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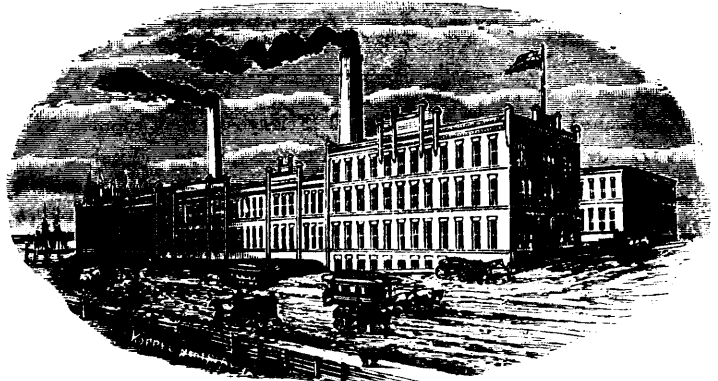
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THE NATION THAT MANUFACTURES FOR ITSELF PROSPERS.

READERS of the *Toronto Globe* should never be surprised at any tergiversations that that journal may exhibit. After long and persistent wrangling about the American duty on iron ore, and against the system of Protection observed in both Canada and the United States, claiming that the rich Canadian mines must remain undeveloped and valueless unless their ores can be sold to American furnaces free of duty; it now flops the other way and speaks most encouragingly of the prospects of some developments proposed to be made in that direction. In a recent editorial in which the Dominion and Ontario Governments are urged to render some assistance to the Central Ontario Railway Company in extending its line from Coe Hill to Sudbury, speaking of the works that would probably be erected at the latter place, says:—

"It is understood that the Railway and Mining Companies are prepared to undertake the construction of the road to Sudbury, the erection of a furnace somewhere on the line for making coke iron with a capacity of 250 tons per day, and the extension of their smelting plant at Sudbury to a capacity of 1,000 tons per day, on condition of receiving certain subsidies from the two Governments. These mining and smelting industries would give employment to a very large number of men from the outset, and would be a boon of immense value to a section of country that has been for some time in a very depressed state—the Counties of Northumberland, Hastings and Prince Edward. The circumstances, too, seem to favor some town or city of Ontario as the location of works for the manufacture of nickel steel and for the refining of nickel and copper ores. The plant for the manufacture of nickel steel alone would, it is stated, cost \$3,000,000, and the Canadian Copper Company has received offers of any financial aid they may require from British, French and German capitalists should they go into the enterprise. We learn on good author-

ity also that the Governments of Great Britain, France and Germany have each made an offer to purchase all the nickel which the Company can produce in the next ten years, but probably these offers have been made without any conception of the possible output of the Sudbury mines."

If the establishment of these works can be guaranteed by the granting of the bonuses asked for, it will be the wish of every true Canadian that the bonuses will be granted. The establishment of these works would be the dawn of a season of prosperity to the country that would at once place it in the front rank of manufacturing nations. "The nation that manufactures for itself, prospers."

"UNBALANCED AND INCOMPLETE."

In speaking of the growth of manufacturing industries in the West, Hon. David H. Mason, of Chicago, indulges in some very expanded anticipations. He says: "It is now seen that the configuration and the natural wealth of the vast interior basin of the North American continent—its easily-settled prairies, its fertile soils, its mineral resources, its forest growths, its varied climates, its navigable waters, its affinity of relations—constitute such an extraordinary concurrence of favorable conditions as to fit the region to be the abode of the most multitudinous, the most homogeneous, the most powerful association of men on earth. Indeed, the physical aspects are so peculiar, and so dovetailed into a systematic oneness of adaptability, that they almost unavoidably suggest a geographic prophecy of such an occupancy—that they embody evidences of a divine plan to create a commodious area phenomenally suited to be, in the fullness of time, the habitate of an enlightened population, the workshop of a diversified production, the scene of the most intimate commercial intercourse, the storehouse of unprecedented opulence, the umbilicus of political power, the highest seat of learning, science, art, refinement and influence—the focal-point of American civilization."

We catch breath long enough to read that Mr. Mason attributes all this anticipated greatness and power to the manufacturing industries of the section, and he tells us that "the teeming multitudes which shall soon fill the Great West are to be as supreme in the domain of manufactures as in the arena of politics." The two manufacturing and business marts that are to control all this greatness will be Chicago and St. Louis; the latter city having in the Father of Waters a natural outlet to foreign countries, while Chicago will find one of her outlets via the St. Lawrence; "as, without Canada and Mexico, the United States would be unbalanced and incomplete." "In due time," says Mr. Mason, "manifest destiny, whose other name is the domineering necessities of intercourse, and the impulses of self-interest, will cause both of these countries to fall, like ripe fruit, into the ready lap of the American people." * * "Then, too, instead of exporting raw products, as now, we shall receive them to be wrought into higher forms, and send abroad our diversified manufactures in vast quantities."

It is all right for our American friends to boast and boom their country for all it is worth. It is indeed a great country, and we rejoice in its prosperity; but the brass and impudence of such men as the author of the foregoing gush is supreme. The United States, confined as it is to its present geographical

bounds, is not large enough to allow of the expansive forces at work therein, and nothing but the absorption and assimilation of Canada and Mexico will satisfy its greed. It has already had a taste of what can be done in that direction on its southern border, in the robbery of vast possessions from Mexico, of what are now great and prosperous States; perhaps it would not find the removal of its boundary down towards that of the Central American States quite so easy a task. Certainly it cannot swallow Canada, as Mr. Mason proposes.

Canadians should note the drift of public sentiment in the United States regarding this matter. Our American friends see in Canada vast storehouses of raw materials for their industrial establishments, and a rich and valuable field in which to sell their manufactured products. Our "mineral resources and forest growths" are coveted by them; but to acquire these treasures nothing but Annexation will answer; for, in the language of Mr. Carnegie, if these mineral and forest products of Canada are to be freely disposed of to the United States, Canada will have to be annexed to that country, there not being any room there for any but the American flag.

Perhaps Mr. Mason is correct in saying that "without Canada the United States would be unbalanced and incomplete;" but that condition will not be changed. Canada will pursue her destiny, but not under the Stars and Stripes.

TOO FUNNY FOR ANYTHING.

In alluding to the fact that the Governments at Ottawa and Toronto, have been asked to assist in the extension of the Central Ontario railway from Coe Hill to Sudbury, the *Toronto Globe*, speaking of the unremunerative character of that part of the road already built, says:

"Up to the present time the road has served the country through which it passes, much more efficiently than it has the particular object of the company, owing chiefly to three causes: First, the presence of sulphur in the magnetic iron ores of the Hastings district; second, the opening of extensive mines of clean ores in the Lake Superior country, about the time that the railway was got ready for traffic; and third, the American duty. If the duty was removed, the lower cost at which the Ontario ores could be delivered at American furnaces would enable them to find a market in competition with the Lake Superior ores; but under existing conditions, they are doubly handicapped, and so the mines have been closed down for several years."

This is just too funny for anything. The road has served the country through which it passes better than it has the object of the owners, because there is sulphur in the Hastings ores; because of the opening of new iron mines in the Lake Superior country, and because the United States levy a duty on foreign ores. Very, very funny, these reasons. And by the same tokens, the company owning the road find it unprofitable from the same causes. In other words, the *Globe* tells us that the Central Ontario railway, which is now an unprofitable investment, would have been a profitable investment if the iron ores in the Hastings district had been free from sulphur; if the Yankees had not opened new iron mines in the United States, and if that country had not long years before levied a duty on imports of iron ore. Exceedingly funny.

The *Globe* speaks of these Lake Superior ores as being "clean," by which is meant, free from sulphur. These Lake Superior ores, as we have frequently shown, are worth \$7 a ton in Cleveland, Ohio, the great ore market of the United States, but the *Globe* tells us that the sulphur ores of the Hastings district, were there no American duty on them, could be delivered at American furnaces in competition with the Lake Superior ores. This is not only excruciatingly funny, but very wonderful. Mr. Ledyard says that it costs but a dollar a ton to mine his Peterborough ores, and that they can be laid down in Cleveland, duty paid, for \$3.90 a ton; and no doubt the Hastings ores could be laid down in that American city at the same cost. These Hastings mines were worked for a number of years, and were "closed down" only when the owners discovered that they were handicapped by the influences herein alluded to. Because the Central Ontario railroad served the country through which it passes more efficiently than it has the company owning it, therefore the owners of the Hastings iron mines feel themselves handicapped in shipping their ores to the American market. Funny. Notwithstanding the sulphur in these ores, they could be sold to American furnaces in competition with Lake Superior non-sulphur ores, if it were not for the American duty, by which they are handicapped. The Hastings mines were in operation a number of years, and, according to Mr. Ledyard and the *Globe*, must have been paying the owners three dollars a ton or more on all American shipments, but were "closed down"—for what?

The *Globe's* reasons for the closing down are just too funny for anything.

PHENOMENAL INDUSTRIAL GROWTH.

THE growth of the iron and steel industry in Chicago has been phenomenal. In 1857 Mr. E. B. Ward built a rolling mill in that city; and in 1863 the Union mill was built. In 1871 the first Bessemer plant in the West was built at the Union works; and in the next year a similar Bessemer plant was started at the North Chicago works. In 1869 the Ward mill passed into the possession of the North Chicago Rolling Mill Company, and that same year two blast furnaces were built at these works, which were at that time among the largest and best appointed furnaces in America, the capacity of them being 250 tons of iron per week each. In 1880 this company began the construction of a large steel rail plant, which embraced four large blast furnaces, all of which were put in operation in 1882. The small iron rolling mill plant of 1857, which has capacity to produce 300 tons of iron rails per week, had expanded to a works capable of making 6,000 tons of steel rails per week, or twenty times as many tons. The furnace which, in 1869 turned out but 250 tons of iron a week, in 1889, according to President Potter of the Illinois Steel Company, with absolutely no change whatever in the furnace or its equipment, but simply with the improvements derived from a better knowledge, was made to yield over 700 tons a week; and the same furnace, with but a single change in its hot blast stoves, is made to produce 1,100 tons per week.

Chicago, prior to 1870, was not recognised as an iron producing centre; but in 1887 that city produced more steel than the county of Allegheny, in which the city of Pittsburgh, Pa., is situated; and it is claimed that at this time the iron and

steel works in the State of Illinois produce more than one fourth of all the iron and steel made in the United States; and the works of one company alone—the Illinois Steel Company—have capacity to make one third of all the steel rails that can be made in that country.

It is a remarkable fact that nowhere in the State of Illinois does there exist any of the raw materials required for the manufacture of iron and steel. All the ores necessary are brought a distance of 350 miles from the Lake Superior region; and all the fuel for smelting is brought a distance of nearly 600 miles from the Connellsville ovens in Pennsylvania.

CAN'T TELL THE TRUTH.

In a recent issue of this journal we stated that there were a number of manufacturing establishments in Canada whose regular supplies of pig iron were drawn from the United States; American iron being given the preference over British iron because it was cheaper. This indisputable fact has fallen like a bombshell in the camp of the Free Traders, who, in true Chinese style, seek to avoid the effects of it by making noisy, meaningless sounds. The *Montreal Herald*, in attempting to evade the force of our fact, professes to have knowledge of "some manufacturing establishments that have to import Scotch and Swedish pig, regardless of price, to make the higher grades of steel, because the pig iron made here is not suitable for that purpose." It argues that "according to protectionist logic, the duty on pig iron should be increased so as to shut out these imports, and compel the steel manufacturers either to use the home product and turn out inferior steel, or do the next best thing."

The antipathy of the *Herald* to Protection leads it to say many silly things, which, if it expects its readers to believe, it cannot have any exalted opinion of their common sense, and this is one such occasion. If it knows of any manufacturing establishment in Canada engaged in the production of "the higher grades of steel," wherein the use of Scotch or Swedish pig iron is absolutely essential, it would contribute a valuable page to current Canadian history by giving the name of the manufacturers and the location of the works. If, on the other hand, the *Herald* knows of no such establishments, it stands convicted out of its own mouth as not being wedded to the truth.

These anti-Protection papers all do it. They are in a chronic state of suffering from a spirit of exaggeration, always finding it exceedingly difficult in offering arguments in defence of their indefensible theories to confine themselves to actualities, or to be unfettered by the restraining influences of cold facts.

AMERICAN IRON ORE.

ALL the developed evidence points to the fact that there are no considerable influences in the United States that desire to have iron ore placed on the free list. That country now stands in the enviable position of being able to supply about all the ores it needs from its own inexhaustible mines, and to manufacture from them all the iron and steel products it requires. Until recently, it was thought that only limited supplies of steel making ores could be found in the United States, but it is now known that the Lake Superior region is capable of supplying all the high grade ores required in all the furnaces west of the Alleghenies and north of the Ohio river; while Western

North Carolina, Western Virginia, East Tennessee and North Alabama will supply all Southern works with ores of similar value. These Southern ores are found in quantities sufficient to honor all demands that are likely to be made upon them for generations to come; and it is only such works as are situated along the Atlantic coast that will draw upon foreign countries for their supplies. This latter demand is not for very large quantities of ore, and the proprietors of these Atlantic works carry little or no influence in demanding free ores, while all the influence attaching to the home industry, scattered as it is throughout the country, is decidedly against such a proposition. The consumption of iron ore in the United States during the year 1889 amounted to about 15,000,000 tons, of which the Lake Superior region alone supplied 7,000,000 tons; and one-half of all the pig iron made there in that year was from Lake Superior ores. The importation of foreign iron ore into the United States amounts to less than a million tons a year, but a very small portion of which was taken from Canadian mines, the supply coming chiefly from Spain and Cuba. The product of the Spanish mines last year was only about 7,000,000 tons—just about equal to the product of the Lake Superior mines—but nearly all these Spanish ores are required for the demands of England, France, Belgium and Germany; and all these countries depend largely upon foreign importations for their steel works. The Cuba mines are owned or controlled by the Pennsylvania Steel Company, who have erected extensive steel works near Philadelphia, depending upon their Cuba mines for their ore supplies.

