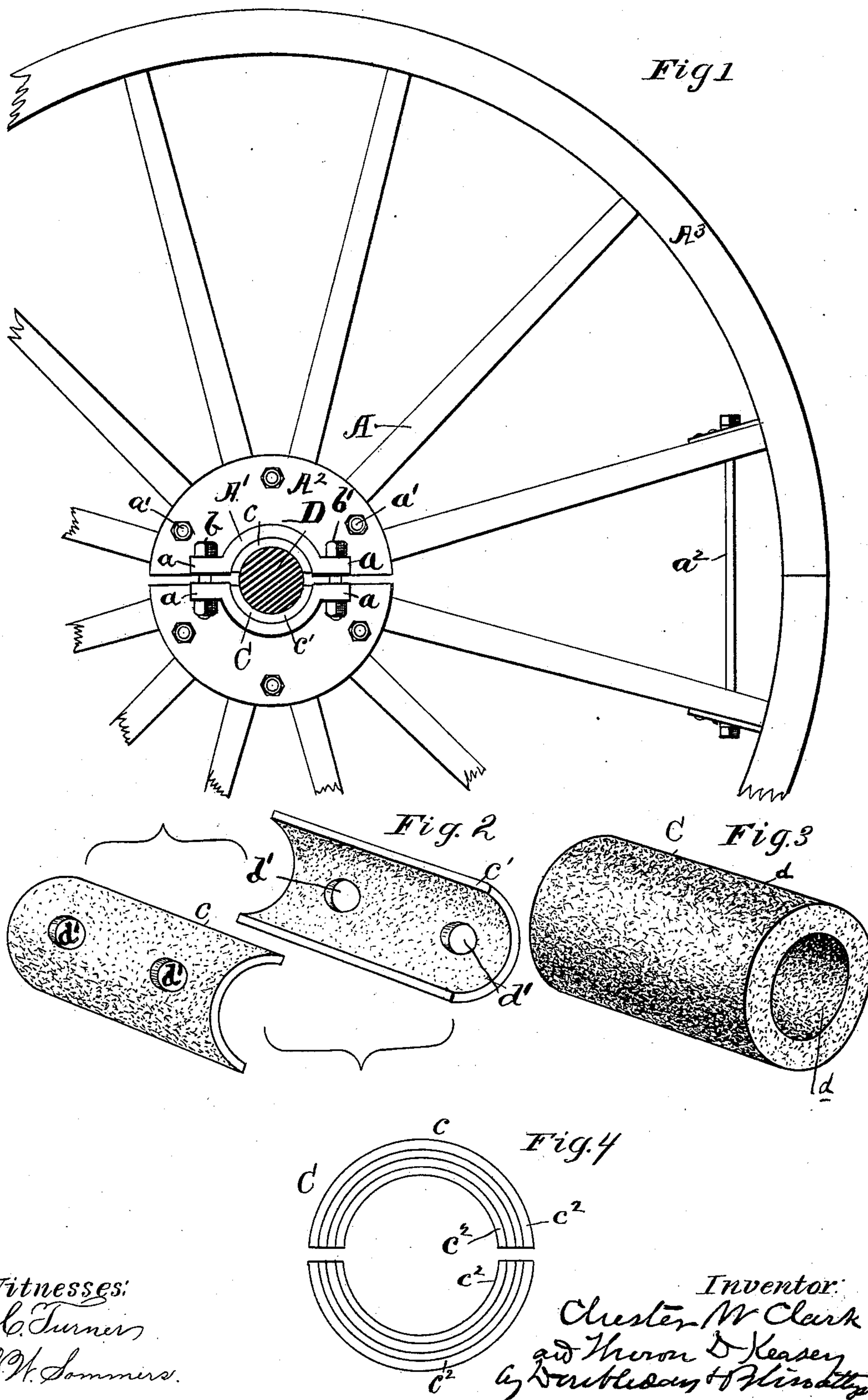


(No Model.)

C. W. CLARK & T. D. KEASEY.
BUSHING FOR PULLEYS.

No. 404,824.

Patented June 11, 1889.



Witnesses:
J. C. Turner
J. H. Sommers.

