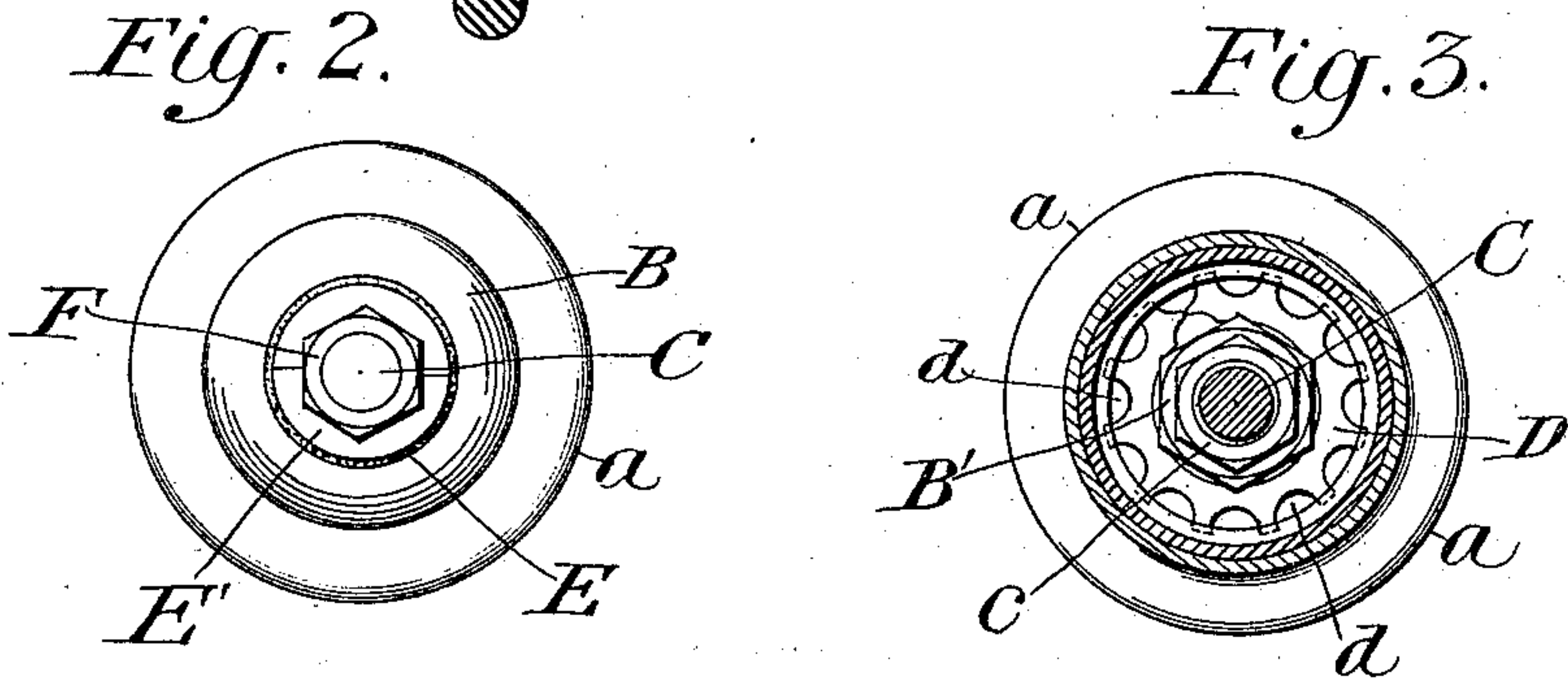
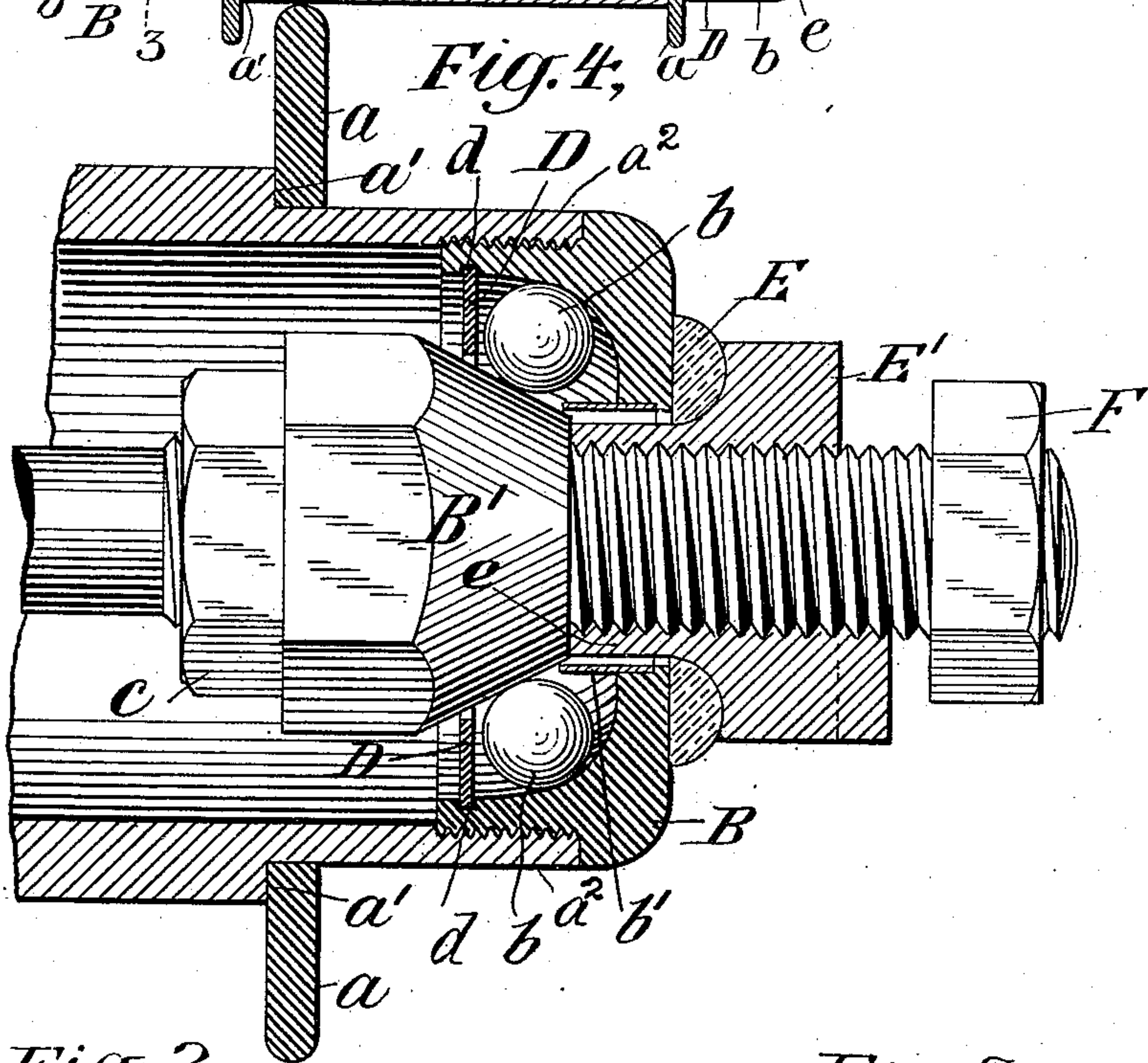
