry could now be profitably conducted here. In that case it will advocate the imposition of a duty, not for the purpose of raising the price, but for the purpose of preventing the destruction of the infant industry while it is weak. But if it is not thought advisable to encourage the manufacture of rails in Canada, we shall advocate the putting of rails for electric roads on an equality with rails for steam roads.

We quite agree with the *Times* that it would have been more consistent in Mr. McKay and the other protectionists

to have argued their case from the opposite standpoint, and to have shown that if rails for electric roads must be dutiable, then rails for ordinary railways should also be made liable to duty; that they could not understand why a rail for a steam road should not be dutiable, while a rail for an electric road was dutiable. The *Spectator* tells us that Mr. McKay's position is that if the statute can be construed favorably to the electric companies he wants it so construed, and if it cannot be so construed he wants it changed so that electric roads and steam roads be placed upon an equality. But he wants this equality brought about not by the enforcement of the principle of protection, whereby the rails for steam roads would be made dutiable, but by the destruction of that principle by placing rails for electric roads in the free list. In palliation of this had break away from the policy of protection of which Mr. McKay is such a great admirer and earnest supporter, we are told that that gentleman holds to the good doctrine of putting protective duties on articles made in Canada, and putting revenue duties or no duties at all on articles which are not made in Canada. Steel rails, the *Spectator* informs us, are not made in Canada, and that they are "raw materials for railways." This is a worse break away from the protective policy than that of Mr. McKay; for that gentleman did not advance the ridiculous idea that steel rails were raw materials for any purpose. The *Spectator* is inclined to think that the industry of manufacturing raw materials, to wit, steel rails, could now be profitably conducted in Canada, and that if such raw materials could be made here, then and in that case it would advocate the imposition of a duty upon them, for the purpose of preventing the destruction of the infant industry of manufacturing raw materials while it is weak. Of course to prevent the destruction of the infant industry, the duty the *Spectator* would impose must be protective of that industry; and herein the *Spectator* differs from Mr. McKay, when that gentleman in behalf of himself and the other street railway capitalists, holds to what he calls the good doctrine of putting only revenue duties or no duties at all on such raw materials as steel rails which are not made in Canada.

The *Spectator* also tells us that if it is not thought advisable to encourage the manufacture in Canada of this raw material—steel rails—it will advocate the putting of rails for electric roads on an equality with rails for steam roads. Being between two fires, our contemporary seems to be in a quandary. In behalf of its queer protectionist friends it wants to smash protection by placing street rails in the free list as a raw material; and in behalf of the policy it has for so many years advocated, it wants to advocate the imposition of a duty upon rails for the purpose of preventing the destruction of an industry that ought to be started.

This is not the first time the *Spectator* has fallen to the ground and made itself ridiculous while trying to accomplish the impossible feat of riding two horses going in opposite directions. At times of late it has become quite enthusiastic over the prospects of a blast furnace being erected in Hamilton. That enterprise has our best wishes for its success; and we have no doubt that under a proper arrangement of the tariff not only would the blast furnace prove a valuable investment, but that a steel mill would soon be built in connection with it, where rails for both steam and electric railways would be produced. But the blast furnace cannot possibly prove a success, and a steel mill will never be built in Hamilton or

anywhere else in Canada unless the tariff is amended with that special object in view. Before such enterprises can be come successful, a demand must be created for their products.

If the blast furnace being erected at Hamilton is to prove a success, the tariff must force the consumption of all the pig iron it will produce, and this consumption must be found in several iron consuming industries. A good demand already exists for all the foundry iron it could produce, but there is absolutely no demand for the other grades, the production of which will be inevitable, nor will there be until the tariff forces the manufacture of it into either puddled iron or steel, or both. As long as the duty upon wrought scrap is only \$2 per ton, just so long will the rolling mills decline to start puddling furnaces, and therefore no demand from that direction for the mill iron produced at the blast furnace; and just so long as steel rails are admitted duty free, just so long will the time be delayed which ought to see a steel plant operated in connection with the Hamilton blast furnace. This journal has heretofore discussed this phase of the question, to which the Spectator has taken exception only because, as far as we could observe, there happened to be rolling mills in Hamilton which do not make puddled iron, preferring rather to work up scrap iron.

The bad spells that the Spectator is so often afflicted with, arise from the fact that it fails to recognize the fact that the success of all the various iron industries of Canada depends absolutely upon the success of the fundamental blast furnace industry; that unless the tariff is framed to meet the necessities of all these industries, especially the latter, none of them can be successful, and that many of them will never materialize. Because we do not happen to have certain of these industries it does not follow that they are not suitable for our circumstances, but rather that mistakes in the tariff have prevented their materialization. It is bad policy to make it impossible to ever have them merely because we do not happen to have them now.

A VICTORY FOR PROTECTION.

In view of the surrounding and attending circumstances, the conviction forces itself that the elections in several of the states last month amounted to a decided victory for protection. It will be remembered that the platform of the Democratic party promulgated at Chicago when Mr. Cleveland was chosen to be the standard bearer, denounced protection as an unconstitutional fraud, and during the following campaign Democratic orators were loud in declaring that the election of Mr. Cleveland would be the death knell of protection. Every imaginable change was rung on the theme. The farmers were told how protection enhanced the cost of every thing they had to buy, while what they had to sell had to be sold in the open markets of the world, in competition with the cheap labor of India and the pauper labor of Europe. The working men were told that protection fostered and encouraged combinations among manufacturers, whereby wages were reduced, while to every article they bought was added the amount of the duty. These were the arguments of demagogues, but they had their effect, and the strange spectacle was presented of a whole people going crazy over fears which were groundless, and sweeping from power a party that for thirty years had legislated to preserve the American market, for American

workmen, American capital and American enterprise. As soon as Mr. Cleveland acceded to office he mapped out a course which would realize the promises his party had made to the people; and then it was that the sober second thought of the people brought them to a realization of what they had done, and of the dangers amid which they stood. When Mr. Cleveland was inaugurated President of the United States his country was in the enjoyment of a most enviable condition of peace, happiness and prosperity; before three months had elapsed a financial panic was precipitated, which closed banks, disorganized business, frightened capital, shut up workshops and factories and threw thousands into idleness and distress. The silver question may have had some influence in creating this painful condition, but not much. That question had been before the country for years, and while the settlement of it was greatly to be desired, it was not imperative. When president Cleveland declared that he and his party would redeem the pledges they had made to destroy protection and substitute a tariff for revenue only, the country suddenly realized what such a change would effect, hence the panic.

There came a time, however, when the people in some of the states would have the opportunity to protest against the great change that the president had threatened. In some of the states the issue was clearly defined as between Mr. Cleveland's policy and that of protection, notably in Ohio and Massachusetts. It was also a vital element in New York, New Jersey, Pennsylvania, Iowa and Kansas, and in these seven states the change of sentiments, as shown in the results, were most remarkable. Speaking of these elections, Mr. J. M. Swank, in the Bulletin of the American Iron and Steel Association, says:

"It is true that the opponents of protection did not proclaim from the housetops this fall that the McKinley tariff had placed a heavy tax upon the workman's dinner bucket, as they did in 1890, 1891 and 1892, the price of dinner buckets having been actually reduced during the past year below the prices charged for them before the McKinley tariff was enacted. Nor did they say that "the tariff is a tax" upon many other articles which they have been accustomed to point to as furnishing notable examples of the greed of protected monopolists, for all manufactured products are cheaper under the McKinley tariff than they were before it became a law. But all the same our protective policy was the one overshadowing issue in the late campaign in every Northern State. The flag of protection was everywhere held aloft by workmen and others who had commenced to realize the injury to the industries of the country which Mr. Cleveland's election had made possible, and nowhere did the friends of Mr. Cleveland repudiate the declaration of the Chicago platform against the constitutionality and wisdom of protection. If Mr. Neal, the author of the tariff plank of that platform, had been chosen Governor of Ohio his victory would have been heralded far and wide by Mr. Cleveland's party friends as a signal defeat for and also a late repudiation of the McKinley tariff. But Massachusetts, New York, New Jersey, Pennsylvania, Ohio, Iowa and Kansas, seven great states, not to mention others, declared by immense majorities that they did not want the sentiments of the Chicago platform to be engrafted upon our tariff legislation.

The tabulated returns of the elections of November 7th have fully established the fact that not far from a quarter of a million workmen and farmers who voted for Mr. Cleveland in 1892 have now voted against him. What does this great change mean? It means, of course, loss of confidence in Mr. Cleveland, but for what reason? Certainly not because of his position upon the silver question, for Republicans in both the Senate and House supported his recommendations upon this question. Silver was not, therefore, a party issue in any sense

in the late campaign. But protection was, and why? Because the people had come to realise, what they did not realize in 1892, that Mr. Cleveland's election endangered the further continuance of our protective policy. So an immense army of Democratic workmen and farmers have done what they could to notify Mr. Cleveland and his friends in Congress that when they voted for him a year ago they did not vote for an abandonment of our protective policy.

In what we have said we have referred particularly to the reaction in public sentiment which has taken place in several of the great states of the North. It has been clearly established that the North does not want the tariff to be revised in the interest of foreign miners and manufacturers. For reasons which are well understood, such elections as have taken place in the southern states could not indicate the state of public sentiment in that section upon the tariff question, but the Democratic business men of the South have spoken in their own way, and with no uncertain sound, against a tariff for revenue only. The South does not want to see protection abandoned any more than the North does, and we may add that it would suffer more than the North would if we were now to take the British tariff as our model.

HOW TO DEVELOP OUR IRON MINES.

Our esteemed contemporary the Canadian Mining Review has frequently referred to the dormant wealth and abundance of the iron ore deposits of Ontario, and the various aids and suggestions to bring about their utilization and development; and commented upon the hard fact that, in spite of a duty of \$4 per ton and a bounty of \$2 per ton, Ontario does not produce a single ton of pig iron, but continues to pay heavy tribute to foreign labor and foreign sources of this material. It complacently contemplates the proposed revision of the United States tariff, seeing therein a gleam of better prospects for Ontario's mineral resources in the hoped-for material reduction if not entire abolition of the seventy-five cents per ton duty now existing on iron ore entering the United States. It alludes to the fact that perhaps no portion of the Dominion possesses such an extent and variety of iron ores as that comprised between Lake Ontario and the Ottawa river, and which is conveniently served by rail and water ways, permitting the transportation of our ores to the blast furnaces in Ohio and Pennsylvania; and it thinks that a reduction of fifty cents upon the present United States tariff would undoubtedly not only revive the operations that formerly existed in the iron ore working, but promote a great activity in new enterprises and development. "It is an anomaly," it says, "that an augmentation of half a dollar or seventy-five cents per ton in the market value should suffice to inspire investors, while the Dominion bonus of \$2 per ton on the domestic production of iron fails to encourage the establishment of a single blast furnace; and the only apparent explanation is our lack of confidence and technical skill necessary to successful iron smelting. However this may be, the next best thing to utilizing this dormant wealth of iron for our own requirements is to employ Canadian capital and labor in its extraction and transport."

Probably no person in Canada is possessed of more accurate knowledge of the mining industry of the country than the Mining Review, and, therefore, we are surprised to learn that the only explanation it can offer for our failure to establish a blast furnace industry in Ontario is our lack of confidence and technical skill necessary to successful iron smelting. These essential elements are not lacking in Quebec or in Nova Scotia;

and certainly that which may be successfully carried on in these provinces might be quite as successfully carried on in Ontario. It might be argued that the furnaces now in operation in Quebec and Nova Scotia are of size and character not commensurate with the requirements of the country, and that it would not be remunerative to build furnaces in Ontario of no larger capacity. This might be admitted; but the broad fact still remains that Canada is a large consumer of iron, and that but a very small proportion of our consumption is of home production. Why is it?

We are told by our contemporary that if we cannot establish blast furnaces and make our own iron from our own ores, the next best thing is to utilize our dormant wealth by extracting it from the earth and transporting it to the United States. This means that because mistakes have been made in our tariff schedules, by reason of which we have failed to realize the benefits which we hoped to have obtained from our mineral wealth, instead of correcting those mistakes we must accept them as final; and, instead of Canada becoming the manufacturer of its own iron, we must send our ores away to Ohio and Pennsylvania to be smelted, and from there returned to us as pig iron. That is just precisely what the Mining Review suggests. No one questions the desirability and importance of Canada becoming an iron manufacturing country. We know that we have all the elements necessary, that they are conveniently accessible, and that there is a good demand for the article. Ever since Confederation it has been the aim and desire of the Dominion Government to stimulate the production of Canadian iron. The natural advantages of Canada are in no way inferior to those of Ohio or Pennsylvania; and there is no reason why, if Canada pursued the same course as the United States, the industry should not be quite as successful and remunerative here as there. If the inducements that we offer are not sufficient, increase them. If the circumstances with which we propose to surround the industry are not favorable, change them and make them so. In making such change it may be that it would not be necessary to increase either the duty or the bonus. No blast furnace could be operated successfully unless all of its products could find ready sale. As the tariff now is, this would be impossible; and we are surprised that the Mining Review does not recognize this fact. It knows well enough that all blast furnaces produce varying grades and qualities of iron; and it knows that if we had furnaces enough to supply all the requirements of the country, much of their products would of necessity go to puddling furnaces and, perhaps, steel mills. If the mill irons made at the furnaces were not in demand for puddling purposes—if such irons found no sale, the furnaces would have to stop work. And here lies the secret which the Mining Review fails to discover. Stop the importation of scrap iron; and instead of the rolling mills confining themselves to working over the waste of other countries, producing an inferior article generally, they would be puddlers of the mill irons made in Canadian blast furnaces. It is the opinion of those who have given much consideration to the matter that, the duty and bounty on pig iron remaining as they are, and the duty on bar iron remaining unchanged, with a prohibitory duty on scrap iron our blast furnace industry would be very quickly developed.

THE BEET SUGAR PROBLEM.

WHEN Mr. Wilson's Ways and Means Committee were first considering the tariff problem, Mr. H. T. Oxnard, president of the American Beet Sugar Association, appeared before it and argued that sugar was entitled to very considerable protection as an exceptional agricultural product, and protested against the sugar industry being made a football by political parties. There should be no argument over the proposition that "nothing is so injurious to the prosperity of a nation as the want of a permanent national policy, upon which so largely depends the development and success, or the retardation and prostration of great business interests." The bounty policy, Mr. Oxnard claimed, was a new policy designed by Congress to be permanent till 1905, a position sustained by the debates in both houses of Congress.

Prior to the bounty act a sentiment prevailed that the high duties on sugar had not stimulated the production of cane sugar as it should. On the other hand it is a fact that under the bounty policy the country is making rapid strides in the production of beet sugar. In 1880, 357 tons were produced; in 1893 about 25,000 tons. In 1881 Louisiana produced 121,800 tons of cane sugar; in 1891, 215,844 tons. The justification of the new policy could not be better set forth than it was by Mr. Evarts in the Senate in these words:

"I take it that this country does not expect to be called upon to give bounties for natural agricultural products in that name and by itself. We offer no bounty for the growing of beets, at the expense of other agricultural products, nor of sorghum over corn, nor of any of the natural products of the soil against all the cereals. That is not the idea. The idea is that we will foster, cherish, and enlarge a manufacturing industry, and a manufacturing industry that is built up of the raw material produced on our own soil, the same as iron is, or lead, or other raw material. So, therefore, it cannot be said that there is any patronage or favor in the 'bounty' for cane, or sorghum, or beets, except in the interests of our common country that sugar shall come out of our fields, and that is only by skill, ingenuity, invention and by labor."

In an extended communication to the New York Press on the value to the United States of the beet sugar industry, Mr. Gerrit Smith Glenn reaches the following conclusions:

(1) That we have a market for sugar at home at the present time which will consume the product of at least 1,200,000 acres of land; that the per capita consumption of sugar here is rapidly increasing, which, with our great increase in population, creates and insures a constantly increasing demand, our imports in 1891 exceeding our imports in 1889 by more than 500,000 tons. (2) That the production of beet sugar is increasing more rapidly than that of cane sugar. (3) That the production of sugar beets here at a profit has been clearly demonstrated, and therefore has ceased to be an experiment. (4) That the culture of the sugar beet, when understood, is simple, and does not require skilled labor. (5) That beets can be sent direct from the harvest field to the manufactory without further preparation or storage. (6) That the culture of the sugar beet does not require any considerable investment of capital by the grower. (7) That the implements required for the production of sugar beets are simple and inexpensive as compared to those required for the production of wheat. (8) That soil upon which beets have been successfully grown is left in prime condition for other crops. (9) That we have a very large area of comparatively low priced lands upon which sugar beets can be grown successfully. (10) That the

profit of the grower is greater than the average of other crops. (11) That four months after the crop is planted it can be harvested and at once converted into money. (12) That with patient and persistent application and investigation, any person of ordinary intelligence can successfully produce the sugar beets upon suitable lands within the belt described.

