

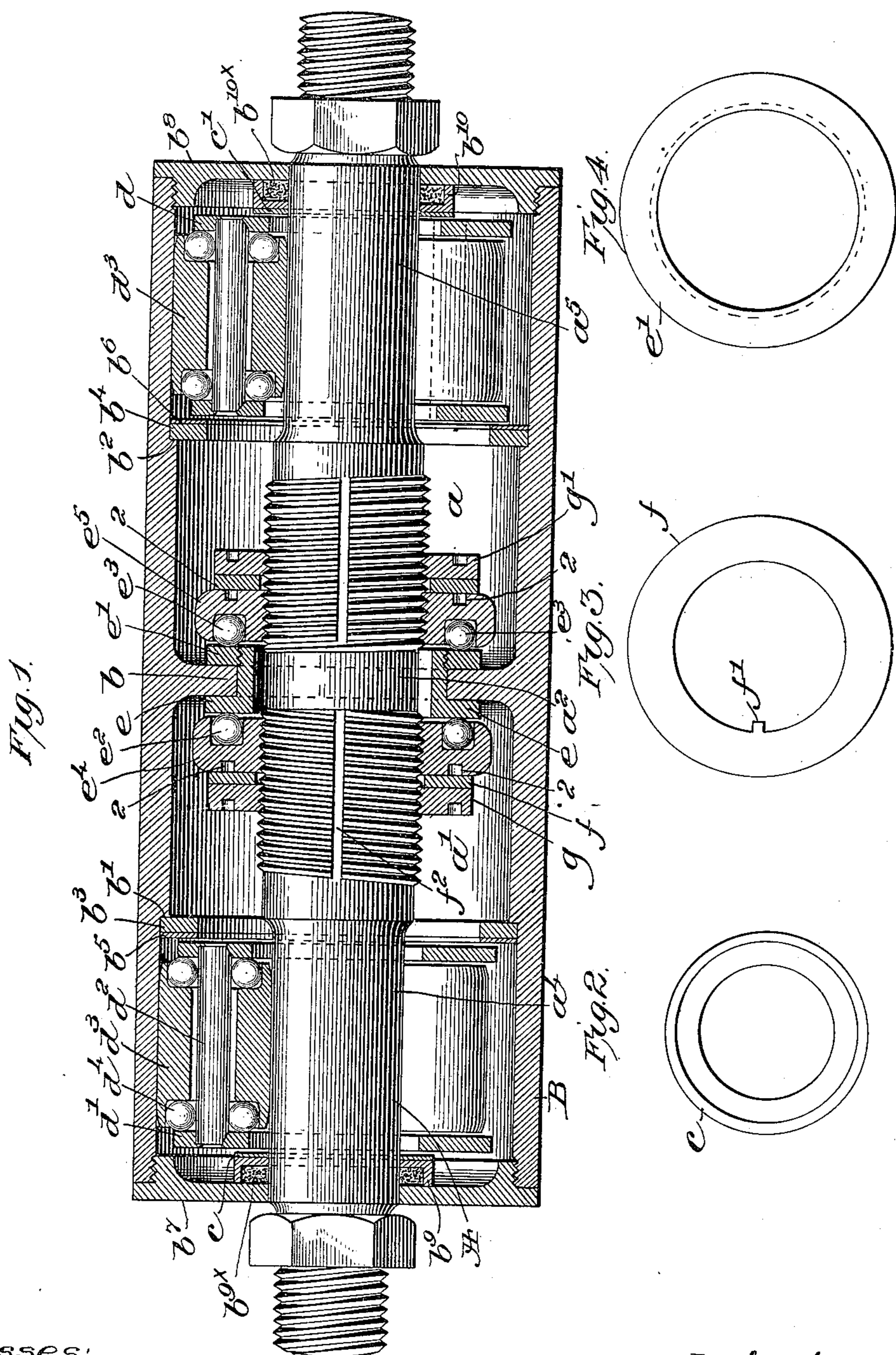
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Patented Feb. 5, 1901.

J. A. PERKINS.
ROLLER BEARING.

(Application filed Feb. 7, 1900.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

JULIUS A. PERKINS, OF OMAHA, NEBRASKA, ASSIGNOR TO THE MOFFETT BEARING COMPANY, OF COUNCIL BLUFFS, IOWA.

ROLLER-BEARING.

SPECIFICATION forming part of Letters Patent No. 667,633, dated February 5, 1901.

Application filed February 7, 1900. Serial No. 4,365. (No model.)

To all whom it may concern:

Be it known that I, JULIUS A. PERKINS, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented an Improvement in Roller-Bearings, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

The invention herein to be described is illustrated in a bearing containing a fixed journal or shaft and a rotatable box, the object of the invention being not only to overcome friction between the journal and box, but also to overcome end-thrust friction; but it will be understood that my invention is equally applicable to a construction wherein the journal or shaft rotates and the box is non-rotative.

