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Vol. 21.

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Published on the First and Third Fridays of each Month

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PROTECTION.

In a recent issue of this journal we commented upon an item which had appeared in the Hamilton, Ont., *Times*, a rank free trade advocate, in which it was narrated that a certain Canadian manufacturer of furniture, who some years ago had given employment to seventy-six hands, now employs but thirteen all told, and that, to save his capital, he was going out of the business. He said that the National Policy had drawn too much capital into the trade. We showed that this whine was a high and deserved compliment to the N.P., in that it was accomplishing just what its founders and promoters had intended it should accomplish.

Like many other things, furniture is an article of prime necessity, and protection was not applied to it for the sake of raising the price, or for unduly enriching those who might engage in its manufacture, although some free traders contend that such was the first effect of the protection. On the contrary, when protection was applied to furniture, the effect was to retain the home market to Canadian furniture manufacturers, and to the competition which might arise among themselves; and, as we have shown, this competition has made furniture as cheap in Canada as it is anywhere else in the world.

There are certain unchangeable economic laws which apply to the manufacture of furniture as well as to other articles.

One of these is that furniture and other articles can be manufactured cheaper in large quantities in the same establishment than in smaller quantities. Thus the larger factory can be made to produce furniture cheaper than the smaller one; and we see that, according to the growler alluded to in the *Times*, protection had drawn so much capital into the business, invested in larger factories, equipped with finer and more effective machinery and appliances, and capable of so much greater production than smaller concerns, that these latter, including the one alluded to, were forced to the wall. It may be unfortunate for the individual that his capital was too small, or that he was not sufficiently enterprising to abandon old and obsolete machinery and equip with newer and more effective machinery, or that lack of business ability handicapped him in the struggle of life; but the general public are not concerned that he should fail because others were making cheap furniture. Cheap furniture is what the people want, and what they are getting, even if an unenterprising or incompetent manufacturer fails to keep going. Another of these laws is that the greatest success, and, therefore, the ability to manufacture cheaply, can only be attained by keeping a factory in constant operation to its fullest capacity, or as near to these conditions as possible. There are many expenses which bear quite as heavily upon an idle plant as upon a busy one. These are depreciation, interest, taxes, repairs, insurance, etc., to say nothing of the scattering of skilled workers, loss of customers, etc. Another of these laws is that, to keep the larger establishment in full operation, there must be a market close at hand to absorb the products as rapidly as they are turned out, and that there shall be a fair market price for them, for no business can be continued indefinitely if it is done at a loss. One of the most important of these laws is that the more certain and reliable this market may be, the smaller the profit will be at which the manufacturer can afford to produce. We know that before the N.P. was adopted furniture was dearer in Canada than it is now, and that it is as cheap here now as anywhere, although it is protected by a thirty-five per cent. duty.

Of course the manufacturer does not derive all the benefit from the trade which protection gives to him to the exclusion of the foreign manufacturer. Of course he gets some benefit, for he is entitled to it, in that he has invested his capital in the business, and gives it his time and attention, the same as the banker or merchant is entitled to the profits he makes out of his banking or mercantile business. But, unlike the banker and merchant, he gives employment to large numbers of workmen, all of whom are consumers of food products, etc., and not producers of them; and to this extent the farmer finds an enlarged market for his products, which he would otherwise have to send abroad, or to not produce at all. There are many other indirect benefits arising from protection, all of which tend to cheapen living generally, and to add to the happiness of the people. Among these are the cheapening of transportation and the multiplication of modes of transportation, by which both manufactures and farm products are evenly and expeditiously distributed to consumers.

If Canada had never adopted protection, we would have the same conditions prevailing here to-day as confronted us a dozen or twenty years ago. Then we were dependent upon foreign countries for our supplies of manufactured goods; and we had

no home market in which to sell our farm products. We were affected by the fluctuations of foreign markets, without the power to redress our grievances, and all our imports were liable to changes which do not now confront us.

A most forcible illustration of the benefits of a high tariff policy is shown where the United States has forced Brazil, Spain, Germany and other countries to show special tariff favors, where before hostile tariffs operated to largely exclude American products; and from this Canada might take a profitable lesson. Brazil has always found the United States her best market for hides, sugar, coffee, etc., but she has always imposed heavy duties upon American flour, bacon, lard, etc. Under her system of protection the United States was able to say to Brazil, "We propose to admit certain of your products free, and will do so if you will admit certain of our products on the same terms. If you will not do this, then we will levy a heavy duty upon your products." Of course we all know how quickly Brazil saw the point and acceded to the bargain. The same lever opened Cuba; and now Germany has concluded that if she desires to sell millions of dollars worth of beet sugar to the United States, sending it there duty free, she must change her mind about American hog products, accept the inevitable, and reciprocate at the dictation of Mr. Blaine.

These are some of the benefits of protection and some of the means by which protection may be made to advance foreign as well as domestic trade.

THE LUMBER INTEREST.

DURING the recent budget debate in the House of Commons Dr. Spohn, M.P., for East Simcoe, made a speech regarding the lumber interest of Canada, which some of the Grit papers have thought proper to reproduce in large part, containing as they say an unanswerable argument in favor of unrestricted reciprocity. In his address Dr. Spohn said he proposed to discuss the question as affected by the McKinley tariff. He said:—

"* * In the matter of labor alone, the Georgian Bay district will lose over \$250,000 by the exportation of logs (as against what would be received if they were cut into lumber there). The State of Michigan gets the benefit of this, and the money that should have been spent in manufacturing the lumber in Canada is spent in the United States. * * The only relief is in reciprocity. * * The McKinley bill strikes at the most vulnerable points in the trade of Canada. * * The McKinley bill put a duty on lumber of \$3 per thousand, the immediate result of which was to bring the Government to their knees. They asked pardon and took off the export duty on logs. The effect of taking off this duty was that many of the saw mills on the Georgian Bay were closed up, and the lumber that used to be exported to the United States is now being sent there in the log. The northern part of Ontario is becoming depopulated, and the money that should be legitimately spent in manufacturing saw logs at the different ports of Georgian Bay is spent in Michigan. * * There are 150 saw mills in Simcoe. One firm cuts 75,000,000 feet a year, another 18,000,000 feet, another 17,000,000 feet, and so on. In the town of Midland, a terminus of the Grand Trunk Railway, and which has one of the finest harbors on our inland waters, of the many saw mills

there but one is in operation, all the others being closed. * * The town of Parry Sound is in the same condition. This dollar duty upon lumber induced the mill-owners to take their logs to the United States and manufacture them there. * * In the town of Tonawanda, New York, the mills employ 5,000 hands in planing and handling lumber. There are thousands of dollars paid annually in duty on Canadian lumber in Tonawanda. A proprietor of a planing mill there told me that with reciprocity he would be compelled to move his mill to the lumber districts of Canada."

There is some truth and point in some of the statements of Dr. Spohn; some good reasons for re-imposing the export duty on saw logs, some good arguments in favor of steering clear of reciprocity, but no reasons whatever why we should have free trade with the United States. It is very true that under present arrangements the State of Michigan gets the benefit of the cost of manufacturing Canadian logs into lumber, and the dreary picture of abandoned saw mills in Simcoe is duplicated in an account given in the *Sault Ste. Marie Pioneer* in which is given the particulars of some of the doings among the lumbermen of the Algoma district. The *Pioneer* says:—

Four weeks ago the American barge *Arnold* arrived at Spanish River with 300 laborers for the lumber woods, who are to operate for the Spanish River Lumber Company. This company will cut 35,000,000 feet this season, of which 16,000,000 may be manufactured at Spanish River, and the balance of the logs will go to Michigan. These laborers are fed with American supplies, they work with American tools, and they are paid their money in the United States, thus depriving Canada of any benefit whatever in the loss. H. W. Sage, of Bay City, will cut from 25,000,000 to 30,000,000 feet this season, all of which will be boomed and rafted to Bay City. The Emory Lumber Company will cut 40,000,000 feet on the Wahnappittie and French rivers, every stick of which will go to Saginaw and Tawas. The Saginaw Salt and Lumber Company will cut 15,000,000 feet on Spanish River and raft it to Saginaw. Howie, of Saginaw, will cut from 25,000,000 to 30,000,000 feet, all they can handle, and take it to Saginaw. Comstock Brothers, of Alpena, will make a very heavy cut this season. They claim to own 1,240,000,000 feet, and will lumber heavy, all of it to go to the United States in logs. The Cheboygan Lumber Company will cut 15,000,000 feet, all of which will go to Michigan. Sibley and Barringer, of Saginaw, will cut from 10,000,000 to 15,000,000 feet, besides taking up 10,000,000 feet now lying in Spanish River, which means 25,000,000 feet more to be manufactured in American saw mills. Gates and Smith of Bay City have purchased 10,000,000 feet on Spanish River to be rafted to Bay City.

It is very plain that the removal of the export duty upon saw logs works to the injury of Canada. Before the imposition of that duty it was found that Canadian forests were being depleted to supply American saw mills, and it was hoped that the export duty would encourage the manufacture of the logs into lumber in Canadian mills. And it had this effect, for under it the almost innumerable saw mills which Dr. Spohn speaks of sprang into existence. It was found that it was more advantageous to manufacture lumber in Canada for the American market, paying the American duty of one dollar per thousand feet thereon, than to haul the logs to American mills paying the export duty thereon. The United States Government finding that the operation of this export duty was to transfer the lumber manufacturing industry from their country to Canada, raised the duty to \$3 per thousand feet, with a proviso that the duty would be but \$1 per thousand if the

Canadian export duty were removed. In our opinion the Canadian Government made a fearful and foolish mistake in allowing themselves to be thus browbeaten and intimidated, and in the face of this threat to remove the duty. The immutable law of supply and demand operated in the lumber question the same as it does in every thing else; and we know that the American market stands in imperative need of Canadian lumber. Michigan once contained vast areas of just such timber lands as we have in Canada, but they have been stripped of their trees, and there is no other available timber limits within reach but those in Canada. Seeing that these Canadian lands were being rapidly denuded of their timber, the logs being taken to American saw mills, our Government did a wise thing in levying an export duty on logs. It was wise because it forced the construction of large numbers of saw mills in Canada, and gave employment to large numbers of Canadians; and we had something more to show for this great natural wealth than the millions of stumps from which the logs had been cut. The American Government felt keenly the loss caused by this transfer of business from their country to Canada; and their plan to recover it was by raising their duty upon lumber as we have shown. The answer of the Canadian Government to this menace should have been not a back down by the removal of the export duty on logs, but an increase of the export duty to \$3, the old duty of \$1 only to be enforced whenever the United States Government might see proper to reduce their import duty to that amount. As has been shown here by different authorities, Canada is being denuded of her timber. The Americans are taking it away, millions of feet of it every day, and they are taking it because they need it. If they need it so badly they could well afford to pay the export duty upon it, and it would be but a question between them and their Government what this duty should be—whether they should pay a Canadian export duty of \$3 per thousand feet, and an American import duty likewise, or if the old arrangement should stand. But it should be well understood that as far as our Government were able to enforce it, the manufacture of Canadian logs into lumber should be done in Canadian mills or the timber would remain uncut.

Commenting on this question the Sault Ste. Marie *Pioneer* says:—

In a few years at longest—unless sooner restrained—these grand pineries will have been stripped of their timber by the United States mill-men, and Canada will be left with a thousand miles of pine stumps to remind her of the prodigal waste of one of the richest territories in the world. Two hundred years of careful industry cannot replace the timber which has already been taken from thousands of acres. How long will it be before such wilful waste is overtaken by woeful want? Are all of the men who are elected to Parliament lumberers, or their agents, that not one word of protest is to be heard in local or federal legislatures against this almost ceaseless destruction of one of the greatest sources of Canadian wealth. Verily our land is being laid waste by strangers, and the source of Canadian wealth is rapidly disappearing without adding to the manufacturing interests, industry, or revenue of the Dominion.

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AS TO NICKEL.

A WELL attended convention was held at Sault Ste. Marie last week of gentlemen interested in mining in the Algoma region, at which a number of questions were discussed which affect this industry. A telegraphic report of the proceedings of the convention stated among other resolutions passed was one declaring against the imposition of an export duty upon nickel ore. This convention was composed chiefly of persons who had come into possession of mineral lands by speculation, and who can see the only profit to come to them from them by forming companies who will get the ore out of the ground and market it as expeditiously as possible, and who have no idea of engaging in the manufacture of refined metals from it. These mining operations give employment to the smallest number possible of workmen, none of whom are skilled, for no skill is required to dig holes, and the ore is quickly hustled away to the United States where large capital is invested in refining plants, and where large numbers of skilled workmen are required in manufacturing the metal into marketable condition. These so-called Canadian mining operators have no greater interest in Canadian mines than here indicated. The mines cost them little or nothing, and their object is to realize all the profit possible out of them with as little delay as possible; and they are in no manner concerned whether Canada derives any benefit from her mineral wealth or not. Canada having surrendered the possession of these rich mineral deposits, is now expected to stand quietly by and see them hauled away to another country, having left only the holes in the ground to show where her riches were formerly stored. The meanest sort of selfishness actuates these mining exploiters in demanding that Canada levy no export duty upon nickel ore. We know that within the last few years nickel has sprung into an importance never before dreamed of; and we know that great as this importance is, the world has to depend almost entirely upon Canada for its supply of nickel. A greater demand has arisen in the United States for this metal than in any other country, and this demand is being supplied from Canada. Before the discovery of the great importance of nickel, the United States tariff imposed a duty of fifteen cents per pound not only upon the metal, but also without distinction upon the metal contained in either ore or matte; and this was done for the protection of but one individual, we believe, who owned or controlled a nickel mine in Pennsylvania. The largest output of nickel in one year from domestic mines in the United States never exceeded one hundred tons, and this was consumed in manufacturing subsidiary coins, and in the arts and sciences of that country. But when it was discovered that nickel was of the utmost importance in the manufacture of armor-plates for war vessels, and that the domestic supply was greatly inadequate to meet the demand, with a magnanimity characteristic of the American people, nickel ore and matte were placed upon the free list, while a duty of \$200 per ton was retained upon the refined metal. It was known that the largest and most valuable nickel mine in Canada was owned by American capitalists, and this import duty upon refined nickel, and no duty upon ore and matte, was arranged with special view to preventing the erection of refining works in Canada, forcing the crude material to the United States where its preparation would give remunerative employment to American

capital and American skilled labor. We speak of this as being an exemplification of Yankee meanness, because if their law had remained unchanged by which a duty was imposed not only upon refined nickel but upon the metal contained in the ore and matte also; or if both refined and crude nickel had been placed upon the free list, Canada would have had an opportunity of profiting by the manufacture of her refined metal upon equal terms with the United States. That this American tariff law was aimed directly against Canadian interests is seen in the fact that the only available source of supply of nickel to that country is from Canada.