No country is better adapted to the growth of the sugar beet than Canada; and it to be hoped that the Dominion Government will see its way clear to give some such encouragement to the industry as is done in the United States.

THE DUTY ON SUGAR.

A DUTY on raw sugar sufficient to raise the price one cent a pound puts one cent a pound, less the cost of collection, into the public treasury. A duty on refined sugar sufficient to raise the price one cent a pound gives one cent a pound, less the cost of collection, to the encouraged refiners and nothing to the public treasury.—Toronto Globe.

Sugar ought to be cheaper now than it was in 1877 and 1878, for several reasons: First, raw sugar is cheaper. The consumer gets the whole benefit of that lower price. Secondly, the duty on raw sugar has been wholly removed. The consumer gets the whole benefit of that removal. And he gets something more: for the decline in the price of refined sugar is greater than the decline in the price of raw sugar and the amount of the duty removed put together. Will the Globe tell us why? In 1877 granulated sugar sold for 12½ cents a pound. Will the Globe explain the elements of cheapness which have brought about this great reduction?

Again, we have more than once pointed to the fact that the duty on refined sugar in the United States is five-tenths of a cent a pound, with a high bounty on home grown sugar. In Canada, the duty on refined sugar is eight-tenths of a cent per pound, with no bounty. If the Globe's theory were well-founded, sugar in Canada would be three-eighths of a cent a pound dearer than in the United States. But it is not. The price has averaged somewhat lower in Canada than in the United States.

Again, if the Globe's theory were well-founded, the price of refined sugar in Canada would be eight-tenths of a cent a pound dearer than in Great Britain. But it is not. Beet sugar in England is a small fraction of a cent lower than cane sugar in Canada. But cane sugar in England is just as dear as cane sugar in Canada. The plain fact is, that the small duty on refined sugar gives the work of refining to Canadians and does not increase the cost to the consumer.—Hamilton Spectator.

In discussing the duty on sugar, we suggest to our contemporaries that they confine themselves to truthful facts. The Spectator states as a fact that "the duty on raw sugar has been wholly removed," and that the consumer gets the whole benefit of that removal. The Spectator knows that this is not true. During the fiscal year ended June 30, 1892, Canada's imports of raw sugar for home consumption amounted to 327,674,283 pounds, valued at \$8,530,672, or 2.6 cents per pound; or 163,837 tons, valued at \$52 per ton. In the refining process, about five per cent. of the raw material is lost, including dirt and other foreign substances, and about another five per cent. results in by-products, such as molasses. In British refineries, it is calculated that from each hundred-weight (112 pounds) of raw sugar treated there is a recovery of 100 pounds of refined sugar, and that the cost of refining is about a half-penny, say one cent, per pound of refined sugar. Thus we see that if refining in Canada is done on as economical methods as it is in Great Britain, the Canadian refiners obtained 292,766,327 pounds of refined sugar, which cost them for raw material and for refining \$11,456,335, or a fraction

less than four cents per pound. In other words, they obtained 146,283 tons of refined sugar at a cost of less than \$80 per ton. According to a recent number of the London Economist, than which there is no higher or more reliable authority, granulated sugar was quoted in that market at 17 shillings per hundred-weight, the equivalent of \$3.70 per 100 pounds; and the cost for freight, insurance, etc., for laying such sugar down in Toronto is 30 cents per 100 pounds. In other words, granulated sugar made in Great Britain can be laid down in Toronto, without duty, at just what it costs the Canadian refiners to produce the article. This supposes that Canadian refineries are as effective and well-equipped as British refineries, and that the cost of refining is no greater in Canada than in Great Britain.

"The plain fact is," says the Spectator, "that the small duty on refined sugar (\$16 per ton) gives the work of refining to Canadians, and does not increase the cost to the consumer." Let us see if this statement is true. A recent quotation for Montreal granulated sugar delivered in Toronto was \$4.50 per 100 pounds, or \$90 per ton; and the difference between the British and the Canadian article was just \$10 per ton, which, on a production last year of 146,283 tons, amounted to \$1,462,830. According to the census returns, all the labor employed in refining sugar in Canada during the census year amounted to less than 700 men. The remuneration for such labor does not average more than \$500 per year, and therefore the Canadian refiners did not pay more than \$350,000 all told for the labor bestowed in an industry which yielded them more than a million dollars clear profit over and above what British refiners would make on a similar transaction. In our opinion, the National Policy was never intended to produce such a condition.

The Spectator also tells us that the duty on raw sugar has been wholly removed, and that the consumer gets the whole benefit of that removal. Let us see if this statement is true. It is true the duty was removed from all sugar not above number 14 Dutch standard; but all sugar above that standard is dutiable at the rate of \$16 per ton. No sugar not above number 14 Dutch standard is suitable for food; therefore Canada cannot consume such sugar which cost the refiners 2.6 cents per pound to import. With much more consideration for the consumers of the United States, the McKinley tariff imposes a duty of only \$10 per ton upon refined sugars, and the limit of free sugar is number 16 Dutch standard. Sugar of this standard is a light brown article which enters largely into consumption in families, and, because it is cheaper, to a certain extent displaces refined sugar. Therefore, it would be perfectly correct to say that in the United States the duty upon raw sugar has been wholly removed and that the consumer gets the whole benefit of that removal; but the proposition is not true as regards Canada.

The Spectator cites the fact that in 1877 granulated sugar sold for 12½ cents a pound, and it asks the Globe to explain the elements of cheapness which have brought about this great reduction. We do not know what explanation the Globe has to make, but for the information of our enquiring contemporary we would say that the beet sugar industry in Europe has been a no inconsiderable factor, another being the bounty of about two cents per pound offered in the McKinley tariff. In a recent issue, we showed that in six countries of

Europe the area of land under cultivation to the sugar beet in 1892-3 was more than 3,000,000 acres, an increase of seven per cent. above the preceding year; and we have also shown that the production of beet sugar in the United States in 1892 amounted to 27,083,322 pounds, an increase of 15,078,484 pounds over the preceding year. We do not know the precise quantity made in that country in 1893, but the increase over last year was phenomenally large. Improved methods of cultivation and of manufacture have done much to cheapen the cost of producing sugar; and these facts, and the vitally essential fact that the soil and climate of Canada, and the habits of the people, render the cultivation of the sugar beet in this country and its manufacture into sugar entirely feasible, have made this journal a persistent advocate of some policy on the part of the Dominion Government which would develop the industry.

It is not to the point that the Spectator should argue that while the American duty is lower than the Canadian duty, the price of granulated sugar is lower in this country than in the United States. If it were essential to do so, this statement might be successfully challenged.

If the Spectator is not an ostrich, it should take its head from under cover and contemplate the situation as it really exists. A ring composed of a few sugar refiners seem to have a cinch by which they are raking a million dollars a year out of the pockets of the consumers of the country more than they should be allowed to do; and the cinch should be loosened. If this were done, and the true interests of the farmers considered, Canada would soon be in a condition to supply all the sugar she wants from her own soil; and the Spectator should be actively supporting any measure that would produce this result.

MINING MACHINERY.

INCLUDED in the "Free Goods" schedule of the tariff, item 983 recites as follows:

"Mining machinery imported within three years after the passage of this Act which is, at the time of its importation, of a class or kind not manufactured in Canada, free."

The limit of time for the free importation of mining machinery has been, since the passage of the Act, extended for a further term of three years, the original Act having been passed March 28, 1890.

Since the passage of this Act, large quantities of mining machinery have been imported into Canada free, which, in our opinion, should have paid duty, the Customs officers in some districts holding that the words "class or kind" mean brand or name. Thus, steam pumps are essential in mining operations, and such pumps are generally known by the names of the makers of them. Thus, if such a pump is known as a Blake pump or a Worthington pump, if Blake pumps or Worthington pumps are manufactured in Canada, then such pumps cannot be imported without the payment of duty; but if they are not made in Canada, then some Customs officers rule that they may be admitted free of duty. The effect of this ruling is to admit pumps free if not made in Canada; but if a foreign manufacturer establishes a branch of his works in Canada, or if a Canadian manufacturer engages in such an enterprise, then he is handicapped by this free foreign competition. The tendency of this ruling is to discourage Cana-

dian manufacturers, and to prevent foreign manufacturers from establishing branches of their works in Canada. Supposing that steam pumps can be made cheaper in the United States than in Canada, and that it is the intention of the tariff and of the National Policy to encourage and protect the home industry against foreign competition, it may readily be seen that a concern in the United States can sell pumps in Canada on much better terms than if they maintained branch works in Canada, or than any Canadian manufacturer.

The interpretation of this clause of the tariff has not been entirely uniform with Collectors of Customs; and while, in a general way, importers of mining machinery have had no difficulty in getting their goods in free of duty, there have been cases where they failed to do so, and it was in consequence of this that the mining associations of several provinces have taken active steps to obtain a positive ruling by the Customs Department in their favor. Committees from them have visited Ottawa and have been invited by the Government to prepare a list of mining machinery made in Canada for the future guidance of Collectors. We learn that such list has been prepared and has been submitted to the Government. This list, we are told, has been drawn up entirely in the interest of the users of mining machinery, with a view to making the construction of the law which has heretofore been quite general absolutely so. The objections of the Canadian manufacturers to this interpretation of the tariff has been repeatedly explained to the mining associations and to their committees, but their protests have gone unheeded; and unless the Government can be made to see the injustice involved in the matter, and unless a different construction is put upon the law, the result will be most disastrous to the Canadian mining machinery industry.

There are many different articles absolutely essential in mining operations, such as steam boilers, steam pumps, air compressors, rock drills, electric appliances, etc., and while all such articles are made in Canada, and of the best and most effective descriptions, it would be ridiculous to suppose that every variety of such articles which might be used for mining operations should be manufactured in Canada. The evident intention of the law is, not that every variety of article not manufactured in Canada should be admitted duty free, but only such particular specialties for treating peculiar or obstinate ores, not made in this country, should be allowed to come in without the payment of duty. Our manufacturers make steam boilers well adapted to mining operations, but under this absurd Customs ruling some no more efficient type of boiler, not made here, comes in free. No better steam mining pump is made in any country than the Northey pump, for instance, but foreign pumps of no greater intrinsic value, having some other name, is allowed to come in free. We have works where rock drills, air compressors and electrical appliances are made equal to the best, but foreign goods not bearing the names of similar Canadian goods are admitted duty free. It is a grave and serious injustice that our manufacturers should be thus handicapped, and it is greatly to be hoped that the Government, again having these facts brought to their attention, will protect a valuable industry from the unfair competition to which it is subjected.

Advertise in THE CANADIAN MANUFACTURER

EDITORIAL NOTES.

So long as Canada's surplus agricultural products are sold abroad it is absurd to talk of protecting them by a tariff. The American products excluded meet our farmers in the British market, and the competition there determines the price at home.—Toronto Globe.

Last year Canadian imports for home consumption of certain agricultural products were, in value, as follows:

Barley.....	\$973	Mill feed.....	\$41,312
Beans.....	15,029	Buckwheat flour..	1,008
Buckwheat.....	125	Corn meal.....	263,800
Indian corn.....	82,155	Oatmeal.....	15,872
Oats.....	1,971	Rye flour.....	985
Peas.....	9,497	Wheat flour.....	167,019
Rye.....	208	Corn, dried.....	3,030
Wheat.....	65,080		
			\$1,392,050

It is true, as the Globe asserts, that Canada's surplus agricultural products are sold abroad, but it is equally true that even with the protection afforded the agricultural industry, we are not able to keep out large quantities of just such articles as are produced by Canadian farmers. All of the articles above enumerated are produced in this country; and it is evident that without the interposition of the duties, in the face of the importation of more than \$1,392,000 worth of agricultural products, most of them coming from the United States, Canadian farmers would not have been able to realize as much as they really did for their products. It was never intended or expected that protection would have any effect upon prices in foreign markets; but it does have a good effect in the home market. To a certain extent it gives the home market to our own farmers, excluding the products of the farmers of other countries. Its effect is to maintain prices at home; and it is only the surplus, which we do not have the capacity to consume, that is sent abroad for sale.

THE Carnegie Company has reduced the price of steel rails \$5 a ton. This looks as if they did not expect a reversal of the free trade policy on account of recent Democratic defeats. When the party of tariff reduction wins in Canada the price of binders and other encouraged products will fall in the same ratio.—Toronto Globe.

The Globe is unfortunate in its illustration. Under protection the steel rail industry has grown to immense proportions in the United States. Canada's policy of free trade in rails finds us to-day just where we have always been, without a rail mill; and no steel rail has ever been made in Canada. Under protection in Canada the manufacture of binders has assumed immense proportions, and we are now producing as good binders and as cheap as can be made anywhere in the world. Why not encourage the manufacture of steel rails as well as binders? If this had been done when the policy of protection was adopted we would now, like the United States, be manufacturing our own rails. Last year we sent \$1,738,661 out of the country to pay for rails which should have been made at home.

GENERAL Manager Seargeant says that the Dominion tax on coal costs his road alone \$360,000 a year. No wonder that it is hard work to make ends meet on Canadian railways.—London Advertiser.

The Canadian Pacific Railway is said to be one of the best paying roads in America. It is not a loop line, and there is no need for the ends meeting.

UNDER the new Wilson Tariff Bill it is proposed to lay an ad valorem duty of 20 per cent. upon barley entering the United States. The law for ascertaining what the real value of an article is in the country from which it is sent is, that the value must be fixed at what the article is worth in the chief commercial centres of trade of that country. Thus Montreal is a chief commercial centre of trade in Canada for the sale of barley; and any barley sent from that city to the United States would be rated for duty at the market price at Montreal. But Winnipeg is also a chief Canadian commercial centre for the sale of barley; but the article is not worth as much in Winnipeg as in Montreal, the difference being the cost of transportation and charges. This cost sometimes amounts to as much as 25 per cent. on the Winnipeg value; and then it may be seen that the duty on barley shipped to the United States from Montreal would be considerably more than the duty on barley shipped from Winnipeg.

A FEW days ago, under the caption "Fakirs at the Fairs," the Toronto Globe published the following letter from a correspondent signed E. Yeigh:

Sir,—About a year ago I wrote a brief note for your columns in reference to the great wrongs inflicted on the public by managers of fall shows in admitting fakirs to their grounds on payment of a small sum. Some of the township fairs are the grossest offenders in this respect, but many of the more pretentious ones are not guiltless, and now a class of thieves and robbers are in attendance wherever they are allowed to open out their schemes. There ought to be a law to punish those who wink at these offences as well as the principals. And, now, I want to give a few facts in reference to the management of the Burford Township show. For years this "World's Fair" has proved a rich harvest for this class, but the exhibition was held this year at Burford Village, and not at Harley, and steps were taken to banish everything calculated to demoralize and offend. What is the result? The receipts were larger than ever before in the long history of the association, perfect order prevailed and everybody is satisfied that more money can be got legitimately than by sharing with gamblers. Will not others take this as an example and help to remove this disgrace to our country?

From which it seems that the country fairs are afflicted with fakirs as well as the Toronto Fair. Mr. Yeigh does not mention the nature of the rackets and fakes the fakirs work in the country, but this journal has repeatedly shown that the advertising solicitors of the Toronto daily papers are the ones who are doing much to impede the usefulness of the Toronto Fair. Mr. Yeigh should study up the advertising fakirs at the Toronto Fair, and get his views published in the Globe.

CONSOLATORY reflection for Winnipeg Conservatives:

When fortune means to men most good,
She looks upon them with a threatening eye.

—The Empire.