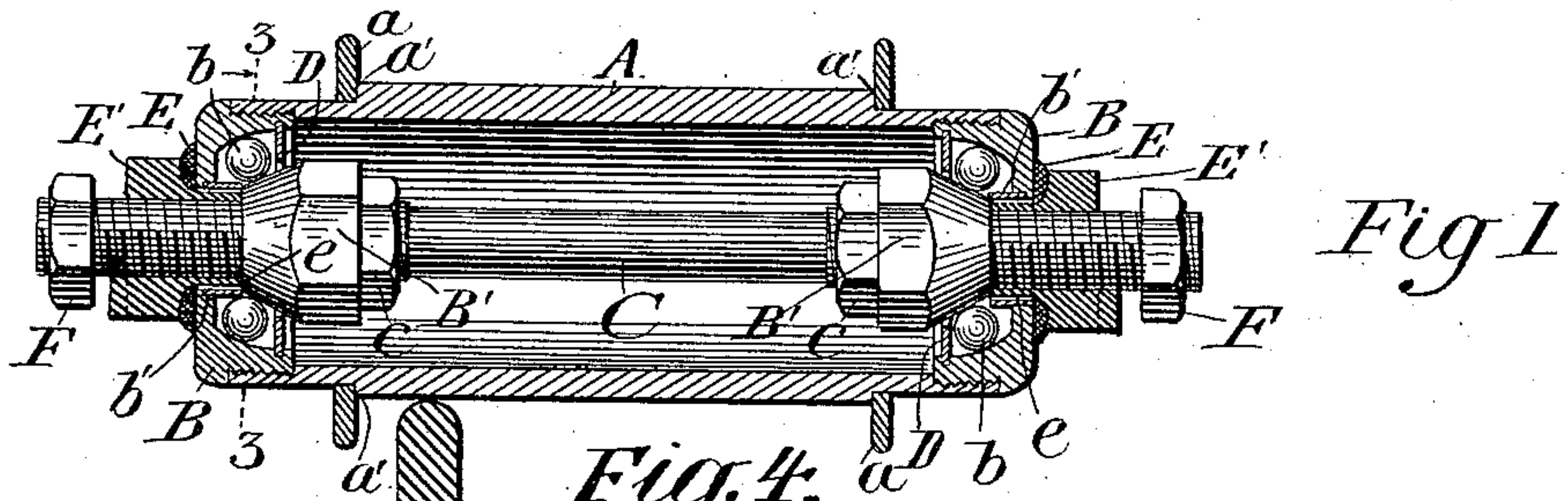


