

*H. F. Mann,*  
*Shaft Coupling.*

*No. 100,303.*

*Patented Mar. 1. 1890.*

Fig. 1.

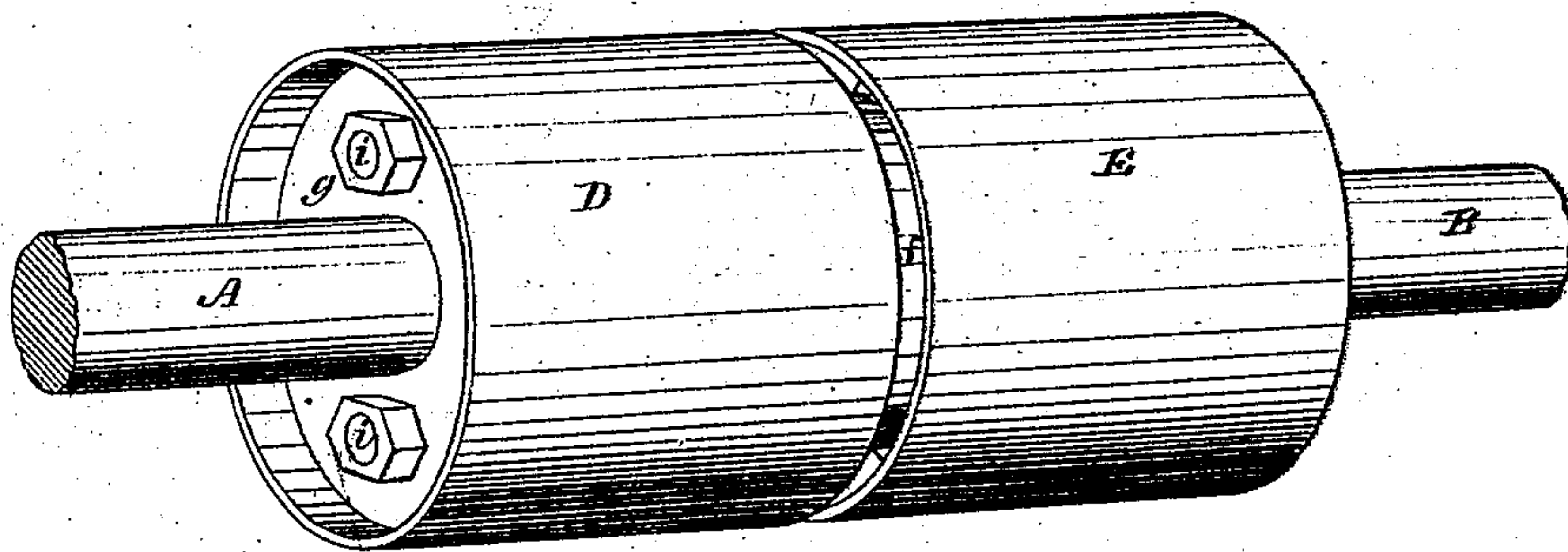


Fig. 2

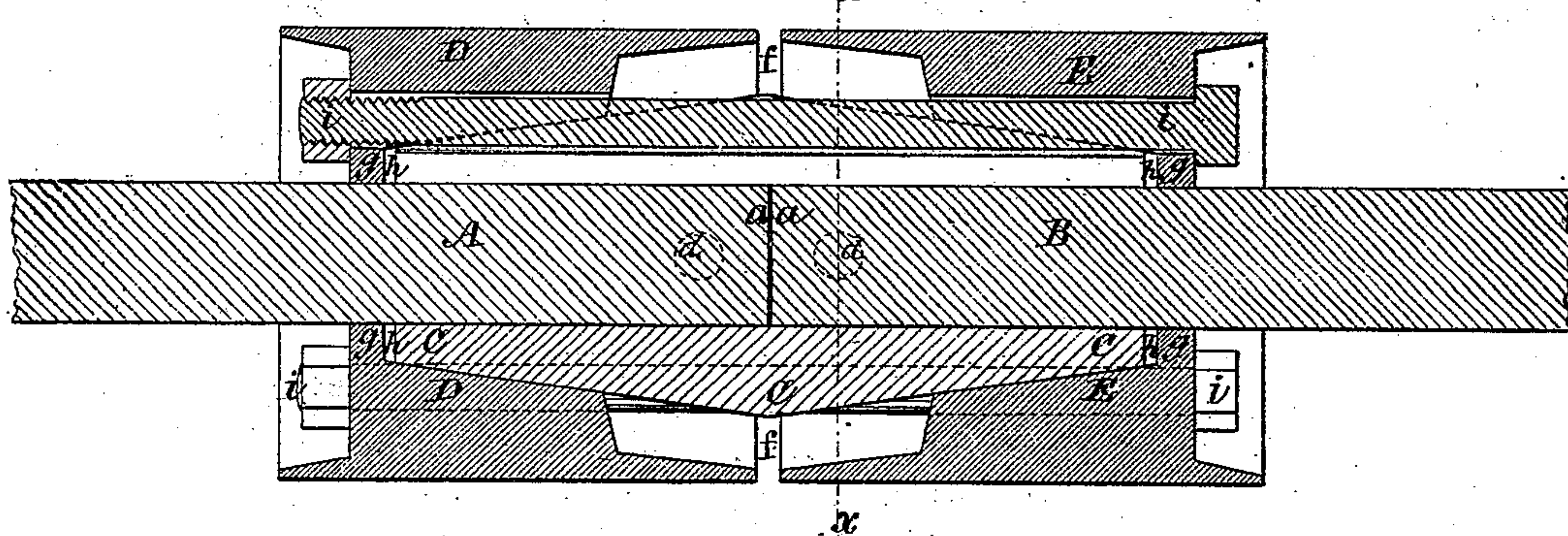


Fig. 3.