Lay not that flattering unction to your soil, dear Empire, nor for one moment imagine that the fortunes of the Conservative party were being improved by the black eye it received at the Winnipeg election. Don't be an ostrich, dear Empire, nor think that hiding your head and closing your eyes to shut out the unpleasant view will avert a catastrophe that will most probably befall your party if you don't watch out. Meanwhile, dear Empire, tell us what you think about free sugar for the poor man's breakfast table, and of our export duty on logs and nickel ore and matte, and a bonus on the

production of beet sugar, and the encouragement of the iron industry by increasing the duty on scrap iron? Don't be an ostrich, dear Empire.

THERE are some men who think free wool will make a poor man's suit cost him \$5 less than at present, but if the poor man has no wages to depend upon what is the odds to him anyway? It is small comfort to the bankrupt to know money is 1½ per cent., and over \$170,000,000 lies idle in our banks. He can't get any of it if it is only ½ per cent. on time. The collaterals are not handy for him. New York Indicator.

THE Globe publishes a special despatch from Washington which we give, from which it will be seen that the Wilson Tariff Bill is not making very rapid progress towards becoming law. It says:

The indications now are that the Ways and Means Committee will not be able to enter upon the consideration of the tariff bill until after the holiday recess. Chairman Wilson of the committee now privately says that it is possible that the measure may not even be brought up for consideration until after January 1. This is due to the fact that the members of the committee have not yet been able to agree as to the articles which shall be taxed to yield a revenue, and to the further fact that it has been as yet impossible to harmonize the conflicting interests within the Democratic party to the radical change in tariff legislation which is proposed. It is natural that there should be a strong opposition to a change in the system which has been in force for thirty years. Chairman Wilson himself, referring to the matter, says it is quite natural that one hundred thousand people engaged in industries which have been protected since their establishment should naturally suppose that legislation ought to be continued for their benefit. Chairman Wilson, however, is of the opinion that it is the seventy million, or thereabouts, of population for which this country ought to legislate, and he is of opinion that the Democratic party will fulfil its tariff pledges. Mr. Wilson, in fact, has lost none of his courage, despite the organized opposition of the beneficiaries of protection in his own party, and he within a few days has thus sharply defined his position with respect to the proposed tariff legislation. In this brief summary Mr. Wilson outlines the condition of opposition to the proposed tariff bill and indicates the programme which it is the purpose of the Democratic party to carry out.

MR. WILLIAM LITTLE, of Montreal, points out in an interview with a Washington correspondent of an American paper, that there is not much in the tariff to make Canadians hilariously happy. The duty of 20 per cent. on our animals put us at a grave disadvantage with American stockmen; and he sees no bonanza for the older provinces in free wheat, oats and corn. On the question of wool, where he is a high authority, he says:

Then, if we consider the wool schedule, what has Canada to gain from this? While you had white pine and spruce timber to spare your lumbermen insisted on \$2 a thousand feet being only a fair protection to the sawmilling interests of this country, and having used up your supplies of these woods, you now propose to us to allow us free admission to your market for our lumber only on the condition that we allow you to stock your mills from our timber without \$2 a thousand feet or any protection whatever. Not only this, but you go further and exact a prohibitive duty on Canadian pulp and expect us, to whom your manufacturers must depend for the future for the spruce timber out of which to make the pulp, to give you the pulp wood free. This is a little too one-sided, and unless modified I can hardly see how you can expect our people to consent to it.

The Daily Notification Sheet of the Legal and Commercial Exchange, Toronto, frequently treats its readers to pungent, pointed paragraphs on commercial affairs, and a few days ago, in one of its criticisms, said:—

The other day a working man, whose enforced idleness represents so much unemployed capital, asked the question, Why should he starve in the midst of plenty? This man is only a unit. Multiply his capabilities of production by the multitude similarly situated, and apply the result of their united strength to the undeveloped resources of the country, and think for a moment of the waste to the community arising out of the item of unemployed labor. With regard to surpluses, the capacity for consumption, either of the individual or of the community, can only be measured by their ability to purchase. Cripple the financial resources of either by a scarcity of employment on the one hand, or a rise in the value of capital on the other, and stagnation and depression will ensue.

And yet there are those who desire to enforce idleness upon the working people of Canada to a much greater and more painful extent than now exists by reducing the tariff to a purely revenue basis or destroying it altogether. It might well be asked why working men and women in our midst should be reduced to starvation by closing our factories and workshops by the operation of a tariff for revenue only, to the end that the working men and women in the United States, Great Britain, Germany and France should find employment. It is true that the capacity of Canada for consumption can only be measured by the ability to purchase; but if that ability should be curtailed the financial resources of the country are crippled, to be quickly followed by stagnation and depression.

A TELEGRAM from Buffalo a few days ago was as follows:—

An alarming accident occurred on the Niagara Falls Electric Railway on Saturday. The observation car, which should leave Chippewa at two o'clock, was twenty minutes late in starting, and the motorman intended to make the round trip in twenty minutes less than the usual time. The car started at a terrific rate of speed, which did not diminish on the down grade towards Suspension Bridge. When just opposite the Whirlpool Rapids, the car left the track, jumping toward the Niagara gorge, only ten feet away. In its wild leap down the hill, the car struck the trolley pole with such force that it turned at right angles with the track, and the rear end of the car lay within three feet of the brink of the awful gorge of the Niagara. The pole was shattered and the passengers were thrown from the car. The motorman jumped as the car left the track. The passengers were badly shaken up, but none were seriously injured. Another car was sent after the wreck, and the passengers were brought back to Chippewa.

If the American Congress impose an ad valorem duty of twenty per cent. upon barley as is proposed in the Wilson Bill, it will be interesting to learn what the duty per bushel would be under the following conditions. The law provides that the value of the article shall be fixed at the current price in the chief markets of the country from which it is exported. Canada has three chief markets from which barley is exported—Winnipeg, Toronto and Montreal. A few days ago the Winnipeg Commercial, good authority, gave the following as current prices in these three Canadian barley markets: Winnipeg, 30 cents per bushel; Toronto, 40 cents; Montreal, 50 cents. These differences in prices seem to be caused chiefly by costs of transportation from points of production. If barley was imported into the United States from Winnipeg the

duty would be six cents per bushel; if from Toronto eight cents, or thirty-three and a third per cent. more, and if from Montreal ten cents per bushel, or sixty-six and two-thirds per cent more than from Winnipeg. Under a specific duty no such differences could exist. And still the tariff reformers tell us that the only equitable method of levying tariff duties is ad valorem.

As heretofore alluded to in this journal, very general interest has been awakened regarding the necessity for efficient insolvency legislation by the Dominion Parliament. This matter has been talked of for years, but through lack of concerted action, perhaps, on the part of boards of trade, manufacturers and commercial associations, and merchants and business men generally, no satisfactory result has followed. We believe that the initiatory movement now on foot found its inception in the Toronto Board of Trade, Mr. D. R. Wilkie, the president being very active in the matter; and in this he received much assistance from the Legal and Commercial Exchange of this city. Now that the matter is receiving so much attention, and, in view of the early assembly of Parliament, it is to be hoped that it will not be allowed to rest until the much needed legislation has been had.

The Silver question is bothering more nations than the United States, and it playing havoc with values. In Italy it is a trouble, India is about to take further action, but in what manner is debatable, the Straits, whence we get our tin, is stirred up about it, and does not know what to do, Mexico is in despair and in South American countries trade is paralyzed.—New York Hardware.

Why not adopt gold as the only standard? In countries where gold is the only standard trade is not paralyzed.

The recent purchase of 3,000 acres of land at Ashtabula, Ohio, the iron ore receiving port, was made by the Rockefellers, and a steel plant is to be erected, ground having been broken for a portion of the work. It is said that the Rockefellers propose to make a fight for supremacy against Carnegie and the Illinois Steel Company. They contemplate a product of 2,000 tons of steel a day.

The duty on suspenders is passing through the same course of apologetics as that on agricultural implements. Now it is asserted that the duty does not cause or permit an increase of the price, and, of course the next task will be to explain why the tax so unreasonably high, is retained.—Toronto Globe.

The "unreasonable tax" is for the purpose of keeping the Canadian market for the Canadian manufacturers. If it secures that object what does it matter whether the tax is one per cent. or one thousand per cent.? Nobody suffers from an unreasonable tax that nobody pays.—Hamilton Spectator.

The remarkable spectacle of a sheriff selling nearly the entire city of Kanawha, West Virginia, was presented a few days ago when 3,000 lots were sold. Kanawha City was founded several years ago, when several hundred thousand dollars were invested in it by speculators who bought lots at high prices. The boom collapsed and the most of the city has been sold for taxes. No vast amount of sympathy seems to be convulsing the country because of the disaster to the speculation in the land. In fact the general verdict is "Served them right."

An agitation is being worked up on the part of umbrella manufacturers to have the duty removed from the steel tubes which are used for the handles of umbrellas. At present there is a duty of 30 per cent. upon these tubes, and the umbrella manufacturers claim that as these tubes cannot be manufactured in Canada they should be allowed into the country duty free. There are some five umbrella manufacturers in Canada, and their complaint is that all the material used in the manufacture of umbrellas is so heavily taxed that they cannot compete with the foreign makers. A few days ago a deputation of these manufacturers waited upon Mr. Wallace, the Controller of Customs, at Ottawa, asking that the tariff be amended as indicated. It is just such foolish applications as this that makes one become excessively weary. Such steel as is necessary in the manufacture of umbrella handles is already in the free list, as is also other articles necessary in the manufacture of umbrellas. These five manufacturers know this, and the Government know it; and if, under the circumstances, they cannot compete with foreign manufacturers they should retire from the business.

A SPECIAL telegram from Ottawa published in the Globe on Monday stated:

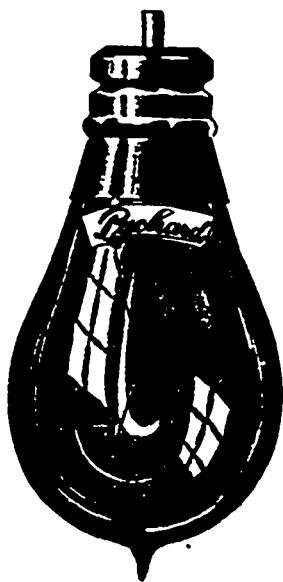
Mr. J. M. Courtney, Deputy Minister of Finance, returned from Washington yesterday after a two weeks' official mission connected with the Wilson tariff bill now before Congress. He said he was not at liberty to say anything as to his mission, except to the Minister. He thought the bill would pass the House substantially as drafted, but the Senate was a different question. Asked if the Committee on Ways and Means took into account the chances of securing

reciprocal advantages from Canada, Mr. Courtney replied: "Pshaw, what is our trade to them, forty millions a year—a mere drop in the bucket."

It is difficult to realize that a gentleman who holds the high position of Deputy Minister of Finance, and in whose judgment and discretion the Government reposed sufficient confidence as to send him on an official mission to Washington, could be guilty of the indiscretion here imputed to him. If Mr. Courtney is correctly reported, he has made himself ridiculous, and brought discredit upon those who sent him. Even before his "thoughts" could be given to the public concerning the passage of the Wilson tariff bill—that it would pass substantially as adopted—it was very greatly modified, the probability being that, if it ever becomes law, it will be in very different shape from what it was when Mr. Courtney "thought" it would pass. And then that "pslaw" of the Deputy Minister of Finance, and his assertion that our purchases from the United States amounted to only forty million dollars a year. If he had turned up the Trade and Navigation Returns issued by his own Department he would have discovered that during the fiscal year 1892 the value of goods imported into Canada from the United States for home consumption was \$53,137,572. And this official of the Dominion Government calls this "a mere drop in the bucket." He is evidently oblivious of the fact that Canada is a purchaser of about one-seventh the value of all the produce the United States has to export. It is this sort of silly talk that puts and keeps Canada at a disadvantage. If Mr. Courtney cannot maintain the dignity of his country when he is sent abroad on an official mission he should be kept at home.

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TORONTO

Our esteemed contemporary, The Manufacturer, of Philadelphia, is a noble stalwart in its advocacy of protection, and by the same token it is no admirer of Mr. Cleveland. After the returns of the recent elections were in it had the following remarks to make:

The Robber Barons appear to have the people on their side after all. The nation tolerated the Robber Barons during thirty consecutive years. It sickened of Grover Cleveland and of the political ruffianism of which he is the great exemplar in just eight months. The vote of Tuesday last, overwhelming in its dimensions and clear and emphatic in its meaning, swept away in a single day the fabric of lies upon which success was built in the last campaign. Mr. Cleveland and his purposes are now fully understood. The people have had more than enough of him and of the political adventurers who flock at his heels. Standing amid the devastation and the misery in which he has involved the country, the men whose property he has destroyed and the laborers from whom he has filched their substance have put upon him the brand of their indignant reprobation. Not a fortnight has elapsed since the Congress of the United States stooped to take orders from this man. Swollen with a sense of his greatness, audacious and insolent with the conviction that he might with impunity override the traditions of the Government and trample under his feet the rights of the national Legislature, even Republican representatives covered before him, and Republican journals offered him the incense of their adulation. To-day there are few so poor as to do him reverence. The people have spoken. They recognize him as the enemy of their industries and the destroyer of their prosperity. A sorry figure indeed does he present to the world at this moment, repudiated and smitten in wrath by a nation that he has dragged down, within one year, from high prosperity to wreck and ruin, and which looks forward with dismay to

three more years of misrule at his hands. The Robber Barons are fully avenged for all the libellous falsehoods he has uttered against them. Their only sorrow is that the harm he has done is irreparable. No wise legislation can restore the billions of wealth that have been destroyed by his propensity to do evil.

A press telegram from Washington, dated 13th inst., says:

Senator Merrill spoke on the tariff to-day. He said that during all the present generation modern Democracy had been prolific in queer tariff platforms, never right even by mistake, and each one dying unloved before the birth of its quadrennial successor. British free trade had been on trial long enough to minimize the profits of agriculture in the whole United Kingdom. Their silk industries had also vanished. Those of iron were bending and groaning under repeated antagonistic invasions from Germany and Belgium, and the frequent cry for "fair trade" exhibited the popular discontent with free trade. He pointed to the fact that the number of persons engaged in farm work in England and Wales had fallen from a little over two millions in 1861 to a little less than one million in 1891, and said that the extraordinary exodus of workmen from Great Britain to the United States could not be ascribed to anything other than either the home oppression of free trade or the attractions emanating from a protective tariff. What was it, he asked, that had blighted the vocation of more than a million workmen and compelled them to flee from their homes to other countries or to seek other occupations? If those who were left behind might answer, whether owners of the soil or laborers, they would with one accord straightway declaring that their sufferings had been imposed by a "tariff for revenue only." Among English farmers free trade had not a rag of reputation to cling to. In conclusion, Mr. Merrill said: "Free trade as an economic science, in the judgment

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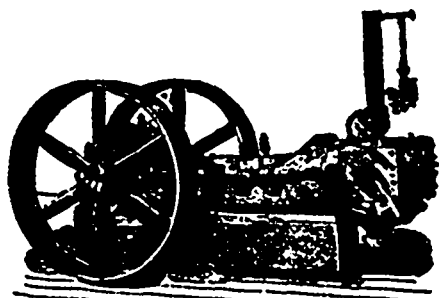
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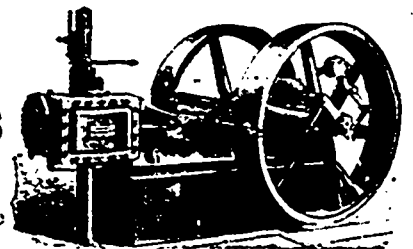
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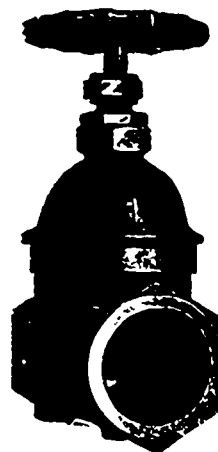
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of the world, is a dismal failure. One great difference between those who now favor the protective tariff and those who favor revenue reform appears to be that the protective party seeks to find work and good wages for the many, while the reformers are struggling to find good wages without work for the many in the Executive patronage pasture, but that pasture, even with the paramour' aid of Honolulu, is likely to be overstocked."