(No Model.)

E. S. LEAYCRAFT.
ANTIFRICTION BEARING.

No. 601,348.

Patented Mar. 29, 1898.



WITNESSES:

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UNITED STATES PATENT OFFICE.

EDWIN S. LEAYCRAFT, OF JERSEY CITY, NEW JERSEY.

ANTIFRICTION-BEARING.

SPECIFICATION forming part of Letters Patent No. 601,348, dated March 29, 1898.

Application filed April 27, 1897. Serial No. 634,107. (No model.)

To all whom it may concern:

Be it known that I, EDWIN S. LEAYCRAFT, of Jersey City, in the county of Hudson and State of New Jersey, have invented a certain new and useful Improvement in Antifriction-Bearings, of which the following is a specification.

My invention relates to antifriction-bearings designed especially for use in bicycles or other vehicles, and is particularly directed toward providing a construction embracing but few parts, whose active members are relatively adjustable and readily separated one from the other for the purpose of inspection, whose wearing-surfaces are thoroughly lubricated, and a construction withal possessing dust-proof qualities.

I will describe an antifriction-bearing embracing the features of my invention and then define the novelty in claims.

In the accompanying drawings, Figure 1 is a longitudinal view, mainly in section, of such a bearing. Fig. 2 is an end elevation of the bearing represented in Fig. 1. Fig. 3 is a cross-section on the line 3 3, Fig. 1, looking in the direction of the arrow. Fig. 4 is an enlarged detail view, mainly in section, of one end of the bearing.

Similar letters of reference designate corresponding parts in all figures.

A designates the hub of the vehicle-wheel—for instance, a bicycle-wheel. This hub is preferably tubular or barrel-like in form and constitutes a reservoir for a suitable lubricant and is provided with shoulders a' , formed by set-off portions a^2 , made at each end of the hub, against which shoulders abut the flanges a for attaching the spokes. Said flanges may be shrunk or otherwise secured to the hub.

