O. E. HOVEY.

BEARING.

APPLICATION FILED MAY 13, 1921.

1,436,259. Patented Nov. 21, 1922.

3 SHEETS—SHEET 1.

Fig. 1.

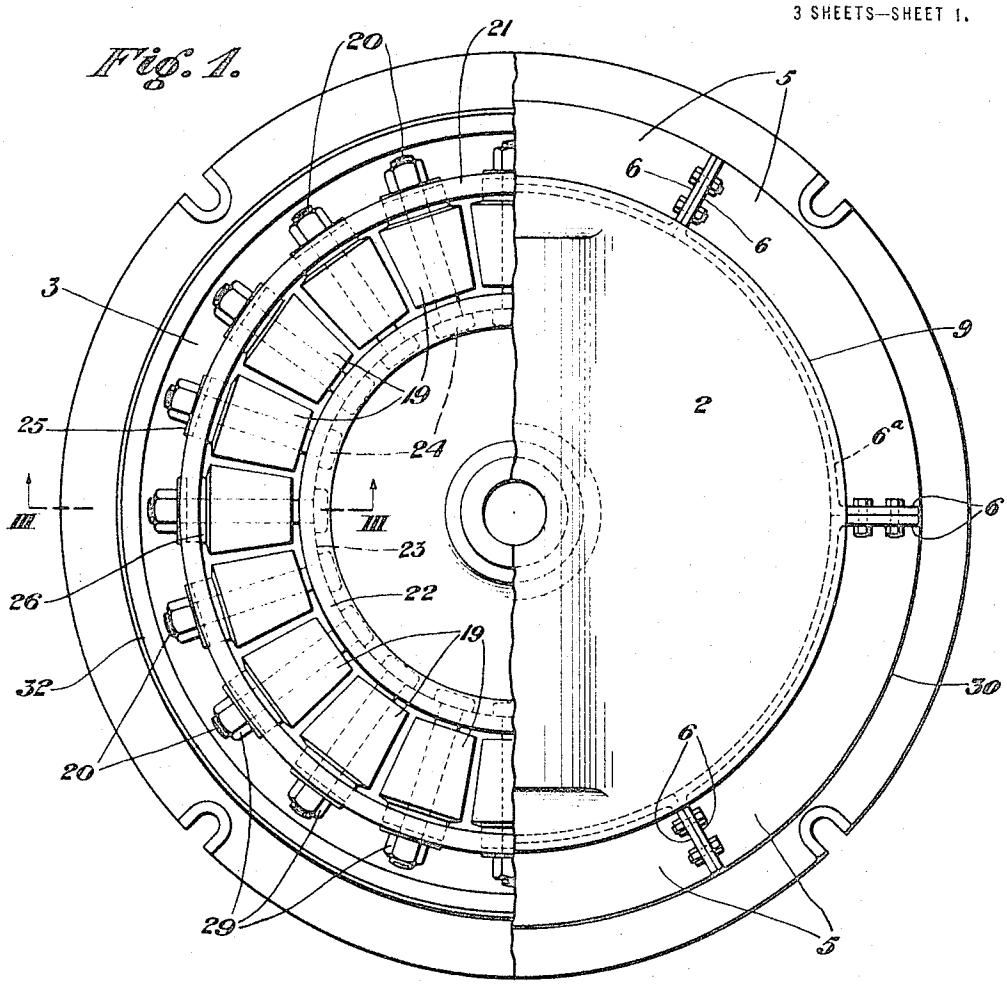
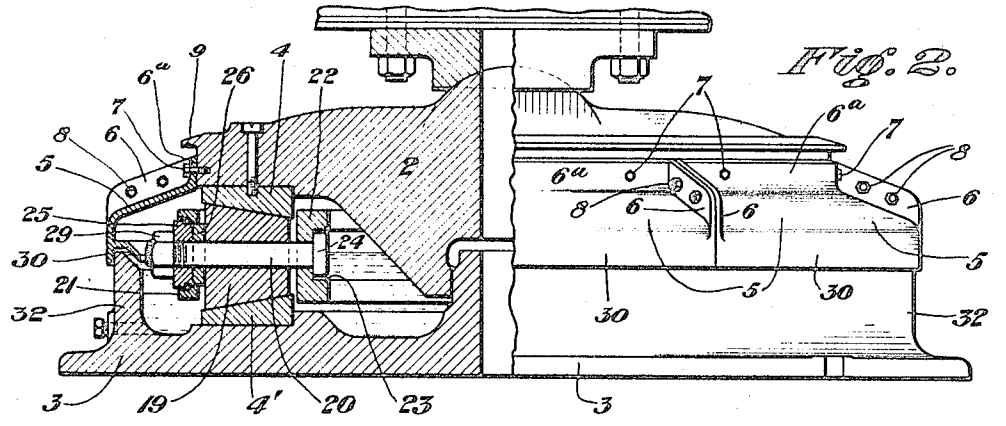