The State of Ohio has 21 representatives in Congress, and 11 of these were elected last year on the Chicago platform. One of them, Mr. M. D. Harter, is an open and avowed opponent of protection; another is Mr. T. L. Johnson, who disputes with others the credit of preparing the Chicago resolution denouncing protection; and there are nine others who have been clamoring for the legislation the threat of which stopped the mills of that State and made so many thousands of the people idle. How many of these men will Ohio return to the next Congress? In November he gave \$5,000 majority for McKinley and elected a Legislature in which the Democrats are an unimportant fragment. Of the counties of the State three-fourths went with McKinley, and of the 21 Congressional districts all but three. The great political issue in that State next year will again be protection and busy mills, or free trade and foreign imports. In such a contest Ohio ought to leave at home every man who says a word to destroy the industries of his country.

ONE feature of the "reform" which tariff reformers wish to inflict upon the country is that there shall be no specific duties, and that there shall be none but ad valorem duties.

Of course this would open the door for frauds upon the revenue by undervaluation; and the following from the St. John, N.B., Globe, shows how even good church people find it impossible to resist the temptation:

Some time ago an organ was imported from the United States for the Methodist church at Moncton. It was a puzzle to the knowing ones how the Massachusetts firm could come into the Canadian market and undersell our own manufacturers, notwithstanding the high duty. After the organ was placed in position it was seized for undervaluation. The matter has been hanging fire until a few days ago. Advice from Moncton to the Globe state that the Collector of Customs has made his report on the matter, with the result that the charge of undervaluation is sustained, and the church is called upon to pay the amount of undervaluation and extra duty, in all the sum of \$500, in order to get the organ released.

SPEAKING of the Wilson Tariff Bill, the American Manufacturer says:

The most objectionable feature of the bill is its adoption of the ad valorem principle of levying duties. It would be inconceivable, if it were not a fact, that a committee of Congress could be so ignorant of the effect of ad valorem rates in administering tariffs and so oblivious to the effect of these rates in high and low markets as to seriously suggest their general adoption. They are an open bid for undervaluation and dishonesty. The few ad valorem rates that have of a necessity been incorporated in recent bills have been a fruitful source of trouble, vexation and litigation. If this principle is adopted, three months will not pass, if the law is enforced, before the dockets of our courts will be crowded with suits. Ad valorems also have the effect of making duties per unit very low in times of low prices and depression in business, and high in times of high prices. It is a most vicious system.

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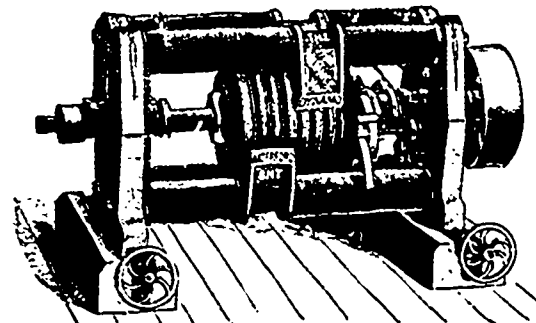
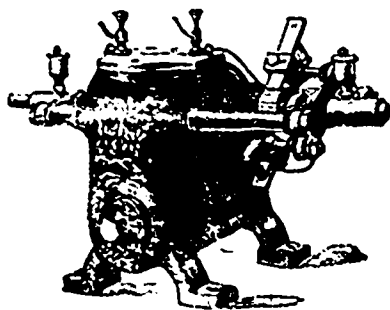
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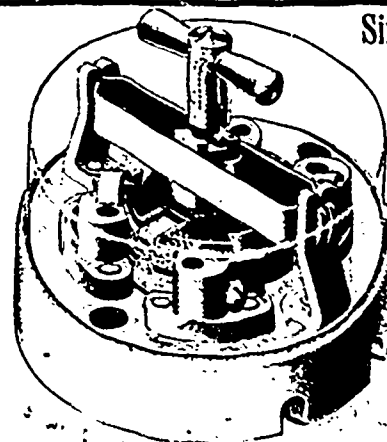
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An Ottawa telegram says:—

The Dominion Government have awarded a contract to Messrs. Fleming, shipbuilders, of the Clyde, Scotland, for the construction of a 300-ton steel steam cruiser for service in the St. Lawrence. She is to cost in the vicinity of \$90,000.

When a steel steam cruiser was constructed in Scotland for service in the Pacific coast we were told that it would be better to have it built there than in this part of Canada, and then sent around Cape Horn to destination. That was bad enough; but it is too bad to repeat the mistake when there are quite a number of shipyards in Ontario capable of building such vessels. Our Government have queer ideas concerning the encouragement of Canadian manufacturing industries.

THE Empire says that "The Toronto motormen are a stalwart, healthy, warmly-clad body of men, who do not look on any occasion as if they were feeling the cold half as much as the passengers who sit inside." That sounds something like a tariff argument.—Toronto Globe.

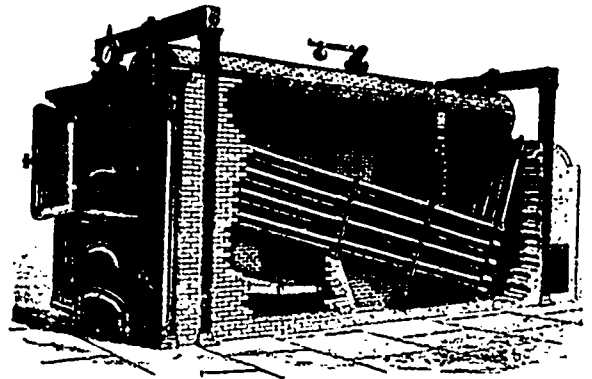
Not at all. Tariff arguments do not drift in such a direction. The tariff, however, makes it possible for workmen employed in manufacturing industries to appear stalwart, healthy and warmly clad. The motormen, however, are employed by a company who are in no way affected by the tariff, and therefore have it in their power to refrain from equipping their cars to protect their employes from the inclemency of the weather. The Empire, however, seems to think that the motormen have no rights that their employers should respect, and therein it shows its lack of sympathy for a class of men who have to face storms of rain, sleet and snow, and shudder and freeze while in the performance of a duty where the safety of the lives of men, women and children are constantly at stake. We suppose that the very humane expression of opinion of The Empire's was paid for by the railway company at so much per line or per word, as is the rule of all Toronto daily newspapers. Such expressions in those papers can be always had by the payment of money.

THE London Advertiser keeps an item standing regarding the advantages of that city, and it invites any who may desire to apply to it for further particulars. Its references to London are regarding its population, location, railway facilities, public parks, charitable institutions, theatres and halls, schools and colleges, churches, etc. It says of its industrial enterprises:—

London is an excellent centre for manufacturing and commercial enterprises. There are already established wholesale houses for groceries, hardware, drygoods, small wares, boots and shoes, drugs, crockeryware, etc. There are one or more manufactories of furniture, engines, boilers, stoves, furnaces, iron and brass foundries, carriages, burial caskets, agricultural implements, stamped tinware, railway cars, oil refining, leather, barrels, machine tools, clothing, cigars, office and school furniture, biscuits and confectionery, mirrors and bevelled plate glass, corsets, furs, beer, washing compounds, acids, woodwork of every description, etc.

This is a most excellent showing of which the Advertiser and all Canada might well feel proud but our contemporary conveniently forgets to state that without these factories and workshops London would not be much of a city, and that their presence there is entirely due to the National Policy.

THE Berlin, Germany, paper Kulow's says. "Many places in Asia formerly supplied with cane sugar from the East Indies are now using beet sugar from Russia. Experi-



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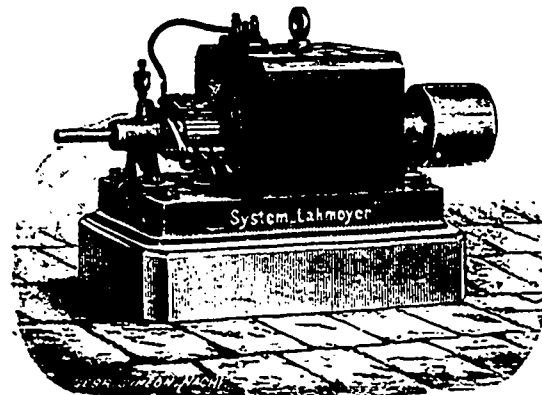
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ments with sugar beets have been tried at the eastern end of the Caucasus mountains, in the Baku province of Georgia, and a large sugar factory is being built near the city of Baku, on the Caspian sea. Petroleum from the oil wells of that region will be used for fuel. The output will be shipped by water to the vast territory bordering on the Caspian, and especially to the markets of Persia, which are now supplied with Russian beet sugar, which is subject to a long and costly overland journey before reaching the inland sea. There is also railroad communication with the port of Redut Kale, on the Black sea."

Good Housekeeping for September closes the seventeenth volume of that popular and valuable family journal. It is a Christmas number, filled with matter appropriate to the occasion, but not neglecting the numerous interests of everyday life. In modestly referring to its success in the past, the magazine promises even better things for the future, naming some of the attractions which it will offer during the coming year. It is emphatically, as its title indicates, "a family magazine, conducted in the interests of the higher life of the household." Sample copies are sent on application, and the subscription price is but \$2 a year. Clark W. Bryan Company, Springfield, Mass.

Outing for December is a delightful number, superbly illustrated and full of interest. Three fascinating complete stories and a plenitude of readable sketches of sport, travel and adventure in many lands, comprise a literary menu well calculated to gratify all cultivated tastes. The contents are as follows: "Mistress Marion," by Frances Swann Williams; "A Sable Nimrod's Error"; "Fitznoodle's Debut with the Bally-poreens," by Capt. T. S. Blackwell; "In Quest of Caribou," by S. R. Clarke; "A Day's Fishing in Jamaica," by Ametta J. Halliday; "A Medley of the Midway," by A. B. Ward; "Still-hunting Grouse on Snow," by J. R. Benion; "The Last Ride of the Season," by Grace E. Denison; "Foot-racing," by Jno. Corbin; "From Sloop to Cutter in America," by Capt. A. J. Kenely; "Big Game of Ceylon"; "Canoeing on the Cuyamel," by E. V. Perry; "Lenz's World Tour A-wheel"; "The National Guard of Pennsylvania," by Capt. C. A. Booth, and the usual editorials, poems, records, etc.

THE TENDENCY TOWARD NON-UNIONISM.

Trade unions in this country are hoeing a hard row this year. There seems to be an almost universal desire on the part of manufacturers to break away from the restrictions which labor organizations have imposed upon them in the operation of their plants. To a very unusual extent, the attempts to non-unionize industrial establishments have met with success, and now the proportion of mills and factories working outside of union regulations has become so large that the situation has become serious and even critical from the standpoint of labor organizations.

All this change has not been wrought without cause, and the cause is not hard to trace. The great strength of some of the unions has proved to be their weakness; conscious of power, they have grown autocratic and have been slow to realize the change in conditions which have been so marked within the past two years. In the iron and steel business, for example, a very radical change has been going on, by which steel has supplanted iron and values in all lines steadily have declined, yet when it was suggested to fix the sliding scale at Homestead on a basis more in consonance with selling prices, it took a woful struggle to accomplish it. A basis of \$25 for steel billets was insisted upon. Steel now sells for \$18, and even less. The causes which brought this condition about were at work then and manufacturers knew that \$25 steel was a thing of the past, with other lines in proportion. Another influence for which sufficient allowance has not been made is the low rate for puddling which the non-union Eastern Pennsylvania manufacturers have been able to secure, giving them an immense advantage in markets accessible to both. A quite recent instance of where the Amalgamated Association might have gained for itself credit for recognizing facts was in the case of the lodges refusing to vote their acceptance of a lower price on puddling, when mills in this district were running at a lower rate, and it was evident that those who wished to could start their furnaces with non-union labor and without much difficulty. When much had been lost, another vote was taken and the reduction accepted. As a result of differences of this nature, two more of the Pittsburg mills have broken away from the union and started up independently this week. The Oliver Iron and Steel Company and the Clinton Iron and Steel Company

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are the ones in question, and are running their puddling furnaces, the Olivers at \$1.50 and the Clintons at \$1.

The mining industry furnishes evidence on this point. The conferences held within a week between the railroad mine operators and representatives of their workmen were fruitless of results. The point at issue is, that operators working at the scale are paying 70 cents a ton and their competitors are paying 71 cents in some cases and in others less. The 71-cent rate was insisted upon, and the operators will continue to pay it until the competition of their more fortunate competitors becomes too strong, when they will close their mines. Some of the delegates to the conference were from mines paying only 71 cents, and yet they were inconsistent enough to stand for 71 cents as the scale rate.

In the glass industry, the union restriction of a certain output for a "turn," and the insistence upon a long summer close of the factories, have been sources of annoyance to factory owners because of the severe competition of a very large non-union factory, which runs almost steadily throughout the year. The glass manufacturers proposed changes in respect to removing the limit for a "turn" or "move," but the workmen rejected it, with the result, chronicled in another column, of deciding the United States Glass Company to start up without recognizing the union. We have frequently called attention to the rigid rules obtaining among window glass workers, which, in practice, prohibit young Americans from becoming apprentices.

The instances cited are sufficient to illustrate the point that labor unions gradually have come to insist upon points which were inimical to the prosperity of their employers and hence ultimately injurious to themselves.

And what will be the result? We believe that this wave of non-unionism has not spent its force, but that it will spread further and involve more industries, and then, when the wisdom of much that is past has been recognized and the lessons learned, there will be a reorganization of unions on more progressive and, at the same time, more conservative lines, and these organizations will be stronger in a certain sense than ever. For it is as natural and right for labor to organize as it is to live.

Manufacturers, in many cases, prefer to deal with their men as organizations; especially is this true of rolling mill managers, and they will not oppose, but rather welcome, an organization of labor on the lines indicated. Then employer and employee will approach nearer to a business-like co-operation—

not necessarily a profit sharing co-operation, but one in which is recognized the mutual dependence and independence of both parties. American Manufacturer.

A discovery which promises to be of great importance in the arts has recently been made in connection with the electro-deposition of copper and other metals. Heretofore these processes have been carried on by immersing the metal intended to receive the deposit in an aqueous solution of a salt of the metal to be deposited. The new process makes use of insoluble salts of the various metals, which are reduced to fine powder and mechanically mixed with water. The mixture is applied to the surface of the metal by means of a brush, to the handle of which is attached the electric conducting wire, so that the process of deposition resembles that of applying a coat of paint. Not only pure metals, but all sorts of alloys are applied as coatings to other metals with the utmost facility by this process. The hull of an iron ship, for example, may be painted over with a tough, adherent and insipivous coating of metallic copper, of any desired thickness. Experiments have been made which indicate that this process may be successfully applied to plating aluminum with silver or gold.

About 20 years ago it was discovered by a Mr. Woodward that blast furnace slag run into an iron mould and annealed would make an exceedingly tough block suitable for road paving, much cheaper than granite or other natural stone. The manufacture of these blocks is now carried on in England, and has become a staple industry. The total product is at present about 100,000 blocks per week, of a value of about \$3.25 per ton. The process of manufacture is as follows: The slag, when of suitable quality, is run into a ladle, from this it is poured into cast iron molds secured to the periphery of a horizontal wheel. Each mold has a hinged bottom. The wheel is slowly rotated, and the bottom of the molds are released in succession. The blocks, molten inside, but solid at the surface, drop upon a soft bed of granulated slag, and are quickly removed and stacked in an annealing stove. When full, the doors of the stove are closed, and the blocks are allowed to anneal themselves without extraneous heat. In about eight hours the doors are opened and the blocks withdrawn. They are then fit for use. Without annealing they would soon crumble to pieces from internal stresses. The blocks are in great demand for street paving, not only locally, but also in foreign towns where they can be conveyed by water.

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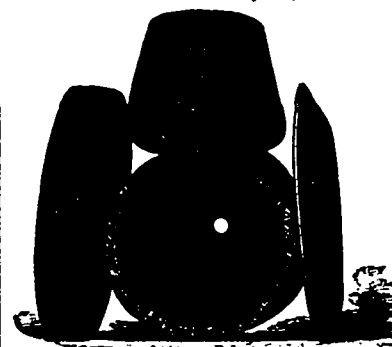
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The manufacture of cellulose, of which wood pulp forms the principal part, and its subsequent manipulation into artificial leather, ivory, celluloid, water-proof fabrics and many other useful articles in the arts, will constitute one of the largest consumers of spruce wood and wood pulp now known. Patents have been secured for the manufacture of this cellulose in infinite variety, both in this country and in Europe. Those best informed on the subject think these new patented processes for the utilization of cellulose in the arts will prove as far reaching and as valuable as the vulcanization of rubber under the Goodyear patents. Great is wood pulp and cellulose!