The history of the iron ore industry in the United States is briefly told. It began about forty years ago, and it struggled along through the earlier years of its existence under a so-called "protection" of an advalorem duty of twenty per cent. Iron ore was not mentioned in the Morrill Tariff, but was classed under the section which read "all mineral or bituminous substances not otherwise provided for," the duty being about equivalent to 45 to 55 cents a ton. It was in view of the large and rapid increase in importations of ore, subsequent to 1880, that the present specific duty of 75 cents a ton was imposed. Under the 20 per cent. duty the industry languished, and the United States was forced to depend, in large measure, upon foreign mines for its supplies of steel ores; but as soon as the specific duty of 75 cents a ton was imposed, new mines were opened, railroads for transporting the ores were pushed through the wildernesses to them, immense fleets of vessels found profitable employment in sharing the transportation with the railroads and every trade and business connected with this industry assumed a most lively and lucrative character. Hon. Geo. H. Ely, president of the Western Iron Ore Association, estimates that the capital now invested in the United States in connection with ore mining, transportation and manufacture into iron amounts to not less than \$150,000,000, and furnishing employment to hundreds of thousands of laborers, who receive three times as much wages as are paid for ore mining in Spain and Cuba.

Mr. Ely, speaking of what would be the result if the American duty on iron ore was removed, says:—

The displacement of American ore by foreign, which would certainly follow the removal of the duty, would have the effect of reducing wages all along the line of this vast combination

of ore production and transportation, or of closing many mines and of pushing out the brain and muscle now employed in them to crowd the laborers in other occupations, while much of the capital employed, being immovable, would perish on the spot. But what has been the effect upon the country and upon prices of iron and steel products to the consumer of keeping (under the defence of the duty) the home supply of iron ore in all varieties of chemical constitution abreast of the wants of our iron and steel manufacturers? The prices of all iron and steel products have ranged quite low—certainly lower than would have been possible under any dependence upon foreign supplies. Has the consumer of iron and steel products been complaining about the price of steel rails, pig iron, nails, merchant iron, steel and hardware? He knows the effect of giving the home market to iron and steel makers, and how enlargement of production diminishes cost."

This gentleman calls the attention of Western farmers to the fact that, in the good old revenue tariff times that the Free Traders are so anxious to see returned, in the State of Iowa the price of cut nails was eighteen cents a pound; and it took three pounds of butter to buy one pound of nails; while now, under protection, one quart of skimmed milk will buy two pounds of nails.

It is evident that if proprietors of Canadian iron mines intend to wait until the United States removes the duty on iron ore, these mines will never be worked. As we have time and again shown, many of these Canadian ores are of the very finest and most desirable quality and, fully equal to the best found in the Lake Superior regions, in the South, in Spain or in Cuba. The consumption of iron and steel in Canada, amounts to about 300,000 tons a year, of which less than 50,000 tons of pig iron is manufactured here. Until recently most of our importations were from Britain, but lately large quantities are brought from the United States. Why should not Canada manufacture all of this 300,000 tons of iron and steel? What made it possible for the United States to become entirely independent of Britain in this respect? Why should not Canada, under similar influences, become equally independent? Canada has within herself all the requisites for the manufacture of iron; and, as we have frequently shown, such pig iron as now commands \$20 a ton or more in the market, can be made at a cost not exceeding \$14 a ton. What Canada needs is blast furnaces, and iron and steel works—enough of them right now to produce at least 300,000 tons a year.

EDITORIAL NOTES.

WHAT constitutes "raw material"?

WHEAT is the "finished product" of the farmer.

FISH in the sea is "raw material," but when the fisherman catches the fish it is the "finished product" of his labor.

WHAT is an "unprotective tax on raw materials," as affected by the tariff? Will the *Empire* please enlighten a waiting world.

WHEAT is the "raw material" of the miller who converts it into flour. According to the *Empire* the duty on wheat is an "unprotective tax on a raw material." Is the farmer entitled to "protection" on his wheat?

WE are waiting with anxiety to hear the *Montreal Herald* enumerate the manufacturing establishments in Canada that have to import Scotch and Swedish pig iron to be used in the manufacture of "the higher grades of steel," that it professes to have knowledge of.

THE total amount paid by the Dominion Government during the last fiscal year as bounties on pig iron manufactured in Canada from native ores was \$37,233. The premium paid on such production being \$1 a ton, the figures indicate the manufacture of 37,233 tons.

COAL and ore in the earth, never having been disturbed, are "raw materials," but when the labor of man brings them to the surface they constitute the "finished product" of the miner. Is the miner of coal and ore entitled to any "protection"? If so, protect him. He is as much entitled to protection as he who manufactures watch springs that are worth their weight in gold.

THE Dominion Department of Customs have issued a pamphlet containing in concise form tables of the trade and navigation of Canada as a preliminary to the annual bulky blue book. As previously announced, the total exports for the year were valued at \$89,189,167; imports, \$115,224,931, and the duty collected amounted to \$23,784,523. The total revenue collected by the department was \$24,001,687.

AN explosion of gas occurred a few days ago in the Ottawa river, at Ottawa. The saw mills at that place discharge their sawdust into the river, and there is a great accumulation of it there; and it was from this sawdust the gas was generated. The hole rent in the thick ice covering the river was quite large, and many tons of ice, about two feet thick, was thrown in all directions. Fortunately no skaters were on the river at the time of the explosion.

Is the duty added to the cost? Do consumers pay the cost of production plus the duty? The American duty on coal is 75 cents a ton. The Norway Iron & Steel Works, who have recently removed from Boston, Mass., to Peoria, Ill., will obtain coal fuel for their works at the latter named city at 28 cents a ton. Now if the duty of 75 cents is added to the cost, what would be the net cost to the company for their fuel for which they now pay 28 cents?

THERE is no "raw material" whatever, that is, or can be, of any value to man until the labor of man has been expended upon it; but when that labor has been thus expended that "material" becomes the "finished product" of that labor. Gold, silver, iron, lead, copper, precious stones, etc., embedded in the earth, are emphatically raw materials, and entirely without value until the labor of man gives value to them, when they cease to be "raw materials."

"THE American manufacturers of chemicals are asking for a restoration of the enormous duty which used to make quinine so expensive. Quinine is a standard remedy for 'la grippe,' and the politician who favors the duty will have to face an army of angry sneezers."—*Toronto Globe*.

The duty on quinine was never "enormous," nor did that

duty ever make quinine "expensive." Neither did the removal of the duty cheapen the price to the extent of remission. The planting and cultivation of vast areas of land with cinchona, from the bark of which tree quinine is manufactured, did the business.

NORTHERN young men are looking more to the Democratic party than formerly. Mr. Cleveland, in his recent speech, said that "the enterprising and thoughtful young men of the country are turning to the Democratic party rather than to the Republican party," and no wonder, if they desire to do right and help their fellow mortals.—Wilmington, N.C., *Messenger*.

The "Northern young men" in the United States, who are "looking" to the Democratic party there, are like the Canadian young men who are looking towards the Grit party. These young men look at these parties as being the enemies of progress, and they take care to vote the other way.

THE value of property exempt from taxation in the city of Montreal amounts to \$19,131,920. In Toronto it amounts to about \$18,000,000. It is no wonder the tax payers groan. Every cent's worth of this property should pay municipal taxes. It all enjoys all the benefits derived by other property from lighting, street improvements, police and fire protection, etc. Let those who indulge in the luxury of churches pay equally with the poor man who pays taxes on his cottage home, and with the manufacturer whose factory and work shop is unjustly burdened with taxes to enable the churches to go free. Abolish tax exemptions.

Is the duty added to the cost? The Free Traders tell us that it is. They tell us that when a duty is levied on an article, then the cost of that article is enhanced to the extent of the duty. The American duty on bituminous coal is 75 cents a ton, but there are cities in Illinois that are proclaiming the fact that coal for fuel is so cheap as to upset this favorite theory of the Free Traders. One city, where the receipts of coal aggregate 65,000,000 bushels a year, offers it at a dollar a ton, and another city, very near, where extensive coal mines are, offers it at 28 cents a ton. Do these prices include the 75 cents a ton duty?

IRON ore is the primitive form of iron and steel. Iron ore is the "raw material" of which pig iron is made; and pig iron is the finished product of the blast furnace. Pig iron is the "raw material" of which refined iron is made; and refined iron is the finished product of the puddling furnace. Refined iron is the "raw material" of which fine steel is made; and fine steel is the finished product of the crucible. Crucible fine steel is the "raw material" of which fine cutlery, needles, watch springs, etc., are made. A ton of iron ore is worth, perhaps, five or six dollars; a ton of pig iron is worth, perhaps, twenty-five dollars; and a ton of some watch springs, is worth more than its weight in gold. What is "raw material"?

CHIEF JUSTICE FULLER, of the U.S. Supreme Court, tersely says that "it is the duty of the people to support the Government, and not of the Government to support the people." The Protectionist doctrine may be stated thus:—"It is the duty of the rest of the people to support the Government and Us."—Toronto *Globe*.

St. Paul said that the man who neglected his family was worse than an infidel, and this doctrine agrees precisely with that of the Protectionist, who believes that the duty of the Government is to provide for those living under it, the welfare of the balance of the world being a secondary consideration. It would be interesting to hear Chief Justice Fuller explain how "the people" can support the Government if the Government deprive the people of the ability to support it.

ENGLAND boasts that she has given her eastern possessions the blessings of Free Trade. During the last session of Parliament, Lord Stanley, of Alderley, gave notice in the House of Lords that he would question the Government if certain natives in India had been punished for defrauding the revenue by scraping salt from the ground for their use; the defrauding the revenue consisting in evading the payment to the treasury of excise duties levied on salt. In India there is a very heavy excise duty on salt, and also a countervailing import duty; and according to the late India revenue returns, the receipts of revenue from this source amounted to over \$75,000,000 rupees. This sum, reckoning ten rupees to the sovereign, amounts to over £6,000,000 in excise duties, and about £1,500,000 in import duties. This is a "blessing" with a vengeance.

THE Free Trade howlers have been assiduously pointing to the complaints made by some of the New England manufacturers of iron goods regarding their inability to operate their establishments unless they were allowed to have ore, coal, pig iron and other "raw" materials free. The Norway Iron & Steel Works, Boston, Mass., is one of the concerns about whose welfare the Free Traders have expressed much solicitude. This concern, instead of sitting with folded hands in Boston, bemoaning the trade that does not flow towards that city any more, has pulled up its stakes and is following the trade. To do this it has migrated to Peoria, Illinois, where it will re-establish its six large mills that will give employment to 800 hands. Its fuel supply will be drawn from the everlasting hills near that city, and the coal can be laid down in the works at a cost of 28 cents per ton.

A PENNSYLVANIA farmer is quoted as having told a congressional committee that the home market, given him by the protective system, was not sufficient compensation for the increased cost of the articles he has to buy. The farmer was confusing two widely different things. It is not the protective system which increases the cost, having the very contrary effect through stimulating domestic competition, but it is the unprotective taxes on raw material, once a painful necessity to raise money for the civil war, and still foolishly retained, now the need no longer exists. It is this heavy and unnecessary taxation to which the Annexationists, Continental Free Traders and all the clique, under their various designations, are endeavoring to subject Canada.—*Empire*.

"Unprotective taxes on raw materials still foolishly retained." Bosh. THE CANADIAN MANUFACTURER propounds a question to the *Empire*—What are raw materials? An explicit answer is respectfully requested.

STRONG efforts are being made to induce both the Ontario and Dominion Governments to extend aid to the Central Ontario Railway Company to enable the building of the extension of the company's road from Coe Hill, its present terminus, to

Sudbury, on the line of the Canadian Pacific Railway. The Central Ontario road now in operation extends from Picton to Coe Hill, one hundred miles, and was built by the Company entirely without municipal or government help, the object of its construction being to open a market for a number of iron mines in Hastings county, in which the principal owners of the railroad are interested. There are valuable mineral properties at Sudbury in which these parties are also interested, and the development of which would be of inestimable importance to Canada, and it is to be hoped that the assistance asked for will be promptly granted.

An item is going the rounds of the papers to the effect that the making of knitted carpets is a home industry in Germany, being carried on by all classes of the population, from peasant women and girls to ladies of leisure and good position. Knitted carpet schools have been established in many towns, and itinerant carpet makers travel from place to place teaching the art of carpet knitting for a small remuneration. This is no new thing in Canada, the writer of this having knowledge of such work being done here. The carpet here alluded to is knit of strips of textile goods such as woven rag carpet is made of. The knitting is done with wooden needles, and for convenience the carpet is made only about twelve inches wide, the widths being joined together by sewing in the usual manner. This knitted carpet is more durable than woven rag carpet. Knitted in strips from six to eight inches wide, it serves admirably as a border for remnants or short pieces of Brussels or other carpet made into rugs.

The citizens of Galt, Ont., are to be congratulated at the result of the municipal election held there last week. The striking moulders and some of their unwise friends conceived the idea of offering "labor" candidates to be voted for, and they made a vigorous canvas for their ticket. These candidates represented no other than the sore head element of the strikers; and these imagined that because a certain amount of sympathy was extended to them when their strike was inaugurated several months ago, this sympathy could be depended upon to help elect the "labor" candidates. The sensible people of Galt long since discovered that their sympathy for the strikers was misplaced, and they understood that should the "labor" candidates be elected, disastrous results would surely follow to their town, and so they overwhelmingly defeated the aspirants at the polls. It was a happy day for Galt when this was done. May peace and quiet now prevail. The jawsmiths have discovered that they cannot trifle with impunity with the intelligent people of that community.