Fig. 2.



Witnesses:
Edwin Trumb

Inventor:
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3 SHEETS—SHEET 2.

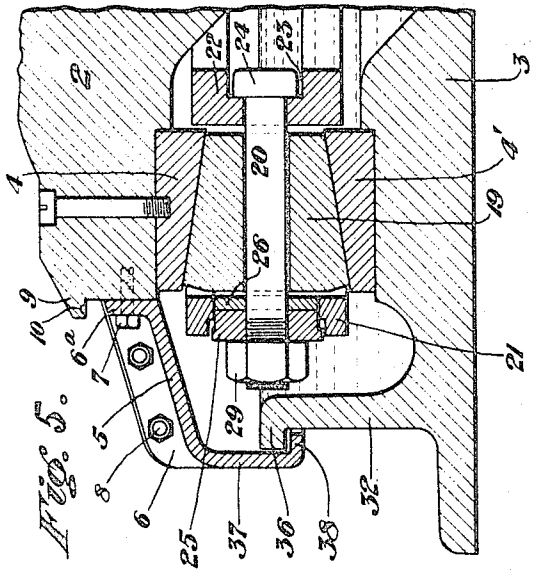


Fig. 5.

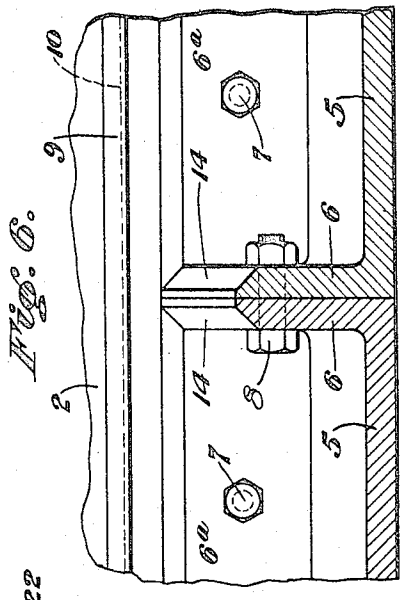


Fig. 6.

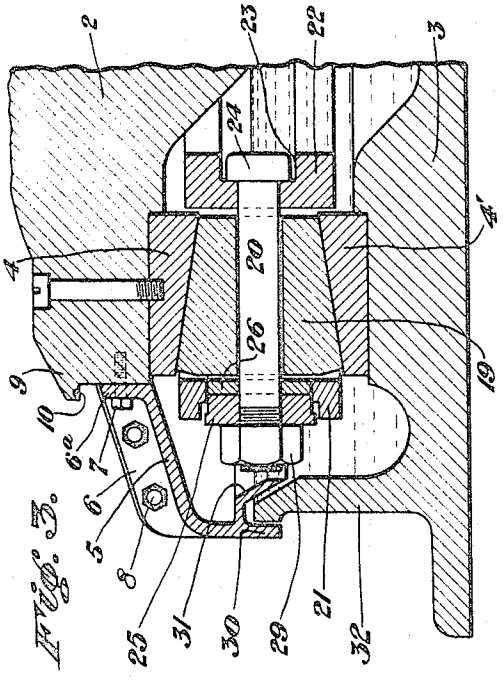


Fig. 3.

