A CHAT ABOUT PULLEYS.

How do you like wooden pulleys? Don't the belts seem to take hold better with wood than with iron face? We vote for the wooden pulley, but we don't like the wooden pulley hub. A pulley built upon a great big cast iron flange is rather an uncomfortable concern to deal with. You can't get hold of a big six inch wooden pulley. There are no arms to put a chain between, or to reach through while you are at work around it. We have got first-rate results from a wooden rim with iron arms. We used to run a planer. The feed belt kept slipping on a 24 inch iron pulley. We took a hammer and knocked the rim off. Care was taken not to break the arms or thing would be no good. Got out a lot of wooden segments. Made them not over ¾-inch thick; nailed and glued up a pulley having half the width of face required and then laid on the old hub and arms. Cut the next layer of segment away ¾ inch from the arms, and drove in a few nails to keep them from shifting out of place. The hub was centered before the nails was driven. Suppose you try it.

Put on the rest of the rim and then pour in melted brimstone around the edges of the arms. Don't be afraid that it will not hold, we have put up six-foot pulleys in this manner, turned them off true, balanced them, and they run ten years and are running to-day. Don't ever run one of these pulleys without balancing, and for that matter, don't ever run and pulley, or cutter head unless it has been balanced. Very often a machinist gets left when he balances pulleys. Supposing a pulley is thick at one edge, thin at the opposite edge, and on the opposite side there are thick and thin places, but the thick places are on opposite edges of the pulleys. Now when the machinist puts an arbor in this pulley, and hangs it on the levelling horses, the pulley balances exactly. There is a thick place and a thin one at opposite parts of the circumference and they offset each other. It was caused by the molding of the pulley. By some means the cope got moved. It offset a little on the drag when the mold was closed, so there are two thick and two thin places after the pulley is turned, for the machinist balances the error as much as possible. When this pulley is started up, it tries to turn around parallel with the shaft. In fact it "wobbles endwise." There is but one way to balance such a pulley. I must have two or more pieces of iron rivited to the rim. There is but one way of finding the exact spots where they should be put and that is by running the pulley while suspended upon a pivot or point which has a bearing exactly in the centre of the bore of the hub. This leaves the pulley free to turn in any direction laterally, and the part needing weight will move in a path some distance from a plane passing through the point of suspension. The wrought iron pulleys are good in this respect. They are uniform and so run very true. A wooden rim pulley can be balanced very easily by driving in nails until the needed weight is added, but when a half pound or so is needed, it will pay to bore a hole in the inside of the rim and drive in a chunk of round iron. Don't bore the hole from outside of the pulley, we have seen plugs of iron fly through window glass from this cause.

In fitting an iron arm with a wooden rim, we don't want to stand the pulley on edge to pour in the brimstone. We could only pour one arm at a time in this manner and would run the risk of moving the hub out of centre. We will bore a ½-inch hole down into each pocket and then fit a piece of cardboard around each arm, tack it in place and reinforce with putty. We can serve each arm in that manner and then pour them all one after another. A wooden pulley should be turned down nearly to size and balanced. If it is very badly out of truth it should be nearly balanced before turning at all. Before the finishing touch is put on the pulley must be put in good balance, for it is impossible to turn a pulley nicely when one side is ½ or 1½ lbs. the heaviest. Heavy pieces of wood, knots, etc., prevent making a pulley that will not need balancing. Nails are not necessary in making a wooden pulley. The very best are made without them, and are put together entirely with glue. To do this in good shape a coil is necessary for heating the stock, and a big press or a lot of clamps for squeezing out the glue. Don't try to glue up a big pulley out of cold stock. If you can't get the wood hot enough to keep the glue melted, then you must put in nails or you may have an exploded pulley, and segments of that rim will be "too numerous to mention." When we get one pulley in place, we find the belt will not run where we want it too. Something is wrong. Something is out of line or level, or our pulleys are not turned true. Perhaps one edge is larger than the other. No matter what the trouble is, hunt it up, and apply the remedy right where it belongs. Don't walk up to a belt which is running two inches off on one edge of a pulley, and look at it ten minutes and then feel too tired to fix it. The next time you see that belt it has bent one edge against a hanger. The sight of it makes you lazy again and you nail up one of Slipshod's guide rods which consists of a 2x3 edging. It runs so two weeks. It might have run until this time for all you cared if it had not cut the "guide rod" clean off and run off between two close pulleys, where it caught, broke in two, wound up and threshed itself all to pieces. Perhaps the belt pulls down ten or fifteen hundred pounds of pulleys, shafting and hangers, and you have a $200 repair job to pay for, all through a little chronic "tired laziness." *J. F. Hobart in Lumber World.*

FOREST FIRES IN MAINE.