How long is Canada to submit to this unfriendly legislation on the part of the United States? It really looks as though our Government were bulldozed at all points. What Canada needs to enable her to obtain some measure of benefit from her vast nickel wealth, is an export duty upon ore and matte, allowing the refined metal to go out without restriction. Impose the duty.

SWEATING.

OUR readers will remember that a commission was appointed some months ago by the British House of Lords to investigate the "sweating" system in vogue in London and other English cities. The *Westminster Review* of last month has an article which deals with the evidence adduced by that committee, in which it is shown that the old system of apprenticeship to trades has almost ceased to exist, and that "sweating" has taken its place. The writer says:

Boys are now taken by an employer frequently on a verbal agreement or understanding that they are to learn his trade. Beginning with the simplest and most inferior work they rise gradually to the more skilled. But they do not learn the trade in all its branches. They are almost always confined to one division of it. In firms which turn out only the better class of work this may have its compensations, as the learner gains in finish and dexterity what he loses in all-round capacity, and here the training may last for years. But in the inferior class where competition is keen, and cheapness in production rather than quality is aimed at, the same course is adopted from a different motive and with a less fortunate result so far as the worker is concerned. When once he has acquired the capacity of executing one small process with speed, it is the employer's interest to continue to engage him exclusively on that process at learner's wages rather than to cease to profit by his already acquired skill while he is being taught the next step in the training. Then when he ought to have reached a proficiency which would entitle him to a journeyman's wages he is discharged. The employer takes another learner to exploit him in the same way. The first man, on the other hand, finds great difficulty in obtaining work which will afford him an opportunity of supplementing the stunted training he has already received, by acquiring as journeyman the experience he should have obtained as learner.

This is a doleful state of affairs, and affords a bad outlook for the working classes. The fact is, in consequence of the way society is at present constituted, there is always a strong current of humanity constantly drifting from the country towards the cities, and no country seems to be exempt from it. A consequence of this is there is an overcrowding of all the trades, and wages in England and some other countries are reduced to the starvation point. This is not the case in Canada, although this country is no exception to the rule regarding the rushing of country people to the cities. Grit orators and newspapers

here declare that this migration is due altogether to our policy of protection, and do not hesitate to say that the conditions would not prevail if we had free trade, or if we had unrestricted reciprocity with the United States, where the altitudinous McKinley tariff prevails. It is very certain that the tariff is in no way responsible for the sweating system, for it seems to be of a more virulent and distressing form in England than in any other country; and it is safe to assert that this virulence is due more to free trade than anything else. In fact ever since its establishment there a half century ago it has been driving British workmen out of Britain, their places being filled by the offscourings of Poland, Russia and the inferior nations of the world. These paupers, who never knew any better conditions of social life, can manage to live on what a self-respecting British workman would scorn, with the result that there is a constant stream of British workmen emigrating from Britain, and a larger stream of pauper immigrants are constantly pouring in. To make matters worse the operation of free trade is to destroy British agricultural interests, the farmers being forced to seek a scanty living in cities which they cannot obtain on the farms; this feature being a prominent one in the congestion of the cities. Discussing this matter, the *Toronto Globe* says:

The subdivision of labor has come to stay. The hands of the clock cannot be put back to the sixteenth century. Labor reformers recognize this, but assert that if the apprenticeship system disappears entirely, and mechanics learn but one small process in their trade, they will be reduced to a condition very little removed from serfdom, and may be replaced in the event of trouble by others who, with a few weeks of teaching, can fill their places effectively. The difficulty is increased by the growing disproportion between the rural and urban population in all civilized countries. Until a few years ago there were plenty of all-round mechanics, who, learning their trades fully in small towns and villages where no great subdivision of labor was possible, became efficient in the various parts. A fair proportion of these men came to the cities, and, being able to work at any branch of their trade, were a source of strength to it and to the weaker city brethren who knew only one division and were helpless when deprived of work at that particular branch. Perhaps not in Toronto, which has still a great rural Province dotted over with small towns to draw from, but in most great centres this class of workmen is becoming scarce. London can absorb all who come and outnumber them ten to one with her helpless, half-learned mechanics. The city population of England is increasing so rapidly that the influence of the country migrant is no longer felt, and the most pressing of the labor problems of the time is to restore the mechanic to his former position as a skilled workman.

It is plain that if the British workman and the British farmer desire to live in Britain and to enjoy the ease and comforts which should be theirs, they must revolutionize existing policies and inaugurate those which will accomplish the desired ends. This can be done by excluding objectionable immigrants, and by giving some adequate measure of tariff protection to British manufacturing and agricultural interests.

BRITISH AGRICULTURE.

A FEW days ago the newspapers contained long accounts regarding the vicissitudes which have recently befallen the Marquis of Exeter. Burleigh House, with all the great estate surrounding it, was to be thrown upon the market for sale. Lord Burleigh had been the great Minister of Queen Elizabeth,

and now this ancient inheritance must be parted with to a stranger. Since 1560 the property had been in the same family, but now it must be sold, and there are very few persons in England who can afford to indulge in such a luxury as this. The farms on the estate do not pay under the altered conditions of agriculture in that country. The rents cannot be collected. The revenues of the estate do not pay the expenses. The policy of Sir Robert Peel in 1846 is working out the results then foretold by many, but ridiculed by many others. Bad harvests, cheap foreign wheat, decaying agriculture, unrestricted foreign competition—these have done it. These obstinate, slow-moving old families cannot adapt themselves to the new order of things surrounding them, for they are Bourbons, who never forget anything, and who never learn anything. There are scores of just such instances in England to day; and the farmer there finds himself between the upper millstone, represented by the aristocratic land-owners, and the nether millstone, represented by the manufacturers, whose highest ambition is to produce cheap goods and to clip coupons. Pride and vanity may not be disappearing from among these landed aristocrats, but their wealth certainly is; for we find that they are being constantly forced to cut down expenses in all available directions. Carriages are dispensed with; servants are dismissed; fashionable town houses are unoccupied, and those who once fondly thought that England belonged to them now find themselves forced to sell their vast estates, and only too glad to be able to retain enough proprietorship in the soil to embrace a place scarcely more than sufficient to shelter them.

It is no consolation to the British farmer that his landlord is in the strait we find him to day. If the acres of the noble Lord have to go under the hammer, certainly the farmer is in no condition to become the purchaser; and he recognizes the fact that he is going from bad to worse all the time. He knows that only rich men can be members of Parliament and make laws, and that no poor farmer can aspire to a seat in the House of Commons. Those seats are occupied chiefly by wealthy merchants and manufacturers who have nothing in common with him; and it is to their interest to legislate with a view to making farm products exceedingly cheap in England. Hence the place of the farmer between the upper and nether millstone. Time was when the British farmer was not in this sad plight, but his condition shows the baneful effect of British free trade—the most fanatical fad that ever affected a sensible people.

The condition of the British farmer is an object lesson well deserving the attention of the Canadian farmer. More than eleven millions of good cultivatable land in England are now lying waste, and this simply because wheat and farm produce generally can be produced cheaper in other countries. England admits free of duty such things as she herself could produce—and she taxes things which she cannot produce. This is the theory of free trade as distinguished from protection, the theory of which is to admit raw materials free such as cannot be produced at home, and to levy import duties upon such articles as are or can be made at home. There are nearly a million workmen in England who are unable to obtain work, and there are hundreds of thousands of workmen there who labor sixteen hours a day or more for starvation wages. If this

is a sad outlook for workmen who depend upon mechanical trades for their living, the condition of the agricultural laborer is much worse. His life is an incessant toil for wages too small even to afford the commonest necessaries of life. His career is one long toil, and his dying days, if he attains to anything like old age, are usually passed in a workhouse and in the depths of squallor and misery. Free trade does it. Britain imports a hundred million pounds sterling of bread-stuffs every year, a large portion of which might be produced upon British farms—upon the eleven million acres there of cultivatable land, which are now lying idle.

It will not always be thus. The agricultural classes of England are beginning to discover that Cobdenism and free trade, and the so-called free breakfast table so much talked about, are delusions and snares. The other laboring classes—those employed in mechanical industries and those who can obtain no employment, find that the east wind of sweet-sounding promises regarding cheap food and a free breakfast table does not satisfy their hungry stomachs, warm their shivering bodies, nor shelter their defenceless heads. These promises do not afford either food, clothing or shelter; and in the absence of employment, or of insufficient wages, these people are considering whether they would not be better off if all the landed estates of the English aristocracy were not divided into small holdings and put under the hammer and sold; whether the time had not come when the peculiar privileges of the Lords had ceased, and if more practical men should not be called to represent them in the House of Commons and make laws which would protect the interests of the working classes. Indications point in that direction now; and although the cloud may not now be bigger than a man's hand, it will certainly increase, and result in a deluge which will sweep Cobdenism out of existence, and establish a system of protection which will do for the laboring classes of England what it is doing for the same classes in other countries. British agricultural interests will never again be in a prosperous condition until England gives them the benefits of tariff protection.

AS TO "TORIES."

THE *Empire* continues to make itself ridiculous by abusing the "Yankees." It gave a long editorial a few days ago to explaining what these bad people mean when they speak of the Conservative party of Canada as being "Tories." It tells us that since the Revolutionary War there have been no Tories in the United States, but that up to that time there was a class of people there to whom that name was given as a term of reproach; and that many of these adherents to the Crown took up their abode in Canada when the fortunes of war favored the birth of the American republic. We quote from the *Empire's* silly expressions:—

We should not wonder at the bitter and relentless hate of these people by those who so heartlessly persecuted them, for it is something like a law of human nature to hate those whom we have injured; but that this insensate hatred should be kept up for more than a hundred years, and made to descend from the fathers to the children to the fourth and fifth generation, is surely a singular illustration of the persistency of evil and of the blinding influence of inherited prejudice and passion. But,

whether it please these revilers or not, the people whose property their fathers confiscated, and whom they barbarously drove from their homes into the all but unbroken forests of Canada, are here yet, and here to stay; and if all this malignant and insolent talk has no other effect, it certainly will serve to keep alive the memory of their wrongs and their sufferings. The spirit of those men still lives in this country and is not at all likely to die out; but if there was any danger of such an eventuality, the course which is being pursued by an influential section of the political press of the United States is quite sufficient to prevent it.

This all grows out of the fact that certain newspapers in the United States have a great deal to say just now about the "Tory" party in this county: and what we have quoted is only a specimen of a column long article of such stuff. The fact is the *Empire* has made it its mission here upon earth to say and do all its little best to stir up and ferment all the ill and unkind feelings it can against our neighbors. It may think—if it does think—that doing so makes friends for the Conservative Party to which it seems to be allied, and in strengthening a feeling in Canada which will some how or other keep the Yankees from gobbling up this country. The animosities existing at the time of the Revolutionary War are long since buried and forgotten, and the space between 1776 and 1891 is too great to be bridged over for the sake of reviving unpleasant memories. The question of Whigism and Toryism as existing in the United States more than a century ago has no possible bearing upon the political parties of to-day, and the *Empire* will find it difficult to array the United Empire Loyalists of Canada against either Republicans or Democrats of the United States, or against the Government or people of that country, for what transpired when George the Third was King. Why become excited because Yankee newspapers call Canadian Conservatives "Tories"? Why call it "rhetorical garnish," and "cheap taitwisting" designed to conciliate the Anglophobia element; and why consider it an "insult and injury"? We fail to see how being called a "Tory" by a Yankee is an attempt to meddle with the party politics of this country, as the *Empire* says it is. This sort of thing is not argument—it is not common sense—but it is exceedingly mischievous, or would be if it did not suggest the escape of a lunatic who had found refuge in a newspaper office.

Canadians who love their country, her institutions and her connection with Britain—those who know the derivation and meaning of the word—the term "Tory" is not considered a reproach. Is Lord Salisbury ashamed of being called a "Tory"? In English politics the Conservative party is called the "Tory" party even as what was formerly called the Whig party is now called the Liberal party. Canadian Conservatives need not blush to be called Tories when the destinies of grand old Britain have been for so long directed by Tories. Canadian Conservatives need not become angered because American newspapers call them Tories. The *Empire* is on the wrong track.

"HEADS I WIN—TAILS YOU LOSE."

THE Cleveland, Ohio, *Marine Review* informs us that when the commissioners appointed by the Canadian Government meet in Washington to consider the subject of reciprocal trade relations, it will be found that the American Lake Carriers' Association had presented to the State Department

a statement relative to the tolls on the Welland Canal discriminating against American vessels, ports and citizens. It tells us that the document will urge upon the United States Government to take prompt and energetic measures to secure full rights for American interests under the treaty of May 8, 1871. It quotes Article 27 of that treaty as follows:

The government of Her British Majesty engages to urge upon the government of the Dominion of Canada to secure to the citizens of the United States the use of the Welland, St. Lawrence and other canals of the Dominion on terms of equality with the inhabitants of the Dominion. And the government of the United States engages that the subjects of Her British Majesty shall enjoy the use of the St. Clair Flats canal on terms of equality with the inhabitants of the United States.

These American lake carriers in airing their grievances contend that the Canadian government have violated this article of the treaty by the imposition of tolls and the institution of a system of rebates on the Welland Canal which discriminate against citizens of the United States and in favor of citizens of the Dominion, and that "simple justice to American forwarders and vessel owners requires that on grain bound for Montreal the same tolls should be exacted at the St. Clair Flats Canal that are exacted at the Welland Canal on grain destined for ports of the United States."

The ground upon which this complaint is based is the facts set forth in the recent annual report of the Minister of Railways and Canals, in which it is shown that during 1890 there passed down the Welland Canal to Canadian ports 368,839 tons of freight of which a rebate of nine tenths of the tolls was granted upon 212,080 tons; while during the same season 327,833 tons of freight passed down the same canal to American ports upon which rebate was granted upon only 16,433 tons. But we fail to see any discrimination in this; for the facts show that although rebates of tolls were granted upon cargoes carried to Montreal in Canadian vessels, like rebates were also granted upon cargoes carried to that city in American vessels; and it is also shown that if American cargoes did not receive rebates not going to Montreal, Canadian cargoes fared no better under like circumstances. It is certain there is no toll discrimination whatever against vessels because of their American nationality.