After many experiments the Central-Hudson Railroad Company has found a method of lighting passenger cars perfectly by electricity. At one end of the car which has been equipped, says Iron Age, is a dynamo about four feet high, which is connected with the axles of the car. Near the dynamo is a small storage battery. When the car is in motion the dynamo not only supplies electricity to light the 60 incandescent lamps which are suspended along the sides of the car, but also stores a quantity away for use when the car is not in motion. The dynamo and battery are well secured in a closet, upon the door of which are six large padlocks, which renders it impossible for any person to secure a drawing of the mechanism.

Hemolin is a new product, which has all the advantages of logwood, with none of its inconveniences. It may be employed, says the Textile Mercury, in wool dyeing as a self color, or in combination with other colors, with a chrome and tartar mordant, and in the place of logwood, wherever that dyestuff is used, by following the same recipes, only adding to the dyebath one pound of acetic acid for each four pounds of hemolin used. The principal advantages of this product are—purity of shade, solubility, stability and cheapness, in which respects it excels logwood in its various forms. It is the first product made that perfectly replaces the natural dyewood. The crystals are free from resinous matters, and dissolve quickly in hot water. It is readily weighed out and used every time with exactness. It gives shades and effects perfectly identical with those obtained from logwood.

Four sulphur compounds which, after exposure to daylight, become phosphorescent, are noted by Safety Valve. These are the sulphide of calcium, strontium, barium and of zinc. Sulphide of barium gives an orange glimmer in the dark, which, however, lasts only for a few minutes after each exposure to daylight. It is therefore of little practical value as compared

with sulphides of strontium and zinc, which emit a greenish light lasting about two hours. Even these, however, suffer in comparison with the sulphate of calcium. In a pure state this gives out a yellowish light, and makes the best luminous paint known. With a small quantity of some bismuth salt added and heated to redness, on the other hand, it gives out a violet light which may be maintained for about forty hours, even though the mixture be originally exposed to daylight for only a few seconds. The calcium paint should be prepared by dissolving 500 gms. of pure white gelatine in two litres of hot water. To this should be added 1½ kg. of the calcium and bismuth salt mixture, and finally 50 gms. of glycerine. The liquid should be applied hot, and should be kept well stirred.

Shoddy is manufactured of soft woollen and worsted rags only, such, for instance, as the clippings which come from the tailor shop. This class of rags is always preferable, for the important reason that clippings from the tailor are generally clean and soft. It is essential, however, that they be filled but little, for the less they have been felted and matted the less grinding will be required to separate the fibre. When shoddy rags are required one of the fundamental considerations is the condition of the material in this respect. In addition to tailors' clippings such stock as castaway woollen knit garments and stockings which have been but moderately filled, are acceptable as a shoddy material. This class of stock usually arrives at the shoddy mill in a clean condition, and, therefore, does not require an elaborate preparation previous to subjecting it to the action of the grinding and separating or picking machinery. The clean woollen clippings from the tailor's shop never call for any other preparation than a little oiling, while the knit stock probably needs both washing and oiling. These processes being completed the material is ready for the grinding operation, which is accomplished by a system of powerful steel, pointed cylinders and rollers. The rags or material to be ground are fed on to a table or feed sheet, and conveyed to two fluted rollers, on emerging from which they are forcibly seized by the rapidly-revolving teeth of the main cylinder. This cylinder contains about 1,500 strong, sharp steel teeth, turning at the terrific rate of sometimes 750 revolutions per minute. This high speed of the teeth of the cylinder results in tearing the rags apart and separating the threads and fibre in such a manner that the whole is finally reduced to a soft woolly condition, and apparently possessing many of the qualities of a good fine textile fibre.

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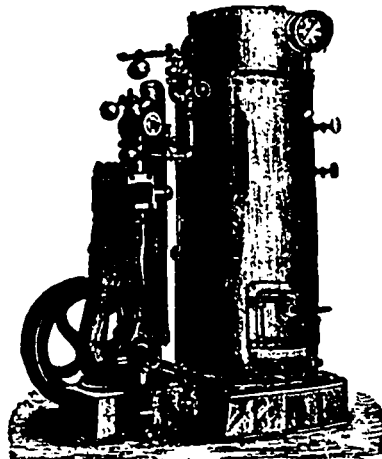
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Santiago, Chili, asks for tenders for an electric lighting plant; the Egyptian Minister of Public Works will receive propositions until February 1st for the construction and working of an extensive line of street railways in Cairo; the Hungarian government ask for designs for two new bridges over the Danube at Buda Pesth; and the Spanish government are about to lay a system of submarine cables among their West India islands.

In the use of insulation in tanneries, broweries, etc., where there is extreme moisture, it has been demonstrated that plain rubber will resist the vapors better than the taped or braided protection. The insulation being solid, gives no chance for the penetration of moisture, and as there is little need of ornamentation in such localities, very good cords more suitable for the purpose can be secured for less money.

The costliest mile of railroad is a mile measured on the steel portion of the Forth bridge. The length of this portion is a mile and twenty yards, and the cost of it was considerably over \$10,000,000. The most expensive railway system in the world is the "Inner Circle" line, of London, which cost, includ-

ing the purchase of land, from \$3,000,000 to \$5,000,000 per mile. The last constructed mile, between the Mansion House and Aldgate, cost altogether, including "compensations," nearly \$10,000,000.

There seems to be no end to the uses of aluminum. Its extreme lightness makes it invaluable in all cases where strength is a secondary consideration. Tripods for landscape cameras are now made of it, and fine chains for eyeglasses. These instances alone illustrate the immense variety of purposes to which it is applicable. In fact, there seems to be great probability of aluminum rapidly taking its place in the same category with gold and silver for many articles now almost manufactured of those metals which are heavier.

A SUBSTITUTE FOR LEATHER.

LEATHER possesses such excellent qualities for the many purposes to which it is put that it would seem idle to seek a substitute. Nevertheless, there are many persons who, while they find that leather, serves as an effectual protective covering for the foot, find also that it is often obstinate in adapting itself to the requirements of individual feet, or to the more or less physical abnormalities to which so many are subject. In such cases, if comfort is to be expected, only the most supple and yielding quality should be worn. At the same time, of course, it should be waterproof and durable. These qualities, so far as we have been able to judge, belong in a satisfactory degree to an interesting and new material called "flexus fibra." It appears to be a flax-derived material, suitably prepared and oiled, so that to all appearance it is leather. It is particularly supple and flexible, and takes a polish equally well with the best kinds of calf.

We have recently had occasion to wear a boot of which the "vamp" or cut-front section consists entirely of flexus fibra, and have purposely submitted it to somewhat undue strain, in spite of which no cracking of the material was perceived, while the sense of comfort to the foot was very evident. Flexus fibra, being a material of vegetable origin, is calculated also to facilitate free ventilation, and thereby to obviate the discomfort arising from what is called "drawing" the feet. Tests with a view to prove its damp-resisting power were made with the material by placing a small section over an open glass tube with true ends, so that on applying pressure at the

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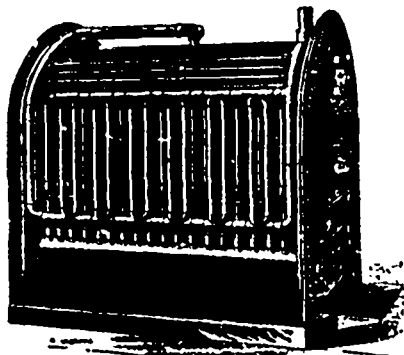
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other end of the tube it was found to be practically air-tight. This having been ascertained, a little water was placed in the tube resting on the flexus fibra and pressure once more applied. After some time traces only of liquid had oozed through; but, of course, this was an exaggerated state of things, and, as a matter of fact, no oozing of water took place at all when it was simply allowed to rest on the material for several hours. The structure of flexus fibra is better seen when the oil in it is removed with ether, to which it imparts distinct fluorescence, and when the black dye is washed out (being at the same time changed to red) by hydrochloric acid.—The Lancet.

A NEW PROCESS FOR CLEANING WOOL.

This is the invention of M. Aime George, of Puteaux, France, and is described by him as follows:—Wool taken indiscriminately without distinction as to its origin, condition or age cannot be practically or effectively cleaned by solvents, of which the following may be named as examples: carbon bisulfid, ether, chloroform, alcohol and liquid hydrocarbons, such as benzine, rock-oil, etc.

The impurities in wool consist of: first, various fatty or waxy matters soluble in the solvents previously referred to; secondly, of a pitchy and glutinous matter insoluble in the said solvents or in water, even if the latter be rendered slightly alkaline; thirdly, matters soluble in water (such as salts of potash, etc.); and fourthly, sandy and earthy matters.

To one only of these various substances—the pitchy and glutinous matter—must be attributed the unsatisfactory results of the processes previously employed.

The pitchy and glutinous substance, not being dissolved either by the before-mentioned solvents or by water, adheres to and agglutinates the wool to a considerable extent. Even by the use of soap and hot water a small quantity only can be removed, so that the wool, before being carded or combed, would still contain the larger part of this deleterious matter.

This pitchy and glutinous substance is partially soluble in solvents previously charged to a certain degree with fatty or waxy matter, and, further, it is easily decomposable into various salts and fatty or waxy matters by acids; carbonic acid gas being the most suitable for employment, as this gas does not injure either the wool or the fatty substances.

Treatment by solvents partially charged with fatty or waxy matter may suffice for certain kinds of wool, but for many other kinds it is insufficient. Treatment by carbonic acid gas and pure solvents (that is, solvents which do not contain any fatty or waxy matter in solution) invariably gives excellent results. But to avoid redistilling the solvents too often, there may be used, in conjunction with the carbonic acid gas, impure solvents (that is, solvents which, though having been previously employed, do contain a certain quantity of fatty and waxy matter in solution).

The carbonic acid gas may be admitted to the wool through a pipe provided with a stop-cock at the bottom of a vessel of any form whatever, in which the wool is being treated; the vessel being left open so that the gas may freely escape after passing through the wool and solvents, or to the wool alone before the solvents are added. Preferably, however, the vessel may be provided with a cover; the carbonic acid gas being forced in and allowed to act, under pressure, on the wool either before or at the same time as the solvents. The pressure may be regulated by permitting, if necessary, a portion of the carbonic acid gas to escape through a pipe secured to the cover, and furnished with a stop-cock. This pipe may be utilized for admitting the solvents; the latter, after having acted on the wool, flowing out through another pipe leading from the bottom of the vessel and having a stop-cock.

The improved method is best carried out at a temperature of about 100° F. The pitchy and glutinous matter, owing to the combined gas, is decomposed into various fatty or waxy substances and salts; the fatty and waxy substances being thereupon completely taken up by the solvents. The salts of potash, etc., are subsequently removed by washing with water; the fatty or waxy matters and the acid salts being in this way separated without any alteration. The sandy and earthy matters are subsequently got rid of in the ordinary manner by using a large quantity of water without soap; but, however, if the wool requires reviving after being subjected to the treatment described above, it is washed with soap and water, instead of with water only.

Wool treated in the above manner is perfectly scoured without undergoing any injurious wear and tear or alteration in its nature, and less waste occurs than in any other known system. It is more open, softer to the touch, can be more readily carded and yields a better result after combing than if prepared by any other process; so that finer and better threads can be produced than has been hitherto possible from raw material of equal quality.—Textile Mercury.

Inventions.

CANADIAN PATENTS.

The following patents have been issued from the Canadian Patent Office, from November 8 to November 16, 1893, inclusive.

Information in regard to any of these patents may be had free on application to THE CANADIAN MANUFACTURER, or copies of American patents corresponding to these, where the American patent has been previously granted, can be procured through us for the sum of twenty-five cents.

- 44,647 Playing cards, F. A. Cole et al, Sacramento, Cal., November 8th.
 44,648 Revolving fire arms, P. H. Finnegan, Chicago, Ill., November 8th.
 44,649 Steaming grain, H. S. Jewell, Brooklyn, N.Y., November 8th.
 44,650 Metallic shingle, H. W. Kincaid, Athens, Ont., November 8th.
 44,651 Raising all kinds of liquids, R. Wagner, New Butz, Germany, November 8th.
 44,652 Producing basic lead salts and obtaining certain lye products, Dr. G. Lunge and C. H. M. Lyte, Zurich, Switzerland, November 8th.
 44,653 Key opening sheet metal cans, The National Key Opening Can Co., Chicago, Ill., November 8th.
 44,654 Treating, preparing or forming compounds with gutta percha and rubber, R. Hutchison, Springvale Mills, Scotland, November 8th.
 44,655 Production of marble-like plaster, R. Bannmann, Berlin, Germany, November 8th.
 44,656 Mills for cutting grain, G. A. Engle, Baxter, Iowa, November 8th.
 44,657 Spindle attachment, L. W. Huyck and E. Allen, Rochester, N.Y., November 8th.

- 44,658 Chain coupling, C. F. Noble, Baldwin, Maine, November 8th.
 44,659 Can opener, D. Morgan et al, Latah, Wash., U.S., November 8th.
 44,660 Damper, W. H. Packham, Buffalo, N.Y. November 8th.
 44,661 Seamless leather articles, F. J. Bingham, San Francisco, Cal., November 8th.
 44,662 Hose coupling, J. H. Carson, New York, U.S., November 8th.
 44,663 Gas generator, H. W. Williams, Victoria, B.C., November 8th.
 44,664 Medicine, A. Racicot, Montreal, Que., November 8th.
 44,665 Screw propeller, A. D. Hall and G. B. Sloan, San Francisco, Cal., November 9th.
 44,666 Brake used on railroad cars, H. F. Brann, Denison, Texas, November 9th.
 44,667 Roundabout, W. Somers, Atlantic City, N.J., November 9th.
 44,668 Means for guiding logs in their transportation by floating down streams and rivers, J. Finney and G. Davidson, Goulding, Fla., U.S., November 9th.
 44,669 Instrument for use in hernial surgery, A. Dallas, New York, U.S., November 9th.
 44,670 Decomposition of mineral oils for the production of illuminating gas, W. Young and A. Bell, Peebles, Scotland, November 9th.
 44,671 Petroleum or liquid hydrocarbon engines, J. Roots, London, Eng., November 9th.
 44,672 Packing Machine, The Nordyke and Mannon Co., Indianapolis, Indiana, November 9th.
 44,673 Confectioners' machinery, E. H. Van Derveer, New York, U.S., November 9th.
 44,674 Safety pocket, A. T. Cozens, Toronto, Ont., November 11th.
 44,675 Electric arc lamp, L. E. Howard, Plainfield, N.J., November 11th.
 44,676 Combination and treatment of certain materials for the production of substances as a substitute for india-rubber and leather, A. A. Blandy, London, Eng., November 11th.

