

THE Americans are determined to nurse their industries, and begrudge the least diversion of anything they can do for themselves. Now they are compelled to take the raw material or half-manufactured article from us, and inquiries for freights for such goods from England and Spain are numerous, but English producers must take advantage of the opportunity they have at present, while the prices in America permit, to compete with the producers across the Atlantic, even after paying the import duties, which, large as they are, are not heavy enough for some of the Protectionists in that country.—*Iron and Coal Trades Review (London)*.

It is interesting to observe that our London contemporary very candidly admits that the American duties are paid by "English producers." The remarks above quoted apply with equal force to Canada; and if this country hopes to ever attain to anything like the commercial importance enjoyed by the United States, Canadians, too, must "nurse their industries, and begrudge the least diversion of anything they can do for themselves." Free Traders say that the duties imposed upon imports are paid by the consumers, but our London contemporary knows better, and states that they are paid by the exporter.

THE DODGE WOOD SPLIT PULLEY.

THE Dodge wood split pulley, manufactured by the Dodge Wood Split Pulley Company, Toronto, Canada, has attained a very wide and deserved popularity. The rim of these pulleys is constructed by building up a series of rings of segments of wood, fastened together with insoluble glue, and nailed and dovetailed in a strong and substantial manner. The spoke or hub bars are secured at their ends to the rim by means of a dovetail, the parts of the bar being so placed that they will not touch each other at the axis, or hub, when the ring segments are in position. They are split transversely, and are turned over their entire surface, and are true in all respects. After turning, they are treated to a filling, applied hot, which fills in all the pores of the wood, after which the belt surface is coated with several coats of shellac varnish, and the body painted with two coats of fire and water proof paint, protecting the wood from steam, dampness and the effects of high degrees of heat. The parts being separable renders the pulley very convenient to adjust upon the shaft where it is intended to be placed. The bushing in the hub or centres of these pulleys are made to suit any size shaft on which it is to be used.

Regarding the utility of split pulleys, it can be said that in the arrangement of lines of shafting, no matter how permanent it may be thought the machinery is adjusted, changes are frequently necessary to be made, and any change, either in the location of pulleys on the shaft, or of pulleys of different sizes, where the pulleys are not otherwise adjustable, implies much annoyance and expense. All this is obviated in using this split pulley, for the location of it on the shaft can be changed by simply slacking up the screws which hold the halves together, and an old one may be removed and a new one adjusted to place in the same way.

The difference in weight between the common iron pulley and this wood pulley is very great. We have knowledge that in a large manufacturing establishment in Toronto, where an iron pulley was removed from a shaft to give place to a wood split pulley, the iron pulley, which was 43 inches in diameter and 20 inch face, weighed 785 pounds, while the Dodge pulley which was substituted, was 54 inches in diameter and 20 inch face—a very much larger pulley—but which weighed only 295 pounds. If the substituted pulley had been of the same dimensions as the iron pulley, the weight would have been but 125 pounds. When it is remembered that weight is not a desirable feature in a pulley, the fact that the iron pulley here

alluded to weighed 660 pounds more than a wood pulley of equal dimensions, should demand careful consideration.

Carefully made tests have developed the fact that the traciveness of wood pulleys is very much greater than that of iron pulleys, and that a wood pulley will drive from 40 to 60 per cent. more machinery, with the same tension of belt, than iron with like tension.

The capability of a belt to transmit power is determined by the extent of its adhesion to the surface of the pulleys. The width of a belt diminishes in proportion to the strain upon it. Mr. Robert Grimshaw, an expert engineer of Philadelphia, who made a test of the relative merits of the Dodge and a turned cast iron pulley, and who made a report thereof to the Franklin Institute of that city, in stating the results said that the figures showed facts unparalleled in the history of belt transmission, and that they were practically about six to one in favor of the wood pulley.

In summing up the advantages of this pulley, the claims which are guaranteed for it are, that it will transmit from 25 to 60 per cent. more power under similar circumstances than an iron pulley; that the compression fastening by which it is secured to the shaft holds it there firmly, and that the compression of wood on iron will hold stronger and better than set screws.

Large sales of these pulleys have been made in Europe, resulting from the exhibit made by this company at the recent Indian and Colonial Exposition in London; and the National Arsenal at Shanghai, China, is now fully equipped with them, they having been made in and sent from Toronto.

THE rate at which bleaching powder (chloride of lime), loses its chlorine, is becoming more important now that the price of the substance is advancing, and the rise promises to be permanent. By the old or Leblanc process of making sodium carbonate, hydrochloric acid was a waste product, and to save himself, the manufacturer had to utilize its chlorine by passing the gas over lime, and forming the well-known bleaching powder. But by the new or Solway process of making sodium carbonate, no hydrochloric acid is produced. To generate the acid for the purpose of making bleaching powder would necessitate a great increase in the cost of the latter, and this is just the situation which confronts the bleaching industry to-day. Self-preservation dictates an inquiry into every cause of loss, and what takes place when the powder is stored, whether for sale or use, especially demands investigation.

AN observer must stand 6,667 feet above the level of the sea to discern a vessel 100 miles distant, and 26,666 feet when it is distant 200 miles.

DR. J. STRAHAN utters a caution against long-continued dosing with mixtures of iron, maintaining that there is danger of intestinal concretions being formed.

MESSRS. W. BELL & Co., Guelph, manufacturers of the well-known Bell organ, have established an agency in Toronto at 12 King street west, under the management of Mr. J. W. Scott.

THE committee of the Winnipeg Board of Trade charged to consider the colonization of vacant lands within 30 miles of that place, report that a large acreage has been sold at an average price of \$6.50 per acre.

MR. GUSTAVUS TUCKER, United States consul, at Sherbrooke, in his report to the Department of State, giving an account of Hartford copper mine near that place, says that the ores contain thirty-five to forty-two per cent. sulphur, three to four per cent. copper, and twenty-seven to thirty per cent. iron. These ores are reduced at the company's smelting works at Capelton, where they are converted into a matte of from twenty to twenty-five per cent. copper, and shipped via Boston, Portland or Quebec, to Liverpool, Eng., or Swansea, Wales.