The proposition of the American Lake Carriers' Association for the United States Government to exact the same tolls upon Canadian vessels and cargoes passing through the St. Clair Flats Canal bound for Montreal, as are exacted at the Welland Canal on American vessels and cargoes destined for ports of the United States is scarcely feasible. Will like tolls be exacted at St. Clair on American vessels bound to Montreal? And then this wise association should bear in mind that what it calls the St. Clair Flats Canal is not entirely in American territory, and that Canada has as equal and full right in the navigation of that pass as the United States; for, as has been heretofore shown in these pages, this strait is supposed to be upon the international boundary line; some recent surveys going so far as to show that one end of it is entirely within Canadian territory.

The Lake Carriers' Association's proposition is like that of the cute gambler—heads I win—tails you lose.

SUBSCRIBE FOR
THE CANADIAN MANUFACTURER.

WHAT DOES THIS MEAN ?

A TELEGRAM from Washington states that efforts are being made to induce the United States Government to ask for a modification of the treaty of 1817, by which the United States and Great Britain were both prohibited from the maintenance of war vessels on the great lakes lying between the United States and Canada, so as to allow the United States to establish a marine militia on the lakes, and build and maintain the vessels necessary for that purpose. The feeling is that the best interests of the United States requires that there should be this increased means of defence in the event of any trouble arising between the two countries. This treaty can be abrogated by either country, simply by giving six months' notice of a desire to that effect. This is not an unexpected move in the United States, for we have observed that for a year or more past, and since the shipbuilding industry on the American side of the lakes has assumed so great importance, the desirability of establishing navy yards, and building some of the vessels there for the new navy, has received considerable attention. In fact one or more of the smaller of these American war vessels would have been built probably at Wheeler's works at Bay City, Michigan, if the terms of the treaty had not forbid it. Our American cousins are an imitative people. When they discovered that the three new steamers, built by the Canadian Pacific Railway for the trans-Pacific trade to China and Japan, were constructed with a view to their instant conversion into armed cruisers, and that complete armaments for each of them had been deposited at Esquimalt, although they denounced the matter as being semi-hostile, they were quick to see the advantages which might exist in such an arrangement should an emergency arise; and now, in imitation, they desire to require that all commercial vessels of certain descriptions hereafter to be built on the lakes, shall conform to such requirements as the Government may impose, with a view to their instant conversion into gun-boats, or cruisers, should their services be required as such. They understand that in case of hostilities with Britain, it would be impossible for them to bring any of their war vessels from the Atlantic into the lakes via the St. Lawrence river and the Welland canal. Of course there will never be any necessity of their doing so as long as peace is maintained between the two countries, and war vessels on the lakes would never be needed except for war purposes. If the United States really desire to recover the privilege to have war vessels on the lakes, they have the means to gratify their wish—by abrogation of the treaty—and neither Canada nor Britain would have any right to object. But should the United States enter upon the building of war vessels upon the lakes, it could not but be construed as a menace to the integrity of Canada, and the example would have to be quickly followed by the appearance of quite as formidable British ships on our inland waters. That is if they could be placed there. But could they? Would it be possible for even the smallest ships of the British navy to gain access from Montreal to lake Ontario? Only during the past summer we have seen that several vessels built above the Welland canal, and destined for salt water, had to be cut in two to enable them to pass through the intervening canals; and we know that only very light draft vessels can pass through the canals between Montreal and Toronto.

Forewarned, forearmed. If the United States determine to place war vessels upon the lakes, Canada must make it possible for British ships to sail upon these waters. To do this implies the entire reorganization of our canal system, particularly of those between Toronto and Montreal. The locks would have to be lengthened and widened and deepened; and not only these, but the Welland canal would require works which could defend them from hostile attacks aimed at their destruction. If these changes are made in our canals, and if they can be successfully defended, all the power of the British navy would be available for Canadian defence. If this work is not done, in the event of war between Britain and the United States Canada could be overrun by the enemy, and every city, town and village along our lake shores brought under the guns of American war ships. British ships no farther west than Montreal would avail nothing in the defence of Toronto, Hamilton, and all other Canadian lake cities.

It is to be hoped that no war will ever disturb the friendly feelings that now exist between this country and the United States. Canada desires no war; but we cannot tell what may be in the future. It was to be hoped that the two different English speaking people of this continent would be spared the conditions prevailing in Europe, where the wealth of the nations is expended largely in maintaining armies and in buying arms and ammunition. If such condition prevailed here, it would not be the choosing of Canada; but the question naturally arises, Why does the United States desire to build and maintain war vessels on the lakes? The only use to which they could be put would be to operate against Canada; but why do our neighbors desire to arm as against us? We know that there are those in Canada who are constantly proclaiming their desire for annexation, and they declare on all occasions that the people of this country desire to come under the American flag. There is no sentiment of this character prevailing in Canada, but if the American people believe that there is, their insane ambition for national aggrandizement would naturally lead them to prepare for such an issue. We also know that there are those in Canada who would resist any effort to annex this country to the United States, and this is the prevailing sentiment. Canada can never become annexed to the United States, and any effort or attempt to haul down the British flag, substituting the American flag therefor, would mean a most determined and bloody war. Is it this war that the United States wants to prepare for by building war vessels on the lakes? We hope not.

EDITORIAL NOTES.

A POINTER to farmers:—The wider the home market the better the prices for farm products. Where the home market is small, prices for farm products are also small.

WE are in receipt of a letter from a large manufacturing concern in Eastern Ontario asking us to give some reasons why we think there should be increased protection upon pig iron. This matter will receive due attention in the next issue of this journal.

PROFESSOR WIGNAM, the eminent electrician of Trinity College, Dublin, says that lights produced by oil are visible in

foggy weather to a useful distance, while the electric light is invisible, and therefore useless when it is most needed. This evidence is corroborated by the London Shipmasters' Society.

If Canada levied an export duty upon nickel ore and matte perhaps we could work Mr. Blaine's reciprocity racket on the United States, and offer the remission of the duty thereon as an inducement to withdraw some of the exceedingly unfriendly provisions of the McKinley tariff. But alas, we have no export duty on nickel ore and matte.

SINCE 1860, the commerce of England has increased less than six times, while that of the United States has increased more than six times. England's export trade has increased four times; that of the United States eight times. From the third producing power of the world, the United States has risen to be the first. Previous to 1860 her exports amounted to \$9,000,000,000; from 1860 to the present time, they have amounted to \$14,000,000. Protection did it.

As long as human slavery existed in the United States, South Carolina was the hot-bed of Cobdenism and free trade. Under the benign influences of freedom and tariff protection, that State is making wonderful strides in industrial greatness. Comparing the conditions of 1889 with those of 1890, the number of manufacturing enterprises increased from 341 to 360; the number of hands employed from 4,838 to 5,722; capital invested from \$6,946,000 to \$8,997,500, and the value of manufactured products from \$11,954,500 to \$13,742,879.

THE late session of Parliament was not only remarkable for its length, but for the amount of legislation, there being no less than 136 bills passed, the largest number ever got through with in one session. In 1885, although the session was longer, there were only 92 bills passed, and last year the number was 109. Of the 136 bills assented to this year, 55 were Government measures, 80 were private bills, and there was one public bill. The private bills were divided as follows: Railways 45; Bridges and Tunnels Companies 8; Insurance 4; Banks 3; Loan and Land Companies 3; other Companies 13; Divorce 4.

DURING the last fiscal year the importations of Egyptian cotton into the United States aggregated more than 20,000,000 pounds, against only 8,600,000 pounds the previous year. It might be supposed that the United States was able to raise all the cotton needed there for manufacturing purposes, but the long staple Egyptian cotton has been utilized for many years by European manufacturers for the production of the finer qualities of fabrics, which cannot be made without it. American manufacturers have begun to compete with the foreigners in the production of these fine goods, and to do so successfully they are forced to use Egyptian cotton.

THOSE Grits who have been amusing themselves by alleged witticisms about Mr. Adam Brown's "pleasure trip" to the Jamaica Exhibition, and prophesying that Canada can never do any business with the West Indies, on account of the National Policy, would do well to study the Jamaica papers just now, and note the advertisements of Canadian goods, something which never appeared in a Jamaica newspaper

before the Exhibition. In the issue of the Kingston *Gleaner* of 7th September, there are no less than fourteen advertisements of Canadian goods, including butter, cheese, tweeds, fire extinguishers, furniture, fish of various sorts, whiskey, buggies, harness, whips, saddles, flour, cornmeal, crackers, paper, and many other articles.—Vancouver, B.C., *Telegram*.

It is quite true, as the CANADIAN MANUFACTURER emphatically assures the "Grits"—the Liberal and anti-Protection party—of Canada, that there is little prospect of getting a new one-sided treaty of counterfeit reciprocity out of the United States. The present administration of this nation will agree to no such thing. The conference between the representatives of Canada and the United States arranged to take place at Washington on October 12th has been postponed, owing to the continued indisposition of Secretary Blaine, and when it shall be held,—if ever—the outcome will not be a treaty to give Canada the chance to grow big at the expense of the United States. Canada, like her own hibernating animals, will have to live a while on her own fat.—*Philadelphia Manufacturer*.

THE folly of purchasing property without first having learned all about it was recently illustrated in Chicago by the fate of some unwise persons there, who bought and paid for lots in one of the new districts of that city. When they came to inspect their property they found that it was under two feet of water, and with slight chance of draining it. The land was there, but it was entirely unavailable and useless for the purpose for which it had been bought. The property was bought by over-confiding people who placed implicit confidence in the word of the plausible seller. They did not investigate the surroundings as they should have done before investing their money. It is always better to look before you leap.

THE *Empire* tells us that the Republican party of the United States "has by its policy done more than everything else to force us into the adoption of that modified form of protection that exists in this country." So? It is our impression that Canada adopted the National Policy not because the United States had a similar policy, but because it was believed that the N.P. was just what Canada needed. If Sir John, the father of the N.P., were alive, what on earth would he think when told by the *Empire* that the republican party of the United States had "forced" Canada to adopt protection? The *Empire* does not seem to appreciate what Sir John A. Macdonald did for Canada. It gives the credit to the Yankees.

SENATOR HISCOCK, of New York, in a recent speech at a county fair defined the meaning of reciprocity as follows:—

Reciprocity is the same relation between nations as that which exists between two farmers who are neighbors. If one has a surplus of one essential and the other has something needed by both, they exchange what they have for what they want. Reciprocity does not mean that the products of any competitive nation shall be forced into our markets to our detriment, but that we shall trade with nations not competitive for those things which they have in abundance and which we need, and give the products of the fields and shops which they have not.

And still there are those in Canada who insist that reciprocity can be had with the United States for the asking.

A FEW days ago, Prof. S. H. Emmons, of Pennsylvania, passed through Toronto on his way to the Sudbury and other

rich mineral regions of Ontario, seeking openings to invest large capital in nickel mines in the interest of American capitalists and manufacturers. There is not much being said about the exportation of Canadian nickel ore, but we understand that the mining and smelting operations at Sudbury are being pushed with much vigor, the ore and matte going to the United States to be refined and manufactured. Canada is reaping a rich and valuable harvest of holes in the ground and what will prove to be sad experience as her share of these transactions. It is suicidal not to impose an export duty upon nickel ore and matte.

CANADA buys over \$20,000,000 worth of manufactured goods from the United States yearly, and yet American statesmen tell us that they will not consent to any form of reciprocity of trade between the two countries, unless it include manufactures as well as natural products. In adopting the McKinley tariff the United States set an example which Canada might do well to follow. Canada might well afford to adopt the spirit of the McKinley tariff, as far as manufactures are concerned, and enforce it, as against the United States, to be void, nevertheless, and the present tariff reinstated, on condition that the United States withdrew her discrimination against us, as represented by the duty of five cents per dozen on Canadian eggs. The scheme might be worth the trial.

THERE are now engaged in the building of new war ships for the American Government, something like 50,000 men. This force is scattered throughout the whole of the United States. It comprises the workmen in the shipyards all along the Atlantic Coast and on the Pacific Coast. It includes yards in the Chesapeake, as well as yards on the coast of Maine. Every principal port in the country is to some extent interested in the new development. In Western Pennsylvania, in Ohio, in Iowa, in Western New York, in West Virginia, in the interior of New Hampshire, to say nothing of the yards on the banks of the Delaware, the yards at Norfolk, the shops in Richmond, Va., the private establishments in New York City—all are engaged in war-ship work.

HERE is an illustrated lesson, worthy of a more than casual study by the young man of to-day. It shows what value employers place upon sobriety and an upright character. The Washburn and Moen Manufacturing Company, one of the largest employers of labor in the United States, were contemplating the erection of a new plant near Chicago. At first South Chicago was selected as the site. Then the close proximity of the saloon came in as a factor. Sober men do better work. Negotiations were opened with Waukegan, fifty miles from Chicago, offering to locate there if that city would banish saloons. The proposition was agreed to, and the company with a weekly pay roll of \$20,000 goes to Waukegan. Here is a lesson for enterprising towns that are looking for new industries.

THE manufacturers had only to ask to receive. They did ask and they did receive. They alone had any one to present their claims. They stated what taxes they should like to be levied upon the 62,000,000 of consumers, and they were levied with a disregard of popular interests which was astounding.

The manufacturers levied the duties and the people pay them.—*Philadelphia Telegraph*.

That is precisely the situation of Canada. The protected manufacturers dictated the duties, the Government levied them and the people pay them.—*Montreal Herald*.

The fact is, the people in both Canada and the United States desire protection and they will have it. The *Herald* trying to defeat protection is very like Mrs. Partington who tried to beat back the advancing tide of the Atlantic with a broom. Protection will not be kept back.

"It is a fact beyond contradiction," says a correspondent of the *Halifax Herald*, "that this province (Nova Scotia) is fast drifting towards direct taxation." So are all the provinces under Grit rule. The motto of their financiers is: What has posterity ever done for us? Let us eat, drink and be merry, for to-morrow we die.—*Empire*.

It is evident that the province of Nova Scotia, and all the other provinces require revenues with which to maintain Government. How are these revenues to be obtained? Dependence is now had upon the Dominion Government for large subsidies, but in our opinion this system is inherently wrong and demoralizing, and should be abandoned. Some of the provinces obtain some of their revenues from sales of timber and mining lands, but this is not general, and the revenues derived therefrom are not equal to the requirements. How else, then, can provincial revenues be raised than by direct taxation? The United States Government do not contribute a dollar to the states of the union, and their revenues are obtained mostly by direct taxation.