The law passed during the last session of the Ontario Legislature to prevent the granting of bonuses to establishments already in existence, with a view to inducing them to remove from one town to another, is a dead failure. The evil is now greater than ever before, and from one end of the country to another, towns and villages are vying with one another in the mad haste to offer large sums of money to proprietors of industries who indicate a willingness to change their location. The law, as it now stands is intended to prevent the granting of bonuses to industries already in existence, but this provision is easily evaded. In every direction owners of manu-

facturing establishments are being tempted this way, and the result is that municipalities are being burdened with debt, values of property are unsettled, and a spirit of unrest and dissatisfaction is seizing upon the people. There is no doubt that the Legislature made a serious blunder when it did not abolish the whole system of bonus giving, and the sooner it wipes the present law from the statute-book the better.

THE following press telegram from England appeared in all the daily papers a few days ago:—

"The sale of the Morton manor estate for only £38,000 has caused quite a panic among landowners in the west of England. Here is a property in excellent order, within three miles of Taunton, with a very fine modern house and a reduced rental, being close upon £2,000 a year, and after being in the market for a considerable period there is a forced sale by mortgages, with the result that it is knocked down to a local land agent for the miserable sum of £38,000, whereas £75,000 was actually refused for the estate about fifteen years ago, and the new house cost £20,000."

About all the Free Trade papers in Canada and the United States have of late been loading their columns with pessimistic allusions to the deserted farms in New England, attributing the decline in land values there to the operations of the protective tariff. But here we see in Old England a valuable estate that, fifteen years ago, was worth £75,000, and which has since then been improved to the extent of £20,000, actually going under the hammer at £38,000. They have Free Trade in Old England—plenty of it—but the local and general taxes there eat up the very substance of the land.

THE president of the Pennsylvania Steel Co, wants free iron ore. His company are large manufacturers of iron, and have recently erected an extensive plant on tidewater near Philadelphia, where ships may come to its wharves. This company are owners of valuable iron mines in the Island of Cuba, and they say they can put their ores on board ship there at a cost of \$1 a ton, the price of Cuban labor employed in mining these ores being from sixty to seventy cents a day. The American duty on iron ore is 75 cents a ton, and the Pennsylvania Steel Company can probably land their Cuban ores at their works, duty paid, for less than \$3 a ton. Lake Superior ores of equal quality and value are worth \$7 a ton in Cleveland, Ohio; and similar ores from Canadian mines can be laid down in Cleveland, duty paid, for less than \$4 a ton. The Pennsylvania Steel Company ask more than they are likely to receive. There are many other similar concerns in the United States that do not ask for free ore. They are not willing that the negro slave labor of Cuba shall be brought into unrestricted competition with free American labor. Cuba ores can now be laid down at Pennsylvania furnaces cheaper than Canadian ores, and a removal of the duty would not help the matter.

WHY is it that while there seems to be any amount of English capital to invest in American iron works, not one shilling of it can find its way into the iron works that Sir Charles Tupper declared were about to be established when he severed the last commercial bond uniting us with the empire by increasing the iron and steel duties, but which have never been established?—*Montreal Witness*.

A question easily answered. The reason why English capital is being invested in American iron works is because, under Protection, American iron works are a most profitable invest-

ment. The reason why English capital is not being invested in Canadian iron works is because the so-called "Protection" afforded the industry in Canada does not protect—the duty is not high enough. The whyness of the *Witnesses* "why" consists in the difference between the duty of \$7 a ton, as in the United States, and \$4 a ton, as in Canada. Under a high duty the manufacture of pig iron in the United States has proved an unbounded success, so much so, that American iron manufactured under it can be sold in Canada several dollars a ton cheaper than British iron manufactured under Free Trade. Our present duty is for revenue only—if it was raised to \$7 a ton it would be a protective duty, and under it English capital would quickly seek investment in Canadian iron works.

ONE of the strange associations of bedfellows is seen in the amalgamation of the Knights of Labor and the Farmers' Alliance, recently effected in the United States, by which it is hoped certain political ends may be gained. The Knights of Labor hope to have some law passed, by which laboring men will have to work not exceeding eight hours a day; and the Farmers' Alliance hope that some similar law may be passed, by which the farmers may receive high prices for their products regardless of the market value thereof. It looks like an exaggerated case of trying to mix oil and water. The knights want high prices for few hours of labor, and want to pay only very low prices for all the food products they buy; while the farmers, who require their help to work long hours, want to get higher prices for what they sell. The knight wants to sell his labor at high prices, and the farmer wants to hire his labor at low prices. Of course both classes must have what they want. The law must ensure that the farmer receives a dollar a bushel for his potatoes though the knight don't want to pay more than twenty five cents for them; and it must ensure that the knight shall not work more than eight hours a day, though the farmer wants his hired man to put in all the time between four o'clock a.m. and eight p.m. These "combinations" are fearfully and wonderfully made.

In the *Toronto Mail* of Jan. 4th, in reporting the proceedings of the Toronto Trades and Labor Council, was the following:

"A letter was read from the Ontario Government regarding an alleged defective fly-wheel recently erected in the Central Prison, and purchased from a firm in Galt, where the workmen are on strike. The letter said the wheel had been carefully examined and found all right; the Government would be pleased to see a deputation on the subject on Tuesday next. The secretary said he had the affidavits of several men on the subject, and it was decided that the Council should arrange to meet the Government and lay the case fully before the responsible minister."

The "Tuesday next" alluded to was Jan. 7th, but no account of any such interview as here spoken of between the Ontario Government and a deputation from the Trades and Labor Council has since appeared in the *Mail*. If it is a fact that the secretary of the Council has in his possession the affidavits spoken of, they should be produced; but it is probable that the secretary never had any such affidavits, for the reason that they were never made. The production of such affidavits would simplify one phase of this Galt strike business very con-

siderably, and open the way for some of the vicious ones to take up their abode for a time at the Central Prison, where they could observe the perfect working of the machinery which they allege to be defective. By all means let the affidavits be produced.

EIGHTEEN years ago, a commission was appointed in Great Britain, to investigate the question of the probable duration of the coal supply of the kingdom. Some of the results of this official inquiry, given in a paper read before the Statistical Society, suggest some startling probabilities. At the average rate of increase and consumption, which has been going on for the past twenty years, it is computed that the Newcastle coal district will be exhausted in 94 years, the South Wales district in 79 years, and the remainder in even less time.

Regarding this fact the *Electrical Engineer* says:

"Nothing in the future appears more probable than that within the lifetime of persons now living, the industrial supremacy of Great Britain will pass away with the exhaustion of her coal fields. Switzerland, Italy and the Scandinavian peninsula are destined to become the great manufacturing districts of Europe. This extraordinary industrial revolution will be brought about by the transmission and distribution, by electrical means, of the inexhaustible and permanent water power which is now running to waste in those countries. Indeed, this power is already beginning to be successfully utilized by the skill of the electrical engineer. More than a year ago we visited in Switzerland a woolen manufactory of 36,000 spindles, with the usual complement of auxiliary machinery, which was operated wholly by electric power conveyed from a distant stream, deriving its never-failing supply of water from the melting of Alpine snows. To an electrician, the sight was an inspiring one and full of significance. In the new era, which is advancing with such rapid strides, the Swiss Republic may not improbably become the foremost industrial nation of Europe. Nothing is more certain than that the next quarter century will witness amazing changes in the commercial relations of the nations of the earth, in consequence of the development of the conception of the electrical distribution of energy."

DISCUSSING the prospects of iron manufacturing in Canada, the *London, Eng., Iron and Steel Trades' Journal* says:—

"We hear that a well known American engineer has prepared plans for six large blast furnaces, which are to be erected near to Ottawa, and we see no reason why pig iron production on a large and profitable scale should not soon be an important feature of Canadian industry. It is only a matter of time, and we believe that movements now on foot are likely to accelerate the event. The enormous production of pig iron in the United States has now rendered the great Republic practically independent of external supplies of crude iron, and we must be content to accept the inevitable and see Canada also become self supporting in the matter of pig iron. * * When we visited the Ottawa district in the autumn of last year, the work of development of the iron ore mines in the Bristol region was going on steadily, and we now learn that it is intended to smelt the ore in Ottawa, instead of marketing it in the United States as heretofore."

The *Journal* then quotes from Mr. Birkenbine regarding the cost of manufacturing the Bristol ores into iron at Ottawa, which facts have already been displayed in these pages, and says:—

"This is worthy of attention, from the fact that 50,000 tons of pig iron and 250,000 tons of manufactured, cast and wrought

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The eighteen-inch Driving Belt we had from you in July, 1879, has given us thorough satisfaction. It has done all the work in our factory ever since, and looks as if it were good for the next ten years.

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iron enter Canada each year. As will be seen by the following, there is every encouragement given for the production of domestic pig iron in Canada: The Canadian duty is now \$4 per net ton on pig iron. In addition, the Canadian Government offers a bonus of \$1 per ton on all pig iron made in Canada from Canadian ores. Therefore, the domestic metal would be well protected, at least, until the expiration of the bounty period. If, therefore, pig iron made at Ottawa costs \$14 per ton, foreign metal will have to be delivered at \$8.40 per ton to meet the native iron on a level. This, of course, is impossible. In the far west, on the Pacific coast of British Columbia, the iron industry will some day flourish, the time, perhaps, has not come yet, but it seems only natural, that as ores and fuel exist in immense quantities, steel for the railways and iron for many purposes should be made on the spot. Vancouver Island abounds with coal which is extensively worked at Nanaimo, Wellington and Comox. At the last named place the Union Colliery Company, a syndicate of San Francisco capitalists, has erected a splendid plant and bought their own steamers for carrying the coal to California. Texada Island, which lies between Vancouver Island and the mainland of British Columbia, is a mountain of ironstone, and this ore is being shipped down the coast to be smelted in Washington Territory, U.S.A. We have seen the "Texada" pig iron in San Francisco and have been told by iron founders that it suits them as well as the best brands of Scotch. It, therefore, seems probable that in the near future iron smelting will be an established industry on both the Atlantic and Pacific Coasts of British North America."

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.

200 LIGHT GAS MACHINE for sale, only used two winters. Apply Wagner, Zeidler & Co., West Toronto Junction.

TISDALE'S BRANTFORD IRON STABLE FITTINGS.—We lose no job we can figure upon. Catalogue sent free. The B. G. Tisdale Co., Brantford, Canada.

IRON TURNING LATHE—12 inch over sheens, 20 inches in gap, 6-foot bed, in good order—for sale or exchange for small shaper. Standard Needle Co., Paris.

I WILL give a free deed of ten lots on the Scugog River to anyone who will start a manufacturing establishment employing a certain number of hands. A. D. MALLON, Lindsay, Ont.

BISCUIT FACTORY FOR SALE IN KINGSTON.—Including land, buildings and machinery, at \$5,000; going concern; good business; fully equipped. Apply to Macdonnell & Mudie, Kingston, Ont.

FOUNDRY AND MACHINE SHOP FOR SALE IN DUNDAS—Formerly occupied by Thomas Wilson & Co., and lately by Cochrane Roller Mill Co., very suitable for manufacturing purposes; steam engine, boiler (new), also water power; a quantity of machinery and shafting in building. Apply to Thomas Wilson, Dundas; Kingsmill, Cattnach & Symons, Toronto; or Bruce, Burton & Bruce, Hamilton.

FLOUR MILL FOR SALE.—One of the best Water Powers on the Welland Canal. Could be converted for other manufacturing purposes. Address Richard Wood, St. Catherines Ont. P. O. Box, 977.

A DYER—Blue vats and fancy colors in wool and piece. Fast carriage green cloths, tricots, flannels, etc., etc. Am at present engaged in the States, but desirous of coming to Canada. Address, GUBELINUS, this paper.

FOR SALE—at Merrickville, Ont., within five minutes' walk of the C.P.R. station or the Rideau canal wharf, a first-class Water-Power with substantial buildings suitable for roller mill or other heavy machinery. Apply to Mrs. M. P. MERRICK, Merrickville, Ont.

FOR SALE.—The Wilkinson Plough Co. (Lim.), of Aurora, Ont., are moving to West Toronto Junction about the 1st January next, and offer their works at Aurora for sale or exchange. They are large, complete works, and have a capacity of from forty to fifty ploughs a day. Apply either to Aurora, or to their temporary offices, 19 Wellington street east, Toronto.

SIXTY HORSE-POWER BOILER FOR SALE.—Size, 60 x 144 inches, containing 76 3-inch tubes. Fitted with a No. 2 Curtis return trap, valves, condenser and steam gauge, water gauge and cocks, cast iron soot door, cast iron independent front, grates and bearers complete; all in perfect condition. Apply to SAMUEL MAY & Co., 111 Adelaide St. West, Toronto.

Santa Claus, that beautiful magazine for young folks, that makes regular visits every week in the year, continues to be quite as attractive and interesting as ever. The stories, poems, etc., are of the very highest order, and just such as parents would like to have their children read, and the illustrations are all by first-class artists. Published by the Santa Claus Co., 1,113 Market Street, Philadelphia, Pa.

It affords us much pleasure to note the success attending *Farm Machinery* of St. Louis. It has become the leading paper in the United States devoted to the interests of manufacturers of and dealers in farm machinery and agricultural implements, and, judging from the exceedingly liberal manner in which it is patronized by those classes, they place an appreciative value upon it, and will have their business cards in it. In fact, it looks as though they are convinced that they cannot do without it. It is clearly a case of "Eli" who has got there. The heathen rage, but "Eli" remains on top.