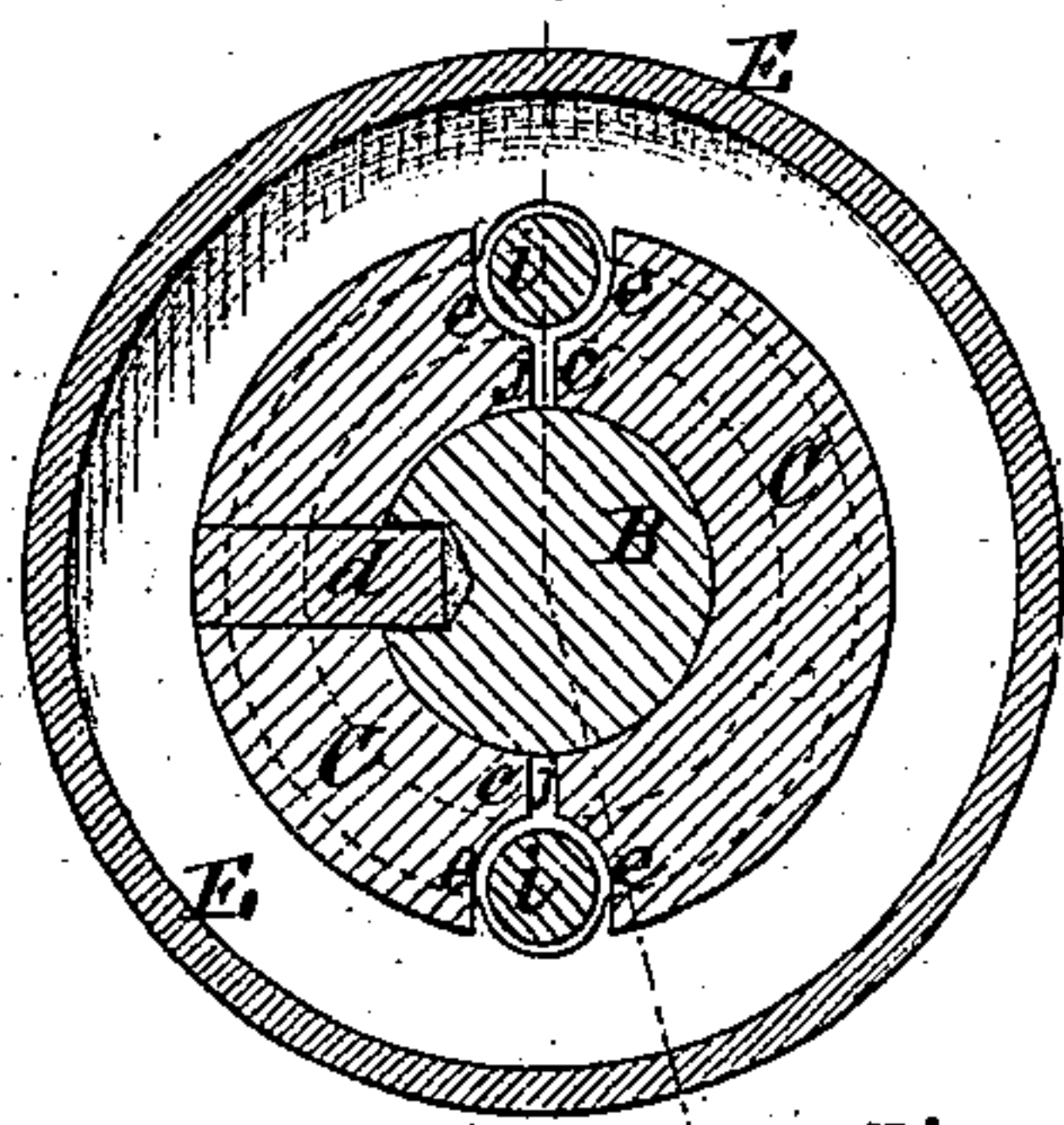


Fig. 4.