WHILE the state department is giving attention to that part of the treaty of Washington which is being violated by Canada in the matter of Welland Canal tolls, would it not be well also to consider a feature of the treaty of 1817, which, according to the recent ruling by Washington authorities, prohibits the building of war vessels of any kind on the lakes. It was through a clause in this treaty that F. W. Wheeler & Co., of West Bay City were a short time ago refused the contract for a practice ship, although they were the lowest bidders, and now there is doubt whether this same vessel can be brought up to the lakes for exhibition at the World's Fair. The organization of a naval militia on the lakes, if vessels are to be used in practice for the militia, is also in doubt on account of the treaty.—Cleveland, Ohio, *Marine Review*.

Better go slow on this naval militia business, and the building of any sort of ships on the great lakes for naval or militia purposes—it is "agin the law." But what does the *Marine Review* mean by "considering" that feature of the treaty of 1817 which prohibits the existence of war vessels on the lakes? Does it want the treaty set aside so that American war ships may be kept on the lakes as a standing menace to Canada?

THE *Toronto Globe* affects to think that the British Minister of Agriculture, Mr. Chaplin, is disposed to join hands with Major McKinley in a base conspiracy against the Canadian hen, because in a speech he recently made at a meeting of the Fruiterers' Company in London, he said: "We import into this country every year eggs to the value of no less than £3,400,000. Surely it would not be a very great thing if we were to make an effort in the future which should enable us to

produce £3,400,000 worth of eggs instead of importing them." The *Globe* tells us that this is a most cruel blow at the Imperial trade policy. This is a mistake; and even if Britain should produce all the eggs she requires, thereby ceasing to be a purchaser of Canadian eggs, it would be no discrimination against Canada, such as the McKinley tariff imposes, of five cents per dozen. No doubt the day is approaching when Britain will show more consideration for her agricultural and farmers' interests than what she now does; and when that time comes, there will be no discrimination against Canada, although American eggs and other produce might find a tariff barrier there.

ONE of the greatest advantages which has yet occurred to the United States from the operations of the McKinley tariff is that by which the ban upon American pork and hog products in Germany is removed. It will be remembered that for some years Germany has refused to admit these products, the ostensible objections being that all hogs in the United States were affected by disease. The American Government have heretofore failed to get this restriction removed, and no doubt it would not be removed now, except for the McKinley tariff. More than four-fifths of all the raw beet-sugar imported into the United States is made in Germany, the importations last year amounting to nearly \$9,000,000. Under the American tariff this raw sugar is admitted duty free, but that law allows the President to re-impose the old duty upon German sugar if Germany persists in excluding American pork; and now it is suddenly found that American pork is not as bad as it was said to be; and for the sake of retaining the American market for her beet sugar, Germany is now willing to consider the American hog quite good enough to associate with German stomachs.

SUGAR in Montreal is quoted at $4\frac{1}{2}$ cents a pound for granulated. In New York it is quoted at from $4\frac{1}{2}$ to $5\frac{1}{8}$. When the article was a little lower in the States than in Canada Reform journals made the most of the fact, and pretended that Canadian consumers were being robbed. When the price is lower in Canada the same people are as quiet as you please. They are eager to say everything bad about Canada, but they cannot persuade themselves to speak a good word for it.—*Hamilton Spectator*.

What makes sugar cheaper in Montreal than in New York? It is not because we can buy raw sugar cheaper than the Yankees, for we cannot. It is not because we can refine it cheaper than the Yankees, for we cannot. It is not because Canadian refiners have more liberality than the Yankees, for they have not. If they had they would sell cheaper all the time, and not by jerks and starts merely for an ulterior purpose. We admit that our refiners can buy raw sugar as cheaply as the Yankees, and they publicly declare that they can manufacture as cheaply, but still they insist on having \$6 per ton more duty in their favor than the Yankees under the McKinley tariff. The *Spectator* should come off.

THE Toronto *Globe* shows good taste in admiring our cartoon, in which a Canadian mechanic and a Canadian farmer are represented as enjoying their profits derived from the protection given to their industries, seated in the shelter of the National Policy wall, which keeps out envious Americans.

Unrestricted reciprocity would sweep this protecting wall away, and the envious Americans would then have nothing to prevent their swarming into the land like red-legged grasshoppers in a Kansas harvest time, and desolating the prospects of the Canadian boys. These envious Americans already boast that they send us forty-three per cent. of all our importations of manufactured goods; but if our tariff wall was a little higher, these goods would be manufactured in Canada. The *Globe* speaks truly when it says that at present the wall is not high enough to keep the youth of Canada from climbing over in search of the unrestricted opportunities which it tells them are to be found on the other side. That is just what we say. If the wall was higher, the millions of dollars annually sent to the United States for manufactured goods would be spent in Canada, which means that these Canadian youths who are deceived by the glamouring yarns of the *Globe*, would find full occupation at home, and at greatly increased wages. That is what a higher tariff wall would do for Canada. Mr. McKinley viewed the matter somewhat in the same light when he raised the American tariff wall. By the bye—will the *Globe* kindly enlighten us as to what it really means by unrestricted reciprocity? Please tell us all about it and how it would work.

A TELEGRAM from Washington a few days ago stated as follows:—

Mr. Charles A. Pope, United States Consul at Toronto, is making a short visit to the States. He is reported as expressing the opinion that the Canadian people had never been so anxious as at present to have the tariff barriers of trade taken down between Canada and the United States, and that there is a growing sentiment among them that if a separation from Great Britain is necessary to accomplish that object, then separation is the thing to advocate.

Mr. Pope is no doubt a very clever gentleman, and perhaps knows enough to make a good United States Consul, but if he really said what is reported in this telegram, he is certainly making an ass of himself. It is likely that he has fallen into the hands of a parcel of tricky Grit politicians, who have stuffed him with a lot of unrestricted reciprocity nonsense, which he is now retailing broadcast in the United States. No doubt but these politicians from whom Mr. Pope has been imbibing are in favor of unrestricted reciprocity, which also means annexation, and it is from them he gains the idea that there is a growing sentiment in Canada in favor of separation from Great Britain. That any such unpatriotic ideas prevail to any appreciable extent in this country is false, and Mr. Pope is making himself ridiculous in repeating any such stories. Perhaps he is somewhat like the ex-Governor of Louisiana who spent some time in Canada last summer, and was accorded the generous hospitality which Canadians are always willing to extend to respectable visitors, but who mistook this hospitality as an evidence of a desire for annexation.

THE Toronto *Labor Advocate*, the weekly labor reform newspaper recently started in this city, has ceased to exist. It was endorsed by the Toronto Trades and Labor Council and by a District Assembly of Knights of Labor, was edited by one of the best writers in Canada, judging from the standpoint which he occupied, and the financial backing was abundantly ample and liberal, and yet it failed to receive the patronage it

deserved as a commercial venture. It was undertaken at the earnest request of the representatives of labor organizations, and on the assurance that the members of those bodies were desirous of having a paper published in their interests, and would give the undertaking a liberal support. The management made most worthy efforts to meet the views of the laboring classes, and while the more active and progressive men among them did what they could to keep their organ alive and in a sound financial condition, the mass of organized workmen were apathetic and indifferent. From our standpoint, the *Labor Advocate* was often very far astray in its conclusions on economic questions, but whatever they were, they were fearlessly and honestly said, and it was a good and aggressive fighter. The paper should have lived and prospered. This was to be desired, because, being in sympathy with the working classes, it was always available as a mouthpiece for whatever they might consider their grievances, and the advice it gave was sincere and usually reliable. With this safety-valve within reach, a greater feeling of satisfaction existed than is likely to be experienced by organized labor now the *Advocate* is no more.

DR. SPOHN, the Grit Parliamentarian, who recently pleaded so fervently in the House of Commons for unrestricted reciprocity with the United States, advanced some very cogent reasons why it would not be a good thing for Canada. He showed that from a thousand feet of lumber culls worth \$7 per thousand at mills on Georgian Bay, could be manufactured 500 feet of wainscotting, and that wainscotting was worth \$40 per thousand feet in Buffalo. It requires 24,000 feet of culls to make 12,000 feet—a car load—of wainscotting, worth at the mill \$168, and cost of making, \$12. In other words, 12,000 feet of wainscotting, manufactured in Canada, costs \$168 for lumber, and \$12 for manufacturing, or \$180 total—say \$15 per thousand; while in Buffalo the same article is worth \$40, a clear difference in favor of Canadian consumers of \$25 per thousand feet. Wainscotting is essential in building homes for Canadians. Then as to doors for houses. Dr. Spohn tells us that the ordinary four-panel door is made of lumber worth \$22 per thousand feet at Georgian Bay mills, and that these doors are worth but \$1.50 wholesale in Canada, while in Buffalo they are worth \$2.20. This too, is a difference in favor of the Canadian consumer of 70 cents per door. Doors are essential in building houses for Canadians. Now, it is a well-known fact that the selling price of an article is usually controlled by the consuming market, and Dr. Spohn took great pains to show that unrestricted reciprocity would advance the price of wainscotting \$25 per thousand feet, and doors 70 cents each. Why, then, should Canadians desire the change? The time will come by-and-by, when, if the Americans want cheaper wainscotting and doors, they will reduce or remove their duty, and admit Canadian made goods. If not, they will have to pay the difference out of their own pockets.

CANADA has just harvested the largest and most valuable crops ever cultivated on her soil. Protection did not cause the sun to shine, the warmth to stimulate, the rain to fall, nor any of the happy concatenation of events to occur by which this great blessing came to the country; neither did protection cause the agricultural depression in Europe, resulting from

the failure of crops there. Heretofore we have experienced similar depression in Canada, and that, too, was not to be ascribed to protection or the absence of it; and whatever depression we may have felt at any time, was due to conditions entirely independent of any source or thing in any way controllable by any force or system existing in this country. Our surplus of agricultural products has to be thrown upon the great consuming markets of the world, just the same as the surplus products of all other nations is thrown. If as in other years the surpluses of other nations were large, and the supply greater than the demand, the agricultural industries of Canada were depressed and the country suffered. In this year crops of some large producing nations are small, and the demand is larger than the supply; and Canada, having abundant crops, is largely benefited by the situation. It can readily be seen that the larger the home consumption of farm products, the less there will be for export, and the less there is for export, the less dependent we are upon the fluctuating markets of the world. The prosperity of our farming interests depends more upon the volume of home consumption than upon the foreign demand. Diversified industries is what we need. Diversified industries give the best opportunities for employment to the greatest number; and this is quite as true of agricultural industries as of manufacturing industries; and protection is what affords us this diversification. Nothing else will do it.

A RUMOR was afloat a few days ago to the effect that the Government intended to reimpose the log export duty. It has been impossible to trace the rumor to a reliable source. It may have been started for the sake of the effect it might have in connection with the reciprocity negotiations, but it can scarcely be possible that the Government seriously contemplates such action, the first effect of which would be to double the American duty upon the pine lumber imported from Canada. The removal of the export duty was made in consequence of a statutory offer contained in the McKinley bill which provided that the duty upon pine lumber should be \$1 per thousand, except in the case of lumber imported from countries imposing an export duty on logs. In the case of such countries the duty was to be \$2 per thousand.—*Toronto Mail*.

No such good news as yet of the reimposition of the export duty upon pine logs, though why the Government should hesitate in the matter, or why the duty was ever removed passes ordinary comprehension. The duty was imposed in the first place because it was discovered that Canada obtained no share in the manufacture of the logs into lumber, and it was thought that the imposition of the duty would help to build up the saw mill interest in this country. This is precisely what it did accomplish; and because American owners of Canadian timber limits found themselves thus handicapped in taking their logs to their mills in the United States, they gained the assistance of the McKinley tariff in imposing a discriminating duty upon Canadian sawn lumber. When the American Government threatened to impose a double duty upon Canadian lumber unless Canada removed the export duty upon logs, instead of crawling and removing that duty our Government should have answered by increasing the export duty to \$2 or \$3 per thousand feet on logs. It may be that the so-called Canadian timbermen do not want to have any restriction upon the exportation of logs, but every other interest in Canada suffers because we do not have it.

THE following telegram was flashed over the wires from Pittsburgh, Pa., a few days ago:—

On Friday night there was cast in the open-hearth department of Carnegie, Phipps & Co.'s Homestead Steel Works a nickel steel ingot weighing over twenty-five tons. It took the entire contents of one open-hearth melting furnace to make the cast. The ingot when stripped was found to be a perfect cast and absolutely without a flaw. It will be reheated and then rolled into a single armor plate for the United States monitor Monterey, now in course of construction. This is the largest of the nickel steel ingots yet made in any steel mill in this country. The other ingots cast for armor plate by the Carnegies weigh from six to twenty tons. In a few days the Carnegies will cast a nickel-steel ingot weighing fifty tons. It is also destined for the United States monitor Monterey, and when finished will be thirteen inches in thickness. The great armor plant of the Carnegies is now almost complete, and the firm is meeting with success in its new undertaking. One of the naval inspectors at the Homestead Steel Works informed a reporter that the Carnegies are meeting with far better success in their experiments with the nickel alloy than the La Creusot works in France. This success is most marvellous when it is remembered that where rises the monstrous steel-girded buildings that cover more than \$500,000 worth of machinery, was but ten months ago a cabbage garden where the succulent weed was cultivated to nourish the paupers of the City Poor Farm.

The lesson which Canada should learn from this is that the nickel entering into these armor plates was obtained in Canada, and that all we have to show for it is the hole up in Sudbury from which it was taken. If we had imposed an export duty of \$200 per ton upon the metal contained in the ore, equivalent to the American import duty upon refined nickel, there would have been just that much more money in the Dominion treasury. The American navy can never be equipped with nickel-steel armor unless the nickel is obtained from Canada, and they would have to have it at any price. Our Government could force the erection of immense works in Canada, such as those of Carnegie in Pennsylvania, by the judicious application of an export duty. Wouldn't it be a fine thing to have works here which could manufacture such immense armor plates? There is no good reason why we should not have them, nor why we should not supply the world with armor plates. As it is, however, not even an ounce of nickel is manufactured in Canada. We suppose this is because the Yankees would not like to have us do so. Impose the duty.

THE reports in circulation as to the export of logs from Canada to Michigan during the past season are said to be greatly exaggerated. It is stated upon good authority that the total export this year amounts to less than eighty million feet, board measure. How this compares with the export of pine, spruce, and cedar logs from the state of Maine to New Brunswick the present year we are unable to say. Last year the log export from Maine down the St. John to New Brunswick points is said to have exceeded ninety million feet, board measure.—*Toronto Mail*.