MESSRS. HENNING & PAINE, Richmond, Va., have sent us several of the office calendars manufactured by them. These calendars are shown in connection with very beautiful pictures, which, being gems of art, ensure their preservation in whatever offices they may find their way. The printed matter on them informs us that Messrs. Henning & Paine are lithographers agents for everything in that line; and that they also handle gold, glass, and embossed signs, advertising specialties, chromo cards, etc. These gentlemen are pushing, go-ahead young Americans who are bound to succeed.

THE Milton Manufacturing Company, Yarmouth, N.S., recently organized with a capital of \$25,000 for the manufacture of lumber, building materials, woodenware, etc., have completed the erection of their factory and are now at work. The main building is two stories and a half high, with the frontage of 100 feet, and an L in the rear 27 by 45 feet. In addition they have a two story and a half building in the rear, the lower part of which is for store room, and the upper part a glazing room. The steel boiler is 5 feet in diameter and 17 feet long, and the engine is 100 horse-power, and are from the works of the Burrell-Johnson Iron Company. These works give employment to about 50 hands.

At the beginning of the New Year Mr. James M. Swank presented to all the members of the American Iron and Steel Association, of which he is general manager, copies of a new and thoroughly revised edition of the Association's "Directory to the Iron and Steel Works of the United States." This edition is the tenth issued by Mr. Swank, and it is larger and more complete than any of its predecessors. The changes noted in its pages begin with November, 1887, and are brought down virtually to the close of 1889. Copies will be sent to all persons who are not members of the Association upon receipt of \$3 for each copy ordered.

FOLLOWING are the decisions rendered by the Dominion Customs Department during the months of November and December last: Aluminum bronze, 30 per cent.; Basswood, over 1-16 inch thick, 20 per cent.; Castile soap in cakes, 2 cents per lb.; Corn-cob pipes, 25 per cent.; Frillings and flounces, 35 per cent.; Glaziers' diamonds set in brass, steel or iron, 30 per cent.; Jellyine, when not sweetened, 2 cents per lb.; Labels, all, silk, letters, woven or printed, 30 per cent.; Labels, all, cotton, letters woven, 25 per cent. Labels, all, cotton, letters printed, 32½ per cent.; Plate glass, bent, value to include cost of bending, 20 per cent.; Sanitary and ingrain wall paper, 35 per cent.; Snowshovels made of wood, 25 per cent.

PRACTICALITY and variety are the prominent characteristics of the number of *Good Housekeeping* for January 4. The paper entitled "A Screw Loose in the Household Machinery," is very stimulating to the processes of thought, but with the wide differences of judgment as to what are the best ways of "managing" the home expenses, the problem suggested by the paper is not likely to prove easy of solution. "Practical Window Gardening," "Mending Day," "School-day Dresses for Little Misses," "Our Children and Their Treatment," the first of a series, and others are practical and useful papers. Edward Bellamy's suggestions for co-operation in household service as a means of eliminating the servant girl, have excited a good deal of criticism, and the current number pays considerable attention to the subject, editorially and otherwise.

If trustworthy statistics could be had of the number of persons who die every year or become permanently diseased, from sleeping in damp or cold beds, they would probably be astonishing and appalling. It is a peril that constantly besets travelling men, and, if they are wise, they will invariably insist on having their beds aired and dried, even at the risk of causing much trouble to their landlords. But the peril resides in the home, and the cold "spare-room" has slain its thousands of hapless guests, and will go on with its slaughter till people learn wisdom. Not only the guest but the family often suffer the penalty of sleeping in cold rooms, and chilling their bodies at a time when they need all their bodily heat, by getting between cold sheets. Even in warm summer weather a cold damp bed will get in its deadly work. It is a needless peril, and the neglect to provide dry rooms and beds has in it the elements of murder and suicide.—*Good Housekeeping*.

THE *Dominion Illustrated* for January 11 contains the portraits of some of our noted men—Sir Joseph Hickson having the place of honor, while the Hon. P. J. O. Chauveau, once a prominent figure in Canadian public life, and Dr. J. G. Bourinot, the new C.M.G., form an interesting pair. The other features of the number will please the lover of scenery, the antiquary, the enthusiastic for industrial progress, and the Canadian patriot, to whatever of these classes he may belong. There is a fine series of New Brunswick views—Grand Falls on the St. John River—a valuable memento of Old Canada—the house in which Vaudreuil signed the capitulation of Montreal, an Indian scene on Rainy River, and a fine art picture, "Joan of Arc," by Chataillon. Altogether, it is an excellent number, both in illustrations and letter-press. Price of subscription, \$4 a year. Address, Mr. G. E. Desbarats, managing-director, Dominion Illustrated Publishing Company, 73 St. James Street, Montreal.

THE calendar issued by the Intercolonial Railway for the current year deserves notice. It is not only beautiful in design but exceedingly well executed and very attractive. The view of Sydney, C.B., was selected, it is understood, because the Government is building a railway in Cape Breton in connection with the Intercolonial. The moose head, which is the trade mark of the Intercolonial, is brought out prominently in the calendar, as also the salmon fishing on the Restigouche, N.B., and each tablet contains useful information. Behind the tablet will be found facts and figures which insure the calendar being preserved long after its usefulness as a calendar is gone. There is a chart and table of distances from which will be seen that the distance from Halifax to Liverpool is 2,480 miles; St. John to Liverpool is 2,757 miles; Boston to Liverpool is 2,950 miles; New York to Liverpool is 3,130 miles. This calendar reflects credit on the management and all concerned in its production. The

traffic over the I.C.R. has been very large this winter, especially in export grain from Ontario and importations of general merchandise from Europe, and a dock has been secured in London for Canadian lumber, which is now going forward via Halifax.

THE American public does not appreciate or give due credit for the remarkable reductions in the charges for transportation which have been made within the past few years and are still going on. The St. Louis *Republic* referring to a tariff sheet of the Chicago & Alton Road, dated April 20, 1863, which an official of that company chanced to come across the other day, gives the following example of rates per hundred pounds from East St. Louis to New York 27 years ago, compared with those now in force:—

	1887.	1863.
Corn.....	\$0 23	\$0 95
Flour, per barrel.....	0 59	1 90
Bran.....	0 29	0 95
Pig lead.....	0 29	0 95
Cotton.....	0 30	2 50
Beer.....	0 35	1 60
Dressed beef.....	0 55	2 50
Hides, dry.....	0 87	2 50
Hides, green.....	0 35	0 95
Flour, in bags.....	0 29	1 60

In what other department of industry have charges decreased from 75 to 87½ per cent. in the last twenty-three years?

THE IRON ORE DEPOSITS OF SPAIN.

FROM the commercial report of Consul Finn, dated Malaga, October 22, we learn that the Sierra of Bedar, situated about eight miles west of Garrucha, contains a number of important deposits of iron ore of a very superior quality. The principal mines are divided between two companies—a French one and an English one. The former have constructed a wire rope tramway nine miles long, completed on August 12, 1888, which puts their mines into communication with the sea at this port, and they have already brought down 60,763 tons, of which they shipped, in the last four months of 1888, 11,420 tons, in five British steamers and one French, to the United States of America. None of the ore shipped has contained less than 62 per cent. of metallic iron, and is practically free from sulphur and phosphorus. The other company own mines adjoining the former, and are at present opening out the quarries and making works of investigation, and there appears to be some prospect of a railway to the port being constructed by an important financial house in London. Should this be carried out, the exportation of iron ore in future by the two companies will not be less than 500,000 tons annually, employing some 250 large steamers. These will be principally British. The shipments are now made off the open beach and the shipping arrangements are still very primitive, yet two steamers, as large as 4,200 tons cargo, have been loaded in twenty-five hours. It is expected that when these works and the railway from Lorca to this port are completed, a closed port will be constructed.—*The London Ironmonger*.

THE TARIFF AS A "LEVELER."

THE suggestion has lately been made by some sincere protectionists that tariff legislation should never be permitted to carry the protective principle further than to put the American manufacturer upon an exactly equal footing with his foreign competitors, with respect to the cost of labor and raw materials. In other words, the notion is that the tariff should simply raise the American to a certain "level," upon which he and his rival may run a neck-and-neck race, with a fair chance that the best man shall win. There is an attractive appearance of justice in this proposition, and, moreover, it involves expression of a complimentary, and quite warrantable, belief that the ordinary American will be likely to come out ahead in a contest conducted upon equal conditions for all participants.

It must, however, be evident that grave difficulties will be encountered in putting this theory into practical operation without the assistance of a tariff-law. The theory takes for granted that the European "level" of prices is a fixed condition to which we may adjust our law with an assurance that an act of Congress will always supply the same amount of protection at the same point. But, in truth, no such "level" of prices or conditions exists, or can exist. What the American manufacturer has to menace him is not an ascertained and persistent quantity, but conditions of price and of supply which are continually fluctuating. Not only do values abroad change from day to day, but a further element of doubt is introduced to our domestic production by the circum-

stance that Europeans frequently choose this country as a dumping-place for surplus products which are to be parted with without much regard for values.

For this reason no legislation can exactly measure the precise degree of protection that a tariff system will afford. A law that may be fully protective to-day, may give little or no protection to-morrow. In 1883, the wool and woolen schedule of our tariff act was judged by expert observers to be sufficient to shield the home industry from destructive foreign competition, and this estimate was probably a correct one. But, after a while, the prices of wool tumbled, and changes in machinery and prices of labor, reduced the cost in Europe of certain fabrics, and the law that was once protective, permitted the infliction of grave disaster upon an important home industry. Three months ago British and Belgian iron and steel products poured in here in a flood. The law was a partial obstruction to the movement, but it was so little obstructive that the European manufacturers was able to over-ride and surmount it, and to beat us in some lines in our own markets. The law has not yet been changed in any particular, and yet, to-day, it is not only fully protective, but in certain directions absolutely prohibitive. The reason, of course, is that prices of iron and steel products in Europe have so far advanced that no European can meet American prices in this market. The legislator who should undertake to use a tariff law as an instrument for maintaining parity of the conditions upon which American and European manufacturers enter the American market, will have to devise a law that will change with every shift of the wind in the commercial centres of the world, and that is an impossibility.

A customs law must necessarily be nearly if not quite inflexible, unless it be based wholly upon the *ad valorem* principle, and that would mean limitless opportunity for fraud. If the law is, in fact, to be made protective in all cases, there is no escape from the necessity that it shall be high enough to supply protection when there is a decline of foreign prices, as well as when such prices are at a fairly normal level. An owner of low meadow-land along a river, desiring to build a bank to prevent overflow, would hardly content himself with a construction which should lift the bank just beyond the ordinary level of the stream. He would consider the certainty of the coming of freshets, and would build the bank upwards above the extreme high-water mark indicated by past experience. This, and this alone, would make the dyke fully protective. It would serve for low water and the highest high water. It would guard against every form of menace from the fluctuating forces of the stream. No tariff law can be regarded as actually protective if it exposes home industry to the shock of severe and unusual competition from abroad, whenever European prices happen to make a tumble or surplus production, chances to create a willingness to make heavy sacrifices. In such cases the domestic producer in fact actually fails to get, what every Protectionist admits he should have, namely, an opportunity to meet his rival upon equal terms. In truth, unless the tariff law gives him at least this, at all times and in spite of all upward and downward movements of the market, the Protective system is a delusion and a snare, rather than a comforting and encouraging reality. We express the opinion that the American people desire that the law shall supply such full assurance of fair play to the producers of this country. If the verdict given at the polls last year mean anything, it means that the nation favors Protection in full measure without qualification or reservation; and it is difficult to avoid the impression that the friends of Protection, who are filled with anxiety lest the tariff may be a trifle too high or a little too obstructive of importation either, have not the courage of their convictions of the justice of the system, or not enough faith in the expressed purpose of the mass of the people, to stand firmly by the principles to which they have given emphatic approval.—
The Manufacturer.

NOVA SCOTIA COAL AND IRON.

The following letter, from the Premier of Nova Scotia, appears in the *Boston Herald*:

In a recent issue of a Boston paper, Mr. D. H. Hall discussed the question, "Whether the seaboard Canadian Provinces actually possessed any deposits of coal and iron ore suitable to produce pig iron if these materials could be imported duty free?" Mr. Hall, desiring to answer the question in the negative, quotes with much satisfaction a letter in the *Bulletin of the American Iron and Steel Association*, written by Mr. A. Evans, jr., who, for a short time, had charge of the blast furnaces of the Londonderry Iron Company at Acadia mines, Nova Scotia. The substance of Mr. Evans' statement is that the Londonderry company could hardly get enough material to keep one of its two stacks running; that the iron ore available was small in quantity and inferior in quality, that the

manager travelled far and wide through the Provinces in an unavailing search for ore, and that the coal supplied was very poor.

As the views of public men on this side of the boundary line are not likely to have much weight in your tariff discussion, I shall not trouble you with any opinions on the question of tariff reform. But when any of the parties engaged in that discussion endeavor to sustain their views by discrediting the character of the mineral deposits of Nova Scotia, I must be permitted to offer a protest against such unfairness. Mr. Evans, I fear, is a prejudiced witness as respects the Londonderry iron mines, and he certainly is not a safe guide on the general question of the value of the iron and coal deposits of Nova Scotia. I send you herewith a letter from Mr. Edwin Gilpin, jr., Inspector of Mines for Nova Scotia, which, I think, will satisfy those interested in the iron industries of New England, that the iron and coal deposits of Nova Scotia are very extensive and of great value. It is the firm belief of most Nova Scotians that these valuable deposits will, at an early date, be more extensively worked, and will become a source of great wealth to our country.