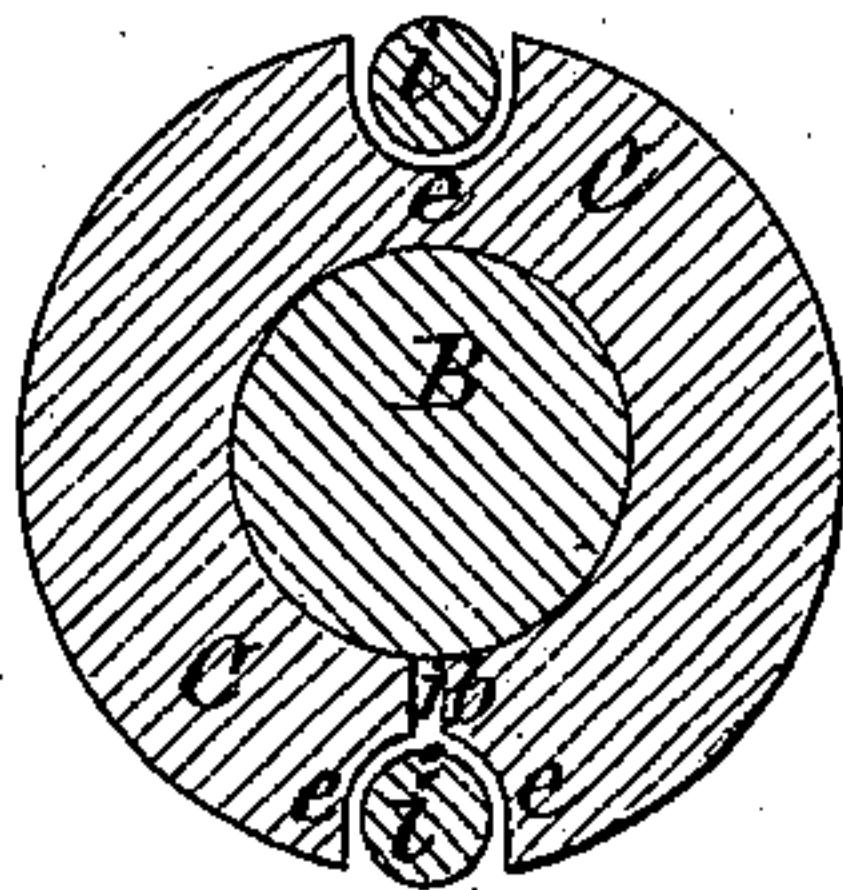


Fig. 5.

