(No Model.)

H. J. GILBERT.

SEPARABLE PULLEY AND METHOD OF CONSTRUCTING THE SAME.

No. 455,875. Patented July 14, 1891.

Fig. 1.

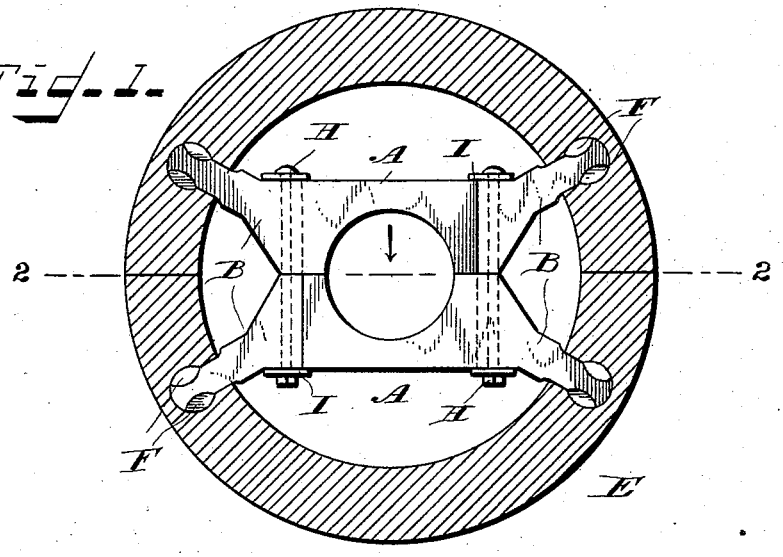
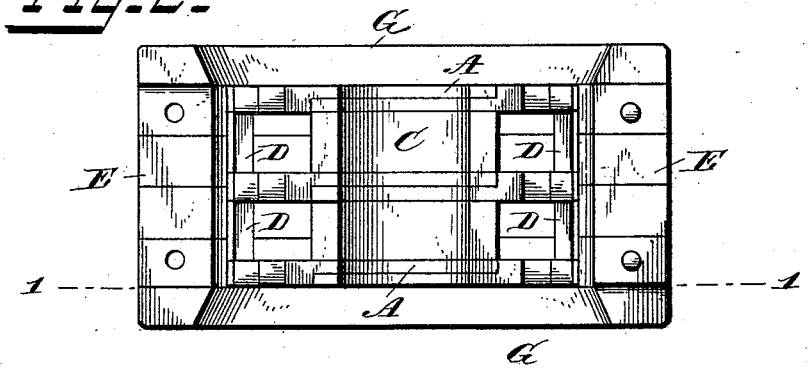


Fig. 2.



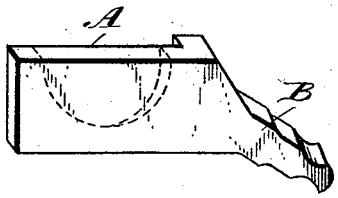
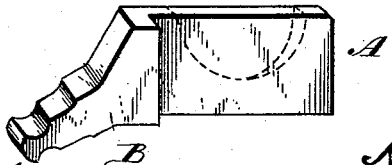


Fig. 3.



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SEPARABLE PULLEY AND METHOD OF CONSTRUCTING THE SAME.

SPECIFICATION forming part of Letters Patent No. 455,875, dated July 14, 1891.

Application filed March 4 1891. Serial No. 383,669. (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 Improvements in Separable Pulleys and the Method of Constructing the Same, of which the following is a description, reference being had to the accompanying drawings, forming part of this specification.

The object of my invention is to cheapen and improve the construction of such pulleys, and its novelty will be herein set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a sectional elevation of one of my improved pulleys, taken on the line 1 1 of Fig. 2 between the edge of the body of the rim and the covering-ring therefor to expose the spoke-tenons secured in the rim. Fig. 2 is a plan view of one-half of such a pulley, looking in the direction of the arrow in Fig. 1. Fig. 3 is a perspective view of the two spokes, showing their halved butt-ends, which are adapted to fit and be secured together.