W. S. FIELDING.

HALIFAX, N.S., December 19, 1889.

Hon. W. S. Fielding, Premier of Nova Scotia—Sir: In answer to your enquiry as to the correctness of the statements about the quality of Nova Scotia coal and iron ore made by Mr. A. Evans writing to the *Bulletin of the American Iron and Steel Association*, I beg to remark:

The Londonderry company have only two stacks. Necessarily it is frequently the case that one is idle for repairs, and they have had both running together. The Londonderry ore has yielded an average per cent. of metallic iron running from 42 to 45 parts in the hundred. Its quality is good as respects sulphur and phosphorous. I am acquainted with the manager, who visited various iron ore deposits in the interest of the company, and I know that he found ores adapted for the use of his furnaces. In one case he informed me that the rate of railway freight insisted on was prohibitory, and in other cases his prices for the ore were considered too small. The amount of available ore in Nova Scotia alone may be gathered from the fact that large bodies of Bessemer ore are known in Pictou county, besides numerous beds from four to fifty feet thick of hematites running from 40 to 50 per cent. of metallic iron and large deposits of limonite ore.

The extent of the Pictou ores is such that at this moment two companies are actively engaged in the preliminary work of railway surveys, shaft sinking, etc., with a view of erecting steel and iron works, and one has actually commenced to build its railway. Large bodies of ore are also known in the Annapolis Valley, in Colchester county, and at several points in the Island of Cape Breton. At the latter point several furnace masters have considered the ore bodies in sight amply large to warrant iron smelting on a large scale.

The coke used at the Londonderry works is silicious, containing several per cent. more of silicious matter than the typical coke made from the Pittsburg coking coal, but it is not inferior in other respects, as far as I have either seen or make analyses of it. There are seams known in Pictou and Cumberland which yield a better coke, and they will shortly be opened, when an increased demand for furnace coke will permit of successful competition with collieries now opened, which consider the amount of coke made for Londonderry a question of "bye products" only. The Cape Breton coals, from practical tests, yield coke in every respect equal to that from Cannelville, and almost identical in character and composition with the famous Durham cokes.

In view of the Londonderry company being obliged to use a silicious coke, it is an argument more ingenious than fair to say that their search for richer ore is a sign that the ore they are working is too poor, as the addition of a rich iron ore to the furnace burden is intended as an offset to the silicious fuel.

It has I presume, never occurred to any one in Nova Scotia that ore holding 40 per cent. of iron would be shipped in competition with the rich Spanish, Algerian and other ores, either with the duty on or off. There are, however, deposits of rich ore in the Province, and it is believed by those who are opening up the Pictou and other deposits that with railway facilities that will be able to supply the markets of the Eastern States with ores equal in quality and lower in price than either the best United States or foreign ores.

It is also believed that the facilities for making cheap coke prevailing in Cape Breton, which have led to its adoption for smelting purposes in Newfoundland in preference to English coke, will be found equally effectual in building up a trade in that article in the New England States.

Yours obediently,

E. GILPIN, JR.

MINES DEPARTMENT, HALIFAX, Dec. 16, 1889.

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.

MR. A. HASLAIN, proprietor of a saw mill at Nanaimo, B. C., will also establish a sash and door factory.

THE lobster pack of Westmoreland, N. B., during the past season amounted to 9,514 cases, or 456,672 pounds.

MR. E. MILLER, of Parkhill, Ont., will establish an extensive brick yard and tile factory at Goderich, Ont.

THE sash factory of Mr. T. Skelton, at Trenton, Ont., was destroyed by fire January 1st. Loss about \$3,000.

THE steam saw and shingle mill of Mr. D. C. McLean, near Kingston, Ont., was destroyed by fire last week, loss \$4,500.

THE Ontario Gas Company struck a heavy flow of natural gas on Jan. 1st., in their No. 5 well being bored at Sherkston, near Port Colborne, Ont.

THE Canadian Shoe factory at the City of Quebec was destroyed by fire January 5th. Two hundred and fifty workmen are thrown out of employment.

MR. JAMES LIVINGSTONE, of Baden, Ont., will erect a flax mill at Seaforth, Ont., that town having granted him exemption from taxation for ten years.

MR. R. C. ENNIS and others of Neepawa, Man., have organized a company with \$30,000 capital stock, and will build a 100 barrel flour mill at that place.

MESSRS. D. WILLIAMS & Co., knit goods manufacturers, Collingwood, Ont., have secured a new factory building, and will considerably enlarge their capacity.

THE Guarantee Carriage Manufacturing Company, of Montreal, has been incorporated with a capital stock of \$50,000, and will manufacture carriages, sleighs, etc.

THE Concord Buggy Company, Ormstown, Que., has been incorporated with \$10,000 capital stock, and will manufacture all sorts of wheel vehicles, cutters, sleighs, etc.

THE new machinery built by the Wm. Hamilton Manufacturing Company, Peterborough, Ont., for a saw mill at Chemainus, B. C., amounting to about 50 tons in weight, has been delivered at destination.

MESSRS. SAMUEL ROGERS, of Toronto, and James Reid, of Hamilton, Ont., have organized a company in the latter city, and have secured suitable premises for the refining of crude oil and the manufacture of machinery and other lubricating oils, etc.

MESSRS. KEHLOR BROS., of St. Louis, Mo., are contemplating erecting an extensive flour mill plant at Sault Ste. Marie, Ont. This concern own and operate several large flour mills in St. Louis, the aggregate capacity of which is about 4,000 barrels a day.

MR. C. TURNBULL and Messrs. James and George Forbes, of Hespeler, Ont., have purchased the Wardlaw woolen factory, at Galt, Ont., which has been lying idle for some time, and purpose forming themselves into a joint-stock company to make woolen yarn and underclothing.

MR. CHARLES FAWCETT'S stove foundry, at Sackville, N. B., now includes a moulding room 200 x 58 feet, a three-story store room 100 x 60 feet, machine shop 40 x 30 feet besides offices, etc. The output is about 125 stoves per week, employment being given to nearly 50 hands.

THE Hastings Saw Mill Company, Vancouver, B. C., who already have a very extensive saw mill plant at that place, will increase the capacity of the same four fold. This company have one of the largest banking corporations in the world behind it, which assures almost unlimited capital in its ramifications.

THE Albion Iron Works, Victoria, B. C., are building a new steam tug for Messrs. Earle & Spencer, of the following dimensions: Length over all, 82 feet; breadth of beam, 16 feet; depth of hold, 8 feet 6 inches. She will be supplied with compound engines of 225 h. p., and will run twelve knots an hour.

At the recent sale of the smelter and about 31 acres of land connected therewith, located at Vancouver, B. C., the property of the British Columbia Smelting Company, Mr. Thomas Dunn, of that city, became the purchaser. A company will be formed to operate the smelter, which will resume work at an early day.

MESSRS. E. R. BURNS, GEORGE MEASURES, and WALTER THOMAS, have associated themselves together and will establish a saw works in Toronto. Mr. Burns was recently connected with Messrs. Shurley & Dietrich, of Galt, Ont., and Mr. Measures with the Montreal Saw Works. The concern expect to begin operations within a few weeks.

MESSRS. NEWLANDS & Co., Galt, Ont., call the attention of the trade to some of the lines manufactured by them, included in which are glove and shoe linings, Saskatchewan buffalo robes, buffalo fur cloth coats, black dogskin cloth coats, etc. Now that we are really having a little taste of Canadian winter weather, the mention of these goods is most timely. Price lists will be sent on application.

THE Londonderry Iron Company, Acadia Mines, N. S., will open and operate the Torbrook iron mines in connection with their works. These mines are in Annapolis County, N. S., and produce red hematite ore of a very superior quality. The Company have secured leases on the property covering about two miles of the ore vein, which is six feet in width, and contains 62 per cent. of metal.

THE organ manufactory of Chute, Hall & Co., Yarmouth, N. S., has been four times enlarged since it was opened in 1883. In addition to cabinet organs they manufacture a variety of stools for the piano and organ trade. Although they have a capacity for turning out 50 finished organs and 200 piano stools per month, they intend to increase their output, and a number of new machines have been ordered.

THE Standard Drain Pipe Company, St. John's, Que., request us to state that they are manufacturers of salt glazed, vitrified fire clay sewer pipes and connections; culvert pipes, double strength; smoke jacks for locomotive round houses; inverts for brick sewers; garden vases; chimney tops, and all kinds of fire clay goods. These goods are all of standard quality. Those interested are invited to send for circulars and price lists.

At the recent exhibition in Pittsburgh, Pa. a remarkable display of aluminum was made by the Pittsburgh Reduction Company, the exhibit including probably the largest amount of that metal ever shown at once. It included a number of small ingots weighing five pounds each, and aggregating in all, about one ton in weight; one large ingot weighing 150 pounds, and a number of articles manufactured of the metal.

THE J. C. McLaren Belting Company, Montreal, are furnishing the MacLaren-Ross Company with an outfit of leather belting for their immense lumber mills at New Westminster, B. C. This belting is being manufactured of best imported oak tanned leather, and embraced in the order are two main drives, double thickness, 30 inches wide and 250 feet long; one 24 inch double; three 20 inch double; one 14 inch double; and about 5,000 lineal feet of smaller sizes.

THE Brooks Manufacturing Company, Peterborough, Ont., have ordered the machinery for their new works, which they expect to have in operation very soon. They will manufacture electric light carbons—which will be the only factory of the sort in Canada—and also other lines of goods. The plant for the carbon factory will cost from \$50,000 to \$60,000. The Town of Peterborough has voted the Company a bonus of \$6,000 on condition that the Company employ not less than 50 hands.

AN account of the recent destruction by fire of the works of the Oxford Furniture Company, at Oxford, N. B., was given in these pages at the time. Since then the company has been re-organized with a capital stock increased to \$50,000, and are now busily engaged erecting a new factory building, which they hope to have in operation at an early day. The main building, which will be of stone, will be 108 x 60 feet, four stories high, with engine and boiler house 60 x 40 feet, also paint shop, large warehouse, office, etc.

THE Dominion Bridge Company, whose works are at Lachine, Que., near Montreal, have just sent out 28 carloads of new steel bridges for the Canadian Pacific Railway. This shipment will be followed by another in a few days for the same Company. The Dominion Bridge Company have also orders in hand for the Grand Narrows bridge, Nova Scotia; the Grand Trunk Railway; the Vaudreuil and Prescott Railway; Canada Atlantic Railway; Drummondville County Railway; and Quebec and Lake St. John Railway.

Messrs. Goldie & McCulloch, Galt, Ont., are offering for sale a large number of steam engines of different capacities, which are being replaced by the celebrated Wheelock engine manufactured by them. Some of these engines are at their works at Galt, the others being in the shops and factories where they have been at work. Messrs. Goldie & McCulloch also offer a number of boilers, suitable for the above mentioned engines, and a lot of wood-working and other machinery. a brief description of which will be found in their card in page 60 of this issue

The H. C. Frick Coke Company, Pittsburgh, Pa., have issued a special notice to the trade calling attention to the fact that certain outside and inferior makers of coke, containing a great deal of sulphur and other impurities, are being substituted to the trade for the genuine "Frick" coke. To obviate this imposition upon their friends they state that the better way of obtaining the genuine "Frick" coke is to order from them direct; or, if it is preferred to buy through dealers, if buyers will drop the Frick Company a line to that effect, they will be glad to give the names of responsible dealers through whom the purchases can be made.

The Imperial Government will be asked to contribute to the cost of lengthening the graving dock at Esquimalt, British Columbia. The amount originally granted by the British parliament for the construction of this dock was £50,000, and now another £10,000, being just half the sum needed for this work, is applied for. It has been discovered that the dock, which is only 430 feet in length, will not be nearly long enough for the mail steamers which the Canadian Pacific Railway Company are constructing, and, as the Imperial Government is greatly interested in the new mail service, it is thought that they will not unwillingly subsidize the improvement of the Esquimalt dock. If the proposed work is carried out, the dock will be, without exception, the finest on the Pacific coast.

Mr. Charles Fawcett, Sackville, N.B., is one of the largest manufacturers of stoves, ranges, etc., in the Maritime Provinces, his establishment giving employment to about fifty hands. The present warehouse capacity is a building covering 100 feet square and three stories high. There is also a two-and-a-half story building 36x72 feet, for storing patterns, and another for the same purpose 28x40 feet. The foundry buildings occupy about 300 feet square, including a new moulding shop 60x120, connecting with the one previously used and containing room in all for thirty-five moulders. All modern appliances are in use in the foundry for

turning out first-class goods. The mounting shop connected with the foundry building is a building 40x80 with carpenter and pattern shop overhead the same size. Some 125 to 150 patterns and sizes of stoves are made, besides hot-air furnaces, portable ranges, ploughs, farmers' boilers and hollow-ware.

Messrs. Goldie & McCulloch, Galt, Ont., are building Wheelock engines for the following well-known firms and corporations: Corporation of Collingwood, Ont., for electric light station, 80 h. p. Messrs. Massey & Sawyer Co., for their new works in Hamilton, 50 h. p. Mr. Joseph Lowrie, Sarnia, Ont., carriage manufacturer, 25 h. p. Messrs. Wm. Doherty & Co., organ manufacturer, Clinton, Ont., 50 h. p. Messrs. Beardmore & Co., Acton and Toronto, 60 h. p. for their new tannery at Acton, being the second Wheelock in use by this firm. Messrs. Evans & Gilbert, flour mill, Kincardine, 50 h. p. Messrs. A. G. Peuchen & Co., paint manufacturers, Toronto, 50 h. p. Hamilton Electric Light Co., Hamilton, Ont., 300 h. p., being the second engine. Corporation of Picton, Ont., for electric light station, 125 h. p. Cobourg Woolen Mill Co., Cobourg, 200 h. p. compound Wheelock. Hess Manufacturing Co., West Toronto Junction, 80 h. p. for new factory. Messrs. W. & J. G. Greey, Toronto, for McIlroy & Co's. mill at Richmond, 60 h. p. Ontario Government for Central Prison, 300 h. p. Mr. James Thomson, flour mill, Orillia, Ont., 35 h. p. Mr. W. R. Gardner, Brockville, Ont., 70 h. p. for new works. Globe Furniture Co., Walkerville, Ont., 60 h. p. W. Cane & Sons Manufacturing Co., Newmarket, Ont., 250 h. p. Leamington Electric Light Co., Leamington, Ont., 75 h. p. Messrs. D. Morton & Sons, soap manufacturers, Hamilton, 50 h. p.