We find the following in *The Industrial Journal* of June 5th:—

"The recent destruction to property in Maine by forest fires, which fortunately have been extinguished by the heavy rains of the past week, bring forcibly to mind a question which has never received half the attention, in this section at least, its importance demands. Every year in this state thousands, and in some years millions, of dollars' worth of property—standing timber, mills and farm buildings, and occasionally entire villages is swept out of existence, industrial enterprises of various kinds bankrupted or seriously crippled, capitalists frightened away from contemplated investments, and the face of the landscape hideously defaced, through the agency of forest fires. Of what use is it to talk of the preservation and propagation of forests, and the waste of timber in cutting, as long as whole townships are being devastated by the fiery element every year? Clearly, while such conditions exist, the owner of timber lands have very little inducement to cull his growth instead of shipping it, or to leave young timber standing until it shall have acquired greater value by reason of increased age; the risk is too great. Rather will he be inclined to strip his tract of whatever may be of value upon it, while yet happily the fires have left it untouched.

"The exasperating feature of these forest fires is the fact that, in nearly every instance, the most simple and ordinary measures of caution on the part of whoever is responsible for starting them would have prevented their occurence. In 99 cases out of a hundred their origin is directly traceable to gross carelessness or negligence, and in the hundredth case to wilfullness. The most prolific sources of forest fires, and the only ones which need be considered, are locomotives, brush burners, campers and sportsmen. As regards the railroads, modern science has provided appliances for arresting sparks and rendering them harmless, and the state should permit no train to be run without one wherever its authority extends. This danger, then, might be easily removed, as railroad managers are supposed to be men of at least average intelligence, and to have more or less respect for state laws. The other classes are more difficult to deal with, as many of them are ignorant and shiftless, and a still larger proportion care little for laws of any kind so long as they can violate them without fear of punishment. Nevertheless there should be laws, as in fact there are, holding the originator of fires strictly responsible for all damage caused by or resulting from his carelessness and stupidity. But these laws should be more strictly enforced by efforts on the part of the state to investigate the origin of each disastrous fire, fix the responsibility and bring the guilty party or parties to justice. A few noteworthy examples of t nd, tending to show that the authorities mean to enforce the laws, will have a wholesome effect on reckless kindlers of bush or camp fires.

"Now that the camping out season is at hand, city sportsmen and rusticators should be made to understand the necessity of exercising the utmost caution in kindling fires for any purpose, and where one has been started to be sure the last spark is extinguished before leaving it. The laws of New Brunswick are clearer and better than ours in relation this matter, and although the rules laid down have, of course, no legal force in this state, they are sensible and simple enough to meet the approbation and be observed by every true sportsman and worthy citizen. They direct that whoever, between May 1st and December 1st, may start a fire in or near the forest, shall: First, select a locality in which there is the smallest quantity of vegetable matter, dead trees, branches, brushwood, and dry leaves or resinous trees; second, clear the place in which he is about to light the fire, by removing all vegetable matter, dead trees, branches, brushwood and dry leaves from the soil within a radius of five feet from the fire; third, exercise and observe every reasonable care and precaution to prevent such fire from spreading, and carefully extinguish the same before quitting the place. Another section provides that any person who shall throw or drop any burning match, ashes of a pipe lighted cigar or any other burning substance, or discharge any firearm, within any forest or wood lot or other place where there is vegetable matter, shall be subject to the penalties imposed by this act if he negligently omit wholly to extinguish, before leaving the spot, the fire of such match, ashes of a pipe, cigar, wadding of the firearm, or other burning substance. It is further provided that every person that may be in charge of a party requiring camp-fires for cooking or other purposes in the forest shall provide himself with a copy of the law and read and explain it to his companions."