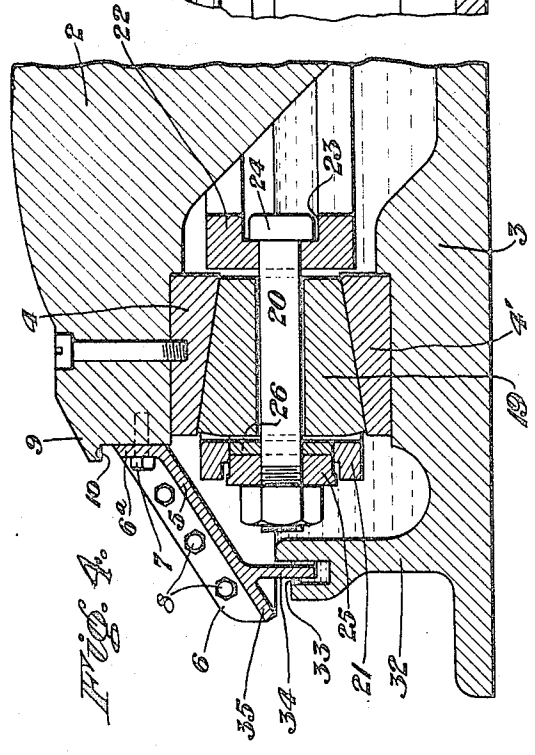


Fig. 4.

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his Attorney

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3 SHEETS—SHEET 3.

Fig. 7.

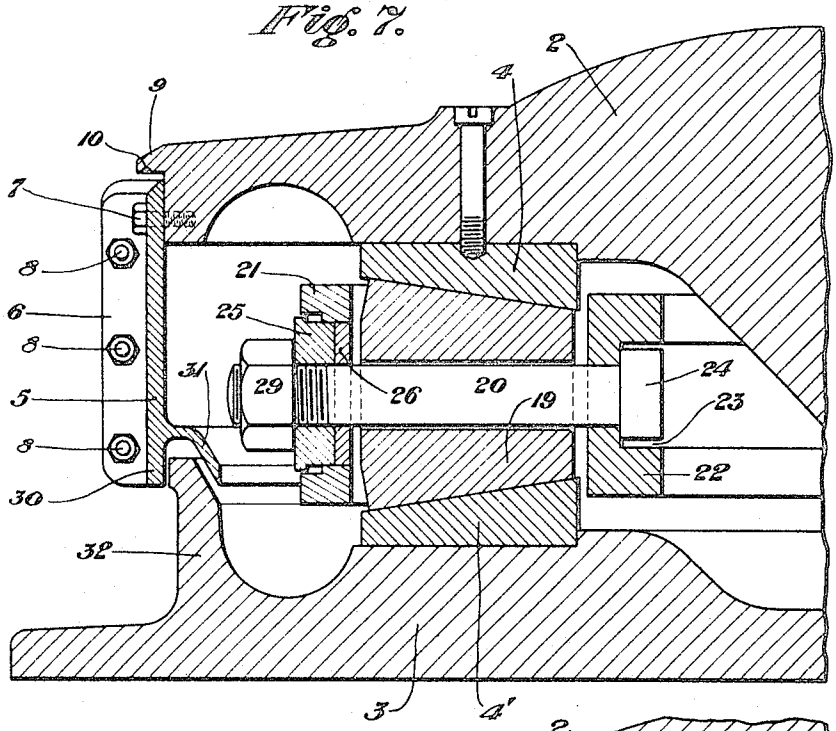
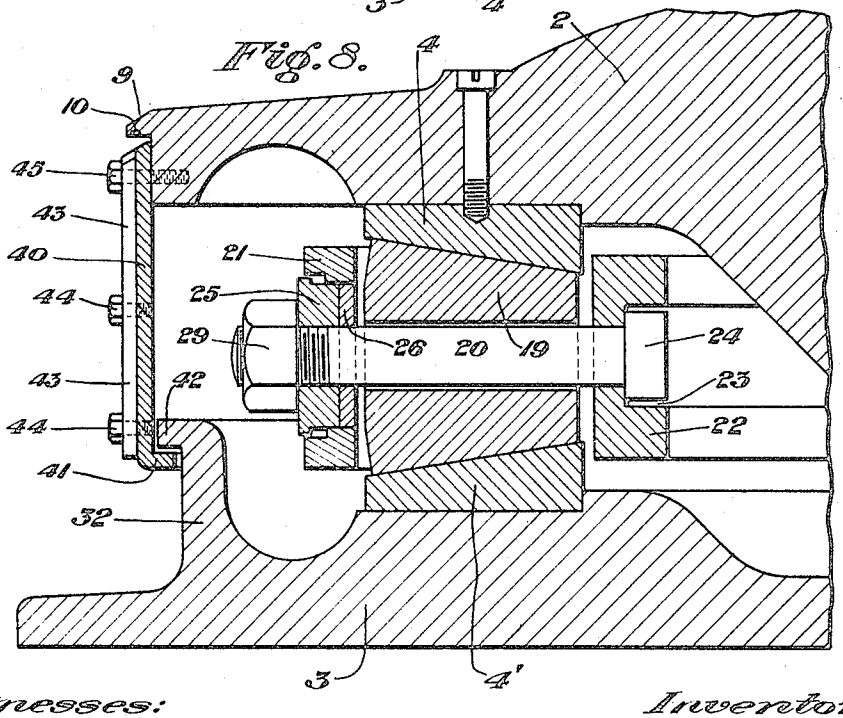