The Dartmouth Ropework Company, of Halifax, N.S., was established in 1868 for the purpose of manufacturing every description of manilla and Russian rope, with which the far-famed ships of Nova Scotia are equipped, and for many years this was the only class of goods turned out by them. But with the introduction of self-binding harvesting machines this company, with their usual enterprise, built and equipped what is still the largest twine factory in the Dominion, meeting with such phenomenal success that con-

Goldie & McCulloch, GALT, ONT.

Have the following **SECOND-HAND MACHINERY**, which they offer cheap and on reasonable terms.

- Iron Turning Lathe, 18 feet bed, 32 inch swing.
- 80 H. P. Automatic Cut-off Engine, can be seen at Hamilton Electric Light Co's Station, Hamilton, being replaced by Wheelock Engine.
- 80 H. P. Ingles & Hunter Engine, to be seen running at Wm. Cane & Sons, Newmarket, being replaced by Wheelock Engine.
- 80 H. P. Dickey, Neill & Co. Engine, splendid for Saw Mill, recently replaced by a Wheelock Engine.
- 50 H. P. Leonard-Ball Automatic Cut-off Engine, being replaced by a Wheelock Engine.
- 50 H. P. Slide Valve Engine, our own make.
- 35 H. P. Kelley & Co. Engine, recently replaced by a Wheelock Engine.
- 40 H. P. Corless Engine and 50 H. P. Boiler, only a short time in use, made by Cowan & Co., and replaced by a Wheelock Engine.
- 30 H. P. Slide Valve Engine, our own make.
- 25 H. P. Kelley & Co. Engine, recently replaced by a Wheelock Engine.
- 30 H. P. Brown Engine, to be seen at W. Doherty & Co's, Clinton, being replaced by a Wheelock Engine.
- 20 H. P. Beckett Engine, being replaced by a Wheelock Engine at Joseph Lowrie's, Sarnia.
- 25 H. P. Westinghouse, recently replaced by a Wheelock at Chas. Boeckh & Sons, Toronto.
- 15 H. P. Slide Valve Engine, at Messrs. Sawyer & Massey Co's, Hamilton, being replaced by a Wheelock Engine.
- 12 H. P. Slide Valve Engine, at Davidson & Leslie's, Mount Forest.
- 20 H. P. Slide Valve Engine, at D. Morton & Sons, Hamilton, being replaced by a Wheelock Engine.

A great many second-hand Boilers, all thoroughly tested, and complete with all mountings, from 50 H. P., down; also several second-hand Planers and Matchers, Moulding Machines and other Wood Working Machines. For particulars address

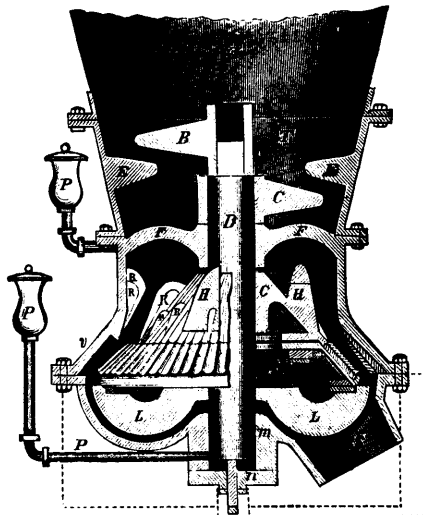
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Cement, Plaster, Bones, Bats, Ores, Paint, etc. It is also used to grind Liquorice and Sarsaparilla roots. Also as a Corn Breaker.

The Segments will retain their cutting edges longer than those of any other Mill, and when dull can be quickly and cheaply renewed.

It has the following good qualities, viz.:—Fast grinding evenly prepared bark; is easily erected and small power required to drive it.

It works with ease in damp or frozen bark, and breakages are prevented by safety coupling.

**PAXTON, TATE & CO.,
PORT PERRY, ONT.**

sumers to-day acknowledge the superiority of their twines. Again, the use of trade marks for binder twine, first introduced by this company, has materially assisted consumers in introducing the best value, nor need they now be in any doubt when purchasing, as the name and trade marks of this company are on all, sufficient guarantee of excellence. For the last few years, from various causes, manilla hemp has been held so high that it became imperatively necessary to furnish a binder twine from some cheaper material, and with this end in view they built and equipped, with machinery adapted for the purpose, still another immense factory, and now have under contract for the harvest of 1890 a thousand tons of their patent composite silver twine, that caused so much discussion and received such a number of the most satisfactory tests last harvest, and which, owing to its cheapness, bids fair to supersede in a great measure the manilla twines until now so generally used.

MESSRS. E. COGSWELL & Co., proprietors of the Enterprise Foundry Company, Sackville, N. B., are thus alluded to by the *Post* of that place: "In 1872, what is now known as the Enterprise Foundry was established and run by the Dominion Foundry Co., under the management of the late R. M. Dixon. After his death the business was conducted for two years, and in 1876 the plant and real estate were sold to Mr. E. Cogswell, the late Sir A. J. Smith, and the late Harmon Humphrey, and Mr. W. F. George, who, under the name and style of E. Cogswell & Co., continued the manufacture of stoves and other iron-ware. In the same year Sir A. J. Smith and Mr. Humphrey sold their interests to Senator Botsford, and Mr. George his interest to Mr. Cogswell. These gentlemen conducted the business until 1881, when Mr. Cogswell purchased Senator Botsford's interest, and with Mr. W. B. Dixon as partner, conducted the business until 1888, when Mr. T. S. Kirkpatrick, the present manager, and Messrs. Emmerson and Fisher, of St. John, entered the concern, which was incorporated as the Enterprise Foundry Co. The buildings have been generally overhauled, a large brick-set boiler has been set in, the engine room and fitting shop enlarged, a new capacious coal-shed erected, and a line of railroad 900 feet long has been built to the I. C. R. track. The result of the past season's business have prompted the company to take immediate steps towards increasing the capacity of their moulding shop and putting in an elevator whereby coal and iron can be put into the furnace more conveniently and expeditiously. At present

30 men are employed continually, and arrangements are being made to take in 15 more. The lines of goods made include 20 sizes of stoves and ranges for hard and soft coal and wood, with the famous Charter Oak ranges as a specialty. In addition to this, the usual grades of hollow ware, pots, tea-kettles, etc., are made."

THE Dodge Wood Split Pulley Company, of Toronto, whose extensive factory is at West Toronto Junction, near this city, inform us that they are exceedingly busy at this time. Alluding to their business they state the following facts:—The Goderich Organ Company, Goderich, Ont., have fitted their new factory throughout with the "Dodge" pulley. The Wilkinson Plow Company, who are just completing an immense new works at West Toronto Junction, are fitting it throughout with the "Dodge" pulley. The new machine shops of Messrs. Kerr Bros., Walkerville, Ont., are equipped with the "Dodge" pulley. The extensive additions which have recently been made to the Ontario Agricultural College, at Guelph, Ont., are equipped with the "Dodge" pulley; and the "Dodge" system of rope transmission of power, which transmits the power of a 20 h.p. engine a distance of 70 feet, is included in the equipment. The works of the Hess Manufacturing Company, now being built at West Toronto Junction, will be equipped throughout with the "Dodge" pulley. The Rathbun Company, Deseronto, Ont., have just replaced their wire cable drive, extending between their cedar mill and car shops, a distance of 300 feet between shafts, with a "Dodge" system of rope transmission, carrying the power of a 50 h.p. engine. Messrs. J. McLaren & Son, lumbermen of Ottawa, have lately adopted the "Dodge" system of rope transmission of power in their mills. Messrs. R. Lang & Son, Berlin, Ont., have just put in a 25 h.p. "Dodge" system rope transmission to convey power to an extension of their works recently completed. Messrs. Stairs, Sen & Morrow, Halifax, N. S., have just purchased a carload of the "Dodge" patent pulleys for the Nova Scotia trade, in which they report a brisk business. Messrs. Wood, Vallance & Co., Hamilton, Ont., carry full lines of the "Dodge" pulleys, for which they have large demand. Mr. T. W. Ness, 694 Craig St., Montreal, is agent in that city for the "Dodge" pulley, of which he carries a large stock. He reports that he is kept busy supplying the trade, his sales increasing rapidly. The Dodge Wood Split Pulley Company inform us that they are now busy filling export orders for Europe.

