(No Model.)

H. J. GILBERT.

SEPARABLE WOOD PULLEY.

No. 455,876. Patented July 14, 1891.

Fig. 1.

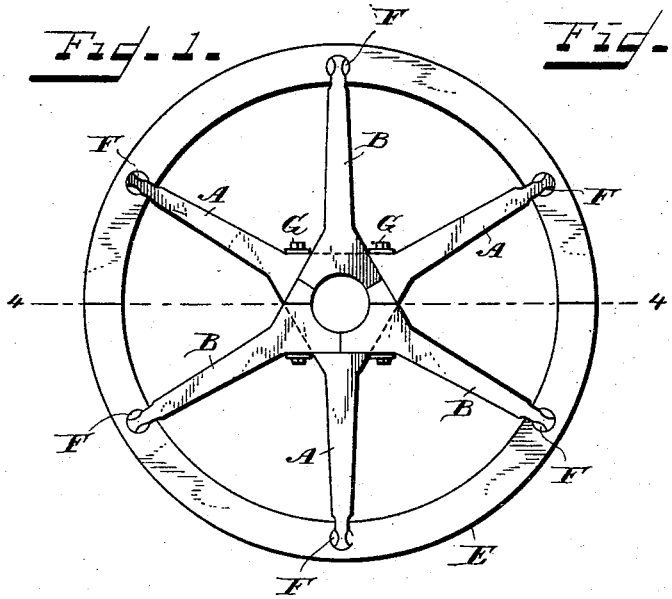


Fig. 4.

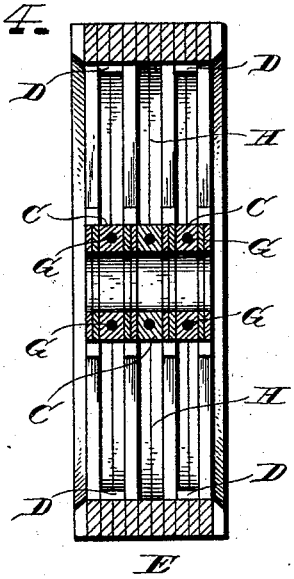


Fig. 2.

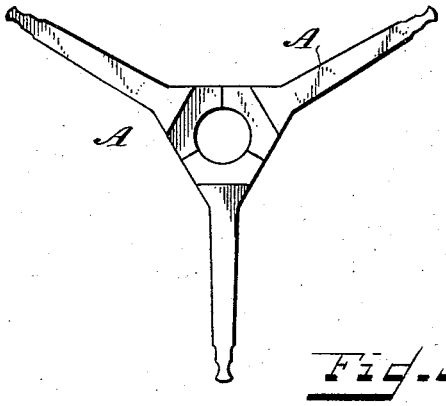


Fig. 3.

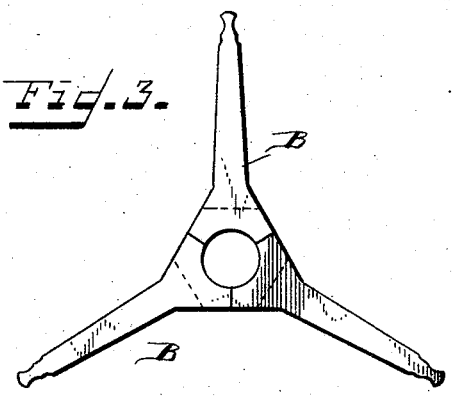
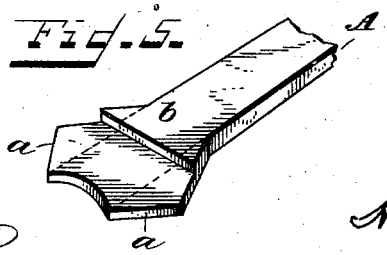


Fig. 5.



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SEPARABLE WOOD PULLEY.

SPECIFICATION forming part of Letters Patent No. 455,876, dated July 14, 1891.

Application filed March 4, 1891. Serial No. 383,670. (No model.)

To all whom it may concern:

Be it known that I, HENRY J. GILBERT, a citizen of the United States, residing at Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvement in Separable Wood Pulleys, of which the following is a description, reference being had to the accompanying drawings, forming part of this specification.

My invention has for its object the cheapening of the construction of this class of pulleys and the increase of their efficiency. Its novelty will be herein set forth, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of my improved pulley, with the near covering-ring for the edge of the rim removed. Fig. 2 is a side elevation of three spokes of one set, the other three being removed to illustrate the interlocking connection between them. Fig. 3 is a side elevation of the three spokes which have been detached from those in Fig. 2. Fig. 4 is a transverse section of the pulley on the line 4 4 of Fig. 1. Fig. 5 is a detail perspective of the butt-end of one of the spokes.

The same letters of reference are used to indicate identical parts in all the figures.

My improved pulley contains two or more sets of spokes, according to the width of face desired. Between each set of spokes is interposed a hub-block, to which the butts or hub portions of the spokes are securely glued and doweled.