Rigidly secured to the hub A are the cups B, constituting one member of the bearing and conveniently made in the form of caps screwed into the ends of the hub and each provided with a central aperture through which extends the axle C.

There is arranged in juxtaposition to each cup B a cone B' , between the conical surface of which and the surface of the ball-race formed on the interior surface of the cup B the antifriction-balls b are borne. The surface of the cups B opposed to the cone against which the

balls impinge is made with a portion approximately parallel with the cone-surface, so that the balls may have some lateral play and not always take the same circumferential path. The cones B' constitute the remaining member of the bearing and are preferably adjustable lengthwise of the axle C. To this end the cones are engaged by screw-threads with correspondingly-formed portions of the axle C, along which they therefore may be adjusted, being firmly held in an adjusted position by lock-nuts c .

To prevent the dropping out of the balls from the circular channel in the cup B when the latter is disconnected and removed, there is provided a retaining-ring D at the rear extremity of the cup, which may consist of a split ring sprung into place and held in a groove d , and a sleeve b' , screwed into the opening in the cup, through which projects the axle, said threaded sleeve acting in conjunction with the ring D to retain the balls in the ball-race during the assembling of the parts. To facilitate the passage of the lubricant contained in the hub A to the active surfaces of the bearing, the outer edge of the ring D is provided with one or more perforations d , through which the lubricant may flow.

While the central opening in each cup B through which the axle protrudes should be made as small as is consistent with the free working of the axle, still it is practically impossible to prevent by the narrowness of the opening between the two the oil from working out or the dust from working in. To effectually prevent this from occurring, the axle C is encircled by a washer E, of felt, leather, or other appropriate material, which may be forced against the face of the cup beyond the edges of the central opening therein by a nut E' , provided with an inwardly-projecting annular extension e , which affords an extended threaded surface of the nut E' . The washer E is seated in an annular groove in the nut E' , from which it projects laterally, extending around the nut E' and filling the space between the nut E' and the cup B.

F are nuts for securing the axle C in position.

It will be seen that by this construction an absolutely dust-proof bearing is obtained, as the washer E, seated in the nut E' and pro-

jecting beyond the outer edge thereof, affords no receptacle for the collection of dust, but causes all dust, &c., to be thrown off.

Having now described my invention, what I consider as new, and desire to secure by Letters Patent, is—

1. In an antifriction-bearing, the combination with an axle and a hub, of a cone, a cup screwed into the hub and provided with an annular groove, an annular sleeve secured to said cup at the axle-opening, a split ring sprung into the groove aforesaid and provided at its periphery with one or more notches or openings, said cup and annular sleeve and ring constituting a ball-race, antifriction-balls in said race, a nut screwed on the axle, and a washer of a dust-proof material intermediate the nut and the cup and extending beyond the outer edge of said nut, substantially as specified.

2. In an antifriction-bearing, the combination with an axle, and a hub, of a cone, a cup screwed into the hub and provided with an annular groove, an annular sleeve secured to said cup at the axle-opening, a split ring sprung into the groove aforesaid and provided at its periphery with one or more notches or openings, said cup and annular sleeve and ring constituting a ball-race, antifriction-balls

in said race, a nut screwed on the axle and provided with an inwardly-projecting annular extension, and a washer of a dust-proof material intermediate the nut and the cup and extending beyond the outer edge of said nut, substantially as specified.

3. In an antifriction-bearing, the combination with an axle, and a hub, of a cone, a cup screwed into the hub and provided with an annular groove, an annular sleeve secured to said cup at the axle-opening, a split ring sprung into the groove aforesaid and provided at its periphery with one or more notches or openings, said cup and annular sleeve and ring constituting a ball-race, antifriction-balls in said race, a nut screwed on the axle and provided with an inwardly-projecting annular groove or recess on its inner face, and a washer of dust-proof material seated in said recess and extending beyond the outer edge of said nut, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWIN S. LEAYCRAFT.

Witnesses:

ERNEST HOPKINSON,
FRANCES A. SPERRY.