Fig. 8.



Witnesses:
Edwin Trueb

Inventor:
OTIS E. HOVEY,
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D. Anthony Usina
his Attorney.

Patented Nov. 21, 1922. 1,436,259

UNITED STATES PATENT OFFICE.

OTIS E. HOVEY, OF NEW YORK, N. Y.

BEARING.

Application filed May 13, 1921. Serial No. 469,302.

To all whom it may concern:

Be it known that I, OTIS E. HOVEY, a citizen of the United States, residing in the city, county, and State of New York, and whose post-office address is No. 431 Riverside Drive, New York city, New York, have invented certain new and useful Improvements in Bearings, of which the following is a specification.

This invention relates to center bearings and more particularly to center bearing housings for bearings of the type shown in United States Letters Patent No. 1,276,530, dated August 20, 1918, of which I am a joint inventor.

Bearings constructed in accordance with this patent contain adjustable conical rollers, which during manufacture, are carefully adjusted in accurate jigs. After the bearing is finally assembled, the rollers are inaccessible, due to the construction of the upper roller box, and when it becomes necessary to repair or renew any of the rollers the bearing must be dismantled, which necessitates the use of a jig to reset the rollers.

My present invention provides certain improvements applicable to center bearings of the type shown in the aforesaid patent and applicable also to center bearings and similar devices of other designs, the particular advantages of the present invention being referred to in detail hereinafter.

In the drawings:

Figure 1 is a plan view of a center bearing or turntable center partly in section, constructed in accordance with my invention.

Figure 2 is a side elevation partly in section.

Figure 3 is an enlarged detail sectional elevation on the line III—III of Figure 1.

Figures 4 and 5 are similar views showing modified forms of seals between the top and bottom roller boxes.

Figure 6 is a fragmentary sectional elevation showing the joint construction between two of the cover or top roller box sections.

Figures 7 and 8 are detail sectional elevations showing further modifications of my invention.

