

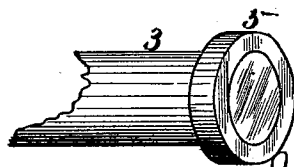
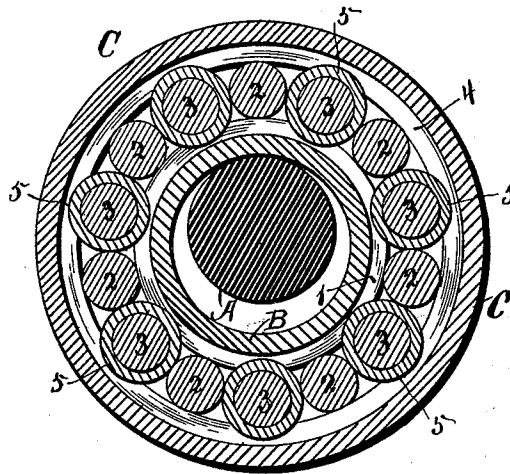
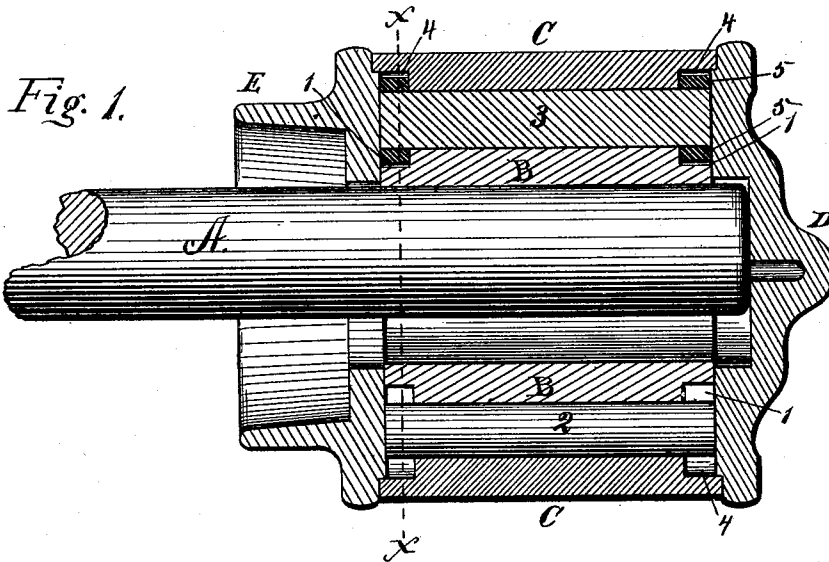
(No Model.)

2 Sheets—Sheet 1.

J. M. & M. A. ANDREWS.
JOURNAL BEARING.

No. 478,533.

Patented July 5, 1892.



WITNESSES:
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O. B. Kune

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(No Model.)

2 Sheets—Sheet 2.

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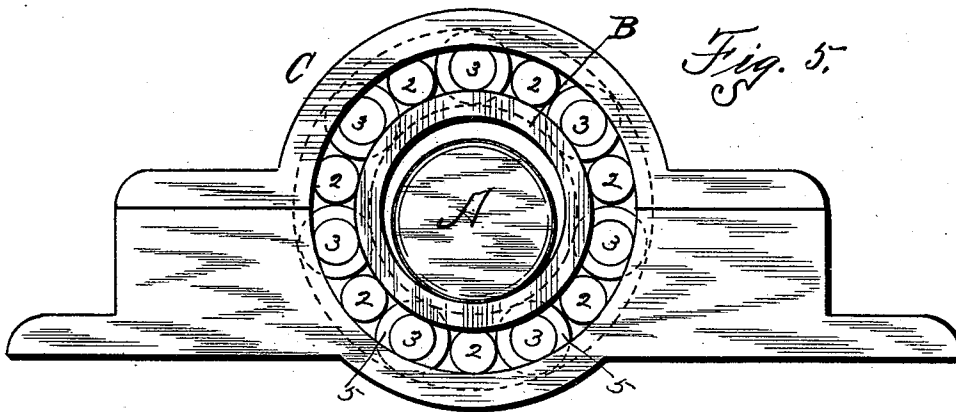


Fig. 5.

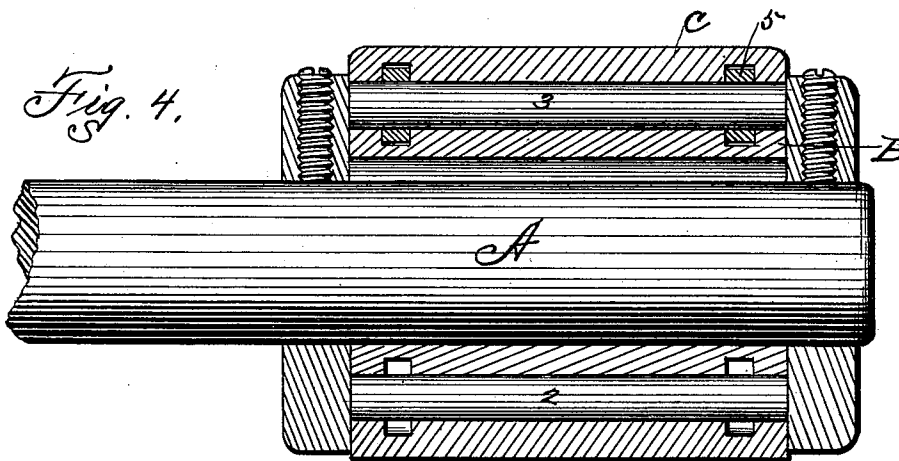


Fig. 4.