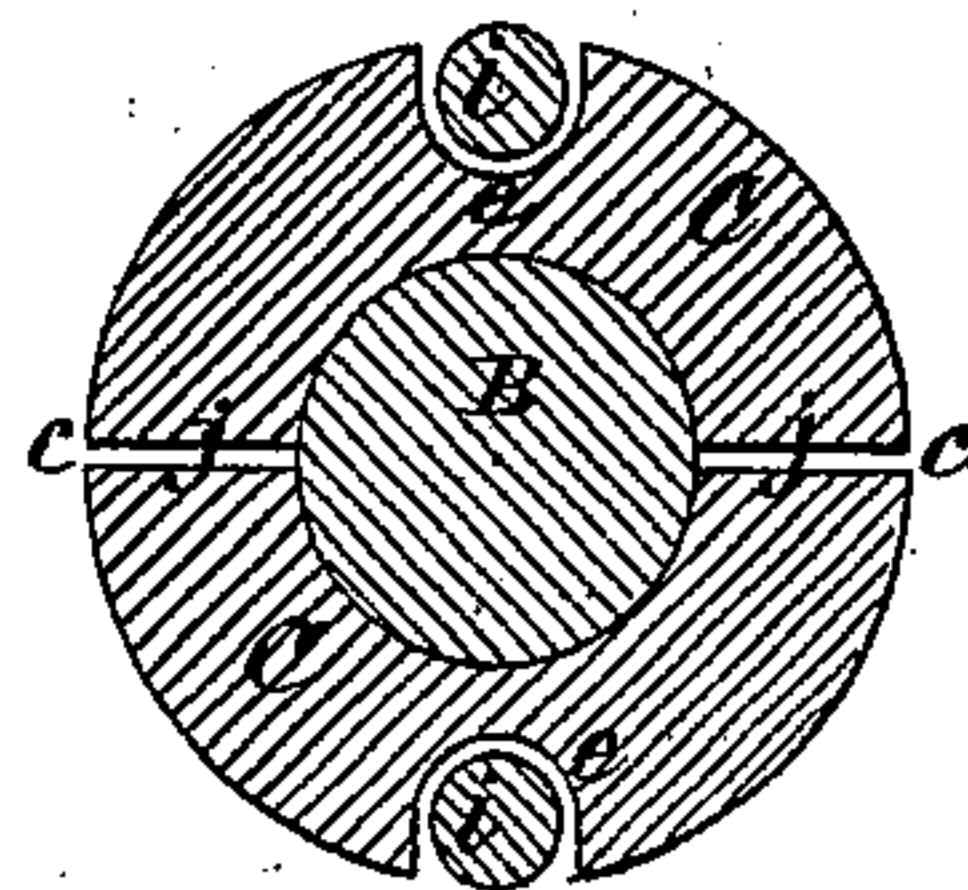
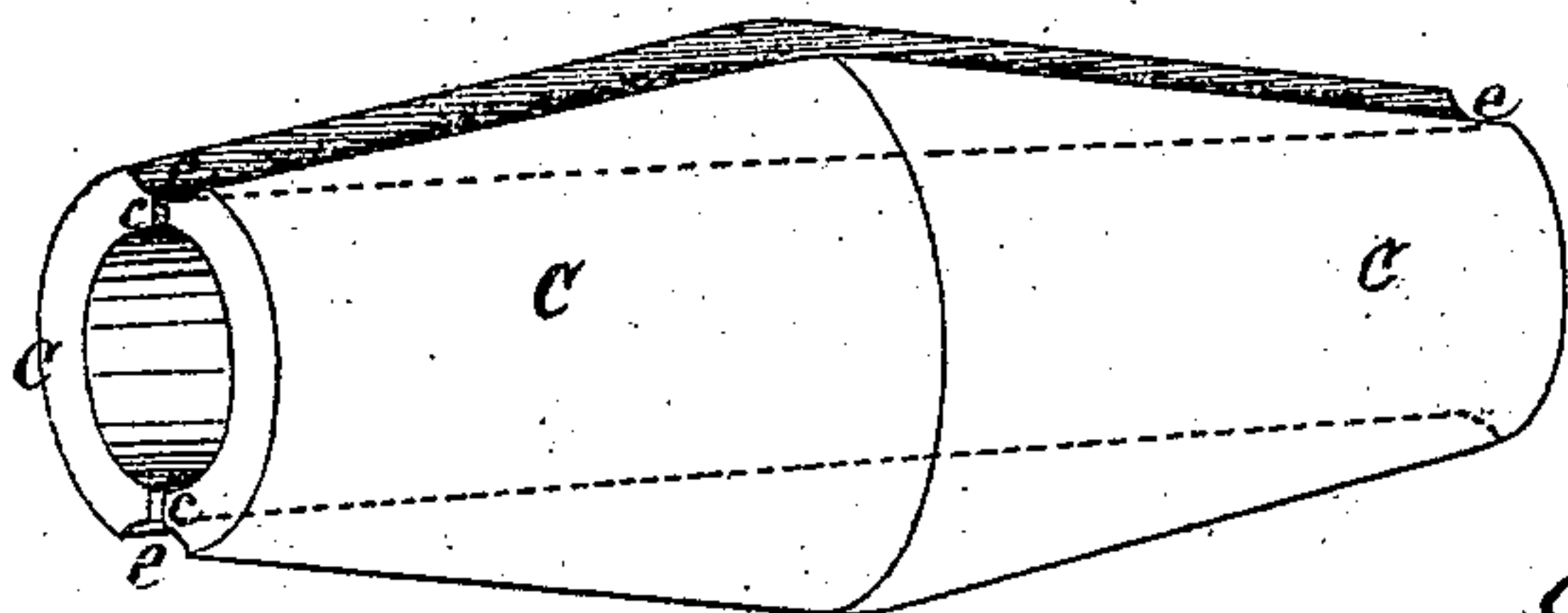


Fig. 6.