In an editorial in another page of this issue, referring to this exportation of Canadian pine logs to the United States, it is shown on the authority of Dr. Spohn, Grit M.P., in a speech made by him in the House of Commons, that over 100,000,000 feet of logs were annually exported from one part of his district; and a statement of the Sault Ste. Marie *Pioneer* shows that over 200,000,000 feet of logs would be cut in the Algoma district this season to go to American mills. Further corrobora-

tion of this wholesale exportation of Canadian timber to the American market is given in the current issue of the *Canada Lumberman* as follows:—

G. A. Burton, representing the Pulp Wood Supply Company of Appleton, Wis., spent some time during September in the Algoma district with a view to making an arrangement with a responsible party for the taking out of some twenty thousand cords of paper wood. H. M. Sage and Hiram Emery, of Bay City, Mich., have purchased a timber limit on the Serpent river, and Mr. Emery has started camp with the intention of putting in 20,000 000 feet of logs, which will be towed to the Sage mill in Michigan. Without this supply the Sage mill was likely to have been closed down. A. J. Scott and Eli McLaughlin, of Michigan, are in the Georgian Bay section looking up timber limits for William Peter to stock his mill at Bay City, Mich. An American lumber exchange gives currency to the rumor that Merrill & Ring, of Saginaw, Mich., are talking of turning over their mills at Parry Sound, Ont., to some other operators. Edmund Hall, of Michigan, has parties prospecting for timber berths in the Georgian Bay territories. A consignment of 306,685 feet of pine lumber from Byng Inlet, Ont., reached Bay City, Mich., per barge *Hercules* on 8th ult. There is said to be no previous record of the arrival at this port of a direct consignment of lumber from Canada. Howry Bros., of Saginaw, Mich., shipped on the 7th ult., from White Fish river, a raft of 3,500,000 feet of logs, and will take another over immediately on her return. Nelson Holland, of Michigan, is a large buyer of Canadian logs. The Saginaw Lumber and Salt Company depend almost wholly upon Canada for its supply of logs. The company owns a large body of timber on the Vermillion and Wahnapiatae rivers, and also on Fitzwilliam island.

Why does the *Mail* attempt to deceive in this matter? And then it should know that the log export from Maine to New Brunswick is to accommodate the Maine lumbermen who find it more convenient to do their business in that way, the logs being cut into lumber and exported thus under special customs arrangement.

SPECIAL ADVERTISEMENTS.

Advertisements will be accepted for this location at the rate of two cents a word for the first insertion, and one cent for each subsequent insertion. Subscription \$1.

"TRIUMPH OF THE AGE." Attention is called to the advertisement of The Eno Steam Generator Company, Limited, on page 259 of this issue. This Generator is being adopted by the leading manufacturers in Canada and the United States. Every steam user should investigate its merits.

J. L. O. VIDAL & SON, City of Quebec, are agents to sell and handle on commission all sorts of new and second-hand machinery, engines, boilers, pumps, agricultural implements, belting, hose, safes, saws, files, bolts, machines and tools for shoe factories, etc. Consignments solicited. Best references given.

THE HEESON IMPROVED SHAKING FURNACE GRATE has no equal for all kinds of furnaces, round or square, boilers heating furnaces, ovens and stoves. It is the only grate that will clean fires without opening fire doors. It is the strongest bar known, having the most air space, thus securing better combustion. These bars are saving more fuel and generating more steam and will last longer than any other bars on the market.

Ten per cent. saving in fuel guaranteed or no sale. References on application. HEESON GRATE BAR CO., 38 King St. East, Toronto.

FOR SALE, A VALUABLE CANADIAN PATENT.—The Trenholm Improved Perpetual Hay Press, patented 1882, has been manufactured in New Brunswick for nine years, and stands without a rival in the Maritime Provinces. As it has not been introduced in the Upper Provinces, the purchaser can, if he manufactures there, get practically a complete control of the business in Canada, as this machine is cheaper, stronger, easier running and more durable than any other Press of its class, and is well protected by patent. Full investigation invited. Terms easy. Write for particulars to A. J. TRENHOLM, Sussex, N.B.

SPLENDID illustrations, supplements, literary features and artistic arrangement; beautiful engravings, charming stories, sketches and poems, wit and humor, in delightful combination in the Christmas number of the *Dominion Illustrated* for 1891. No expense will be spared to make it the most magnificent holiday souvenir ever issued in Canada. Published by the Sabiston Lithographing & Publishing Co., Montreal.

MRS. GLADSTONE has contracted to write a series of articles for *The Ladies' Home Journal*, of Philadelphia, especially intended for American women. The series will be called "Hints from a Mother's Life," and in it the great English statesman's wife will tell the method which she adopted in bringing up her children. As Mrs. Gladstone is one of the most practical women in England, and her children have all attained positions of eminence, her articles for the *Journal* will have a peculiar interest to every mother in the land.

THE *Western Advertiser*, published by the Advertiser Printing Company, London, Ont., is now issued twice a week, and contains eight pages in each number. Its Western Ontario county news is a specially attractive feature, while news from all parts of the world is placed in subscribers' hands every third day. For sixteen pages every week, the rate of \$1.25 is very low, especially when for this figure is also sent the popular ladies' monthly, *Wives and Daughters*, whose regular subscription price is fifty cents per annum.

THE Philadelphia *Manufacturer*, which has heretofore appeared twice a month, is now published weekly. This is in consequence of its increasing prosperity, and more particularly because of the desire of its proprietors, the Philadelphia Manufacturers' Club, to extend its sphere of usefulness as an exponent of the doctrine of tariff protection to which it is devoted. The *Manufacturer* is doing splendid work in its chosen field, and its activity and usefulness will be all the more influential because of the change here indicated.

OUR *Animal Friends* is a monthly journal published by the American Society for the Prevention of Cruelty to Animals, with headquarters at 100 East 22nd street, New York. The objects of this society are to provide effective means for the prevention of cruelty to animals, to enforce the laws enacted for that purpose, and to secure the punishment of all persons violating such laws. The work in which this society is engaged is not of a local or even national character, for it seeks to extend its influence over all the world—certainly wherever the English language is spoken. Public sentiment now-a-days is keenly alive to this subject, and the most salutary laws we have in this country are promptly administered whenever it becomes known that they are violated. The publication to which we here refer is of a most interesting character, and parents would do well to place it in the hands of their children.

THE *Northwestern Architect*, published at Minneapolis, Minn., is a monthly journal devoted to architecture and building, decoration, sanitation, engineering and general improvements. In these days of advanced sciences there is no good reason why all that we do should not be done correctly, and in good taste; and there is nothing in which good taste, or the lack of it, is so prominent and enduring as in the houses we live in, and the buildings we erect for commercial, social and business purposes. If a building is not well proportioned, and all the features of it in harmony with its surroundings, and appropriate to the purposes for which it was intended, it will be an eye-sore as long as it endures. If the proprieties are observed, being a thing of beauty it will be a joy forever.

Correct taste regarding architecture may be acquired, and this acquirement is accelerated and stimulated by the constant study of such publications as that here alluded to.

PICTURES of Maud S. appear in *The Illustrated American* for the week ending October 10. Along with the queens of the trotting turf, are also published pictures of some of the running horses that have raised and sometimes disappointed the hopes of thousands during the season now closing. Views of St. Thomas are given in connection with the report that the United States have renewed negotiations with Denmark, looking to the establishing of a naval station on that island; the desirability of the site is discussed. Two of the new plays are pictured and criticised, namely, Mr. Richard Mansfield's presentation of "Nero," and Miss Marie Wainwright's production of "Amy Robsart," and a portrait of Miss Isabelle Urquhart is added to the "Gallery of Players." An article of historical interest relates to Louisa, the beautiful and patriotic Queen of Prussia, who armed her husband against Napoleon, and it is rendered additionally valuable by two charming portraits reproduced from famous paintings.

THE newest of important educational movements, University Extension, will have first place in *The Popular Science Monthly* for November. The article is by Prof. C. Hanford Henderson, and, after sketching what has been done in England, it describes the beginning that has been made in the United States, and tells the plans of the extension organizers for the future. With a final paper on the Manufacture of Steel, in this number, Mr. W. F. Durfee will conclude his contributions to the series of illustrated articles on the Development of American Industries. The forthcoming paper completes the account of the Bessemer process, and proves that its chief feature was first developed by an American. Prof. Frederick Starr has a fruitful topic, Ornament, for his Dress and Adornment articles. He has found that "the savage loves finery," and the descriptions and pictures of the forthcoming article well support this verdict. President Goodale chose a very practical subject for his address to the American Association for the advancement of Science, namely, Some of the Possibilities of Economic Botany, and had a great many interesting things to tell about it. The second of the Lessons from the Census, by Mr. Carroll D. Wright, points out some serious defects in the American mode of enumerating the people, and proposes definite measures for its improvement.

CANADIAN PIG IRON.

IN recent issues of this journal allusion has been made to the blast furnaces now being built in Pictou county, Nova Scotia, by the New Glasgow Iron, Coal and Railway Company. The proprietors of the Nova Scotia Steel and Forge Company, of New Glasgow, N.S., of which Mr. Graham Fraser is manager, are largely interested in this enterprise, Mr. Fraser being vice-president of the new company. A few days ago Mr. Fraser was in Toronto in the interest of the Steel and Forge Company, and gave some exceedingly interesting facts regarding what will be the first iron furnace in Pictou county. Mr. Fraser says that the first attempt to manufacture pig iron in Pictou county has been made recently by a company composed largely of the stockholders of an old-established company which for years has supplied most of the steel used in Canada. In 1873 Mr. Fraser, then a practical iron-worker, started in company with Mr. Forrest McKay the operation of a steam forge, the material used being scrap iron. This business was successful, and under the name of the Nova Scotia Forge Co. was run as a private concern and managed by Mr. McKay. Mr. Fraser, with a number of New Glasgow gentlemen, in 1882 organised the Nova Scotia Steel Co., which also proved successful. These two works ran as separate companies until 1889, when they were amalgamated under the name of the Nova Scotia Steel & Forge Co. This business has grown to large dimensions and now employs some 450 men. The melting department consists of two Siemens' furnaces producing the steel by the Siemens-Martin open hearth process, with a capacity of 20,000 tons of steel ingots per annum. When the metal is in a molten condition it is cast into ingots, the steel being run into iron moulds, the ingots weighing from a ton upwards. The moulds are twelve to fourteen inches square at one end and from ten to twelve at the other.

The ingots are reheated and transferred to a twenty-six-inch cogging mill, driven by a pair of horizontal compound engines of 1,000 horse power, and are rolled into billets and slabs. These in turn are again reheated and rolled into finished bars, plates and merchant steel. This material is used very largely by agricultural implement makers, carriage makers, bridge builders, railways, nail factories, etc.; and, of the total product, Mr. Fraser says, more

than one-half comes to Ontario. The Grand Trunk, Canadian Pacific and Intercolonial Railways are all big consumers, getting their car axles from the forge department, which also supplies most of the big foundries and machine shops with their large shafting. The forge is capable of handling shafting weighing twelve tons.

Iron ore of superior quality has been known for the last half-century to exist in the valley of the East River of Pictou, but no practical work has been done until within the last two years, when some of the principal stockholders of the Nova Scotia Steel & Forge Co. decided to develop the deposit by sinking shafts and ascertaining if there were sufficient quantities of ore to warrant the building of a railway to the deposits and the erection of blast furnaces for the manufacture of pig-iron, of which the steel works are large consumers, and up to the present time have had to import from England, Norway and Sweden. The result of these developments was the organization of the New Glasgow Iron, Coal & Railway Co. They have found the conditions singularly favorable. On the East River, Pictou, there is a mineral deposit which rivals in richness the famous fields of Alabama. Coal has been worked in Nova Scotia for the best part of a century and the coal seams of Pictou County are among the thickest known, the famous Ford pit seam being thirty-seven feet thick. The amount of coal in this district is incalculable. The coal measures crop out in some places at the surface and are worked by slopes, while the coal in the Ford pit seam is reached by a perpendicular shaft 1,000 feet deep.

The value of the iron deposits comes from its proximity to coal and limestone. On the one side of the furnace now in course of erection coal is found three miles distant. On the other, within seven miles, are iron and limestone, the latter within 100 yards of the iron ore. There are four workings. One in the side of the mountain, another slopes in for 350 feet from the surface at an angle of 30 degrees, while the other two are reached by perpendicular shafts at a depth of 80 and 100 feet. The ore is a brown hematite of rich quality and free from sulphur and other impurities. The deposits are from five to twenty-two feet thick. Nature must have marked off the place as an iron centre, for not only has she brought the raw material together in a remarkable manner, but she has placed it within fourteen miles of Pictou, one of the best harbors of Nova Scotia.

Few persons except those engaged in the production of iron can fully appreciate these advantages. There is plenty of coal in the country and mountains of iron ore, but in most cases a long haul is needed to bring them together, and the cost of haulage entirely shuts out the chance of successful manufacture. Four to five times as much raw material has to be dumped into the furnace as is again taken out in the shape of iron. From this it becomes apparent that the rate of freights has a determining influence in the location of iron furnaces. The New Glasgow Company have anticipated this feature, and are now engaged in building a railway from the furnace side to the iron mines. One mile is already finished, while grading on the entire length will be completed this fall. The new town, for the project embraces the building up of a populous centre around the works, has been appropriately named Ferrona. The construction of the works there is being pushed on rapidly. One furnace, fifteen by seventy feet, is well under way, and three hot blast stoves, seventeen by sixty feet, are nearly completed. A contract has been made for two Worthington steam pumps, of an aggregate daily capacity of 1,500,000 gallons for the supply of water from the river to the furnaces. The production of iron will be begun next May, and the capacity of the first furnace will be from 20,000 to 25,000 tons per year. If it proves as satisfactory as is expected, the capacity will be doubled.

There seems to be no lack of capital to give the industry a fair start. The directorate is composed of thoroughly practical, influential men, with a large stake in the venture. Mr. J. F. Stairs, M.P., is president. The capital is \$1,000,000.

ELECTRICAL TRANSMISSION OF POWER.

An achievement of extraordinary interest has been accomplished through the success, announced by cable to the *Electrical World*, of the transmission of power by electricity from Lauffen on the Neckar, near Heidelberg, to the Frankfort Electrical Exhibition, the distance being 180 km., or about 112 English miles. It is claimed that the efficiency of transmission is seventy-five per cent. Should subsequent reports verify this exceedingly favorable showing, manufacturers and engineers will be called upon to seriously consider the changes which such a revolution is sure to bring about. In fact, the suggestion lately thrown out, that some of the power to be used at the Columbian Fair at Chicago be obtained by

the utilization of the power of Niagara, does not seem at all impossible of fulfilment.