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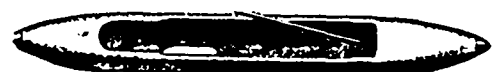
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- 44,677 Electrolysis of chlorides, iodides, bromides, nitrates and other salts, J. Hargreaves and T. Bird, Cressington, Eng., November 11th.
- 44,678 Fixing or locking up type or printing surfaces in their forms or holders, S. Starrett, Londonderry, Ireland, November 11th.
- 44,679 Brush for cleaning chimneys or flues, A. J. Fludder and F. M. Sisson, Newport, R.I., November 11th.
- 44,680 Horse-shoeing stock, E. B. Bradford, Munster, Ill., November 11th.
- 44,681 Removing impurities from smoke, E. E. Dulur, Chelsea, Eng., November 11th.
- 44,682 Steam generator, P. Fitzgibbons and H. K. Eason, Oswego, N.Y., November 11th.
- 44,683 Face protector, C. Gurneson, National Mine, Mich., November 11th.
- 44,684 Method and apparatus for manufacturing sulphuric acid, F. J. Falding, Cleveland, Ohio, November 11th.
- 44,685 Wheat scourer, G. V. Dixon, Waits, Ohio, U.S., November 12th.
- 44,686 Sewing machine, W. H. H. Tracy et al, Troy, N.Y., November 12th.
- 44,687 Attachment to sewing machines for uniting and stitching fabrics, W. H. H. Tracy et al, Troy, N.Y., November 12th.
- 44,688 Method of recovering waste alcohol from liquor casks, etc, M. Hickey, Boston, Mass., November 12th.
- 44,689 Rock boring, C. Hoffman, Charlottenburgh, Germany, November 12th.
- 44,690 Garment hook, G. B. Mershon, Jr., and G. B. Mershon, Sr., Philadelphia, Pa., November 12th.
- 44,691 Sewing machine, Weeks Colley Mfg. Co., Jackson, Mich., November 12th.
- 44,692 Guitar, J. S. Back and G. L. Orme, Ottawa, Ont., November 14th.
- 44,693 Automatic block railroad signal, G. C. Young and G. O. Willever, Phillipsburg, N.J., November 15th.
- 44,694 Curburetor, J. Clingman, Dayton, Ohio, November 15th.
- 44,695 Pneumatic tyre, J. S. Smith, London, Eng., November 15th.
- 44,696 Electric elevator, A. B. See and W. L. Tyler, Brooklyn, N.Y., November 15th.
- 44,697 Electrolytic apparatus, T. Craney, Bay City, Mich., November 15th.
- 44,698 Electrolysis of metallic salts, T. Craney, Bay City, Mich., November 15th.
- 44,699 Shirt, J. Allan, Montreal, Que., November 15th.
- 44,700 Heating, cooling and ventilating system, J. H. Brady, Kansas City, Mo., November 15th.
- 44,701 Horse brush, S. Giesecke, St. Louis, Mo., November 15th.
- 44,702 Metallic waggon frame, W. P. Betendorf, Davenport, Iowa, November 15th.
- 44,703 Wind motor, G. E. Moore, Lorette, France, November 15th.
- 44,704 Air bed or mattress and method of waterproofing, S. Curlin, Union City, Tenn., November 16th.
- 44,705 Blast pipe for locomotives, C. Erdbrink, Paterborn, Germany, November 16th.
- 44,706 Snow plow, T. C. MacAdam, Ferndale, Pa., November 16th.
- 44,707 Slicing mechanism for bread, etc., J. Fallows, Southbridge, Mass., November 16th.
- 44,708 Stall drain, H. Schiffer, New York, U.S., November 16th.
- 44,709 Explosive, F. G. DuPont, Wilmington, Delaware, November 16th.
- 44,710 Spring hinge, Bominer Bros., Brooklyn, N.Y., November 16th.
- 44,711 Gauging knots or bristles for brushes, The Consolidated Mfg. Co., Philadelphia, Pa., November 16th.
- 44,712 Bottle stopper, Universal Lock and Stopper Co., St. Louis, Mo., November 16th.
- 44,713 Weaving cane for chair seats, C. W. Greenwood, South Gardner, Mass., November 16th.
- 44,714 Gas heater, F. P. Ziegler, Milwaukee, Wis., November 16th.
- 44,715 Heating apparatus, B. M. Dunson, Kenton, Ohio, November 16th.
- 44,716 Buckle, G. M. Aylsworth, Collingwood, Ont., November 16th.
- 44,717 Inflated wheel tyre, E. H. Seddon, Sale, Eng., November 16th.

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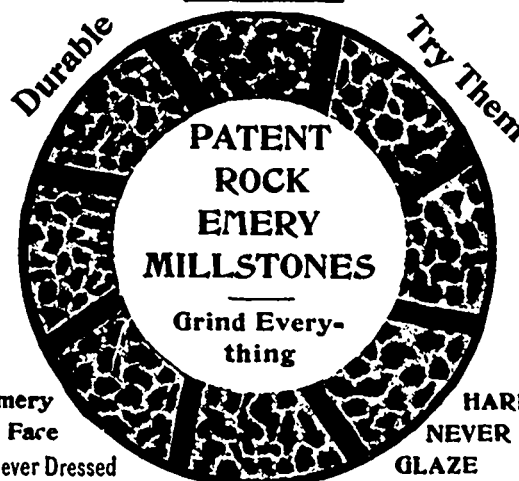
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NOVELTIES IN DYE STUFFS.

Messrs. Wm. J. Matheson & Co., New York, whose Canadian office is in Montreal, have sent us their Bulletin No. 22, in which is given a description of wool dyeings, fast to light, atmosphere, acid and milling, accompanied by an elaborate pattern card illustrating the bulletin.

Regarding these dyes Messrs. Matheson & Co. say:—The great success of our fast mill. & colors, Diamine Fast Red F, patented, Anthracene Yellow C powder, Anthracite Black B, patented, has induced us to demonstrate the usefulness of these colors in a more exhaustive manner than hitherto, by a pattern card of dyed worsted yarn, which we shall be glad to send you, if such colors are of interest to you.

Diamine Fast Red F, patented. It is known that this color, when treated with fluoride of Chrome after dyeing, gives shades, which cannot be produced in equal fastness and brightness with any other red coloring matter known at present. Exhaustive experiments show that Diamine Fast Red F is equally as fast to light, atmosphere and acids as Alizarine Red on wool, while its resistance to milling and alkalis is superior. It has the additional advantage that the entire dyeing operation can be effected in one bath, previous chroming not being required.

Anthracene Yellow C powder has the same advantages as Diamine Fast Red F with respect to fastness and application. The dyeings done on a chrome mordant as well as when treated with Fluoride of Chrome after dyeing, are equally fast to milling, acids and light. Thus Anthracene Yellow C powder is a perfect substitute for the more fugitive Fustic and fills a decided want in wool dyeing as the first really fast yellow for shading purposes.

Anthracite Black B, patented. If dyed direct in an acid bath produces a fine bluish black (No. 11 and 12 of the pattern card). It also dyes on chrome mordant in the usual way and can be used in combination with all colors requiring a chrome mordant, such as Alizarines wood-dyes, &c. The treatment with Fluoride of Chrome after dyeing is equally as effective for this color, which, if dyed in mixtures with Diamine Fast Red F and Anthracene Yellow C powder and then chromed, gives very fast and fine shades (No. 73-80 of our pattern card). If shaded with a little Anthracene Yellow C powder, it gives a good fast deep black (No. 30 of our pattern card).

Fluoride of Chrome. While hitherto chrome combinations

of colors on wool were first without exception produced by fixing the chrome on the wool before dyeing, we introduced the new method of fixing the dyed color by subsequent treatment with chrome. This is quite simply effected by boiling the goods with Fluoride of Chrome, either in the dye bath or in a separate bath. This treatment neither impairs the softness of the wool, nor its spinning capacity; and also for such colors as Alizarine Black 4B, it improves their fastness to water, without, however, making them as fast to milling, as is the case with Diamine Fast Red F and Anthracene Yellow. Copper vessels can be made to resist the influence of Fluoride of Chrome by inserting strips of zinc. This discovery, made by A. Kertesz, has been patented by Messrs. Koepf & Co., the owners of the Fluoride of Chrome Patent, who have licensed to us and to our customers for Fluoride of Chrome the application of this simple method.

Indigo. The consideration of the fact that there does not exist an artificial blue dye stuff as fast on wool as Vat Indigo, especially with regard to fastness to light, has induced us to use Indigo for some of the mixtures in our new pattern card.

A great advantage of our method is that the Indigo bottom remains unreduced, while in topping with wood- or Alizarine dyes the chrome mordant, which these dye-stuffs require, destroys a considerable portion of the Indigo bottom.

Although in our opinion the Indigo bottom is indispensable for all such shades in which blue plays an important part, and for which perfect resistance to milling is required, we should not omit to mention that for a great number of shades suitable combinations with Anthracite Black will be quite sufficient (see No. 73-80 of our pattern card).

Diamine Scarlet B, patented, Milling Yellow O, Formyl Violet S 4 B, patented. The products should not be omitted when discussing a range of fast wool dyeings, and we beg to remark on them as follows:—

Diamine Scarlet B, patented. Although not absolutely fast to milling, resists milling, acids, light and atmosphere better than any other red wool dye of an equally bright shade (see No. 9 and 10 of our pattern card).

Formyl Violet S 4 B, patented, being of all the Acid Violets the fastest to milling, and equal with regard to fastness to light, we have used it in some combinations to produce bright blue violets (see No. 22, 23 and 27 of our pattern card).

Milling Yellow O. This color, brought into the market by us several years ago, possesses great fastness to milling and resists light very well, apart from showing a very brilliant shade. It finds a place in the pattern card (No. 61) in combination with Indigo for producing a very fast and bright green.

Messrs. Matheson & Co. issue periodically a bulletin of the latest novelties of practical value in dye-stuffs, illustrated generally with dyed samples and recipes. There is no charge for them, and parties are under no obligation in receiving them to buy anything that they can buy or think they can buy to better advantage elsewhere.

They have laboratories in New York, Boston, Philadelphia, Providence, Montreal and Long Island City, N. Y., equipped for practical investigation in dye-stuffs, and in charge of competent chemists; the one in the last place named is in charge of Prof. Peter T. Austen, Ph. D., F. C. S., late Professor of Chemistry in Rutgers College, and the New Jersey State Scientific School.

One of the best pastes for sticking labels on tin cans is made by mixing one pound of the very best flour with six to eight ounces of brown sugar. Boiling water should be used as with ordinary paste. If the labels are light in color, this paste will be likely to stain them, and, in that case, white sugar may be used. It is necessary to make the paste every day as required for use, as it turns sour very quickly.

The Largest Factory of the kind in the Dominion.

PURE GOODS | **Lion "L" Brand** | HONEST GOODS



Leading Dealers from Ocean to Ocean
Handle these Goods.

**Pure Vinegars,
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Have the Singular Merit of Dyeing Cotton, Wool, and Silk in an Alkaline Bath, in one operation, without a Mordant, hence their great importance for Mixed Fabrics. Some of the Shades produced are Faster than Alizarine.

Captains of Industry.

"Business is rapidly improving with us." So says the Penberthy Injector Co., of Detroit, Mich. They add that their November sales are nearly double their October business, and that they are again running their factory on full time and with a full force.

The contract for the electric light wiring of the new Bank of Toronto building, corner of St. James and McGill streets, Montreal, has been awarded to Messrs. T. W. Ness & Co., of that city. It is specified in this contract that the "Bishop" white core rubber-covered wire is to be used, and the wires throughout the building encased in interior conduit.

The Dominion Dyewood and Chemical Co., Toronto, are calling the attention of the trade to the fact that they are sole agents for Canada for Mucklow's hematine for wool dyeing, which, they say, is the only perfect substitute for logwood chips. The advantages in using Mucklow's liquid hematine are, saving of steam and labor, uniformity and cheapness; and being free from tannin matter, the wool is left in a soft and natural condition after dyeing, and the bloom of the chip logwood is not destroyed, as is the case with the ordinary logwood extracts. The Dominion Dyewood and Chemical Company inform us that they are receiving repeat orders from many of the best mills in the country for this article.

The Moffatt Stove Company inform us that they will move from their old quarters at Markdale, Ont., this week into their new and splendidly equipped works at Weston, Ont.

The Samuel Rogers Oil Company, Toronto, will build a barrel factory at Brockville, Ont.

The Perfect Button Stick Company, of Toronto, is being in-

SAMUEL FUGE

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Sole Agent for Canada and the United States for JOHN C. TAYLOR & CO'S, Ltd., BRISTOL, ENGLAND, LIQUID ANTI-SCALE

VEGETABLE BOILER COMPOSITION

For the prevention and removal of Incrustation, Corrosion, and Pitting; also for Preserving the Plates, and for Preventing Leakage.

OBSERVE THE FOLLOWING:

THE CONSUMERS OIL REFINING CO.,

Mr. S. Fuge, LONDON, ONT. August 22, 1893.
 DEAR SIR,—Replying to your letter of the 18th inst., we would say that the drum of "Anti-Scale" which we purchased from you gave us good satisfaction. We have found it very efficient in removing the scale, and keeping the boiler clean, without injury to the steel.
 Yours truly,
 THE CONSUMERS OIL REFINING CO.,
 (Signed) T. WOLFE, Manager.

FOUNDRY FACINGS

Core Compound, Ceylon Plumbago, Foundry Supplies and Moulding Sand

Canadian Agents for

Root's Positive Blower

Colliau Cupola Furnace

HAMILTON FACING MILL CO., Hamilton, Ont.

Montreal Agents, DARLING BROS.

corporated, with a capital stock of \$3,000, to manufacture button sticks, etc.

The Blaine Sliding Blind Manufacturing Company, of Toronto, is being incorporated, with a capital stock of \$25,000, to manufacture inside sliding blinds, rolling partitions and blinds, screen doors, etc. George E. Blaine, of Alliance, Ohio, and R. S. Kayler, Geo. Clatworthy, D. Patterson and T. W. Horn are incorporators.

A natural gas company has been formed at Dunnville, Ont., of which Mr. T. J. Ramsay is president, who will exploit the several natural gas wells recently developed there.

Mr. H. J. Donahue, of Chicago, was in Hamilton a few days ago with a view of establishing a branch of the McCallum Steel Wheel and Waggon Company's works in that city. The company manufacture light steel wheels with rubber tires. It is proposed that the branch should give employment to about 500 men. The company, if established, will, they say, smelt its own steel.

The Bell Telephone Company, having received a franchise from the municipality of Owen Sound, Ont., will put in and maintain an electric fire alarm system in that town, which will include 14 magneto electric alarms.

The Petroleum Advertiser says that the Canadian General Electric Company are meeting with great success in introducing their electric lighting system in that town, for both public and private use.

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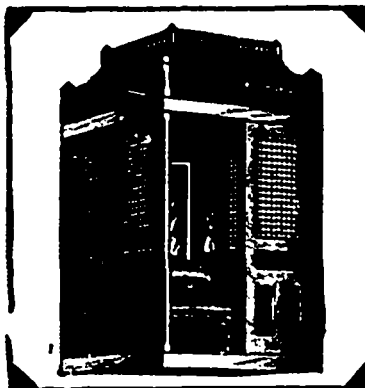
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ELECTRIC HYDRAULIC
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The Welland Power and Supply Canal Company are applying for incorporation, with power to construct a canal from the Welland river to Thorold, Ont., for the purpose of developing water power for commercial purposes, etc.

The Bertram Engine Works Company, Toronto, are applying for incorporation, with a capital stock of \$300,000, to manufacture engines, boilers, machinery, castings, yachts and other vessels and steamers, etc.

Messrs. James Barton, G. P. Hughes, W. H. Wright and others, of Tottenham, Ont., have been incorporated as the Tottenham Elevator Company, with a capital stock of \$3,000, to build a grain elevator at that place.

At the factory of T. W. Ness & Co., Montreal, they are now making a specialty of changing crystal and other gas fixtures into electric, and have recently done considerable in this line in connection with their contracts for Henry Mussen, C. G. Hope, John Hope, F. L. Wanklyn, that city.

The new residences of Messrs. R. B. Angus, Duncan McIntyre, Henry Mussen and the Manager of the Bank of Montreal, also the Protestant Orphan Asylum, Montreal, have recently been wired for electric light by T. W. Ness & Co., of

that city. In all these contracts the wire used was the standard rubber covered wire, manufactured by the Bishop Gutta Percha Co., of New York, for which this firm has the Canadian agency.

The Carnovsky Wood Manufacturing Company is being incorporated at Kingston, Ont., with a capital stock of \$10,000, to manufacture furniture, office fittings, etc.

The McDonell Rolling Mill Co., Toronto, have issued the following circular to the trade: "We take pleasure in announcing that the McDonell Rolling Mill is now in operation, and ready to receive and execute orders in the following lines: Merchant bar iron, agricultural implement and carriage iron, specialties in shapes, consisting of channel, angle, beveled-edge flats, etc. It is the intention of the company to place on the market a brand of iron that will give satisfaction. With this end in view no expense has been spared in the equipment of the mill. Furnaces are after the most modern and approved design, machinery being of the best. We have also been fortunate in securing skilled workmen, they having had experience in different mills both in England and the United States. The McDonell rolling mill is at Sunnyside, on the lake shore, in the western part of Toronto.

A Pocket-Book for Pharmacists

By Thomas Bailey. Full of valuable tables and memoranda. 328 pages, 32mo, limp roan. English Pharmacopoeial. Mailed free to any address on receipt of \$1.00.