Referring more particularly to the drawings, the numerals 2 and 3 designate the upper and lower roller boxes or housing parts having conical tread plates 4 and 4', respectively, secured thereto. The main body portion of the upper roller box 2 is of considerably less diameter than the lower box 3 and is extended so as to overlap the lower box by a plurality of cover segments or sections 5, which are provided with upstanding ribs or flanges 6 at each side edge adapted to abut the flanges 6 of the next adjoining segment or section, and secured together by bolts 8 passed through the flanges 6. Each of the segments or sections 5 is also provided with an upstanding flange 6^a at its rear edge adapted to abut the main body of the upper roller box 2, and to be secured to the body of the roller box by bolts 7.

The main body of the upper roller box 2 is extended to form an overhanging lip 9 having a groove 10 in its lower surface to prevent water and other foreign matter from entering between the flanges 6^a of the sections 5 and the box body.

Each of the flanges 6 are beveled as at 14 to form a sloping surface adapted to lead water away from the joints between the flanges.

It will readily be seen that by removing the cover segments or sections 5 by disconnecting them from the upper box body 2 and from each other by taking out bolts 7 and 8, free access may be had to the interior of the bearing, thus facilitating the inspection, adjusting, repairing, etc., of the bearing.

The tread plates 4 and 4' have their bottom and top faces, respectively, beveled and conical rollers 19 are adapted to rotate therebetween. Each of the conical rollers 19 is journaled on a bolt 20 and the bolts 20 extend radially in a horizontal plane through suitable openings in an annular inner thrust ring 22, and outer spacing ring 21. The spacing ring 21 and thrust ring 22 are "live" rings, i. e., they revolve in the roller box or housing with the rollers 19 around the vertical axis of the bearing. The inner surface of the thrust ring 22 has a groove 23 therein, in which the heads 24 of the bolts 20 are located to prevent axial rotation of the bolts.

The axial openings in the outer spacing ring 21, through which the bolts 20 project, are of a diameter greater than that of the

bolts, and secured in each opening are axially adjustable collars or thrust washers 25 and 26, the threaded end of the bolts 20 extending through the axial opening in the thrust washers 25 and 26.

Each of the bolts 20 has a nut 29 threaded thereon which bears against the outer end of the thrust washer 25 so as to resist the end thrust of the conical roller 19. By adjusting the nuts 29 the rollers 19 are adjusted lengthwise.

In assembling the center bearing having a housing constructed in accordance with this invention, the rollers 19 with the annular inner ring 22, spacing ring 21, bolts or pins 20, thrust washers 25 and 26, and adjusting nuts 29 are loosely assembled within the lower roller box or housing 3 and positioned on the conical tread plate 4'. Three or more of the rollers 19 are then carefully adjusted to their proper position, and the upper roller box or housing 4 is then placed over the assembled rollers so that its tread plate 4 will engage upon the adjusted rollers 19. The remaining rollers are then adjusted by tightening the nuts 29, access being gained to the housing through the space adapted to be closed by the cover segments or sections 5. The rollers 19 are adjusted until they engage the upper and lower tread plates 4 and 4', thus the tread plates serve as a jig. The cover segments 5 are then secured in place completing the assembly.

If, after the bearing is assembled, it is desired to adjust the rollers 19 or inspect and clean the mechanism, access is readily had to the interior of the bearing by removing one or more of the cover segments or sections 5. If necessary or advisable, the top half of the housing may be removed and new parts substituted for worn parts. The housing is then again placed in position and the rollers adjusted against the tread plates without the use of a jig.

In Figures 1 to 3 I have shown the cover segments 5 as provided with an outer vertical flange 30 and an inwardly and downwardly projecting inner flange 31 forming an interlock with the vertical or upstanding side wall 32 of the lower roller box or housing 3. The inner flange 31 extends downwardly along the wall 32 an appreciable distance and is normally below the oil level within the housing.

In Figure 4 I have shown a modified form of interlock. The upstanding side wall 32 of the lower roller box is formed thicker adjacent its upper edge and has its top face grooved as at 33. The cover sections 5 each have a downwardly projecting flange 34 adapted to engage in the groove 33 and an overhanging portion 35 extending beyond the upstanding wall 32 to prevent foreign matter entering the groove 33. The groove 33 is adapted to be filled with oil to seal the joint between the sections 5 and the lower housing.

