No. 717,715. PATENTED JAN. 6, 1903.

A. RAMSAY.

BEARING.

APPLICATION FILED NOV. 13, 1901.

NO MODEL.

Fig. 1

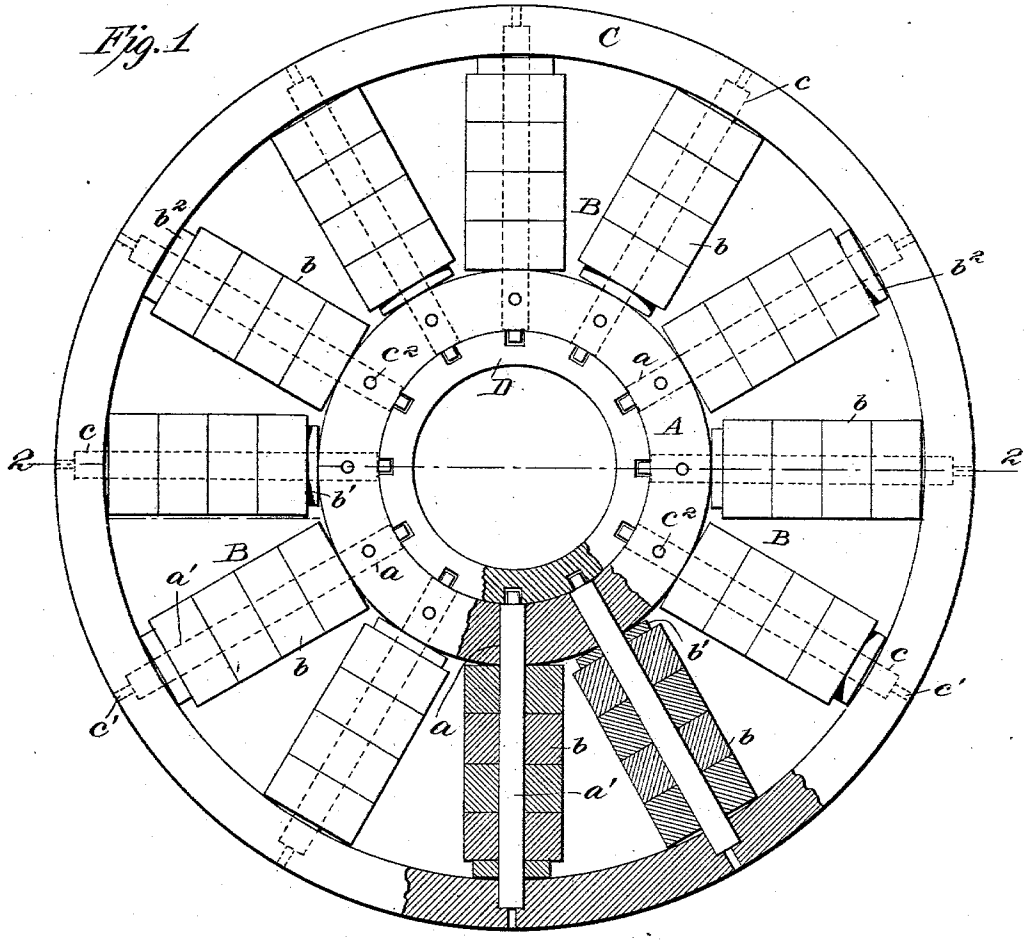
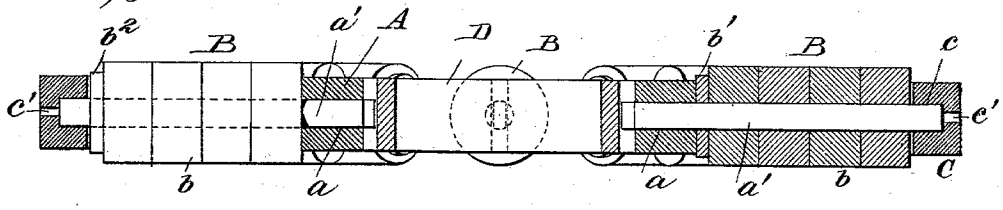


Fig. 2



Witnesses:

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ALLAN RAMSAY, OF CARBONDALE, PENNSYLVANIA, ASSIGNOR TO ELI E. HENDRICK, OF CARBONDALE, PENNSYLVANIA.

BEARING.

SPECIFICATION forming part of Letters Patent No. 717,715, dated January 6, 1903.

Application filed November 13, 1901. Serial No. 82,096. (No model.)

To all whom it may concern:

Be it known that I, ALLAN RAMSAY, a citizen of the United States, residing at Carbondale, in the county of Lackawanna and State of Pennsylvania, have invented a certain new and useful Improvement in Bearings, of which the following is a description.

My invention relates to improvements in roller-bearings, and while capable of efficient use in other forms is designed particularly for use as a thrust-bearing. An embodiment of the invention designed for this particular use will therefore be described therein.

The object of the invention is to provide a roller-bearing which shall consist of but few parts capable of cheap manufacture and easy assemblage.

A further object of the invention is to so construct and assemble the several parts as that broken or worn rolls or parts of rolls may be readily removed and new rolls or parts substituted.

These and other advantages of my improved structure will be apparent from the following description of the invention, taken in connection with the drawings, in which—

Figure 1 is a plan view of a thrust-bearing embodying my invention, and Fig. 2 a horizontal section on the line 2 2 of Fig. 1.