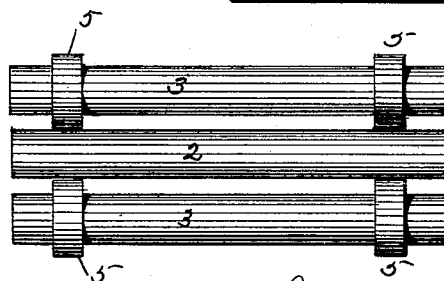


Fig. 6.

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UNITED STATES PATENT OFFICE.

JAMES M. ANDREWS AND MARION A. ANDREWS, OF SYRACUSE, NEW YORK.

JOURNAL-BEARING.

SPECIFICATION forming part of Letters Patent No. 478,533, dated July 5, 1892.

Application filed June 19, 1891. Serial No. 396,841. (No model.)

To all whom it may concern:

Be it known that we, JAMES M. ANDREWS and MARION A. ANDREWS, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Journal-Bearings, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

Our invention relates to anti-friction journal-bearings in which the axle, shaft, or arbor passes loosely through a loose sleeve, the bore of which is larger than such axle, shaft, or arbor, said sleeve being sustained in the casing by multiple rollers bearing against both the casing and ring, and which rollers are kept separate from each other by loose rings mounted upon the alternate rollers adjacent to their ends, each ring bearing against the adjoining roller on each side and said rings fitting loosely in recesses, rabbets, or grooves in the casing and sleeve, but having no bearing directly against either said casing or sleeve.

Our object is to produce a durable anti-friction journal-bearing embodying the foregoing anti-frictional features; and our invention consists in the several novel features of construction and operation hereinafter described, and which are specifically set forth in the claim hereunto annexed. It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical diametrical section showing rabbets in the ends of the casing and of the loose sleeve in which the loose rings upon the anti-friction rollers fit, but have no bearing in the line of their diameters upon either the casing or sleeve. Fig. 2 is a transverse section on line *x x*, Fig. 1. Fig. 3 is an end view of one of the anti-friction rollers, showing the ring thereon. Fig. 4 is a diametrical section showing grooves in the outer casing instead of rabbets, as shown in Fig. 1. Fig. 5 is an end view thereof with the outer cap removed. Fig. 6 is a view of some of the rollers detached, showing their position when in use.

Similar letters and figures of reference indicate corresponding parts.

A is an axle or shaft.

B is a central loose sleeve, through which the axle fits loosely, as shown.

C is a tubular casing, shown as open at both ends.

D and E are the heads or caps, rabbeted around their peripheries or inner edges so as to fit into the ends of the casing and also abut against them.

The sleeve B is provided with exterior annular rabbets 1 in its ends.

The casing C is provided with annular rabbets 4 interiorly in its ends, which are normally directly opposite to the rabbets in the sleeve.

Rollers 2 and 3, cylindrical in form, are interposed between the sleeve and casing and support the sleeve in position central to the casing, and these rollers are in turn supported and maintained in position out of frictional contact with each other by rings 5, mounted upon the ends of the rollers 3, which bear against the rollers 2 between them upon opposite sides and always keep all of the rollers apart a distance equal to the thickness of the ring or its projection beyond the roller upon which it is mounted. These rings lie in the rabbets in the sleeve and casing, but are of less outside diameter than the distance between the bottoms of the rabbets aforesaid when the sleeve is central to the casing, and for this reason they have no bearing inwardly upon the sleeve or outwardly against the casing. The result of this is that their sole function is to separate the anti-friction rollers, so that under no circumstances do said rollers have any contact with each other.

The construction of the caps D and E will necessarily vary according to the style of bearing. Thus in Fig. 1 one is open to receive the shaft and the other is closed over the end thereof, while in Fig. 5, where the casing is sectional, part of each end cap may be integral with each section, in which case the annular rabbet 4 must necessarily be an annular groove at the intersection of the cap with the cylindrical body.

In Fig. 4 annular grooves are shown in the inner face of the casing and the outer face of the sleeve located a short distance from their ends, in which the rings 5 fit loosely, the same as in Fig. 1, and without any outward or inward contact with the casing or sleeve, in which case the rings are slipped inwardly from the ends of said rollers, as shown in Fig. 6,

and perform precisely the same function as in Fig. 1 and in the same manner.

In Fig. 1 the single wall of each rabbet in sleeve and casing and the inner faces of the caps prevent the loose rings from shifting longitudinally, while in Fig. 4 this was prevented by the opposite walls alone, between which the rings lie.

What we claim as our invention, and desire to secure by Letters Patent, is—

In a journal-bearing, the combination, with the axle, of a sleeve encircling it and provided with a central opening of much greater diameter than the axle, recesses exteriorly in the ends of said sleeve, an outer casing having interior recesses, anti-friction rollers interposed

between and bearing against said sleeve and the inner wall of the casing, loose rings upon the alternate rollers bearing against the adjacent rollers and lying in the recesses in the sleeve and fitting loosely in the recesses in the casing out of contact with said interior recesses, and caps, one closing the outer end of the casing and the other fitting loosely over the axle and closing the inner end thereof.

In witness whereof we have hereunto set our hands this 15th day of June, 1891.

J. M. ANDREWS.

MARION A. ANDREWS.

In presence of—

HOWARD P. DENISON,
C. W. SMITH.