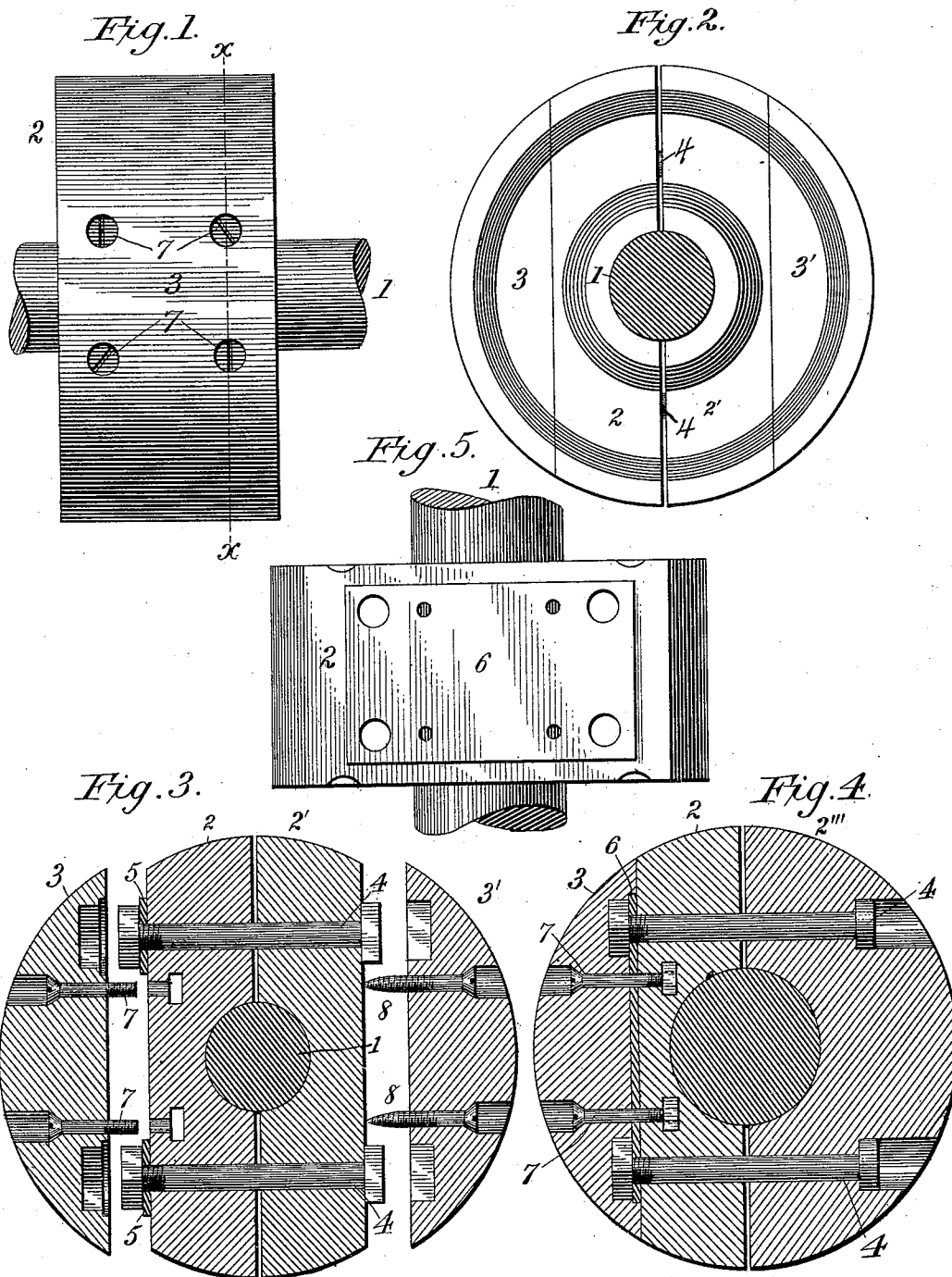


(No Model.)

P. V. LAWSON & W. L. FIELD.  
PULLEY.

No. 403,116.

Patented May 14, 1889.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

P. V. LAWSON AND WALLACE L. FIELD, OF MENASHA, WISCONSIN.

## PULLEY.

SPECIFICATION forming part of Letters Patent No. 403,116, dated May 14, 1889.

Application filed October 25, 1888. Serial No. 289,118. (No model.)

*To all whom it may concern:*

Be it known that we, P. V. LAWSON and WALLACE L. FIELD, citizens of the United States, residing at Menasha, in the county of Winnebago and State of Wisconsin, have invented a new and useful Improvement in Pulleys, of which the following is a specification.