Referring to the drawings, in which similar letters denote corresponding parts, A designates a bearing ring or annulus having radial perforations *a* extending completely through such ring or annulus and acting as journal-bearings for shafts *a'*, on which are mounted rolls B. As herein shown, the rolls B are preferably in the form of independently-rotatable sections *b b*, mounted side by side upon the shafts *a'*. In order that the sections of adjacent rolls shall break joints, and thereby minimize wear upon the bearing-plates (not shown) placed above and below the roller system, I provide each roll or series of sectional rolls upon the same shaft with washers b' b^2, all of these washers being mounted upon the shafts *a'*, the former between a sectional roll *b* and the bearing ring or annulus A and the latter between the outer section of a roll *b* and a peripheral ring or annulus C. The peripheral ring or annulus C is provided with radial perforations *c*, arranged to form journal-bearings for the outer ends of the shafts *a'*. If desired for the purpose of oiling, &c., these perforations may be connected with the exterior of the peripheral ring or annulus C by means of perforations *c'*, of less diameter than the perforations *c*, which form the journals. Also, if desired, the journal-bearings in the central ring or annulus A may be provided with ports or passages c^2, through which a suitable lubricant may be passed to the journal-bearings in said annulus A.

D designates a locking-ring of such size as to snugly fit within the central bearing-ring A, where it may be retained by frictional contact or other suitable means and through which may pass the main shaft or axle, with which the bearing coacts. This locking-ring is provided with peripheral recesses to receive the inner ends of the shafts *a'*.

In assembling the parts heretofore described the shafts *a'* are inserted in the central bearing ring or annulus A, their ends projecting therethrough toward the interior thereof. The rolls, either sectional or in one piece, are then mounted upon the shafts *a'*, the latter being pressed outwardly as the rolls are placed in position. The peripheral ring or annulus C is then placed around the structure so formed and the shafts *a'* (the washers b' and b^2 having been properly arranged, as herein described) passed outwardly from the ring or annulus A, so as to seat the distant ends thereof in the bearings formed in such peripheral ring C. When in this position, the inner ends of the shafts *a'* do not project into the internal opening of the central bearing-ring A; but such inner ends lie substantially flush with the internal wall of such ring. The locking-ring D is then placed in position, thereby firmly but detachably confining the shafts *a'* between such locking-ring and the inner walls of the bearing-recesses in the peripheral ring C.

The invention is not confined to the use of sectional rolls, as such rolls may be made solid and in one piece from end to end, if desired. In this event the washers b' and b^2 may, if desired, be employed in the manner above described in order that such solid rolls may break joints. The construction herein illustrated and described, however, is deemed

preferable, as before stated, for the reason that it minimizes the wear on the plates placed above and below the bearing. Nor is the invention confined to the use of washers placed alternately between the rolls and the central bearing-ring A and alternately between the rolls and the peripheral ring C, for it is obvious that I may, if desired, dispense with such washers, utilizing in place thereof in each roll series roll-sections of greater width adjacent to the central bearing-ring A in alternate roll systems and adjacent to the peripheral bearing-ring C in the remaining roll systems, the effect being the same—*i. e.*, to break joints—as that accomplished by the use of the washers herein described; nor is the invention confined to the use of a locking-ring which shall be held in place by frictional contact, for it is obvious that any other means for firmly but detachably securing such locking-ring in position may be employed, if desired.

What I claim is—

1. In a bearing, the combination with concentric rings, of detachable shafts radially journaled therein, a detachable locking mechanism therefor and sectional rolls mounted upon said shafts, substantially as set forth.

2. In a bearing, the combination with concentric rings, of shafts radially journaled therein, a detachable locking mechanism therefor and rolls mounted upon said shafts, the roll or rolls upon one shaft breaking joints with the roll or rolls upon the next adjacent shafts, substantially as set forth.

3. In a bearing, the combination with concentric rings, of shafts detachably journaled therein, rolls mounted upon said shafts, and means coacting with the inner ends of such shafts for securing the same in position, substantially as set forth.

4. In a bearing, the combination with concentric rings, of shafts journaled in said rings, rolls mounted upon said shafts, and a locking-ring coacting with one of said concentric rings to maintain said shafts in position, substantially as set forth.

5. In a bearing, the combination with a central ring or annulus radially perforated, of shafts the ends of which coact with such perforations, a concentric ring having journal-bearings for said shafts, rolls mounted upon said shafts, and a locking-ring within said central ring detachably securing said shafts in position, substantially as set forth.

6. In a bearing, the combination with concentric rings provided with radial journal-bearings, of shafts mounted in said bearings, a locking-ring for maintaining said shafts in position, and sectional rolls mounted upon said shafts, substantially as set forth.

7. In a bearing, the combination with concentric rings provided with radial journal-bearings, of shafts mounted in said bearings, a locking-ring for maintaining said shafts in position, and sectional rolls mounted upon said shafts, the roll-sections on one shaft breaking joints with the roll-sections on adjacent shafts, substantially as set forth.

8. In a bearing, the combination with concentric rings provided with a port or ports, of shafts radially journaled in said rings, a detachable locking mechanism therefor, and rolls mounted upon said shafts, substantially as set forth.

9. In a bearing, the combination with concentric rings, of shafts radially journaled therein, a detachable locking mechanism therefor, and sectional rolls mounted upon said shafts, said rings having ports communicating with the journals of said shafts, substantially as set forth.

This specification signed and witnessed this 23d day of October, 1901.

ALLAN RAMSAY.

Witnesses:
E. D. YARRINGTON,
M. H. TAPPAN.