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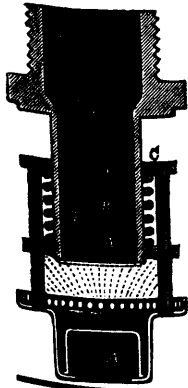
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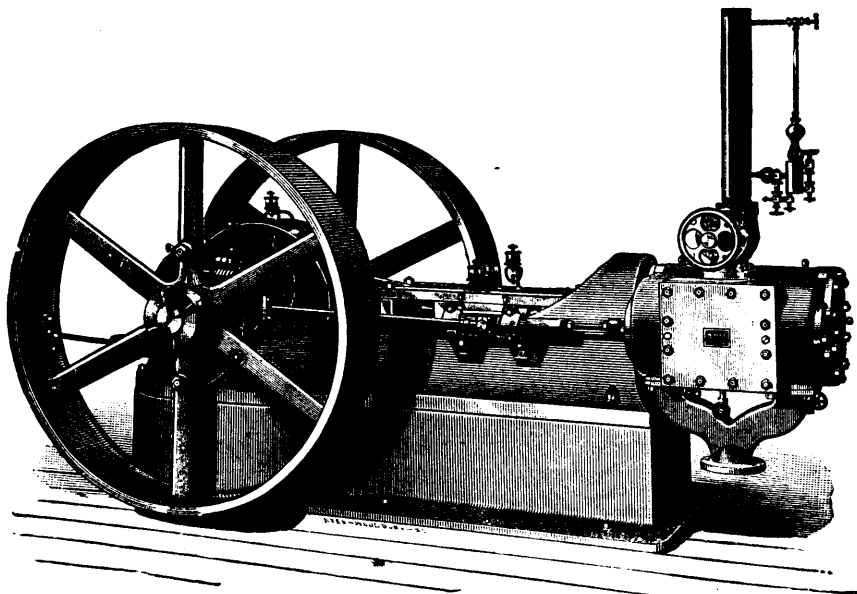
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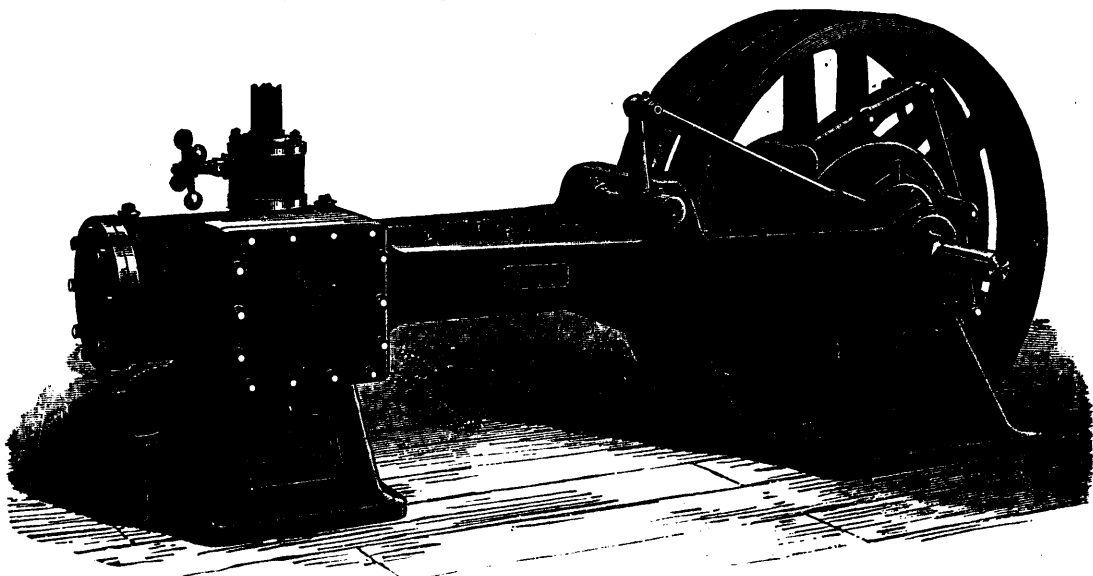
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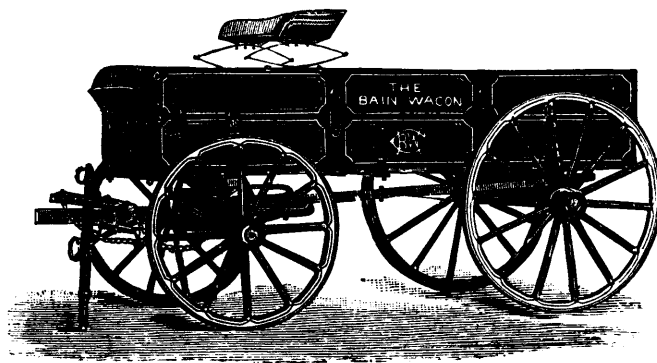
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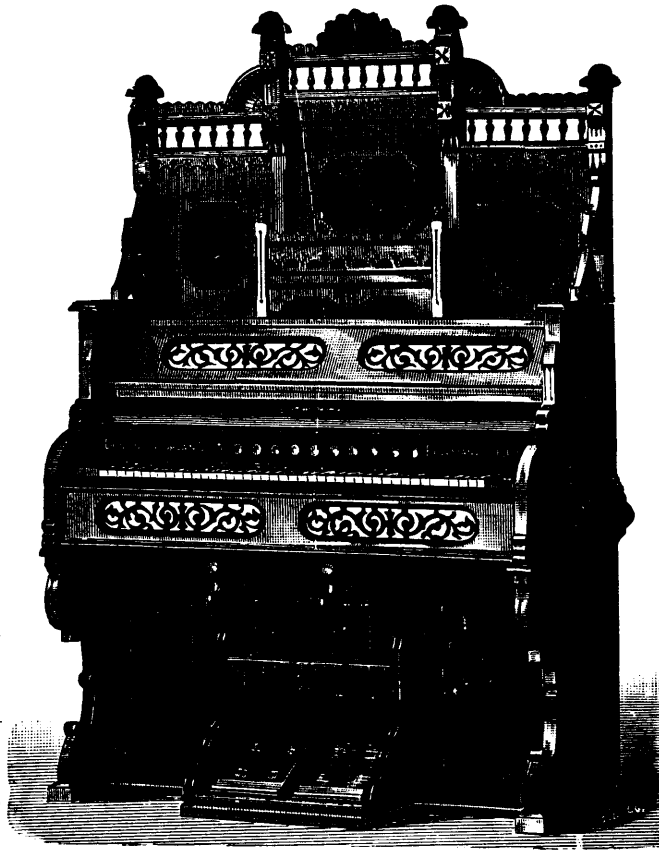
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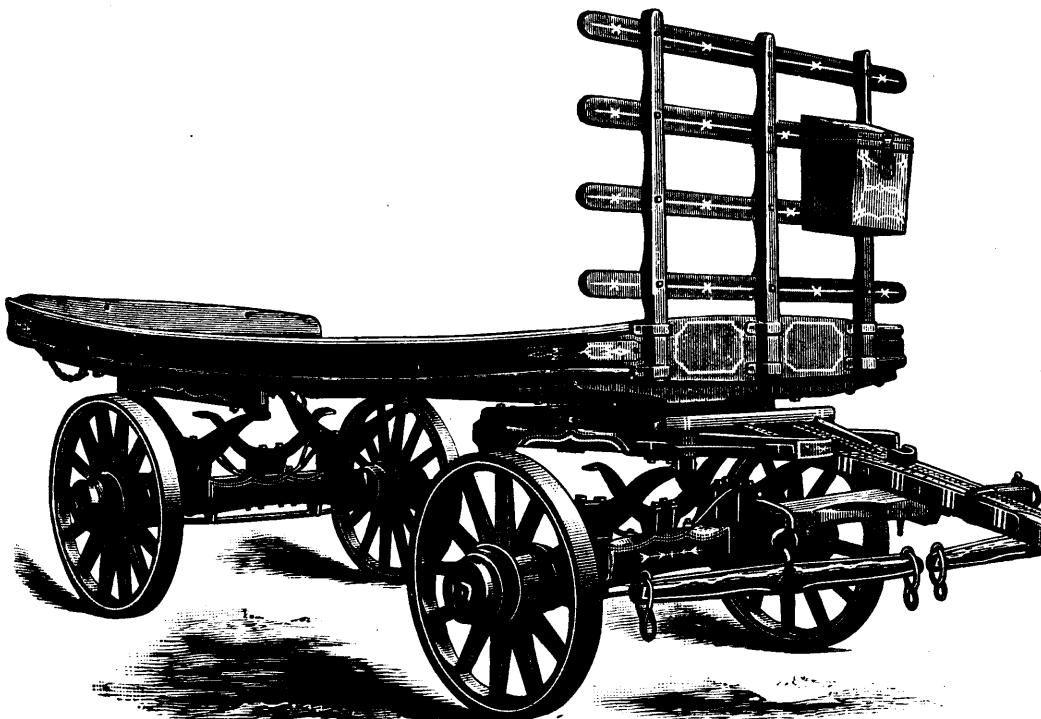
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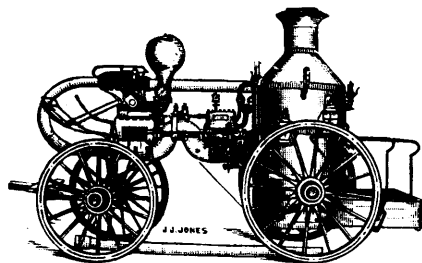
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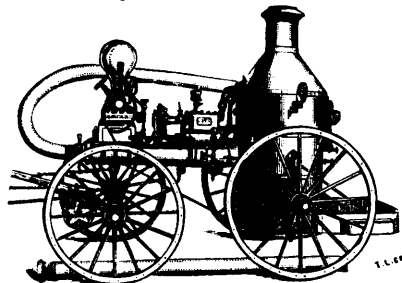
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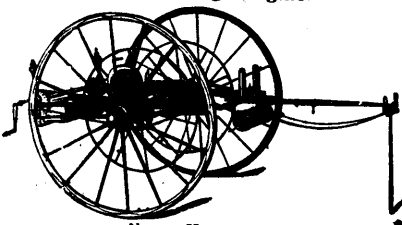
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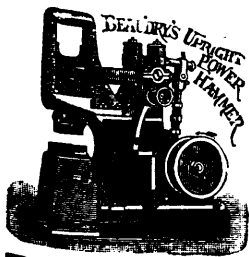
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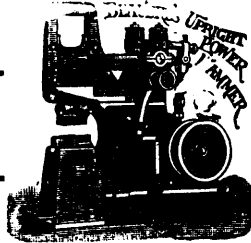
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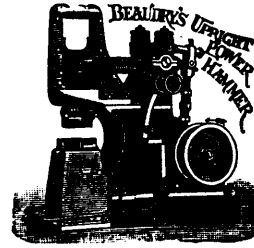
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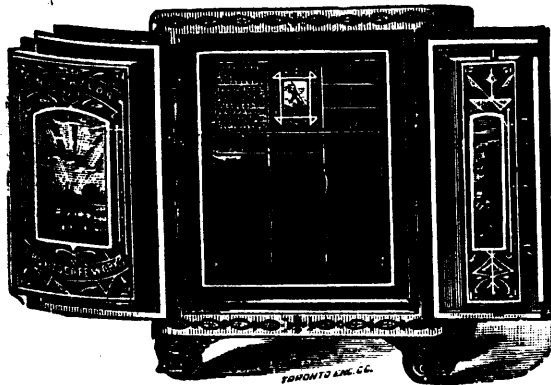