In Figure 5 a further modified form of interlock is illustrated. In this construction the side wall 32 is provided with an outwardly extending flange 36 and the cover sections 5 are provided with a downwardly projecting flange 37 extending below the bottom face of the flange 36 and turned inwardly forming a locking shoulder 38 adapted to be engaged under the flange 36. No oil seal is provided in this construction of interlock. However, the novel form of interlock prevents water and other foreign matter finding its way between the wall 32 and the segments 5.

In Figure 7 I have shown the upper and lower roller boxes 2 and 3 of substantially equal diameter and the side wall 32 of the lower box of less height than that shown in the other figures so as to provide for access from the side of the bearing to adjust the nut 29 on bolt 20 or for other purposes as set forth above. The space between the upper and lower roller boxes is closed by a plurality of cover or side wall segments 5, which are substantially the same construction as the segments 5 described heretofore except that the flange 6[a] is omitted and the bolts 7 pass through the body of the segment. Therefore the description of the construction of Figures 1 to 3 will suffice for the details of this modification and the same reference numerals will be applied.

In Figure 8 I have shown a construction similar to that of Figure 7 in which the upper and lower roller boxes 2 and 3 are of substantially equal diameter. However, in this construction the cover segments 40 are formed from flat plates which have their lower edges bent inwardly at right angles to form a locking flange 41 adapted to engage under or interlock with an outwardly extending flange 42 joined on the upper edge of the side wall 32 of the lower box.

The segments 40 are secured together by plates 43 which are secured across the joints between the plates by bolts 44. Bolts 45 are passed through the plates 43 and segments 40 and into the top roller box 2 to secure the segments in place.

While I have illustrated and described my improvements as pertaining primarily to housings for center bearings, it will be expressly understood that it is not limited to such use since it may be applied to bearing housings generally, and especially to housings for expansion roller bearings.

Various other designs and combinations embodying my invention may be made without departing from my invention as defined in the appended claims.

I claim:—

1. A bearing housing composed of upper

and lower parts, said upper part being of appreciably less diameter than said lower part, and a plurality of segmental cover plates secured to said upper housing part and extending over said lower part.

2. A bearing housing composed of upper and lower parts, said upper part being of appreciably less diameter than said lower part, and a plurality of segmental cover plates adapted to close the space formed by the variance in dimensions of said housing parts, said plates being detachably secured to said upper housing part and to each other.

3. A bearing housing composed of upper and lower parts, said upper part being of appreciably less diameter than said lower part, a plurality of segmental cover plates adapted to close the space formed by the variance in dimensions of said housing parts, said plates having their lower ends flanged to interlock with said lower housing part, and means for detachably securing said plates to said upper housing part and to each other.

4. A center bearing comprising an upper roller box, a lower roller box, said upper box being of less diameter than said lower box, roller bearings mounted between and engaging with said boxes, a plurality of segmental cover plates extending over, and adapted to close the space formed by the variance in dimension of said upper and lower boxes, said plates having their lower ends flanged to interlock with said lower box, and means for detachably securing said plates to said upper roller box and to each other.

5. A bearing housing composed of upper and lower roller boxes spaced apart to form an open space through which access may be had to the rollers within the boxes and a plurality of segmental cover plates detachably secured to said housing and adapted to close said space.

6. A bearing housing composed of upper and lower roller boxes spaced apart to form an open space through which access may be had to the rollers within the boxes and a plurality of segmental cover plates adapted to close said space, said plates being detachably secured to said housing and to each other.

7. A bearing housing composed of upper and lower roller boxes spaced apart to form an open space through which access may be had to the rollers within the boxes and a plurality of segmental cover plates adapted to close said space, said plates having their lower ends flanged to interlock with said lower roller box, and means for detachably securing said plates to said upper roller box and to each other.

In testimony whereof, I have hereunto signed my name.

OTIS E. HOVEY.