My invention is especially applicable to what may be termed a "six-spoke pulley"—that is, a pulley in which each set of spokes contains six spokes—though it may be employed in pulleys having a larger number of spokes in each set.

In a six-spoke pulley, as shown in the drawings, the hub portions or butts of three alternate spokes A in each set of six are so shaped and fitted together as to form substantially an equilateral triangle, as seen in Fig. 2, while the butts of the other three spokes B of the same set form another similar triangle, as seen in Fig. 3. The butts of the spokes of each of these sets of three are cut out on one side or halved in a plane transverse to the axis of the pulley, as shown in Fig. 2, so that when the two sets are brought together with the six spokes at equal distances from each other radially the butts interlock together and the arms of the spokes lie in the same vertical plane transverse to the axis of the pulley. It will be seen from this construction that upon placing the six spokes together in the manner described they become so interlocked that neither spoke can be withdrawn in a direction radial to the shaft or axis of the pulley.

Before placing the spokes together glue is applied to the abutting-faces of their butts, and after they are placed together they may be doweled, if desired.

The construction thus far described produces a set of six spokes firmly united together. From these sets of six spokes each the pulley may be built up in the following manner: If the pulley is to have a narrow face, two sets of spokes will be sufficient. A rectangular hub-block C is placed between the hub portions of the two sets, and they are firmly glued and doweled to it. Between the adjacent outer ends of the spokes of the two sets are placed spacing-blocks D, to which the spokes are firmly glued or doweled. The outer ends of the spokes with the interposed spacing-blocks are then tenoned to the shape shown in the drawings. The two united sets of spokes are then ready to be inserted in the rim E, which is provided with transverse bores and slots to receive the ends of the spokes. The ends of the spokes are secured in the rim by the oval pins F, driven in each bore on opposite sides of the spoke. The pulley is then sawed in two on the line 4 4 of Fig. 1, the hub bored out to the desired diameter, the covering-rings applied to the edges of the rim, and the pulley turned and finished in the usual manner. The two halves of the pulley are then secured together and clamped upon the shaft by bolts G, passed through holes in the hub-blocks C between the sets of spokes. If the pulley is to have a wider face, three or more sets of spokes will be employed, in which case additional hub-blocks C will be interposed, one between each two sets of spokes, and additional spacing-blocks D between the outer ends of the spokes; and after the desired number of sets of spokes have been thus united, the outer ends of the spokes and interposed blocks will be tenoned and the

whole inserted in the rim-section and secured in the manner before explained.

Another way of building up a pulley from the six spoke sets is to first form a pulley-section consisting of two sets of spokes, an interposed hub-block and spacing-blocks, and a rim-section, and then to build up the complete pulley from such sections. In such case two sets of spokes (of six spokes each) are first secured together with an interposed hub-block and spacing-blocks, as before described, in building the narrow pulley having only two sets of spokes. These spokes of these two united sets are tenoned and secured in a rim-section of corresponding width, and this completes the pulley "section." To build a pulley of a width requiring four sets of spokes—such as shown in Fig. 4—two of these sections are employed. A hub-block C is placed between their hub portions and a rim-section H, of corresponding width, is placed between their rims, and all are securely glued and doweled together. It will be noticed that this middle rim-section is solid—that is, has no spoke-receptacles in it and no connection with the middle hub-block. After the pulley has reached this stage of construction it is completed in the manner before described in connection with the pulleys built up directly from the single sets of spokes.

By building the complete pulleys from previously-formed pulley-sections and keeping in stock a supply of such sections of different diameters a manufacturer is enabled to quickly build up a supply of pulleys of any width and diameter desired, and is not required to keep in stock a supply of pulleys of different widths, but simply a supply of the pulley "sections" of different diameters.

The interlocking of the butts of the spokes of each set in the manner described gives great strength to the pulley, while by building up the pulley from such sets of spokes with the interposed hub-blocks I am enabled to utilize thin lumber for the spokes, and thereby cheapen the construction of the pulley, and am also enabled to set the spokes edgewise, so that the air offers the least resistance to them in the revolution of the pulley. In practice I still further cheapen the construction of the pulley by making the flaring sides of the butts of the spokes of separate pieces from the straight arm or body of the spoke, as seen in Fig. 5, where the parts *a a* are separate blocks glued to the straight body *b* of the spoke. In this manner I am enabled to cut the arms or bodies of the spokes from the lumber at a much greater advantage and to use scrap-lumber for the separate pieces of the butts.

Having thus fully described my invention, I claim—

1. A pulley having the butts of the spokes of each set halved in a plane transverse to the axis of the pulley and interlocked together, in the manner described.

2. A pulley composed of a rim and two or more sets of spokes and interposed hub block or blocks, the butts of the spokes of each set being interlocked together, in the manner described.

3. The herein-described six-spoke pulley, composed of a rim and two or more sets of spokes and interposed hub block or blocks, the butts of three alternate spokes of each set forming substantially an equilateral triangle and the butts of the other three spokes of the same set forming a similar triangle, the butts of the two sets of three spokes each being halved or cut away so as to fit together and form a set of six interlocked spokes, in the manner described.

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