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NEW One Dip Black for Wool One Dip Black for Cotton

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These blacks deepen in the atmosphere and in fulling, and dye very economically. Manufacturers and Dyers will do well to send for a sample lib. of each.

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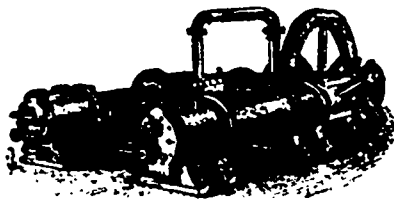
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Head Office: TORONTO.

Are you
Sure

THEY ARE
SAFE

AND IN
GOOD

CONDITION?

The Toronto Radiator Company, Toronto, have purchased the property adjoining their present site, and will erect a new foundry, 300x35 feet, and a machine shop, 132x67 feet.

Waters Bros., printers, Montreal, will hereafter do their printing by electricity, and have ordered a Reliance motor from T. W. Ness & Co., that city, to supply the power.

H. P. Labelle & Co., furniture manufacturers, Montreal, have put in a Reliance dynamo supplied by T. W. Ness & Co., that city.

Messrs. Pitcairn & Pearcey, Vernon, B.C., have gone into the manufacture of iron pumps and drain and irrigation pipes.

The Northey Mfg. Co., Toronto, have just placed a steam pump in the knitting factory of Messrs. Newlands & Co., Galt, Ont., with capacity to throw 500 gallons water per minute.

The Dominion Blanket and Fibre Co., Montreal, have just placed the machinery in their factory, manufactured for them by Messrs. L. M. Tetlow & Son, Cleckheaton, Eng., for whom Mr. R. S. Fraser, Montreal, is Canadian agent.

Messrs. T. W. Ness & Co., of Montreal, are putting in a number of Reliance motors, some of those recently installed being for the following parties: G. H. Harrower, Novelty Stamp Co., Kerr & Morgan, Christian Bros., John Burns, E. H. Thurston, Montreal Show Case Co. and the Montreal Dress Stay Co., all of Montreal.

P. G. DeLaborde, of the St. Malo butter factory, has forwarded, through the Parsons Produce Co., of Winnipeg, ten cases of creamery butter to Japan. This is not, however, the first shipment of Manitoba butter to Japan, as was stated by the Winnipeg dailies. Many shipments of butter have been made from Winnipeg to Japan at intervals during recent years.—Winnipeg Commercial.

Mr. J. D. Ronald, manufacturer of steam fire engines, etc., is just in receipt of an order for one of his latest improved chemical fire extinguishers for the town of Truro, N.S. Mr. Ronald informs us that his works are busy on fire apparatus for all purposes in cities, and towns.

The Hamilton, Grey and Bruce Railway Company are extending their electric road from Hamilton via Grimsby to Burlington Beach, the work to be completed by next autumn. The Hamilton Street Railway Company will also extend a line of their road to Burlington Beach, to be completed by next summer.

The Cold Storage and Freezing Company, Montreal, recently sank a well on their premises to a depth of 1,020 feet to procure a supply of water. When at that depth a flow of gas was encountered, and if this proves to be steady and of sufficient volume it will be used for fuel under the boilers of the company.

The Bell Telephone Co., Montreal, will construct a telephone line from Danville to Dudsville, Que., by way of St. George, Wotton, St. Camille and South Ham. Mr. Cleveland, M.P., and Messrs. Greenshields & Co., of the Danville State Co., bear a portion of the expense, and the municipalities assume a share of it.

Mr. F. F. Mehan's bottling works at Cobourg, Ont., were destroyed by fire Dec. 1st, loss about \$3,000.

Messrs. P. D. Dods & Co., of the Island City Paint Works, Montreal, have recently installed a Reliance dynamo, supplied by T. W. Ness & Co., that city, by which they will do their own lighting.

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but have had twenty years experience, and having had twenty years experience we know how to get steam out of Dye Houses and the largest possible product from Dry Rooms

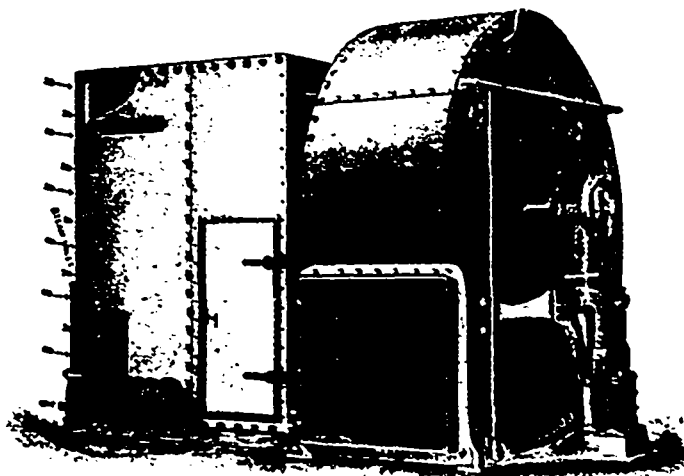
Our Compound Wheel is the most powerful in the world, and if we can't be of actual value to you we don't want your money. No CUSTOMS DUTIES on our Fans.

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Heating and Ventilating



The Sturtevant Steam Heating and Drying Apparatus.

FOR DRYING This Apparatus is unexcelled for Lumber, Cotton, Wool, Hair, Brick, Pottery, Glue, Soap, Cloth, and all Textile Goods.

Applicable to all Classes of Buildings.

Has had a thorough test in the Dominion and the Northern Portion of the United States.

Over 200 Plants in successful operation in this cold climate.

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SEE WHAT HE SAYS!

OFFICE OF J. & R. MILLER, CONTRACTORS, BUILDERS, ETC.,

MOUNT ELGIN, November 22nd, 1893.

THE DODGE WOOD SPLIT PULLEY CO.

GENTS, Please forward to us at your earliest convenience, to Ingersoll, via G.T.R., one pulley for 14-in. non shifting belt, size of bore, 3 $\frac{1}{2}$; diameter of pulley, 28 inches.

The above pulley is for our saw mandrel on which we use a 55 in. saw, and drive with double belts. As there is a heavy strain on this pulley, you can use your own judgment as to whether a four or two armed pulley is required, as your experience in your pulleys as regards strength will decide this matter. The former pulley was an iron one, with a $\frac{1}{4}$ x 1 $\frac{1}{2}$ key holding it fast to the mandrel, so if you consider a key necessary, make the key seat $\frac{1}{2}$ in. wide. I do not know if a key is necessary, but again use your own judgment in this matter. My reason for saying I do not think it necessary is that the pulley I got from you, size 15 x 38, as a line shaft pulley and keyed to shaft (four armed pulley), gripped so tightly that although the key was slack it did not seem to move enough to tighten key. This pulley runs the entire machinery, including saw. This pulley has been running steady for 18 months under a very heavy strain, and today is as good as the day it was put on. In fact, I consider if I was putting in machinery, if I could get iron pulleys at one-quarter the cost of the Dodge Wood Split Pulley, would not use iron, as I consider your pulley that much cheaper in the end. Please send this pulley by freight on receipt of this, subject to your thirty days trial. Advise when shipped, and much oblige yours.

J. & R. MILLER, Box 62, Mount Elgin, Ont.

Per AUSTIN MILLER, Manager.

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Messrs. T. W. Ness & Co., manufacturers of telephones, electrical apparatus, etc., Montreal and Toronto, inform us that business with them is quite brisk. Included in work they have recently completed are warehouse telephones installed by them for Messrs. P. Green, Son & Co., Sabiston Litho. Co. and Messrs. Thompson & Co., Montreal, where the new patent automatic switch telephone is used; a system of private telephones in the offices of the Canada Life Assurance Company, at Hamilton; the large biscuit factory of Messrs. Christie & Brown, at Toronto; electric light wiring in the beet sugar factory at Berthierville, Que., of Messrs. L. Lefebvre & Co.; the Beard estate building on Jarvis street, Toronto; a fire alarm plant for the town of Dundas, Ont., and a similar one for the town of East Toronto, and St. Andrew's church, at Carleton Place, Ont.

Mr. John D. Ronald, proprietor of the Ronald Fire Engine Works, Brussels, Ont., has sent us a picture of the steam fire engine built by him and exhibited at the Chicago World's Fair, and which is now the property of the municipality of Regina, N.W.T. In its operation the Ronald engines are described as complying with the underwriters' standard for capacity to throw 500 gallons per minute, viz: to throw one 1 $\frac{1}{2}$ -inch stream 150 feet through 500 feet of hose, or two 1-inch streams same distance. Mr. Ronald's works include shops 27 feet front, three stories high, of brick with stone foundation, 10 h.p. compound steam engine, seven lathes, two planers, two drills, bolt cutter, steam hammer, etc.

The members of the firm of Grafton & Co., Dundas, have had their residences and places of business connected by main line telephones, supplied and installed by T. W. Ness & Co., Montreal and Toronto.

Messrs. Robin & Sadler, Montreal, inform us that they are in receipt of a handsome diploma and silver medal from the Eastern Townships Agricultural Association for their display of leather belting at the exhibition at Sherbrooke, Que., in September. Messrs. Robin & Sadler are now building nine large leather belts to be used in the new extension of the factory of the Montreal Cotton Company.

The Red Cedar Lumber Company, recently incorporated in British Columbia, with a capital stock of \$150,000, are pushing the construction of their new sawmill at Burrard Inlet, that province. The mill now being built will be 130x30 feet, and a much larger one is to be erected next year.

The first Canadian Pacific Railway train on the Galt Coal Co.'s line, which has lately been altered to standard gauge, arrived in Lethbridge a few days ago. The widening of the gauge from Dunmore station to Lethbridge, and the operating of the line by the Canadian Pacific Railway, will be a great benefit to both Lethbridge and the Coal Co. Lethbridge coal will in future be shipped in Canadian Pacific Railway cars direct from the mines to consumers, and thus delivered in much better order than was possible when it had to be transferred from narrow to broad gauge cars at Dunmore.—Winnipeg Commercial.

Messrs. W. J. Gage & Co., Warwick Sons & Rutter, and Brough & Caswell, the well-known printers, of Toronto, have had their private warehouse telephones installed by Messrs. T. W. Ness & Co., of Montreal and Toronto.

Messrs. John Bertram & Sons, proprietors of the Canada Tool Works, Dundas, Ont., are manufacturers of all kinds of machine tools for machine shops, repair shops, electrical works, brass manufacturers, railway shops, locomotive and car shops, rolling mills, steam forges, ship yards, bridge builders, boiler shops, engine works, etc.; also special machines for paper and pulp mills. This concern informs us that they are constantly adding to their stock of patterns for such equipments as those here enumerated, and intending purchasers would do well to write to Messrs. Bertram & Sons for particulars.

The Robb Engineering Co., of Amherst, N.S., have been awarded a contract for two 250 h.p. engines for the Sandwich, Windsor and Amherstburg Railway, of Windsor, Ont. These engines are of the cross compound railway type, Robb Armstrong pattern, and are for driving electric generators for street railways and for lighting.

The Canadian General Electric Co. have placed an order with the Robb Engineering Co., of Amherst, N.S., for two 150 h.p. Monarch economic boilers for the new electric power house at London, Ont. These boilers will complete a battery of five, three of which have been already installed, and which, we are informed, are giving most satisfactory results, a recent test having shown an evaporation of 10.5 lbs. of water per lb. of combustible, using eastern bituminous coal.

Central Prison, Toronto, has been equipped with a telephone plant with complete switchboard exchange, installed by T. W. Ness & Co., of Montreal and Toronto.

PEAT FUEL.

At the recent summer meeting of the General Mining Association of the Province of Quebec, held at Sherbrooke, a paper was read from Mr. A. A. Dickson, of Toronto, on the subject of peat fuel, in which it was said:

Peat is a vegetable substance, and is produced in several ways, viz.: by the decomposition of forests, by the growth and decomposition of grasses, and the decomposition or disintegration of the Sphagnum moss, but the best and purest peat found in Canada is produced from the Sphagnum moss, which grows on ponds and comparatively shallow lakes.

Peat produced by the latter process forms very rapidly, the moss making very rapid growth, and can be found in bloom at the top while it is disintegrating or decaying at the bottom. This moss grows on the top of the water, and as it is gradually disintegrated by the action of the water its own weight makes it gradually sink, and if the growth is old and the depth of the water in the lake not too great, it will in time descend to the bottom. It is not generally known that the average peat bog is floating on the top of the water like a plank or board, sinking only as its own weight increases, but such is the case. I know of one large bog in the Province of Quebec, covering about one thousand acres, which some seventy-five years ago was an open lake. I have conversed with an old resident who, when he was a boy, used to fish and shoot water fowl on the then lake. At the present time there are three lines of railway running through it. Such has been the rapid growth of the Sphagnum moss. In some places the peat reaches a depth of nine or ten feet, the whole, with the exception of that portion close to the shores, floating on the top of the water.

The elements of peat are essentially the same as coal, save

and except the sulphur and phosphorus, viz: carbon, hydrogen, oxygen and nitrogen. Its freedom from sulphur and phosphorus is a very essential matter, especially for the smelting of ores. It does not require coking or reducing to charcoal, but can be used direct from the machine, although it will stand to be coked and charcoaled equally well with coal. It is extensively used in an air dried state only in Norway and Sweden for the reduction of iron ores, and some of the finest brands of iron are smelted with peat. It makes a more homogenous iron than coal, being very similar to a charcoal iron. In some of the European countries it is being used exclusively for railway purposes. They find it cheaper than coal, the only disadvantage being its bulk. They require specially built vans to carry it in its crude state. It is very dirty to handle as well as bulky, but its freedom from clinkers and cinders and the absence of sulphur, which creates sulphurous acid to eat up the fine boxes and grate bars, is very important. In an experiment made on the Grand Trunk Railway some years ago, the details of which I have before me, air dried peat, containing 20 per cent. of water, compared favorably with bituminous coal. The peat stood 80 as to 100 of coal, or one ton of peat being equal to four-fifths of a ton of coal. Compressed peat is, however, so far ahead of the old air dried material that it may be classed as coal. Its specific gravity is 1.49, weighing 93 lbs. per cubic foot, anthracite coal weighing 83.5 lbs. per cubic foot, its specific gravity being 1.5, and bituminous coal weighing 80.80 lbs. per cubic foot, its specific gravity being 1.30—thus it will be seen that peat produced by the Dickson process will not occupy any more space than the best grades of coal; consequently it will be readily seen that the one great objection which has prevented the more universal use of peat for fuel has been entirely overcome and done away with. In a very severe test made at the John Abell Engine Works, in Toronto, the details of which I have before me, 1573 lbs. of Dickson's compressed peat was tested against an equal amount of anthracite lump coal. The test was made on a coal burning grate, which is not quite suitable for the burning of peat, inasmuch as the surface is entirely too large. The temperature of the boiler house when the peat

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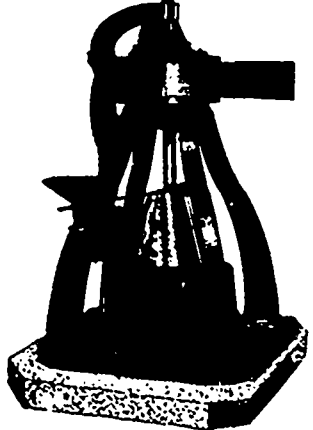
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used stood at 60 above zero; when the coal was used it stood at 82 above, making a difference in favor of coal of 13 degrees. When the peat was used the weather was dull, when the coal was used the weather was bright and sun-shining,—this to those acquainted with steam is a very material difference in favor of the coal; notwithstanding, the 457½ lbs. of compressed peat kept steam up steady at 85 lbs. exactly two hours, while the anthracite coal kept it steady at 85 lbs. for two hours six and one-half minutes only. Under similar conditions of temperature, with the proper type of grate, peat would have done as well if not better than the anthracite coal.

Compressed peat fuel produced by the Dickson process is equal to coal in its specific gravity, equal to coal in its calorific power, free from cinder and clinker, cleanly to handle, free from sulphur and phosphorous, contains all the volatile combustible elements found in the bog, cheaply and easily produced, filling the greatest want of the present day. We are looking forward to this new industry keeping millions of dollars in our own country, which at the present time is sent to our neighbors on the south of us; for whom, however, I entertain the highest regard, but until a closer union is established between the two countries, politically or commercially, we must look to the welfare of our own people.