Figure 1 shows a journal or shaft in elevation surrounded by a box represented in section, the end-thrust means being also in section. Fig. 2 shows detached one of the cage-controlling surfaces located within the inner ends of the box and surrounding the journal. Fig. 3 shows a locking-washer detached, and Fig. 4 shows the threaded ring forming one side of the track detached.

In the drawings, A represents a journal or shaft which may be fixed in any suitable fork, and thus become a wheel-journal, and B may be considered as a surrounding rotatable box. The journal is shown as provided with a right-hand thread a and a left-hand thread a' , the journal presenting an unthreaded part a^2 between said threads, the ends of the journal being reduced in diameter at $a^4 a^5$.

The box B has a central rib b and shoulders $b' b^2$, the latter serving to support rings $b^3 b^4$, faced, preferably, with antifriction-washers $b^5 b^6$, preferably of vulcanite, the ends of the box being closed by head-plates $b^7 b^8$, represented as screwed into said box and having central holes surrounding the journal, said heads at their inner faces sustaining rings $b^9 b^{10}$, which surround the journal and contain felt or dust washers $b^{9x} b^{10x}$, said rings supporting antifriction-washers $c c'$. The antifriction-washers constitute antiwearing-faces for the rings $b^3 b^4$ and $b^9 b^{10}$, they constituting cage-controllers, with which may act to posi-

tion at suitable intervals, as the necessity of the bearing may require, rigid cages $d d'$, containing non-rotating roller-alining means, shown as spindles d^2 , sustained in the end walls of said cages and surrounded by bearing-rollers d^3 , chambered at their opposite ends and receiving balls d^4 , which are interposed between said rollers and said spindles and between said rollers and said cages to prevent the contact of the rollers with either the spindles or cages, said cages having always a certain amount of end play between said washers and running at times between and out of contact with said washers.

The rib b serves to support an end-thrust track, composed, as represented, of a collar e , extended through the central opening of said rib and receiving upon its threaded end a ring e' , the flange of the collar and one face of the ring constituting a raceway for anti-friction end-thrust devices, which may be a series of balls, as $e^2 e^3$, mounted in annular grooves made in end-thrust plates $e^4 e^5$, surrounding the shaft and held in place thereon in suitable manner, said plates, as shown, being held in place on the screw-threaded portions $a a'$, the adjustment of said plates insuring the proper contact of the end-thrust means with the tracks referred to. The plates may be held in their adjusted position by suitable locking-plates f , (shown detached in Fig. 3,) each having a suitable lug f' to enter a spline in the journal A, or vice versa. Each end-thrust plate has one or more holes to receive a spanner by which to rotate them. The locking-plates are acted upon and held in place in contact with the plates $e^4 e^5$ to lock them in adjusted position by locking-nuts $g g'$.

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

1. A journal, a surrounding box, roller-bearings interposed between said box and journal at the ends of the box, and adjustable end-thrust means located between said roller-bearings.

2. A journal, a box, a rib provided with a detachable track presenting two faces, and end-thrust means cooperating with each side of said track.

3. A box, an internal rib carried by said box and presenting a track, a journal, adjustable plates mounted thereon, and a series of balls interposed between each of said plates 5 and said track.

4. A journal provided with right and left hand screw-threads, plates mounted thereon, a box having an internal rib, a track on said rib presenting two faces, and two series of 10 balls one between each of said plates and said track.

5. A journal, a surrounding box, rigid cages interposed between said journal and said box at the ends thereof, said cages containing 15 non-rotating roller-alining means, a series of bearing-rollers chambered at their ends, and balls located in said chambers and surrounding said alining means to prevent the contact of said rollers with said alining means and 20 said cages, antifriction-washers located at the opposite ends of said cages and located at a distance apart in excess of the length of said cages to thereby enable said cages to run at times without rubbing contact with said 25 washers, and end-thrust means including antifriction means and a track occupying a position between the said cages.

6. A box and a journal, combined with a

rib and a two-part track detachably applied to said rib, and plates having antifriction 30 means to contact with said track.

7. A box having an internal rib, combined with a two-part track applied to and covering said rib, the two parts of said track being connected by a screw-thread. 35

8. In a roller-bearing, a box, a track located between the ends of the box, plates containing antifriction means, and means to adjust said plates with relation to said track and hold the said plates in adjusted position. 40

9. In a roller-bearing, a box, a revoluble cage containing bearing-rollers, and traveling cage-controllers located at opposite ends of said cage, said controllers being of different diameters one coöperating with the outer 45 side of one end of the cage near its periphery, the other acting against the outer side of the opposite end of the cage near its inner edge.

In testimony whereof I have signed my name to this specification in the presence of 50 two subscribing witnesses.

JULIUS A. PERKINS.

Witnesses:

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