Our invention relates to an improvement in the construction of separable pulleys which are designed for general use in mills and manufacturing establishments, and is more particularly adapted for pulleys of small diameter—those of about twelve inches or less; and the object of the improvement is to provide as an article of manufacture separable pulleys of the various small sizes, which can be quickly applied to or removed from a line of shafting, and which can be produced at a low cost. We attain these objects by the construction shown in the accompanying drawings, in which—

Figure 1 is a longitudinal elevation of a pulley applied to a shaft. Fig. 2 is an end view of the same, showing the lines of its division. Fig. 3 is a transverse section of the pulley upon the line *xx* of Fig. 1, showing its outer circular segments detached from the inner ones. Fig. 4 is a like transverse section of a modified form of its construction; and Fig. 5, a plan of the inner segments thereof, showing more fully said modification.

Similar figures of reference indicate like parts in the several views.

In the drawings, figure 1 indicates the shaft upon which the pulley is secured; 2 and 2', two similar-shaped segments, as seen in the end view of the pulley; and 3 3', two pieces—segments of a circle—similar in form and size to each other.

4 4 are ordinary machine-bolts, and 5 5 are washers thereon.

6 is a plate of iron, which is used with the bolts in one modification of the pulley.

7 7 are stove-bolts, and 8 8 are wood-screws.

The pulley is represented in Figs. 2 and 3 as being formed of four pieces of wood, 2 2' and 3 3'. It may consist of more than four if the pulley is large; but for all sizes for which this method of construction is adapted it is desirable that the pieces be confined to that number.

In the formation of the pulley, two pieces of similar size are first fitted to a mandrel whose diameter corresponds with the bore desired in the pulley, and are secured thereon with the bolts 4 4. Upon each of these pieces shorter pieces of similar width are then placed and secured thereto by screws or bolts. The latter pieces are countersunk upon their inner surface—the piece 3 for receiving the nuts and washers of the bolts 4 4, and the piece 3' for their heads.

If the pulley is quite small—three to six inches in diameter—the half of the pulley in which the bolt-heads are inserted can be formed of one piece and the bolt-heads countersunk therein, as shown at 2''' in the modification, Fig. 4; but it is generally desirable that it be of two pieces, as shown in Figs. 2 and 3, one half of the pulley being then a duplicate of the other in regard to the size of its component parts.

The piece 3', covering the bolt-heads, can be permanently secured to the piece 2' with glue and pins after the bolts are inserted, or it may be detachably connected with it by bolts or by wood-screws, as shown. The piece 3 must be connected with the piece 2 by wood-screws or stove-bolts, preferably the latter, as shown in the drawings, for the purpose of quick and easy access to the nuts of the bolts 4 4. After the several pieces are secured together the pulley is placed in a lathe and turned to the required diameter and width of face. The cap 3 is then removed, the nuts upon the bolts 4 4 loosened, and the completed pulley removed from the mandrel.

In Figs. 4 and 5 a modification of the pulley is shown. It consists of placing a plate of iron upon the pieces 2 2', through which the bolts 4 4 pass. This modified construction is advisable when the bore of the pulley is large in comparison with its diameter, in order to retain the required strength in the pieces 2 2' to withstand the strain imposed thereon by the bolts 4 4. It is necessary to countersink the pieces 3 3' the depth required for receiving the plate 6.

The simplicity of the construction of the pulley will be observed, as it consists of but few pieces, and of these one half correspond in size and form to the other. It can be quickly applied to shafting and firmly se-

cured, or as quickly removed therefrom, the nuts of the bolts 4 4 being accessible and adapted to be turned with the most simple form of wrench.

- 5 No skilled mechanic is required to cut a key-seat and fit a key or to apply or remove the pulley.

By means of the detachable segments 3 3' the bolts 4 4 are accessible for duplication in  
10 case of their breaking and the nuts for being tightened or loosened.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

- 15 1. As an improved article of manufacture, a separable pulley divided into two equal parts upon a plane longitudinally with its bore, each of said parts being divided upon a parallel plane into two segments, and having  
20 clamp-bolts, as 4 4, whereby the inner segments thereof may be connected together and clamped upon a shaft, and means, as described, for securing the outer circular segments to the aforesaid inner ones, substan-  
25 tially as described.

2. As an improved article of manufacture,

a separable pulley consisting of sections divided upon planes parallel with its bore, the sections containing said bore being provided with bolts for their connection together and  
30 for being clamped upon a shaft, and means, as described, for securing the outer circular segment of a section to said section, substantially as described.

3. In a separable pulley divided into two  
35 equal sections upon a plane longitudinally of its bore, one of said sections being divided upon a parallel plane into two segments, the combination of the iron plate 6, arranged upon the outer surface of the inner one of  
40 said segments, and clamp-bolts, as 4 4, for clamping said plate, inner segment, and the undivided section together and upon a shaft, and means, as described, for securing the  
45 outer circular segment to the inner one, substantially as set forth.

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Witnesses:

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