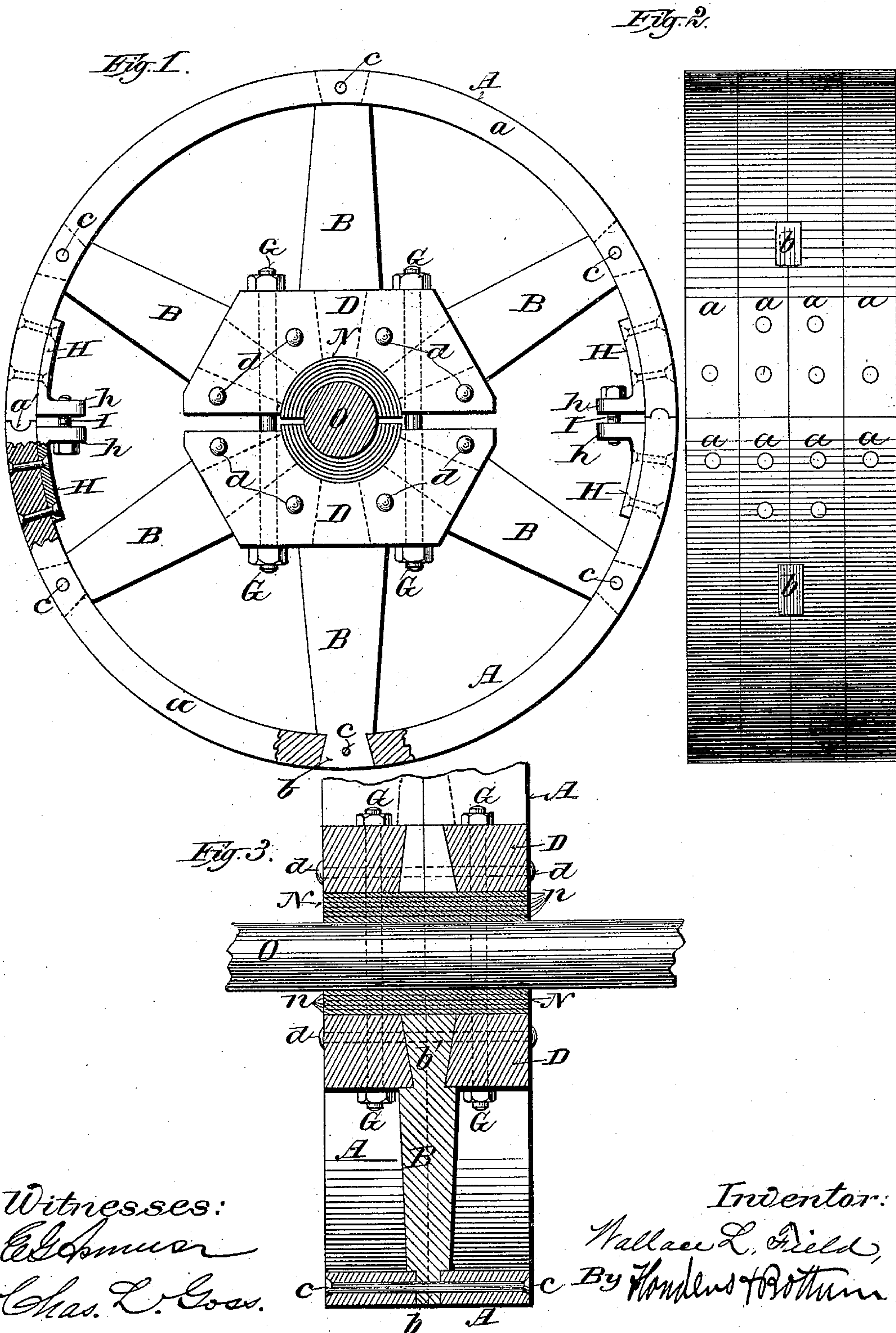


(No Model.)

W. L. FIELD.
PULLEY.

No. 397,978.

Patented Feb. 19, 1889.



Witnesses:
E. G. Sumner
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UNITED STATES PATENT OFFICE.

WALLACE L. FIELD, OF MENASHA, WISCONSIN, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO JOHN STRANGE, OF SAME PLACE.

PULLEY.

SPECIFICATION forming part of Letters Patent No. 397,978, dated February 19, 1889.

Application filed October 8, 1887. Serial No. 251,861. (No model.)