The work on the long line referred to has been done by the Allgemeine Elektrizitäts-Gesellschaft of Berlin, in connection with the Oerlikon works of Zürich, the latter having built the generator, motor and two transformers, in accordance with the designs of C. E. L. Brown, while the former furnished two transformers devised by Von Dövil-Dobrowsky. The generator is a three-phase machine, capable of delivering three separate alternating currents of fifty volts and 1,400 amperes. These currents are not sent directly to the line, but are passed through step-up transformers, the secondary of which is connected to the line. The alternating current, which has the high pressure of 13,000 volts, reaches the final station, there being three line wires instead of two, as usual. Unfortunately, none of the electrical journals which have come under our notice give the size of the wires, so that no conception can be formed of the quantity of copper required, and, therefore, the magnitude of the capital outlay. The currents sent along the line are utilized in the motor by step-down transformers.

It does not, of course, follow that the technical success of very long distance transmission of power by electricity necessarily involves claims to commercial supremacy. The high potentials of the alternating currents used mean that the size of the conductors, and, therefore, the capital outlay for the plant, is not as great as was expected only a short time since. Still, local circumstances must dictate the location of power plant and mill plant. The fact that the one can be divorced from the other in a manner till now rarely attainable will make water power available where it has not been hitherto used.

In certain localities in this country electric transmission of power promises to become of particular importance. We need only refer to Buffalo, and to Duluth and Superior, with the Dalles of the St. Louis River at reasonable distance.

EXPERIMENTS WITH LIQUID FUEL.

THE use of liquid fuel, or petroleum, instead of coal for generating steam in the boilers of marine engines has been revived among steam engineers by the recent experiments with it on the English steamship *Erros* and the Italian steamships *Castelfedando* and the *Ancona*. But the most successful use of petroleum as fuel in marine boilers has been on the English torpedo boat *Sunderland*. This boat has a displacement of eighty-six tons, and is 137 feet in length. The boiler is of the ordinary locomotive type, with web bottom, the furnace front being arranged to receive the oil burners, which are thirty-one in number. The liquid fuel used is pumped from the double bottom (the tanks which hold the oil) and discharged into a small cylindrical tank, where it is subjected to an air pressure of thirty-five pounds per square inch, and whence it flows direct to the burners.

In the fire-room is an air compressor which discharges into cylindrical air tanks near the vessel's side, forming a group of four. The working pressure of air in these tanks is forty pounds per square inch, and it is conveyed here for the purpose of disintegrating the oil as it leaves the burners. Each jet of oil gives a clear, bright flame, about six and one-half feet long and nine inches in diameter, if burning alone. When the jets are combined in the furnace there is a bright mass of fire about two feet from the furnace mouth to the tube plate. This flame entirely fills this portion of the furnace, and gives forth neither smoke, smell nor sparks, so that neither soot nor dust is deposited in the tubes, and no sweeping is required. Special precautions are taken to avoid the bad effects of high temperature and rapid changes of temperature, and it is stated that these are so efficient that, though the boiler has been repeatedly forced very hard, there has not been a sign of leakage about the boiler.

Assistant Engineer William H. Allderdice, on duty in the Naval Bureau of Intelligence, has given liquid fuel a close study, and has carefully investigated all of the reports on experiments with it. From these reports it would seem that the question of danger has been practically surmounted, and that the question of the use of liquid fuel is reduced to that of cost. At the same time, the dangers from fire or explosion have not been entirely eliminated by experiments, and, although the cost of the liquid fuel is admitted to be greater than that of coal, this greater cost is partly offset by a reduction in the number of firemen and in the expense also of their provisions and quarters. Lieutenant Allderdice quotes from a paper read before the Shipmasters' Society of London on the use of liquid fuel, which in substance is: In England and America it is known as "residum." It is the residue of crude petroleum, when all the volatile or lighter oils are distilled from it. It is perfectly non-inflammable, until heated to 350 degrees, and consequently quite safe to

use and carry in large quantities. It has no smell, as it does not emit gas until it reaches the required heat. It does not deteriorate by being stored in tanks exposed to the air, nor does it evaporate perceptibly. It is not detrimental to metal tanks, the inside skin of the vessel, nor any of the ordinary receptacles. The expert says: "One serious question of to-day is: How are we to fuel our men-of-war at sea during a blockade? It has been demonstrated that the successful transfer of coal at sea cannot be depended upon; besides, the modern men-of-war are not constructed for rapid coaling. With oil fuel the case is different; the large tank steamers could always fuel the fleet, even in heavy weather. To fuel a vessel of war in bad weather, the tank steamer could be made fast to the former by running a hawser from one to the other; a hose could be made fast along the line of the hawser, and the fuel be pumped into the ship's bottom at any rate desired."

The Italian Government is continuing its experiments with oil fuel on vessels of war, and, while no definite information is afforded as to technical details, it would seem that satisfactory results have been obtained. The Peruvian Government has directed that the gunboat *Santa Rosa* be altered for burning oil in its furnaces. The British Admiralty are considering the advisability of burning oil fuel, but have not, as yet, decided what kind to use. The Navy Department will have some definite results on the use of oil fuel within the next few months, as it is the intention to have exhaustive experiments made with it by the Board of Engineer Experts at the New York Navy Yard.

The special advantages claimed for liquid fuel are: It has greater efficiency than coal, weight for weight; the manner of stowing it in the double or cellular bottoms gives increased stability to the vessel, and increase of available space for other purposes, now occupied for the stowing of coal; it will require a less number of fire-room force than with coal fuel, and there is no ashes nor refuse from oil fuel. In manoeuvring under steam, it may often be desirable to stop suddenly while at full speed, and not to use the engines for some time. With coal fires this would be difficult, as they would have to be banked, and while lying dormant would become dirty; but with liquid fuel as many burners as necessary may be shut off when the engines are stopped, only enough being kept in operation to prevent the steam pressure from falling. When full power would be required it could be had at once with furnaces and everything clean and in good shape.

MINERAL WOOL AND ITS USES.

MINERAL wool is made from the refuse slag of a furnace. The slag is placed in a large cupola mixed with coke and limestone, then subjected to a molten state at about 3,000 degrees Fahr. As it melts and runs out of the cupola, a strong jet of steam separates it into a white fibre similar to that of cotton or sheep's wool, one cubic foot of slag forming, on an average, about twelve cubic feet of mineral wool, so that the resulting fibres encase twelve times the quantity of air that the slag did. In other words, the product contains over ninety per cent. of its volume of air which is closely confined in the light and soft fibres.

There is no other product, natural or artificial, that has in proportion so much air encased, and, at the same time, is indestructible by fire and perfectly free from mice, rats and vermin.

Mineral wool is principally used for insulation from heat, deadening of sound, protection against frost, and for the covering of steam pipes, boilers and other heated surfaces. For the covering of steam pipes, it is made into a sectional form, three feet long and about 1½ inches thick, and to closely fit the different sizes of pipe. It is jacketed with a heavy canvas and lined with a water-proof asbestos sheathing. The same is also made in a block form, and is used for covering boilers, tanks, heaters, etc. The blocks come in sizes 9x16, 8x18, and 6x24 inches, and 1½ inches thick.

For insulation, deadening, etc., the crude wool is used for filling in walls and between floors, also for a lining as a protection against the spread of fire.

On September 5th the Navy Department at Washington made another experiment of the relative resistant capacity of nickel steel for protective deck armor. A six-inch projectile weighing 100 pounds was fired against two targets, one composed of two one and one-half-inch all-steel plates, and the other of two one and one-half inch nickel steel plates. In the round against the nickel-steel plate the projectile was given a velocity of about 100 feet greater than with the all-steel, giving a striking force of nearly 300 tons greater than against the all-steel plate. The result showed very clearly the superior quality of the nickel steel, as the all-steel target was perforated, the projectile passing through both plates, two feet of oak

and eight feet of earth backing. The projectile fired against the nickel steel glanced off without rupturing the upper plate. It made a small crack five inches long and an indentation about five inches deep. The projectile was shattered into small fragments.

Manufacturing.

This department of the "Canadian Manufacturer" is considered of special value to our readers because of the information contained therein. With a view to sustaining its interesting features, friends are invited to contribute any items of information coming to their knowledge regarding any Canadian manufacturing enterprises. Be concise and explicit. State facts clearly, giving correct name and address of person or firm alluded to, and nature of business. Subscription \$1.

MESSRS. E. NICHOL & SON are building a 25,000 bushel grain elevator at Boissevain, Man.

MESSRS. REID & THURSK's planing mill at Uxbridge, Ont., was destroyed by fire, Oct. 9th, loss about \$6,000.

The planing mill of Messrs. Henderson Bros., of Coburg, Ont., was damaged by fire, October 10th, loss about \$2,000.

The paint factory of the A. G. Peuchen Paint Company, Toronto, was destroyed by fire October 7th. Loss about \$4,000.

The St. John Plumbago Mining Company, St. John's, Que., are finding large demands for their products in the United States.

MOFFAT'S saw mills at Dalhousie, N.B., together with a very large quantity of lumber, was destroyed by fire October 8, loss about \$25,000.

MESSRS. F. MCGIBBON & SONS, Penetanguishene, Ont., have recently made large shipments of red oak from their mills to Antwerp, Belgium.

The Montreal Nut, Lock and Manufacturing Company, Montreal, with a capital stock of \$100,000 for the manufacture of nuts, locks, bolts, rivets, etc.

The Aylmer Canning Company, Aylmer, Ont., filled an order last week for London, Eng., for 8,000 cases canned fruits and 1,200 cases canned meats.

The St. Maurice Metallic Paint Company, St. Maurice, Que., has been incorporated with a capital stock of \$15,000, for the purpose of manufacturing paint, etc.

The Lunenburg Iron Company, of Lunenburg, N.S. has been organized with a capital stock of \$10,000 for the purpose of manufacturing iron and other metals, stoves, etc.

The Cookshire Machine Works Company, Cookshire, Que., has been incorporated with a capital stock of \$30,000, for the purpose of manufacturing machinery, foundry appliances, etc.

MR. A. W. SPOONER, Port Hope, Ont., has acquired the Canadian right to manufacture Bannerman's patent phenyle. This article is a popular disinfectant, germicide and deodorizer.

The Cant Bros. Co., of Galt, have lately received a number of extensive machinery orders, among them being one from a firm in Demerara, and another for a Nova Scotia firm.—*Galt Reporter*.

The Canadian Locomotive and Engine Company, Kingston, Ont., have contracted to build the engine and boilers for the steam tug *Thompson*, belonging to the Montreal Transportation Company.

The McKinnon Dash Company, St. Catharines, Ont., have recently made large additions to their works, and will now add hardware specialties to their other lines of manufactured products.

The City Council of St. Catharines, Ont., have passed a by-law granting exemption from taxation for ten years to Messrs. Patterson & Corbin, who will engage actively in the manufacture of street cars, etc.

LA Compagnie Manufacturiere de Valleyfield (The Valleyfield Lumber Company), Valleyfield, Que., has been incorporated with a capital stock of \$40,000, for the purpose of cutting and manufacturing lumber, etc.

The Thermolytic Fuel Company, of Canada, of Napanee, Ont., will be incorporated with a capital stock of \$12,000, to acquire certain patents relating to improvements in steam boiler furnaces, and to manufacture the same, etc.

MESSRS. STEWART BROS., stove founders, late of Hamilton, Ont., have been bonused to the extent of \$25,000 by the town of Woodstock, Ont., in consideration of their establishing their proposed new stove foundry there.

THE Deseronto Company, with headquarters at Montreal, will be incorporated with a capital stock of \$50,000 for the manufacture of fire-proofing, fire brick, drain pipe, and other products made of clay, also to manufacture lumber, etc.

THE Richelieu & Ontario Navigation Company are about building two new screw passenger steamers for the route between Toronto and Prescott, Ont. The vessels will have twin screws, and have accommodation for 500 passengers each.

MESSRS. NORTHEY & Co., the well-known iron founders and steam pump manufacturers of Toronto, have merged their business into the Northey Manufacturing Company, with a capital stock of \$100,000. They will continue the manufacture of pumps, engines, boilers, machinery, etc.

THE Mycenian Marble Company, of Canada, has been organized in Toronto, with a capital stock of \$100,000, to take over the patent and manufacture in Canada of a new method of making what is called "Mycenian" marble, and to manufacture all kinds of artificial marble capable of production under this process.

THE Michigan Central Railroad Company are building two mogul locomotives at their shops at St. Thomas, Ont. These engines will have ten wheels and outside equalized driver air brakes. The drive wheels will be sixty-eight inches in diameter, the weight of engines on the drivers 94,000 pounds, and the total weight between 180,000 and 200,000 pounds.

MESSRS. M. LEFEBVRE & Co., Montreal, who are large manufacturers of pickles, etc., have been receiving cauliflowers in car-load lots from Winnipeg, Man., grown near that place, for manufacturing into pickles. The plants are said to be of very superior quality. This opens up a new market for Canadian truck farmers for which they have to thank the N.P.

MR. CARMICHAEL, secretary of the B. C. Paper Mill Co., has gone to Alberni with a party of men to clear and prepare the site of the proposed paper factory. The manager, Mr. Hewartson, has left for England to purchase the necessary machinery. It is intended to have the mill turning out paper of every grade within a year.—Victoria, B.C., *Colonist*.

THE Robb Engineering Co., Amherst, N.S., is applying for incorporation with a capital stock of \$249,000 for the purpose of continuing and enlarging the business heretofore conducted by the old established concern of Messrs. A. Robb & Sons in iron and brass founding and general engineering, and the manufacture of all kinds of machinery, engines, boilers, pumps, etc.

THE Ogilvie Milling Company of Montreal and Winnipeg, Man., one of the largest flour milling concerns in Canada, have determined to establish agencies for the sale of their products in Yokohama, Japan, and Hong Kong, China. The Company's Mills were all improved the past summer, additions having been made to the Glenora mill, Montreal, which cost \$30,000. The capacity of this mill is 2,000 barrels per day.

THE developed and undeveloped quarries of gypsum on the Bras d'Or, Cape Breton, are believed to be sufficiently extensive to supply the world for a century to come. These quarries lie almost directly on the borders of the lake, and are destined to add largely to the wealth of the island. Gypsum is very largely used in the mechanical arts, and on some soils is the best and cheapest fertilizer known.—St. John N.B., *Gazette*.