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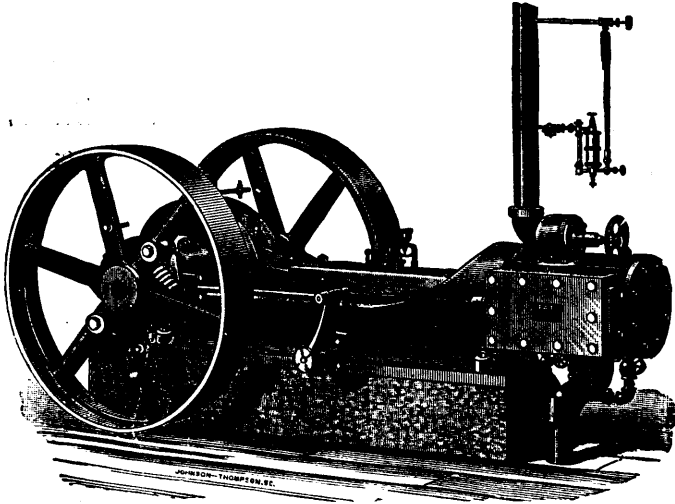
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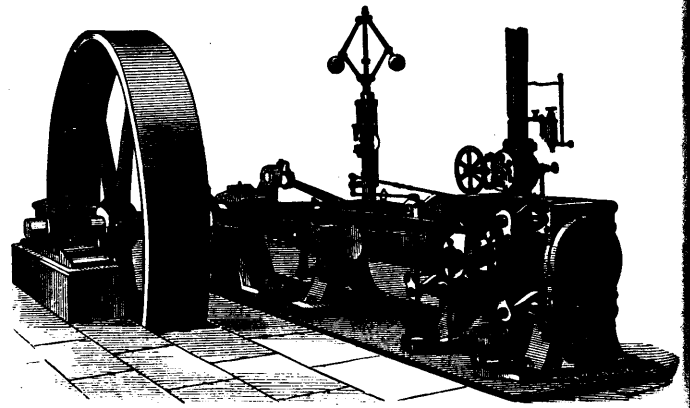
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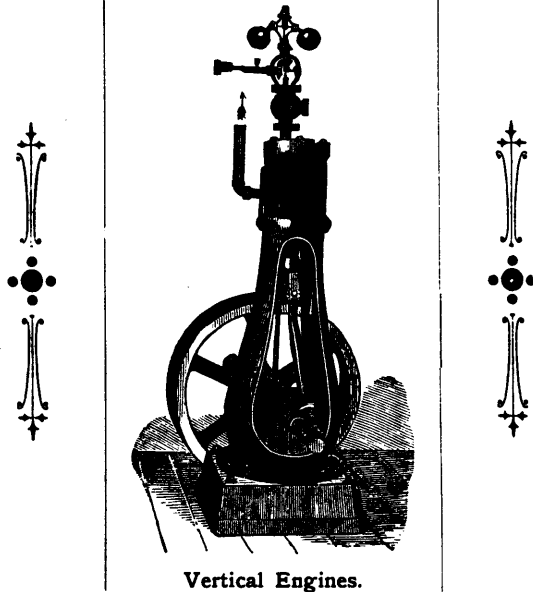
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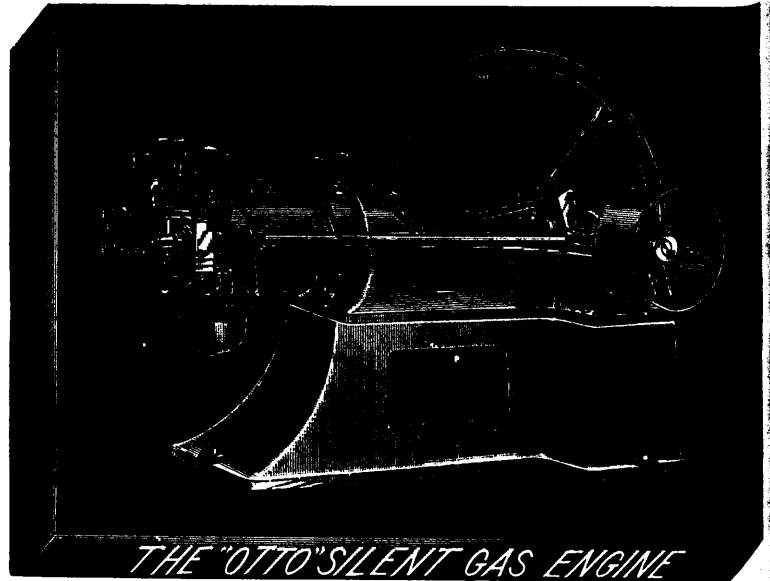
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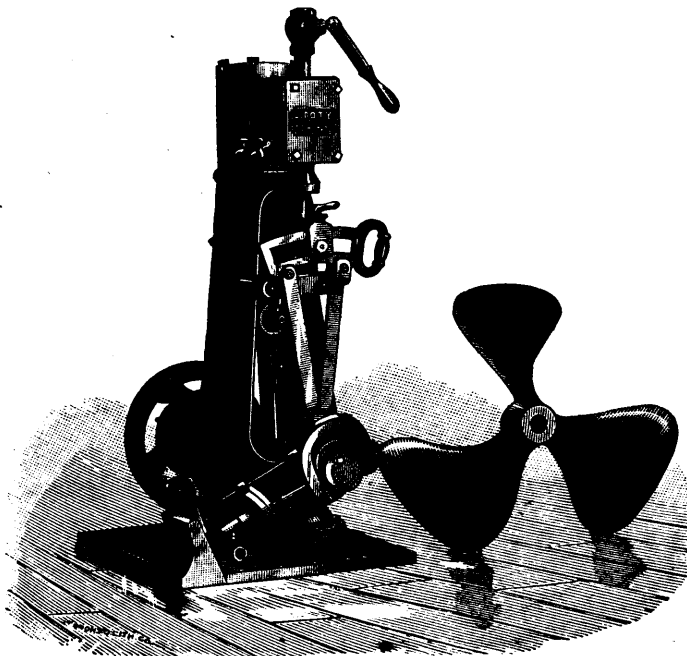
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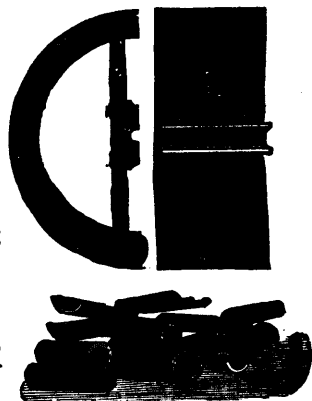
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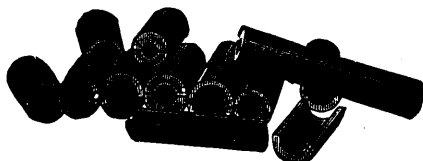
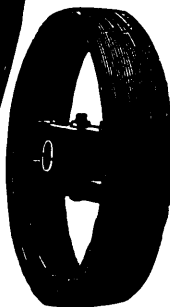
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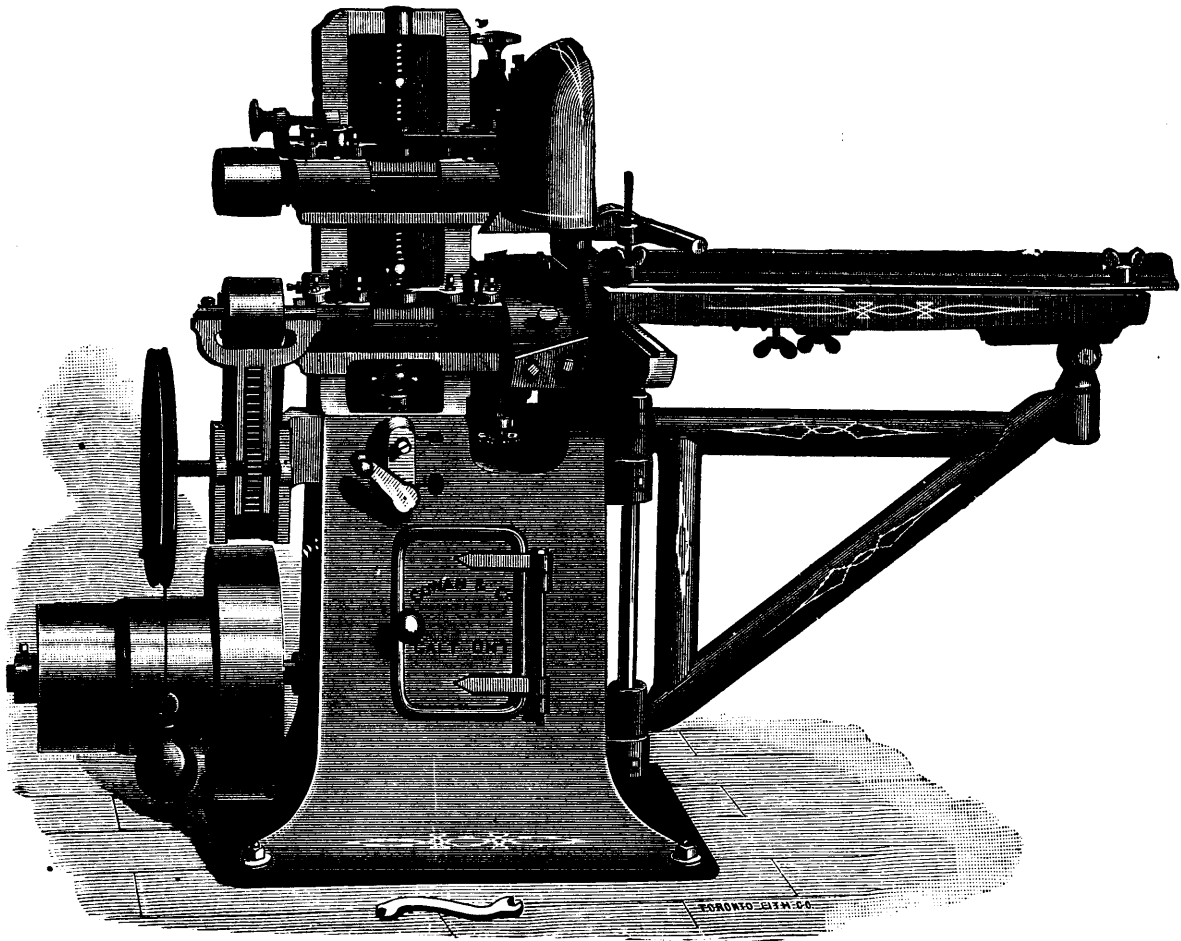
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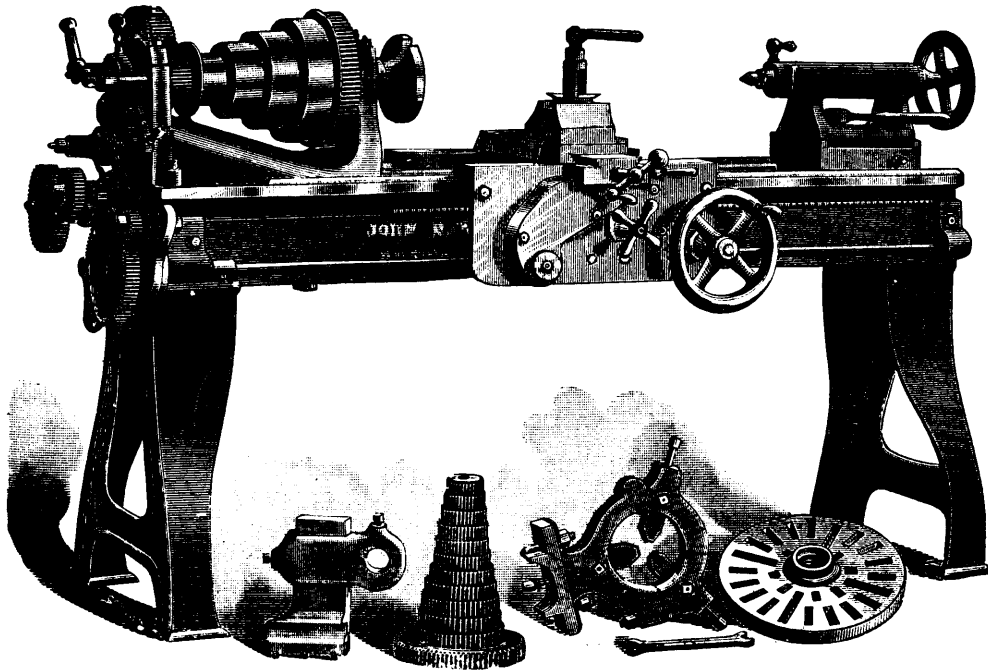
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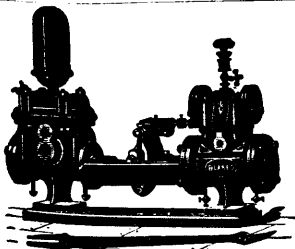
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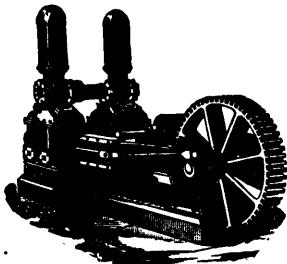
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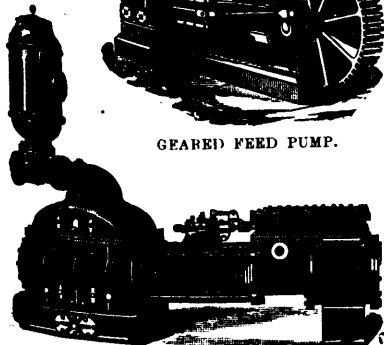
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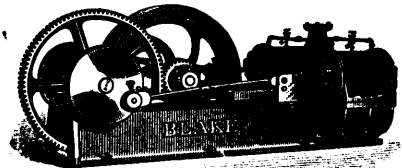
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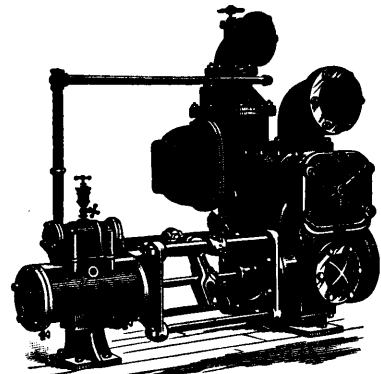
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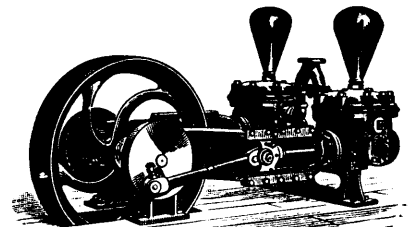
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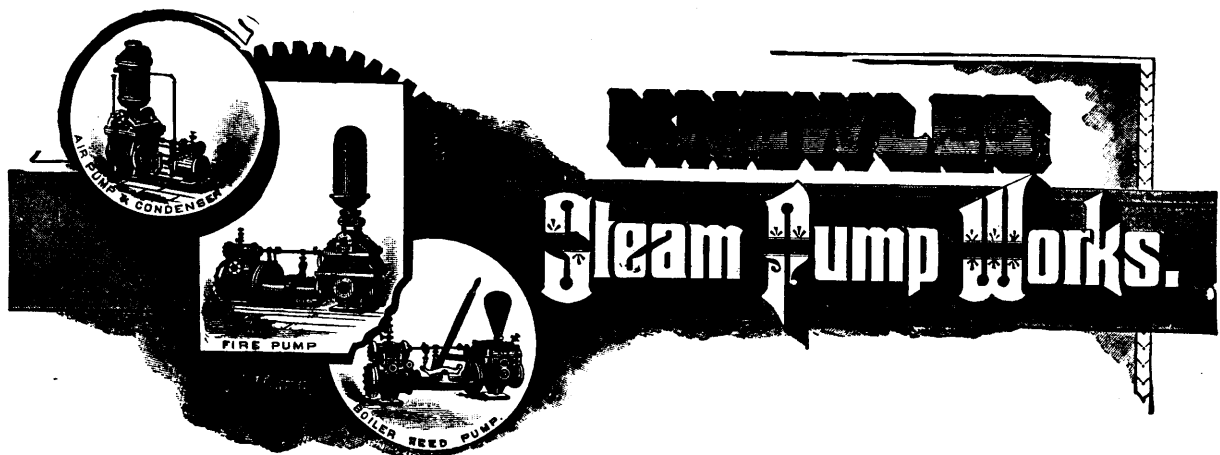
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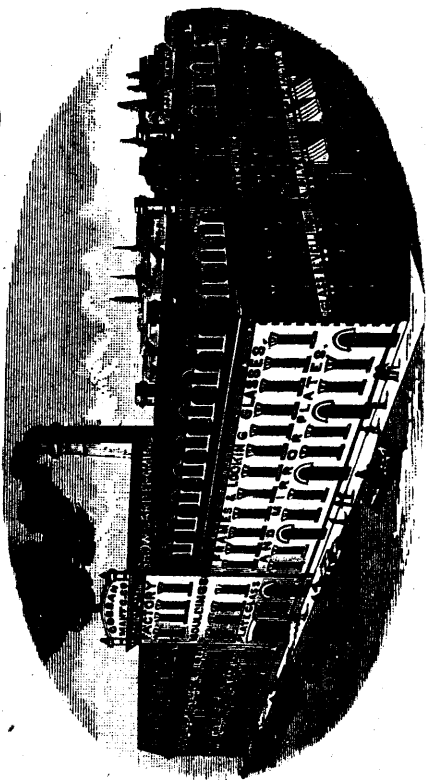
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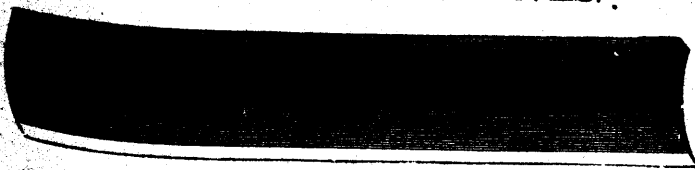
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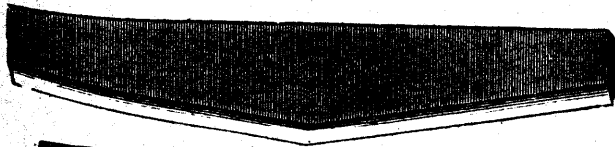
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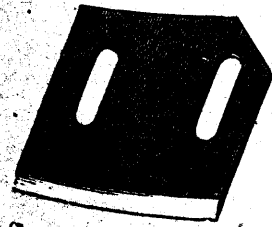
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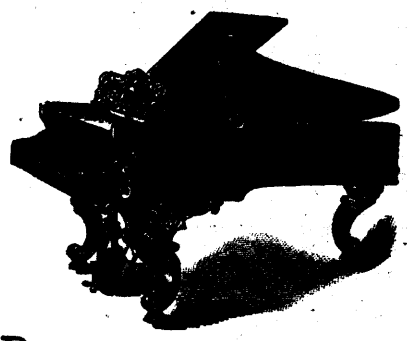


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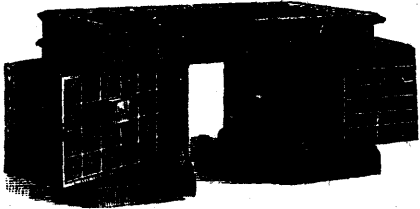
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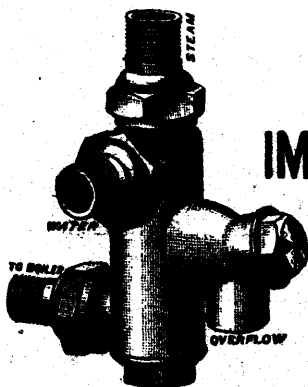
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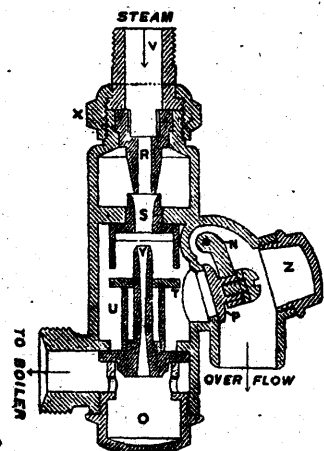
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