To all whom it may concern:

Be it known that I, WALLACE L. FIELD, of Menasha, in the county of Winnebago and State of Wisconsin, have invented certain new and useful Improvements in Pulleys; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to split or sectional pulleys; and it consists, essentially, of a hub and rim formed of separable sections, with fastening devices for securing said sections together, and of sectional bushing by which the pulley is adapted to any size of shafting. Its main objects are to decrease the weight and cost of the pulley, to facilitate mounting it upon or removing it from the shaft without disturbing the latter, to increase the adhesion of belting thereto, to prolong the life of belting, to adapt the pulley to any size of shafting, to balance the pulley and preserve the proper alignment of the shafting, &c. Pulleys made of iron are heavier and more expensive than wooden pulleys, and those made in one piece or section to be mounted upon the shaft necessitate uncoupling the latter or removing it from its hangers or bearings, whereas my improved pulley, which is made principally of wood in two separable sections, is lighter and cheaper and more readily attached to and removed from shafting than pulleys of the usual construction referred to.

In the accompanying drawings like letters designate the same parts in all the figures.

Figure 1 is a side elevation of my improved pulley. Fig. 2 is a face elevation, and Fig. 3 is a central axial section, taken through one of the spokes, of a portion of the pulley.

A A represent the rim of the pulley, made in two semicircular sections of longitudinal strips *a a* of wood steamed and bent to the required curve, each section being composed of two or more such strips.

To the inner side of both ends of each section A of the pulley-rim are bolted, riveted,

or otherwise securely fastened the coupling-plates H H, which are formed next to the ends of the rim-section with right-angled inwardly-projecting perforated ears *h h*. The meeting ends of the rim-sections A A are attached and held together by bolts I I, which pass through the corresponding ears, *h h*, of the coupling-plates, and are threaded to engage one of each pair of said ears threaded to serve as nuts therefor. Transverse tongues *a' a'*, inserted in corresponding grooves or seats in the ends of the rim-sections A A, insure perfect joints between the ends of said sections and prevent any break in the face of the pulley. Like the rim, the hub is also made of two sections, D D, separable in a plane cutting it axially. Each section D of the hub is formed of two or more pieces of wood joined in a plane at right angles to the axis of the pulley and beveled at the ends, as shown in Fig. 1, to form seats for shoulders on the inner ends of the spokes B B, three of which are preferably employed in each half-section of the pulley.

B B are radiating spokes, formed at the ends with dovetail tenons *b b'*, which are fitted to and inserted in corresponding mortises formed in the hub and rim sections of the pulley. The spoke-tenons are placed in their proper mortises, when the strips or blocks of which the hub and rim sections are composed are put together. The component blocks or strips are glued together and further bound and secured by transverse rivets, rods, or bolts *d d*, passing through the hub-sections between the spokes, and by bolts or rivets *c c*, passing transversely through the rim-sections A A and the interposed tenons *b* of the spokes. The tenons *b b* are preferably expanded lengthwise of the rim A, while the hub-tenons *b'* are expanded transversely thereto, as seen in Figs. 1 and 3. By forming the rim, as described, of sections of wood steamed and bent to the required curve it is rendered lighter, stronger, more durable, and of smoother face than when made of sections sawed to the required curve in the usual manner.

The hub is centrally bored or recessed to receive the sectional bushing N, which is composed of concentric cylindrical sections *n*

n, preferably formed of paper, nested together and divided lengthwise to correspond with the division of the pulley-sections. Each pulley being furnished with a sectional bushing
5 *N*, can be readily secured upon any-sized shaft by removing or replacing a sufficient number of sections *n n* to adapt the bushing to the size of the particular shaft *O*, upon which the pulley is to be mounted.

10 Bushing made of paper is tougher than wood, may be made lighter, and is hence capable of being separated into thin sections, by which it may be adapted to any size of shaft. The paper may be compressed upon
15 the shaft, gripping the same more tightly and holding the pulley more securely from turning thereon than wooden bushing.

The hub-sections are secured together and the bushing *N* tightly clamped upon the shaft
20 by means of the bolts *G G*, which pass transversely through said sections and are provided at the ends with nuts.

I claim—

25 1. The combination, in a separable wooden pulley, of semicircular rim-sections formed with dovetailed mortises, hub-sections formed with dovetailed mortises and divided trans-

versely to the axis of the pulley through said mortises, spokes formed at the ends with dovetailed tenons, which are inserted and secured
30 in the mortises of the hub and rim sections, tie-bolts passing through and connecting said hub-sections transversely to the axis of the pulley, and coupling-bolts connecting the ends of the rim-sections, substantially as and for
35 the purposes set forth.

2. The combination, with a pulley, of a sectional bushing composed of independently-removable concentric cylindrical sections of paper, substantially as and for the purposes
40 set forth.

3. The combination, with a pulley composed of separable sections, of a sectional bushing composed of independently-removable concentric cylindrical sections divided to corre-
45 spond with the sections of said pulley, substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WALLACE L. FIELD.

Witnesses:

HARRY DE WOLF,
JOS. L. FIEWEGER.