THE Toronto Rubber Company of Canada, with its head office in Toronto, have commenced the manufacturing of rubber boots and shoes, at their new factory in Port Dalhousie. The most modern machinery is used in this factory, which has a capacity of 4,000 pairs of boots and shoes per day. When in full running order, it will employ at least 100 hands. In addition to boots and shoes, the company intend to manufacture all kinds of mechanical rubber goods, such as belting, packing, fire hose, and fire department supplies.

MR. S. J. RITCHIE, heretofore well known from his connection with the nickel mines at Sudbury, Ont., has made a proposition to the town council of Trenton, Ont., to establish there electrical separators for the treatment of iron ores at an expenditure of \$200,000, and asks the town for a bonus of \$75,000. This industry, it is estimated, will give employment to one thousand men in Trenton, and two thousand in the mines at Coe Hill and other points north. The proposal is favorably received. Work will be commenced as soon as the bonus is granted.

THE first nitro-glycerine ever manufactured in British Columbia was made at the Hamilton Powder Works, at Northfield, on Wednesday morning. It is in the nature of an oil, which is afterwards mixed with an absorbent and then into sticks. The works are now ready for the manufacture of all grades of high explosives. The works, under the energetic and practical supervision of Mr.

Young, the resident manager, are making great progress, and becoming quite an industry in the vicinity of Nanaimo. The B. C. markets will, in future, be entirely supplied by these works.—Nanaimo, B.C., *Free Press*.

ONE of the most attractive exhibits at the late Montreal Exhibition, was a display of large leather belts made by the manufacturers, Messrs. Robin & Sadler. Among these were to be seen a twenty-four inch, an eighteen inch and a sixteen inch belt of double leather made for Mr. W. W. Ogilvie; a twenty-two inch and an eighteen inch ordered by the Royal Electric Company; a twenty-four inch for the Montmorency Cotton Company, and a twenty-six inch double belt that was awarded a gold medal at the Jamaica Exhibition. These goods were a striking evidence of what our Canadian manufacturers can do with Canadian material, Canadian workmen and in a Canadian factory.

THE Polson Iron Works Company, Toronto, are negotiating for land on the Esplanade adjoining their works for the purpose of establishing their steel shipbuilding works in this city. If arrangements are satisfactorily arrived at, the company will remove their extensive shipbuilding plant from Owen Sound and carry on their entire business in Toronto. The shipbuilding department will employ from 200 to 400 men and will be the scene of considerable activity in the coming season. A contract has recently been signed for the construction of a second cruiser for the Dominion Government, and several other vessels are under consideration. The outlook is very good for a brisk shipbuilding business for the next year.

THE Canadian Office and School Furniture Company, Preston, Ont., have sent us a beautiful illustrated catalogue having reference to the perfect automatic and other assembly chairs for opera houses, halls and churches. These chairs are made in a large variety of styles and are all of the most comfortable description. The automatic chair is described as possessing the retreating or self-folding seat which is operated at the will of the occupant, and the tilting or reciprocal back which assumes a perpendicular position when the seat is folded; a desirable feature of it being that in case of fire an audience can be quickly dismissed, as the act of rising folds the seat and back, leaving the passage clear. This company inform us that they were the first to introduce this automatic chair into Canada. The catalogue contains quite a long list of places where these chairs are used.

MANAGER LITTLEHALES, of the Hamilton, Ont., Gas Company, has invented a process by which, he says, all the carbon in coal can be directly extracted and utilized. He has been at work on it for ten years and has at last solved the problem. By the present process not more than a sixth of the carbon can be volatilized or utilized for gas, but by the process which Mr. Littlehales has invented every pound of the carbon in coal can be directly converted into gas. The importance of this discovery will easily be recognized. It will effect a revolution not only in the manufacture of gas, but in many industries where cheap fuel is an important consideration, for it will greatly reduce the price of gas. The process is said to be simple and comparatively inexpensive. Mr. Littlehales has applied for patents in the United States, Canada, and Great Britain.

THE Toronto Lithographing Company, Toronto, have sent us a most beautiful and life-like oil chromo of Sir John A. Macdonald, printed in sixteen colors. This portrait was copied from an oil painting made Mr. W. Bengough, a talented young artist in the employ of the Lithographing Company, and represents Sir John as being seated in a chair, carrying on an animated conversation—probably telling how he had metaphorically knocked the hind-sights off of some unrestricted reciprocity big gun. This picture was got up by the Lithographic Company to be sold by subscription, but Mr. Morton, of Messrs. D. Morton & Sons, of Hamilton, Ont., who are the manufacturers of the well-known N. P. soap, who happened to see it, and who considered it the most life-like likeness of our late Premier he had ever seen, bought the entire edition—10,000 copies—to present to their customers. We quite agree with Mr. Morton regarding the truthfulness of the likeness to Sir John, and can but compliment the Lithographic Company upon the excellence of the work.

THE Auburn Woollen Mills Company have placed with the Edison General Electric Company an order for a complete plant for lighting the mills and premises by electricity. The Auburn Company are doing the thing thoroughly, as everything is done when Mr. Kendry looks after it. The gas plant now in use will be discarded, having served the purpose very well, but the requirements of the mills call for something better. In order that the lighting plant shall have an independent power and not depend on the water power by which the mills are driven, a fifty h. p. compound engine, of most modern design, and a large boiler will be placed in position to drive the

dynamos and generate the current. Two large dynamos of ample capacity will be put in, capable of furnishing current, in addition to what is now required, for any extension in the future. The are system will be used for outside illumination and the incandescent system inside the mills. A very large number of lamps will be required so that every part of the mills will thoroughly lighted.—Peterboro', Ont., *Review*.

MANY people would like to have the electric light in their houses for other than ordinary illuminating purposes. In hot weather a cool light to read by or to use in the piano-lamp is a blessing. Hitherto this has been a difficult matter for many to procure; they may be far away from the mains, and, even if they are not, a connection and the laying of wires all over the house for such a small quantity of light as they are likely to require is out of the question. For such as these an electric reading lamp outfit, which has just appeared, will be particularly useful. The battery is put up in a case quite convenient to handle. The elements are attached to the under side of a movable board, which can be raised or lowered at will. The zincs are by this means lifted out of the liquid or lowered as required. There is a lid at the side of the box which, when open, gives easy access to the battery. The lamp is portable and can be adjusted to any position. The light rays are concentrated on the desk, book, or music, and are of sufficient intensity to enable one to read or write without fatigue to the eyes. On the ground of health and care of the eyesight alone, to say nothing of the convenience and pleasure of a soft, pure, cool light, such an outfit as this is a distinct boon to the public, who can now avail themselves of what was before within the reach of comparatively few.

THE Victoria Gypsum, Mining and Manufacturing Company, who have extensive gypsum mines at St. Ann's, near Baddeck, N.S., are preparing to carry on a large business in manufacturing and preparing that article for market. A line of narrow gauge railway has been constructed from the quarry at St. Ann's, nearly two miles to the point of shipment at Big Harbor. All along the route of this railway is an almost continuous deposit of plaster, though no openings have yet been made, except at the terminus of the line. A wharf has been built, twenty-five feet above tide level, affording facilities for shipment. A cargo of plaster had been shipped to Philadelphia, which has given the greatest satisfaction. Four or five other large shipments are to be made this season, and next year the work of excavating and shipping will be vigorously pushed. The successful prosecution of this industry is expected to be of great benefit, affording profitable labor to a large number of workmen. The process of manufacturing plaster is to grind it to a consistency like flour, and then subject the powder to heat in pots, when the moisture is driven off, and the plaster, ready for its various uses remains. Raw gypsum is admitted into the United States free of duty; and the commercial term in the United States for gypsum is "plaster," as, indeed, it is in various parts of Canada.

SHIPBUILDING in Nova Scotia is steadily increasing. The following shows the number of vessels built in that Province since 1887, and their aggregate tonnage:

	Vessels Built.	Aggregate Tonnage.
1887.....	87	12,300
1888.....	116	12,900
1889.....	106	16,645
1890.....	148	33,746

Some of the vessels recently built in Nova Scotia are among the largest and finest wooden ships afloat. It has been said that in this Province we ought to have a large shipbuilding interest. How much longer must we send to the east for our sealing schooners and for other vessels to ply upon the waters of Puget Sound and the Pacific Ocean? The answer will be given by some people—"Just so long as the Protective National Policy Government at Ottawa fails to encourage local industry, and persists—in face of facts and protests—in getting ships for the Dominion service built out of the country." Such a policy as this weakens the confidence of the people in their own established institution, and takes, as it were, the heart out of those who are inclined to be enterprising. We can build wooden vessels second to none in the world; we have the best of material close at hand—our own natural product—and the experience of H. M. S. *Amphion* has shown that as iron ship-workers we are in no way behind, and for excellence of work and the pluck to undertake it cannot be surpassed.—Victoria, B.C., *Commercial Journal*.

MODERN methods of heating include the use of open grates, stoves, fire-place heaters, hot-air furnaces, steam and hot-water heaters. Of these devices the stove is the cheapest and the most economical of fuel. Of the various forms of stoves the surface-burning, base heating construction gives the largest proportion of

heat for the coal consumed. This style, commonly made with sheet iron bodies, are mostly used in the East, while base-burners are more largely used in the West. Base-burners are convenient because they require filling with coal but once a day, and are not far behind surface burners in economy of fuel. The latter have the merit that more frequent opening to put in coal, and letting the door stand ajar to check the fire materially aids in ventilating the room. Base-burners may now be had which take fresh air from out of doors, warming it and discharging it into the room, and which also have exhaust flues to take foul air from the room, thus largely overcoming the greatest objections to close stoves. Wood burning stoves of improved revertible flue construction, and stoves for burning soft coal with little smoke, soot or dirt, may now be had of all dealers. Surface-burners and base-burners are now artistically ornamented, so that they are among the most attractive of house furnishings. Wood and soft coal stoves are also now made in scarcely less ornamental patterns. Stoves must, on account of their cheapness and economy, always remain the means of warming the dwellings of the mass of the people.—*Good Housekeeping*.

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GUARANTEED RESULTS;

- 15 to 20 per cent. Saving in Fuel, or
- 20 to 30 per cent. Increase in Boiler Capacity.
- Removal of Mud or Sediment.

Adapted to Factories, Mills, Steam Heating, etc. No manufacturer or team user can afford to be without it. Send for Illustrated Catalogue, with full particulars and statements of those who have it in use; or call and see it in operation.

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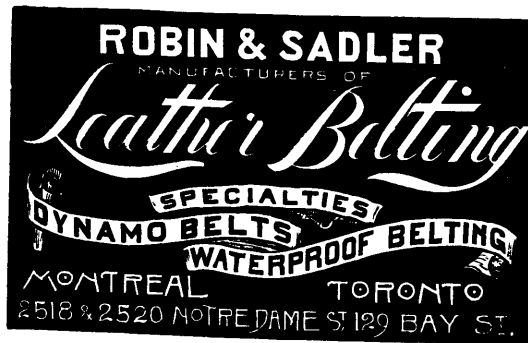
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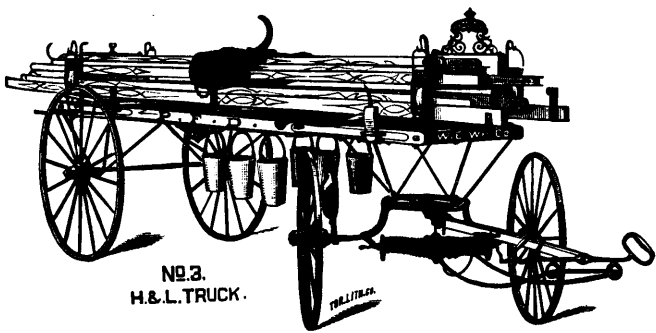
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OBJECTS.

1. To prevent by all possible means the occurrence of avoidable fires.
2. To obviate heavy losses from the fires that are unavoidable by the nature of the work done in mills and factories.
3. To reduce the cost of insurance to the lowest point consistent with the safe conduct of the business.

METHODS.

All risks will be inspected by a competent officer of the company, who will make such suggestions as to improvements required for safety against fires, as may be for the mutual interests of all concerned.

Much dependence will be placed upon the obligation of members to keep up such a system of discipline, order, and cleanliness in the premises insured as will conduce to safety.

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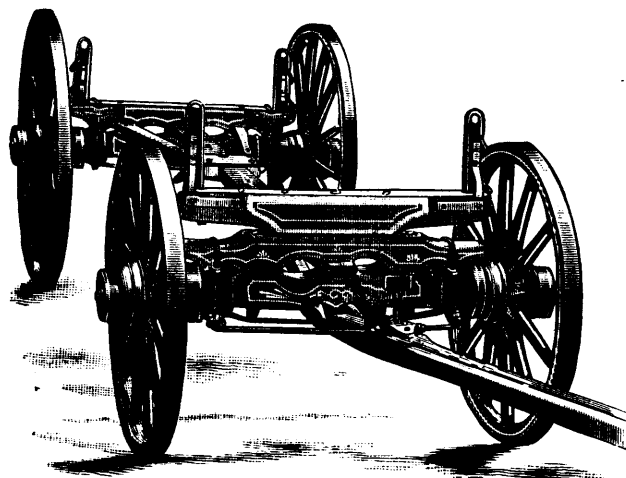
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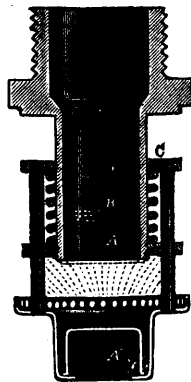
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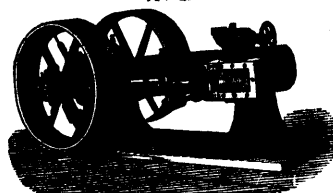
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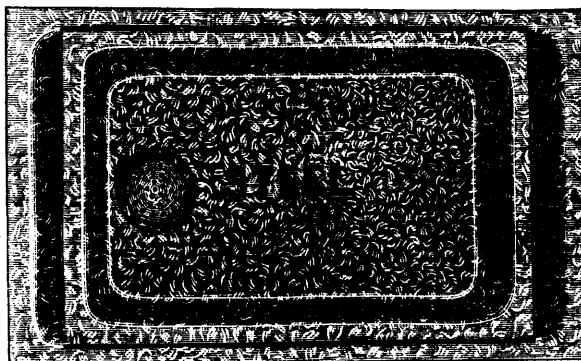
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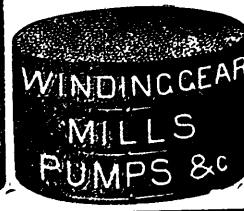
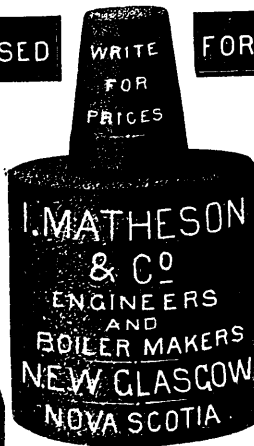
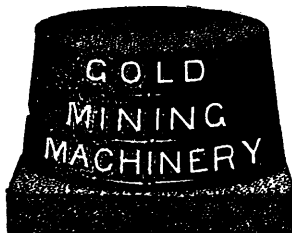
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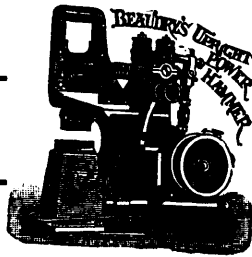
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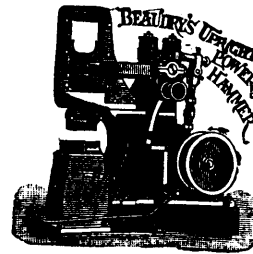
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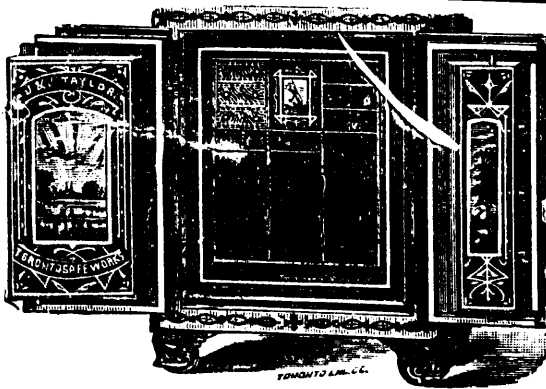