PETROLEUM AND OTHER FUELS.

In a paper recently read by Mr. W. H. Wakeman before an engineering association in Connecticut, the following statements were made:

All coal is not alike, all wood is not the same, and petroleum varies in calorific values the same as other combustibles. The following brands of fuels are mentioned as being representatives of the best of their class. We are told that Durham coke, containing about 94 per cent. of carbon, contains 13,640 heat units, requires nearly 11 pounds of air for complete combustion, the rise in temperature being 4,877° F., and the maximum amount of water that it will evaporate is 14.12 pounds for each pound of coke.

A very good grade of bituminous coal, containing more than 81 per cent. of carbon, contains 14,143 heat units, requires 11 pounds of air for complete combustion, the rise in temperature is 4,890° F., and the maximum amount of water evaporated is nearly 15 to 1. It is unnecessary for me to add that this is an exceptional case.

Illuminating gas, containing 61 per cent. of carbon, contains 20,800 heat units, requiring nearly 10 pounds of air for the combustion of each pound of gas, the rise in temperature is 4,567° F., and each pound of it will evaporate more than 21 pounds of water.

Oak wood when kiln dried contains about 50 per cent. of carbon, has 7,713 heat units per pound of wood, requiring 6 times its own weight of air for its combustion, giving a rise in temperature of 1,287° F., and each pound of it will evaporate 8 pounds of water. Wet and green sawdust, containing 45 per cent. of wood and 55 per cent. of moisture, develops 2,916 heat units, giving a rise in temperature of 2,215° F., and will evaporate 4 pounds of water for each pound of wood in the fuel, but for each pound as it stands (wet and dry together), it is very much less.

Having called attention to these fuels with which we are more or less familiar, let us compare crude petroleum with them.

A fair specimen contains 85 per cent. of carbon, developing 20,300 heat units, requiring 15 pounds of air for the combustion of one pound of oil, giving a rise in temperature of 4,900° F., and each pound of oil will evaporate 21.5 pounds of water. It must be remembered that in each of the above cases the theoretical evaporation is given, and from this a deduction must be made for loss by radiation, etc., and the actual quantity of air passed through the fuel will be much greater; but these figures will answer for the purpose of comparing the several kinds.

Good authorities give us data which inform us that in actual use one pound of petroleum will evaporate from 25 to 50 per cent. more water than anthracite, and from 60 to 100 per cent. more than bituminous coal. If petroleum was much more bulky than coal, we might thus find an objection to it for some places; but it is not, for where a ton of coal requires from 40 to 45 cubic feet of space, a ton of petroleum occupies very much less.

Another thing in favor of the oil is that, while coal contains from 3 to 15 per cent. of ash, the petroleum practically leaves no ashes behind it. With these points in its favor, why is it that we are still shovelling coal, instead of simply opening our faucet, adjusting our steam jet and spending our time in watching the atoms clash together? Is it because of the great difference in price? Altogether, although the oil manipulators probably are well posted on the price of coal, and there is little danger of their letting the oil go for less than it is worth.

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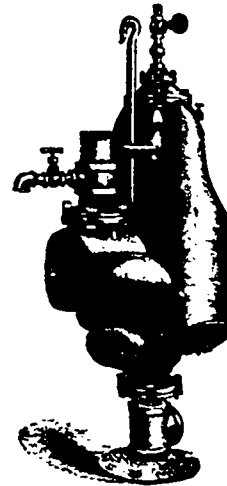
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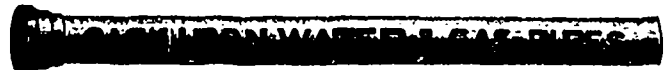
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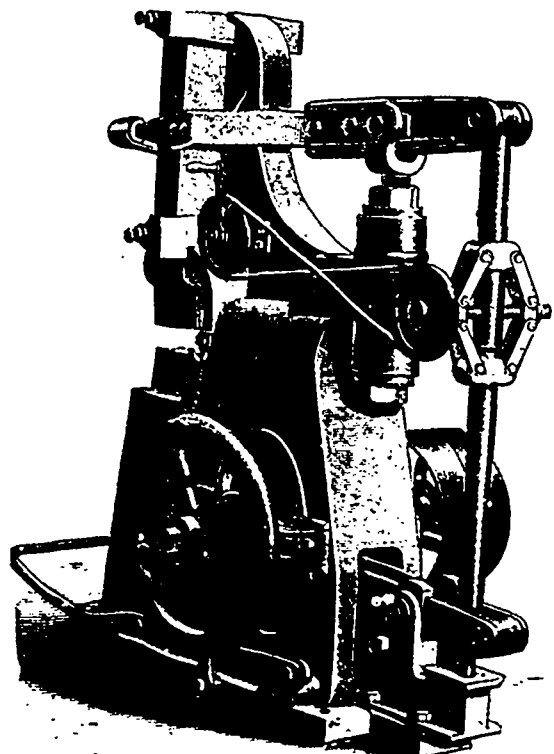
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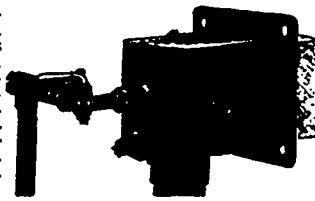
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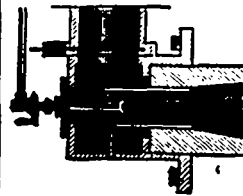
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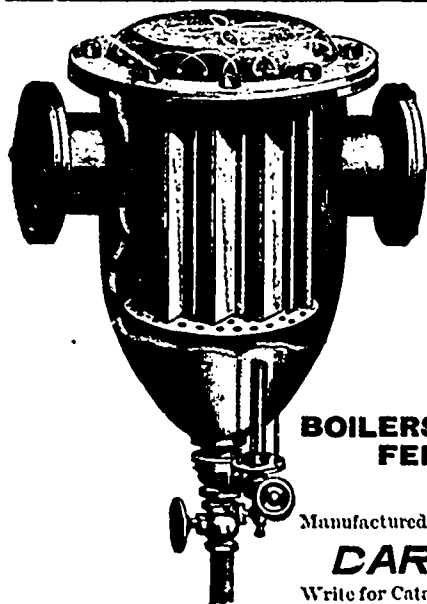
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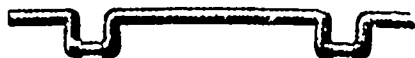
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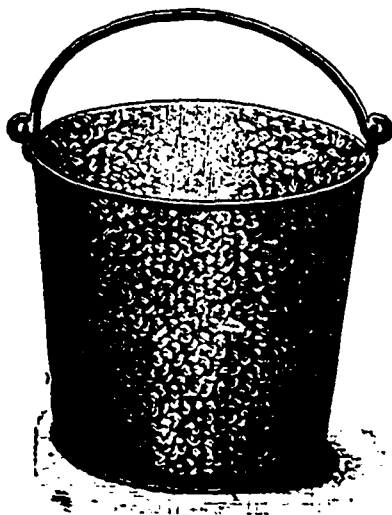
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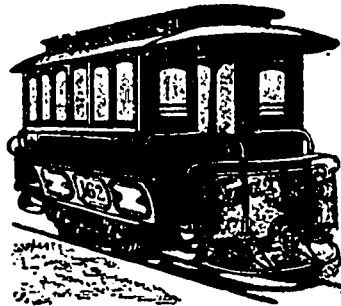
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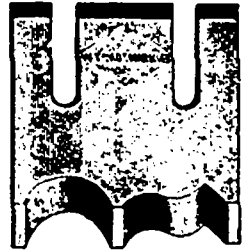
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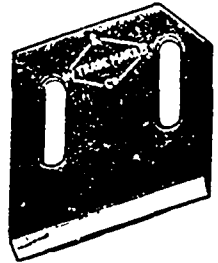
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The report was adopted and the retiring Directors unanimously re-elected. The Board of Directors are now constituted as follows:—James Goldie, Guelph, pres.; W. H. Howland, Toronto, vice-pres.; H. N. Baird, Toronto; Wm. Bell, Guelph; Hugh McCulloch, Galt; S. Neelon, St. Catharines; George Pattinson, Preston; W. H. Story, Acton; J. L. Spink, Toronto; A. Watts, Brantford; W. Wilson, Toronto.

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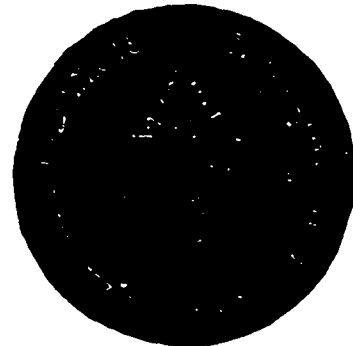
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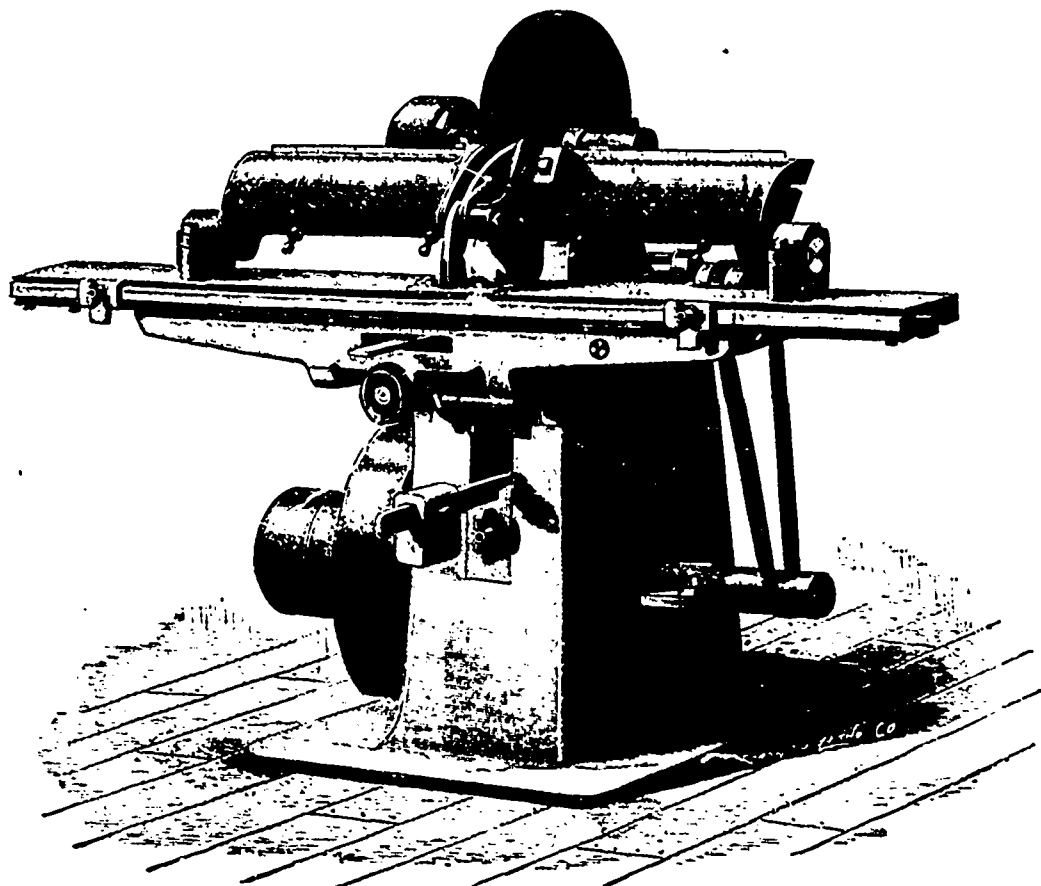
To secure by all legitimate means the aid of both Public Opinion and Governmental Policy in favor of the development of home industry and the promotion of Canadian manufacturing enterprises.

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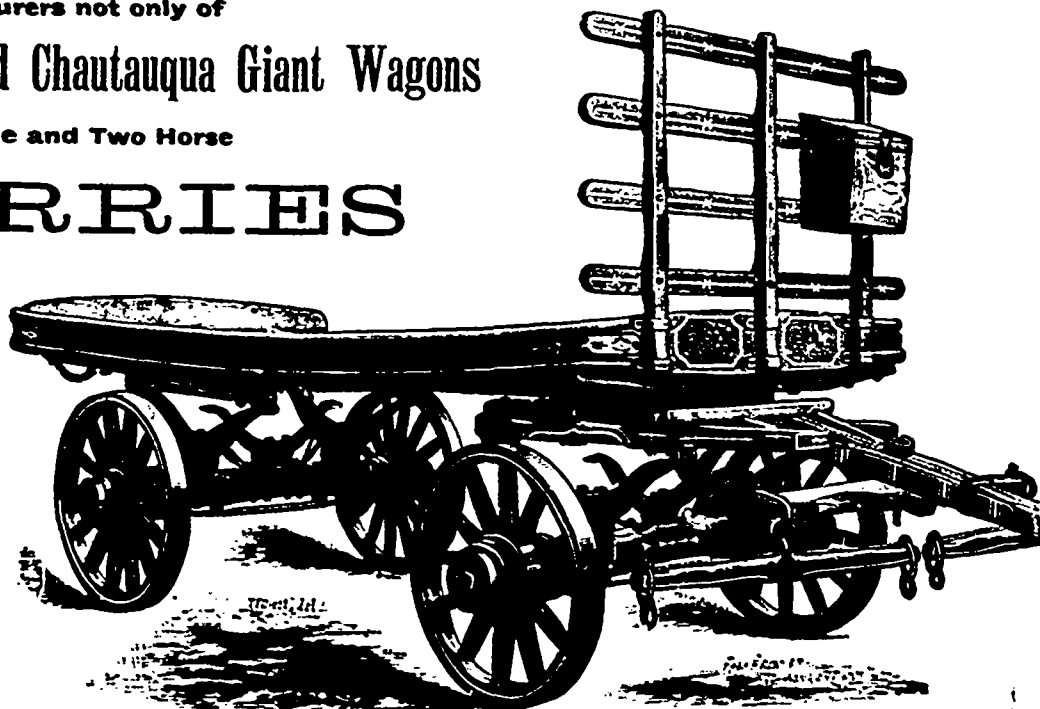
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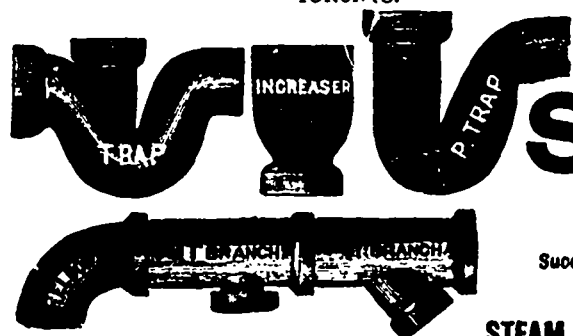
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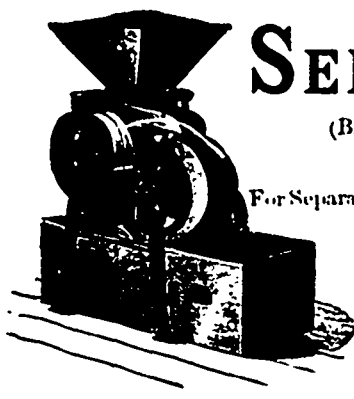
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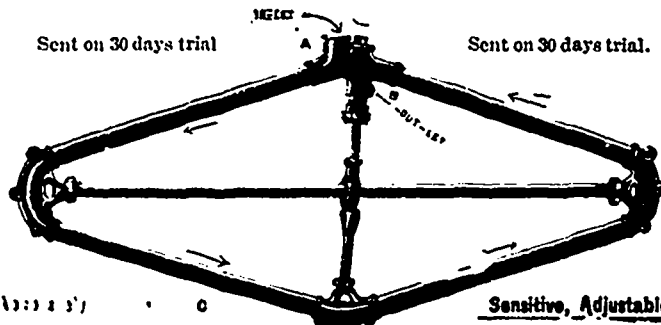
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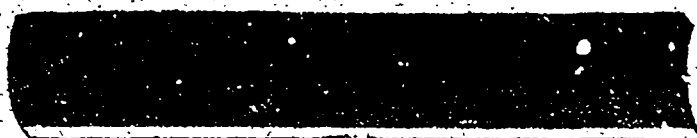
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