Inventor:
C. W. Clark
and Theron D. Keasey
by Doubleday & Flint

UNITED STATES PATENT OFFICE.

CHESTER W. CLARK AND THERON D. KEASEY, OF MISHAWAKA, INDIANA,
ASSIGNORS TO THE KEASEY PULLEY COMPANY, OF SAME PLACE.

BUSHING FOR PULLEYS.

SPECIFICATION forming part of Letters Patent No. 404,824, dated June 11, 1889.

Application filed February 28, 1888. Serial No. 265,542. (No model.)

To all whom it may concern:

Be it known that we, CHESTER W. CLARK and THERON D. KEASEY, citizens of the United States, residing at Mishawaka, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Bushings for Pulleys, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a bushing formed of paper and some abrading material and adapted to be clamped or fitted tightly into the annular space between a shaft and a surrounding hub—such, for instance, as the hub of a pulley—and to so hold these parts by frictional contact as to prevent independent rotation of one relative to the other.

We prefer to form the bushings in sections of such nature that the required number can be fitted around a shaft inside of a separable or divided pulley-hub and compressed tightly by means of bolts.

Figure 1 is a face view of part of a pulley, illustrating one mode of working our invention. Fig. 2 is a perspective of the bushing made in sections and enlarged. Fig. 3 shows a bushing in tubular form produced from pulp. Fig. 4 shows the bushing as produced by properly arranging paper in sheets or layers with a suitable abrading material applied to them.

In the drawings, A are the spokes, and A' A' the half-hubs or half-boxes of the pulley.

A² A² are half-flanges arranged upon opposite sides of the spokes.

a a are arms or lugs projecting from the half-hubs and integral therewith.

B is the shaft.

b b are bolts through the arms of the half-boxes.

a' a' are bolts for clamping the half-flanges and the spokes to each other.

The rim A³ is made in sections, each representing a semi-circle, the abutting ends of which are held firmly to each other by bolts a²; but we do not in this case claim any of the inventions above referred to, because they form the subject-matter of another application, Serial No. 264,372, filed by us February 17, 1888.

The pulley half-hubs are provided with a bore somewhat larger than the shaft, and between the pulley end and the shaft is inserted the bushing C. This, as shown in Figs. 1 and 2, is formed in sections c c'. These sections are of such character that a series of them can be placed around the shaft and so arranged as to conform suitably to the shaft and pulley-bore. By making them in sections they can be applied to shafts and bores of varying diameter. Although it will be understood that under some circumstances we contemplate making them in continuous hollow cylinders, as illustrated in Fig. 3. Sand, emery, or other suitable material is applied to these bushings, as indicated at d, for the purpose of increasing their frictional grip both upon the shaft and the pulley-hub. This sand or emery may be applied to the surface only by means of a suitable adhesive material, as indicated in Fig. 2, or it may be distributed throughout the body of the bushing in a process of forming it, as is indicated in Fig. 3.

In Fig. 4 the bushing is represented as being made up of a series of layers c², superimposed one upon another with suitable adhesive material between the layers.

Of course in all the forms we propose to use some sort of abrading material in connection with the paper, in order to produce a stronger frictional grip than would be possible with a bushing made of paper only.

From an examination of the drawings it will be readily understood that the shaft, the bushing, and the pulley-hub may be gripped firmly to each other, and such a frictional grip between these three members produced as will prevent rotation of either of them independently of the other two. However, we propose to form the bushings with holes d', in which to insert pins or screws to further secure the parts against independent rotation in cases where unusually heavy strain will be required.

We are aware that paper has been used in the construction of journal-boxes and similar devices when treated with some lubricating material to facilitate rotation of the shaft within the bearing, or of the bearing upon

the inclosed shaft; but it is obvious that our invention differs radically from such earlier one in all essential particulars.

We are also aware that paper mixed with
5 some abrading material has been used to form the outer surface of friction-pulleys; hence we do not claim that invention, nor do we claim herein the combination with the shaft and the divided hubs of their clamping-bolts
10 and a paper bushing.

What we claim is—

A pulley-bushing made of paper and an abrading material, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

CHESTER W. CLARK.
THERON D. KEASEY.

Witnesses:

ADAM S. BAKER,
HOD L. PIKE.