

NOTHING MORE IMPORTANT THAN PULLEYS.

There is nothing more important that is used around the mill than the pulleys, and yet how few people pay any attention to them, says a correspondent of the St. Louis Lumberman. A wagon without a wheel is of no use, and a machine without a pulley would stand in the same light. A man buying a machine will pay considerable attention to the make of the machine, to the size of the journals, the spindles, and its weight, and yet pay no attention at all to the pulleys—really the most important part of the machine.

Within the last thirty years wonderful strides have been made in the improvements of our wood working machines, yet no change in the pulley. Science and high degree of mechanical engineering have been brought into play to develop the machine to the highest degree, but when they came to the pulley their science and skill suddenly cease and the same old pulley is adopted. In saw mills the change all through the machine is apparent. The mandrel is much larger, the journals are larger, the frame is heavier, but the size of the pulley remains the same. On engines the shaft is much larger, the wristpin is larger, the working parts are heavier throughout, but the old-style pulley is the same.

There has probably been more change and improvement in our planing mill machines than any others, but look at the pulleys. The same remark is applicable to gang edgers. Look at these machines and compare them with the edger of twenty-five years ago. At that time the idea of making railroad ties on an edger would have seemed preposterous, but to-day it is a common thing to see 4-inch to 6-inch cants run through gang edgers and heavy dimension made to save time with the big saw, yet the pulleys are the same size practically. The necessity of enlarging the pulley seems to have been overlooked or ignored. Some manufacturers seem to think that if they adopt large pulleys, people will not buy their machines. They overlook the fact that a large pulley enables a machine to do more work, as much so as any other heavy part of the machine.

To the practical mechanic or mill man a large pulley is, or should be, as much of a recommendation to the machine as a large journal or spindle. If the builders of the heavy, massive machines of to-day were to put a little less metal in their frames and a little more in the pulleys that go with the machine, the results would be better and the purchaser benefitted. There is not a planing machine built in the United States but what comes out with pulleys that are too small. Take the heavy dimension planer that dresses a stick 18 inches thick by 30 inches wide on all four sides at one operation. The pulleys are 6 x 6 on the cylinders and 5 x 5 on the matcher heads. Does any sane man doubt that the machine would do the work easier if the pulleys were at least three-fourths larger, not only in diameter, but in the face? Take the 4, 5 and 6-saw gang edgers; if their pulleys were 24-inch diameter instead of 14-inch, would they not do the work better? Would it not be easier on the belts?

On the saw mills of to-day, where in this country the saw is running on from 10 to 24-inch feed, would it not be better if the pulleys were 36 or 40 inches than 26 to 30? Some one may ask, where is the advantage and economy of the

large pulley over the small one? The pulley bears the relation to the machine of a lever, and the larger the diameter of the pulley the greater the leverage. The longer the lever the easier it is to turn over the weight. Take a pulley 12 inches in diameter. One-half its circumference is 18 inches, which represents the surface to be gripped by the belt. Take another pulley 24 inches in diameter. One-half its circumference is 36 inches, which represents the surface to be gripped by the belt. Does it require any special amount of common sense to see that the belt will slip less on the big pulley than it will on the small one? And, slipping less, will not the belt last longer? The belt is benefitted in three ways by the larger pulley. First, it will slip less, it can be run slacker, and less weight is needed in the tightener, where one is used, to make the belt hug the pulley. The saving in beating alone is enough to recommend the large pulley. The saving of time, by belts not breaking, and the saving of vexation of spirit, are also obtained in this way.

If our planers were fitted with pulleys on the spindles 10 or 12 inches in diameter and 9 or 10-inch face, will any one say the belts would not last longer? Some may say that you would have more belt travel. Very true; but a belt, like an engine, will travel at a high rate of speed under proper conditions better than it will at a slow speed under improper conditions. The manufacturer of planers, gang edgers and other machines who will step out of the old rut and adopt larger pulleys on his machines will soon be regarded by the users of machinery as a public benefactor. In my acquaintance among the mill men I know one man only who, when he buys a machine, discards the small pulleys and puts on others that are larger in every way. This man uses a lower grade of belting in consequence, is never annoyed by belts breaking and never kicks about his belts being no account. He never "cusses" the belt drummer and says those belts "did not come up to the guarantee." He fixes his machines up in a business way and then the machines go ahead and attend to business.

The use of the large pulley over the small one is based on all the rules of theory and practice. I hope the thoughtful mill man and the thoughtful mechanic will look into this matter and at least give it a trial before condemning it and frowning it down.

AN EXHIBITION OF AXES AND SAWS.

A TEST of axes and saws is to be held at Ulverston, a small town in Tasmania, under the auspices of the United Australian Axemen's Association, on November 20th, 1899.

British makers have for some time complained of the preference shown for United States saws and axes, so it has been decided, at the gathering this year of sawyers and axemen of Australia, to hold a contest, open to all British and American, and possibly Swedish and German saws and axes, and to all Australasian sawyers and axemen. The committee in charge of the trial will include Hon. Sir Edward Braddon, Prime Minister of Tasmania, and other gentlemen of standing. This should prove a valuable opportunity for opening up an export trade in Canadian products, if they are of as good quality as we believe them to be.

THE FORESTRY LAWS OF INDIANA.

A STATUTE for the encouragement of forestry passed by the State of Indiana this year provides that any person may select from land owned by him a portion not exceeding one-eighth of the entire tract. The portion so selected must be original forest, and if upon each acre of the portion there are maintained not less than 170 growing trees, the law provides that it shall thenceforth be assessed at \$1 per acre at the end of three years, if the owner plants 170 trees per acre and cultivates and maintains the same during that period. If the tract selected has a number of original forest trees growing upon it, but less than 170 to the acre, it may be brought within the act by planting a sufficient number to make up the 170 to the acre. In case any trees are removed or die, the owner, in order to avail himself of the act, is required to plant other trees to take their place, and to protect them until they are at least four inches in diameter. The act further provides that no land owner who shall permit cattle, horses, sheep, hogs or goats to pasture on the reservation before the trees are four inches in diameter shall receive the benefit of it. Before the land is specially rated as forest land the owner has to file a statement with the municipal authorities showing what portion of his land he selects for the purposes of the act. The assessor is required to personally examine the various reservations, and to note upon his return the condition of the trees.

The act of the Indiana legislature shows the growing public appreciation of the importance of forest preservation.

THE HARDWOOD TRADE IN FRANCE.

Referring to the import of hardwood lumber into France, a United States Consul says: "Most of the trade in hardwood lumber products is done by English houses. Of course, the product originally comes from American mills. Wagons, spokes, and handles, and all turned goods in this district are, I think, imported from England, though the wood itself is mostly of American origin. Whether it would pay to seek to get this trade direct is a question which can only be determined by months of careful study on the part of one thoroughly familiar with every branch of the business. Though I have been a manufacturer in this line, and have consequently a particular inclination to the study of conditions affecting this trade, I should hesitate to advise any manufacturer to enter this field without some months of careful study of actual conditions, not of the market merely, but of the ultimate consumption. Judging from what I have learned, I should doubt the policy of competing with the English trade, which is carried on by customers of American producers." We trust this excellent advice will be followed.

An English syndicate, represented in New Brunswick by Fred. H. Hale, M.P., and George S. Murchie, purpose erecting a mammoth saw mill on the Tobique river. The promoters have been in negotiation with the Canadian Pacific Railway with a view to getting a low freight rate to St. Andrews, from whence it is proposed to ship the lumber. At last account it seemed probable that a favorable rate would be granted.