

(No Model.)

C. C. STECK.
METHOD OF MAKING MINE PULLEYS.

No. 507,723.

Patented Oct. 31, 1893.

Fig. 1.

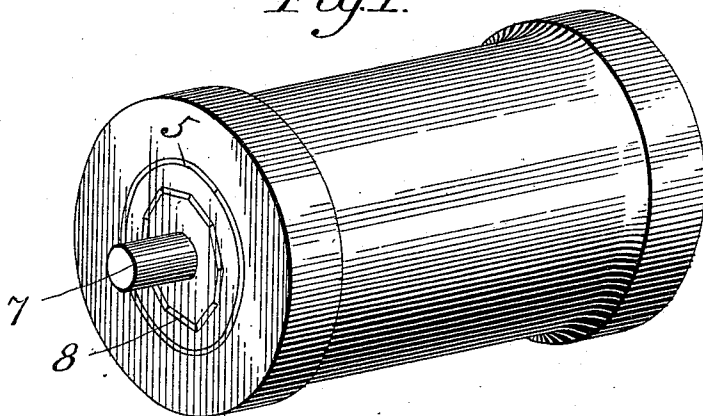


Fig. 2.

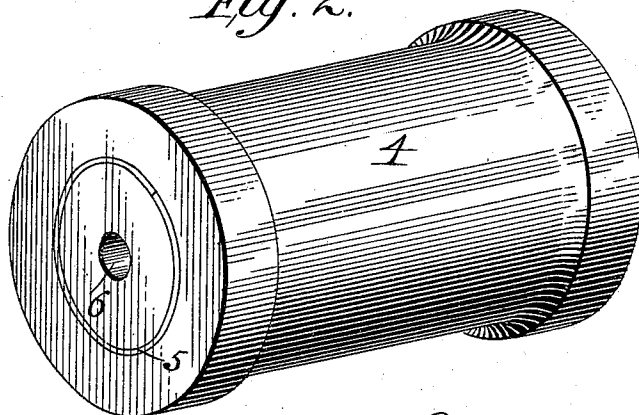
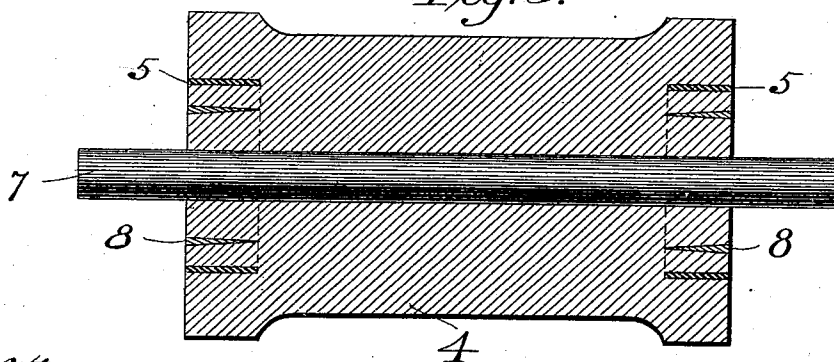


Fig. 3.



Witnesses:

Percy B. Hills.
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Inventor:

Charles C. Steck,
by *James Goldsborough,*
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UNITED STATES PATENT OFFICE.

CHARLES CARROL STECK, OF HUGHESVILLE, PENNSYLVANIA, ASSIGNOR
TO CHARLES WILLIAM WODDROP AND BENJAMIN HARVEY WELCH,
OF SAME PLACE.

METHOD OF MAKING MINE-PULLEYS.

SPECIFICATION forming part of Letters Patent No. 507,723, dated October 31, 1893.

Application filed March 8, 1892. Serial No. 424,200. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. STECK, a citizen of the United States, residing at Hughesville, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Methods of Making Mine-Pulleys; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in methods for making what are known commercially as mine pulleys. These "mine pulleys" are principally employed as friction rollers, spaced at suitable distances apart and underlying the stout cables of steel wire employed in hoisting operations at the mines, so as to furnish a roller bed upon which the cables are supported and over which they move, thereby preserving the cables from the excessive wear that would otherwise be imposed upon them. The employment of metal rollers for this purpose is objectionable on account of their expense and because it is found in practice that they abrade the cables rapidly. Wooden rollers, on the other hand, although preferable to metal rollers and therefore largely employed in their stead, begin to contract as the wood dries, and this contraction frequently results in splitting the rollers longitudinally, whereupon they soon fall to pieces under the strain imposed upon them. Moreover the contraction causes them to separate and become detached from their spindles, and this is objectionable to many mine operators who prefer to have the roller fast upon the spindle and to journal the spindle, rather than to have the roller loose upon an unjournalled spindle.

My invention is designed to obviate in great part the objections to wooden mine pulleys, by practically preventing the tendency to split, and, furthermore, by decreasing the tendency of the wood to separate from the spindle.

In the accompanying drawings, Figure 1 represents in perspective a form of mine pulley made in accordance with my invention. Fig. 2 is a like view of another form of mine pul-

ley to which my invention is applicable; and Fig. 3 is a longitudinal section through the pulley of Fig. 1, the spindle being shown in elevation.

Similar numerals of reference indicate similar parts throughout the several views.

The roller or pulley 4 may be turned from any of the ordinary kinds of hard wood, as, for instance, beech, or the like, by first boring the rough block longitudinally at 6 and placing it upon a lathe spindle. It is then subjected to the action of steam until somewhat softened, whereupon metal rings or pieces 5, preferably of band iron, are driven into its ends, as indicated in the figures. The pulley may then be employed upon a loose spindle. It is preferred, however, to fix it tightly upon the spindle, and to that end the spindle 7 is inserted as shown and a series of wedges 8 is driven in between the metal rings and the spindle, thereby causing the wood to bind upon and firmly grasp the spindle, while at the same time the metal bands prevent the tendency of the wedges to split the wood while being driven in, and, as the bands are of a fixed circumference, they increase the clamping action of the wedges by preventing the wood from expanding as the wedges enter it.

It will be apparent that, in addition to the function of aiding the clamping action of the wedges, any tendency of the wood to split longitudinally will be resisted by the bands. Moreover the bands, being embedded in the wood, will, as the wood contracts, be the more firmly held in place, the contracting wood binding more and more upon the outer surfaces of the bands.

I wish it to be understood that my invention comprises not only the pulley itself, but the method of producing it as well, namely, by first steaming or other equivalent method of treating the wood to soften it, and then driving in the metal bands.

I am aware that a split pulley has been made in longitudinal sections held together by a metal band joined at its ends into a ring and seated in a flaring or conical groove cut in the end of the pulley; also that a pulley has been made having a metal hub with wooden spokes, and a split wooden felly held

to the spokes by a metal band seated in a flaring kerf cut in the sides of the felly; also that a gudgeon has been fastened in the end of a solid roller by means of a metallic bush-
5 ing consisting of a central tapering sleeve and a surrounding wedge shaped ring connected by spider arms to the central sleeve, the whole being seated in a recess and groove previously cut in the end of the roller; but I
10 am not aware that it has ever been proposed to make a solid wooden mine pulley (by which I mean a mine pulley made of a single piece in contradistinction to a sectional or split pulley) with a ring, band or pieces of metal
15 driven into the softened wood of the end of the pulley.

Having thus described my invention, what I claim is—

The method herein described of strengthening and protecting wooden mine pulleys 20 from splitting, the same consisting in softening the wood by steaming, and driving metal pieces into the solid wood at the ends of the pulleys while in softened condition; substantially as described. 25

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES CARROL STECK.

Witnesses:

C. WILLIAM WODDROP,
T. D. TOWNSEND.