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

My invention is especially adapted to four-spoke pulleys or pulleys built up of a number of sets of spokes, each set containing four spokes. The pulley shown in the drawings is built up of three such sets; but they may be built up of any desired number, according to the width of the pulley desired. The views in Figs. 1 and 2 will serve to illustrate how each set is built and how the several sets are secured together in a wide pulley. The two lower spokes of the set seen in Fig. 1 are shown in perspective in Fig. 3 before being fitted together. As there shown the hub portions or butts A of the spokes are rectangular in shape and are halved or cut away upon their adjacent faces in a plane transverse to the axis of the pulley, so that when fitted together the united butts will be of substantially the same thickness as the single arms B of the spokes. The butts of the two spokes are glued and doweled together, and four of them (forming one complete set, as shown in Fig. 1) are placed together. Upon these is placed a rectangular hub-block C. (Shown in Fig. 2.) Upon this hub-block is placed a second set of four spokes, and between the opposing faces of the outer ends of the adjacent spokes of each set are placed spacing and strengthening blocks D, Fig. 2. If the pulley is to contain three sets of spokes, as shown in Fig. 2, a second hub-block C is placed upon the second set of spokes and spacing-blocks between the outer ends of the adjacent spokes of the second and third sets. The butts of the spokes and the hub-blocks are firmly secured together by glue and dowels, as are also the outer ends of the spokes and the interposed spacing-blocks D. Up to this time the outer ends of the spokes have not been tenoned, but have been left with straight sides. They, with their interposed spacing-blocks D, are now tenoned to the shape shown in the drawings, and the three united sets of spokes are ready to be set into the previously-constructed rim-section E, Fig. 1, built up of arc-shaped cants in the usual manner. This rim-section is provided with transverse bores and with slots cut from them through the inner edge of the rim to receive the ends of the spokes. The latter are securely locked in the rim by the oval pins F, driven in the bores upon opposite sides of the spokes. The pulley is now sawed in two on the dotted line 2 2 of Fig. 1 to separate it into halves, after which its hub (composed of the butts A of the spokes and the interposed hub-blocks C) is bored out to the desired diameter. The covering-rings G, Fig. 2, are then applied to the edges of the rim and the pulley is turned and finished in the usual manner. It is now ready to be applied to a shaft, to which it is clamped by bolts H, Fig. 1. There are no holes bored for these bolts. They pass between the spokes at opposite sides of the hub-blocks C and have their bearing in transverse clamping-plates I. The ends of these plates are shown in Fig. 1. They extend the entire width of the pulley and rest upon the spokes and are provided with the necessary number of holes for the passage of the bolts. There is preferably one set of bolts between each set of spokes, so that in a pulley composed of three sets of spokes, as in Fig. 2, four bolts (two sets) would be employed.

By means of this novel method of building up pulleys I am enabled to utilize thin lumber for the spokes and cheapen the construc-

tion of the pulley, while at the same time producing a pulley of great strength.

As before stated, my invention is particularly applicable to four-spoke pulleys, such as shown in the drawings; but it is not restricted to such pulleys, and may be employed in those having a larger number of spokes in each set.

In a four-spoke pulley, such as shown in the drawings, it will be seen that the butt of each spoke half-way encircles the shaft, so that when the pulley is clamped thereto it would not be possible for a spoke to become loosened, even if the glued joints between the halved butts of adjacent spokes or between the hub-blocks and the butts should not alone be sufficient to stand the strain applied to the pulley.

Having thus fully described my invention, I claim—

1. The herein-described method of constructing wood pulleys, consisting in halving the butts of adjacent spokes and securing them together and securing together several sets of such spokes with interposed hub-blocks and spacing-blocks and fitting them in a previously-formed rim-section.

2. A separable wood pulley having the butts of two adjacent spokes halved in a plane transverse to the axis of the pulley and secured together in the manner described.

3. A four-spoke separable wood pulley having spokes provided with rectangular butts halved and secured together in the manner described.

4. The herein-described pulley provided with spokes whose butt-ends are halved and secured together, the several sets of spokes being themselves secured together with interposed hub-blocks and spacing-blocks and fitted in the rim-section, substantially as described.

5. The herein-described four-spoke pulley provided with spokes having rectangular butt-ends halved and secured together, the several sets of spokes being themselves secured together with the interposed hub-blocks and spacing-blocks and fitted in the rim-section, substantially as described.

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