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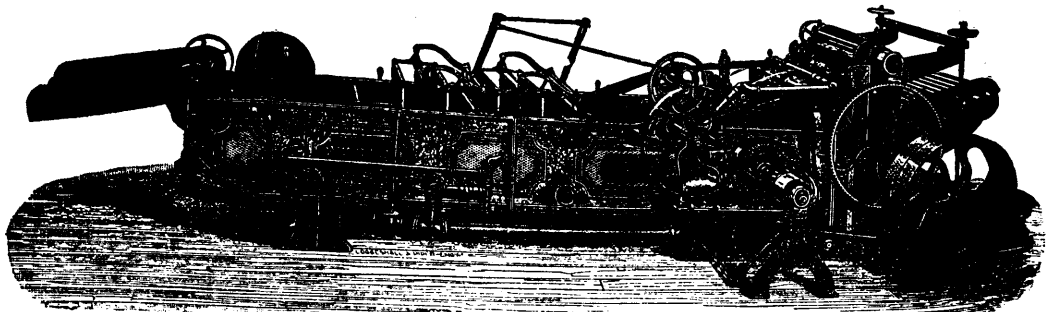
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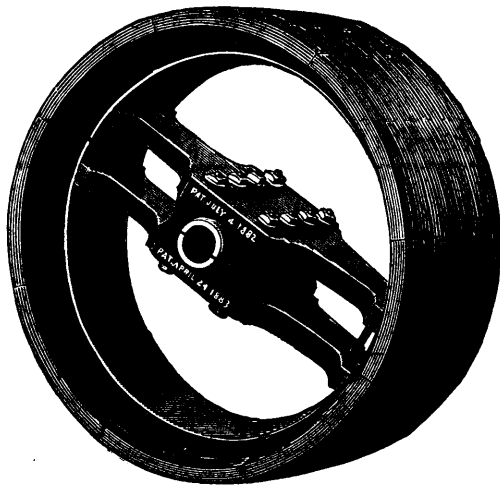
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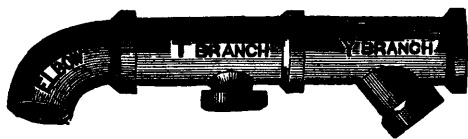
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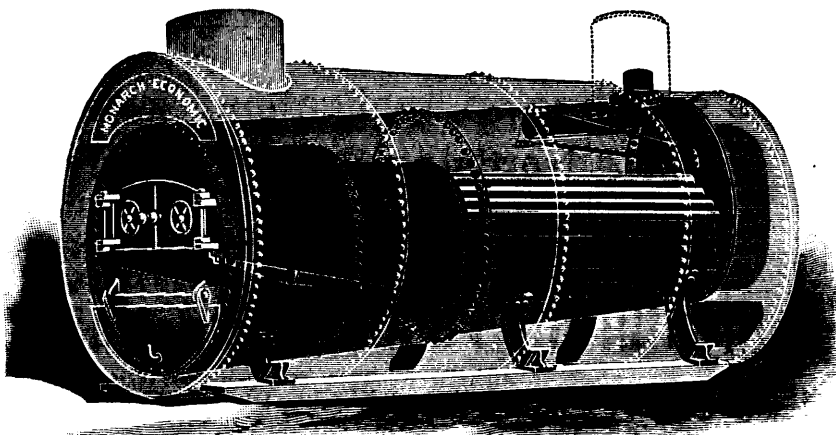
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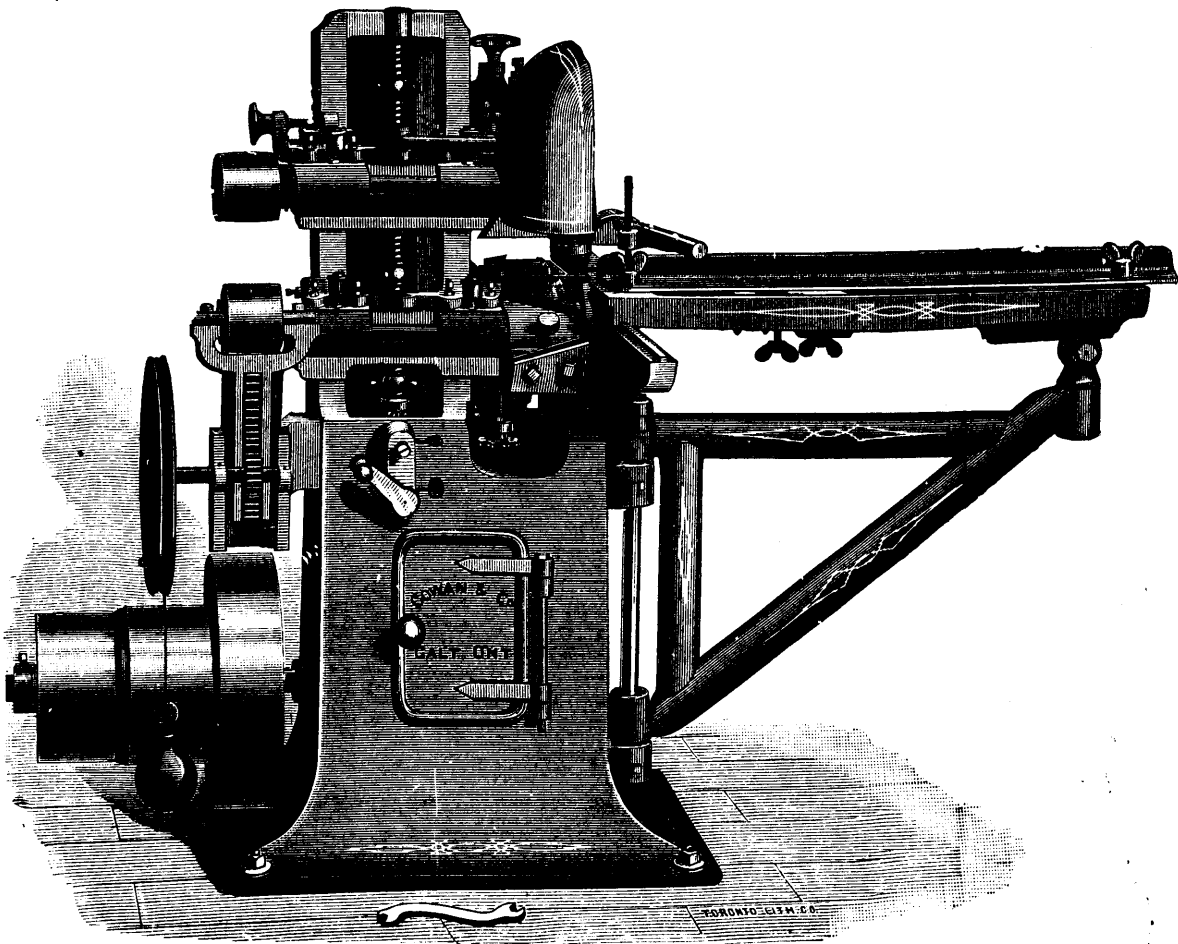
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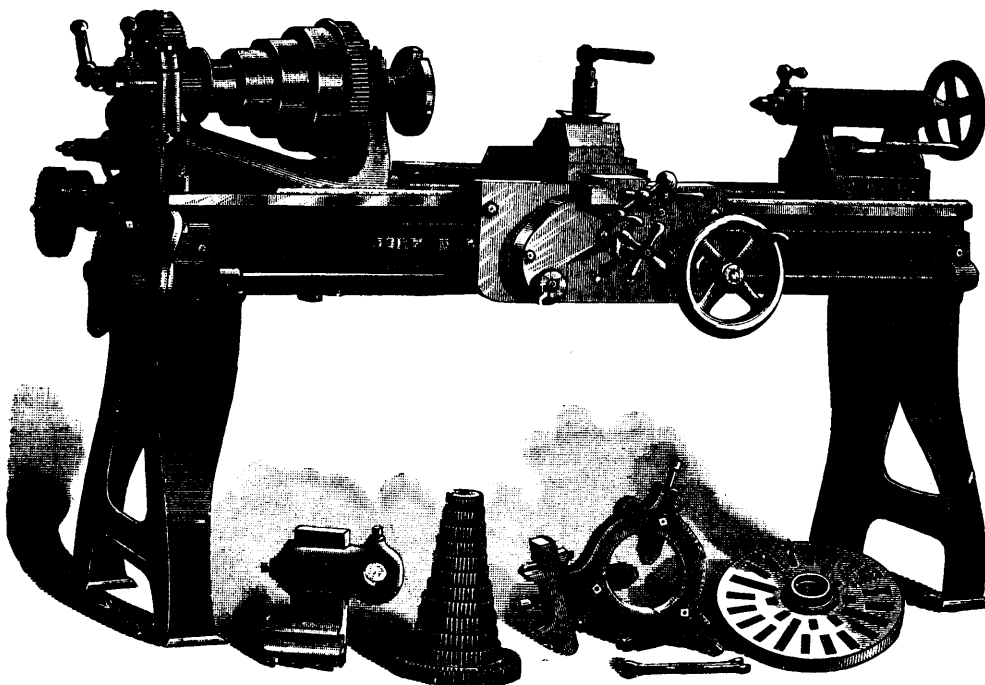
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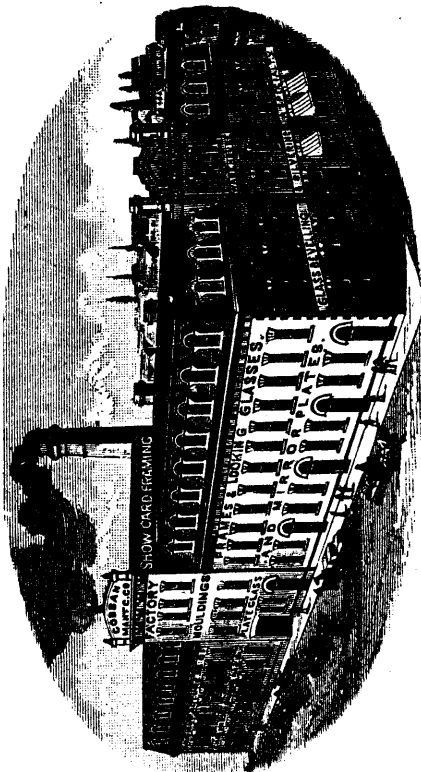
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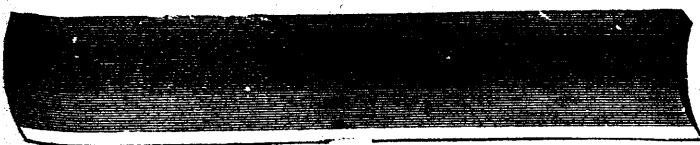
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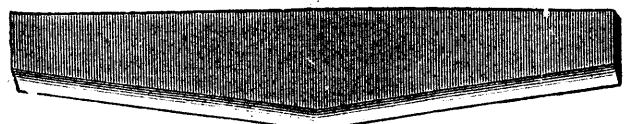
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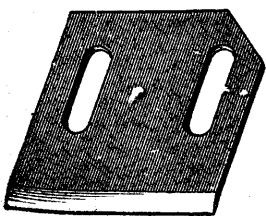
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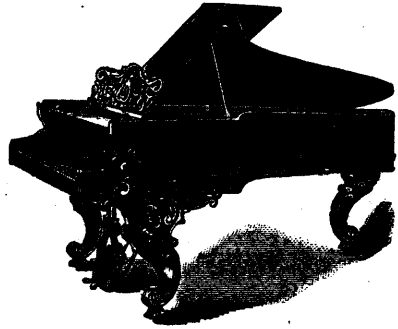
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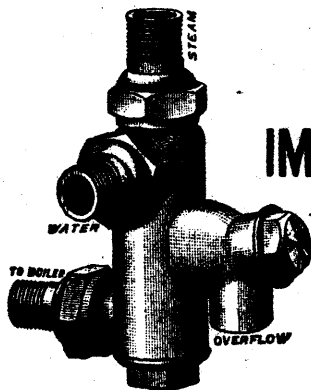
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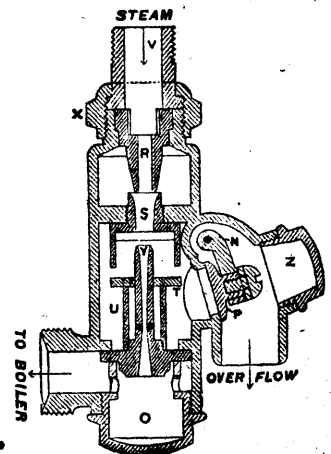
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