Witnesses.  
*A. Morse* } *Henry F. Mann*  
*Edmund Masson* } *By atty A. B. Stoughton*



# United States Patent Office.

HENRY F. MANN, OF PITTSBURG, PENNSYLVANIA.

Letters Patent No. 100,303, dated March 1, 1870.

## IMPROVEMENT IN SHAFT-COUPLING.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, HENRY F. MANN, of Pittsburg, in the county of Allegheny, and State of Pennsylvania, have invented certain new and useful Improvements in Shaft-Couplings; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same; reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 represents in perspective the coupling as applied to the shafts.

Figure 2 represents a longitudinal section through the same.

Figure 3 represents a cross-section through the coupling taken at the dotted line *x x* of fig. 2.

Figures 4 and 5 represent cross-sections through the cone-sleeve and shafts, omitting the external cylinders.

Figure 6 represents in perspective the interior cone-sleeve or coupling plates, as will be explained.

My invention consists in coupling the ends of shafts by means of a split or sectional double cone-sleeve, and external cylinders with corresponding interior double conical bearing surfaces and binding pins or keys and bolts, as will be hereinafter explained, together with bolt-seats in the cylinders and double cone-sleeve or hub, so that drawing the exterior cylinders together tightens up and makes rigid the coupling of the shafts.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same.

The ends *a a* of the two shafts *A B* that are to be coupled together are squared up, so as to abut against each other, and over the joint between the shafts is slipped or laid the conical sleeve or hub *C*, either split, as seen at *b*, fig. 4, or made in two parts or sections, as seen at *c c*, figs. 3 and 5.

If only split or having but one cut, kerf, or slot through it lengthwise, as in fig. 4, then a pin or key is passed through the sleeve or hub and into an opening or seat in each of the ends of the shafts, a short distance from the joint.

But if the sleeve or hub *C* be made in sections or in two parts, as shown at figs. 3 and 5, then the pin or key *d* may be made fast on or in one of the sections, and be laid or passed into their seats respectively on the ends of the two shafts by the act of placing said section upon the parts of the shafts to be coupled.

The sleeve or hub *C* is made tapering or conical both ways from its center, as seen more distinctly in fig. 6, and has bolt-seats *e e* cut longitudinally through them; and these seats may be in the line and plane of the slots, as in fig. 3, or in or through the solid metal, as seen in fig. 5, or one along the slot, and one in the solid metal, as seen in fig. 4.

Two cylinders *D E* are then provided, with their interior made conical or tapering, so as to fit snugly over the conical or tapering surfaces of the sleeve or hub *C*, and so that they will not entirely meet when drawn up, but have an intervening space, *f*, between them.

The outer ends or heads *g* of the cylinders are solid except for the bolts *i i* and shaft to pass through, and space *h* is left between the inner surfaces of the heads and the ends of the sleeve or hub, so that the cylinders can be drawn up onto the cone surfaces of said hub to make the latter more rigidly gripe and bind upon the ends of the shafts; the spaces *j* in the hub admitting of its being contracted circumferentially by the drawing up of the cylinders by the screw-bolts upon its conical surfaces.

When the hub or sleeve is made in two parts or sections, as shown in figs. 3 and 5, its capability of being tightly drawn against the shafts is obvious. When a split hub, such as is shown in fig. 4, is used, that is, with a single slot or split, then the tightening up of the cylinders springs the hub where the key or bolt-seat *e* is cut out, and the edges of the split *j* approach each other and cause the necessary circumferential pressure, while the pins *d* aid in holding the shafts together longitudinally.

Having thus fully described my invention,

What I claim therein as new, and desire to secure by Letters Patent in a shaft-coupling, is—

The combination of the split or sectional hub, with its exterior double cone or tapering surfaces, the cylinders with their interior correspondingly conical or tapering surfaces, the bolt-seats and tightening bolts, or their substitutes, substantially as and for the purpose described and represented.

H. F. MANN.

Witnesses:

A. B. STOUGHTON,  
EDMUND MASSON.