

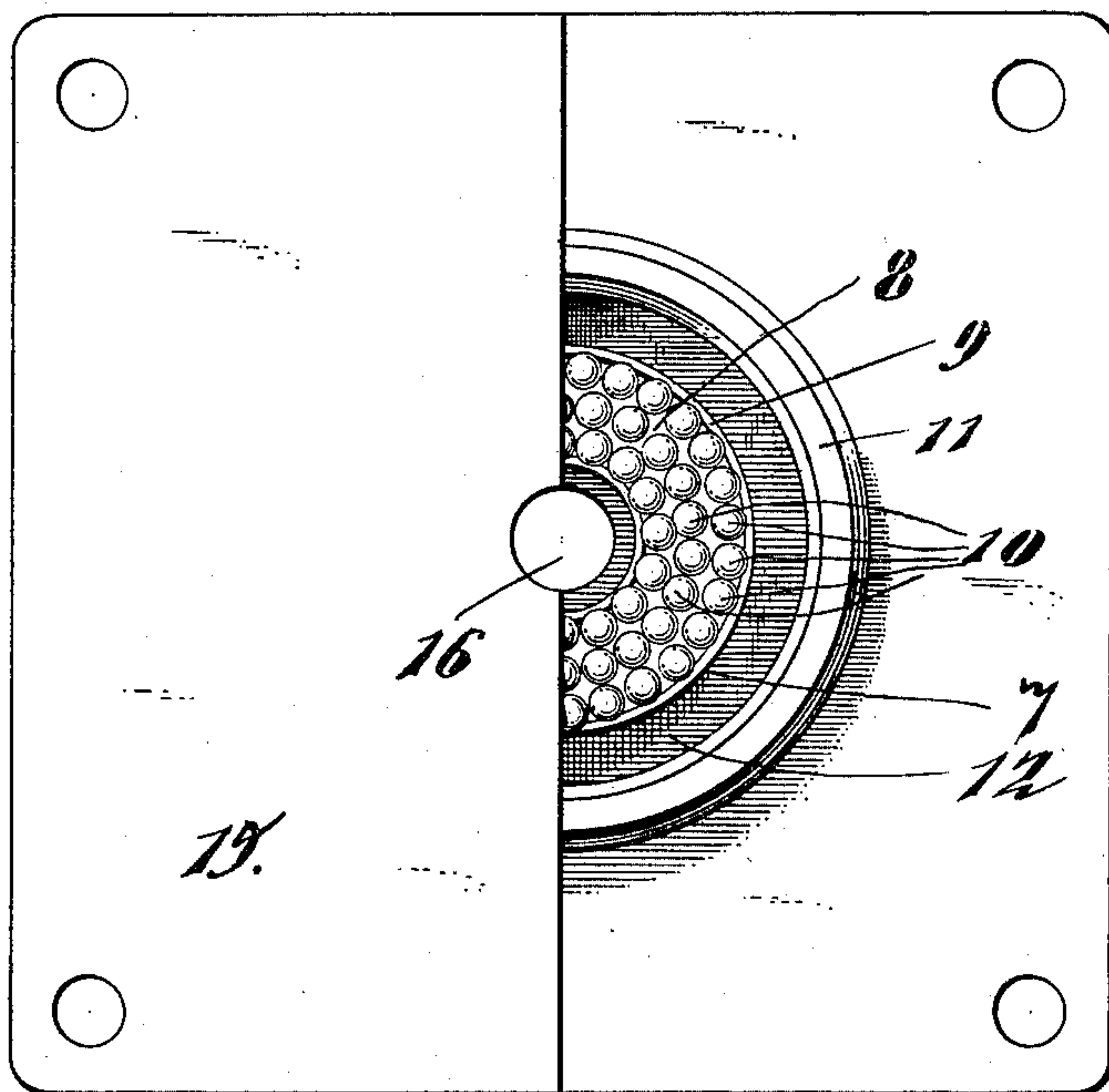
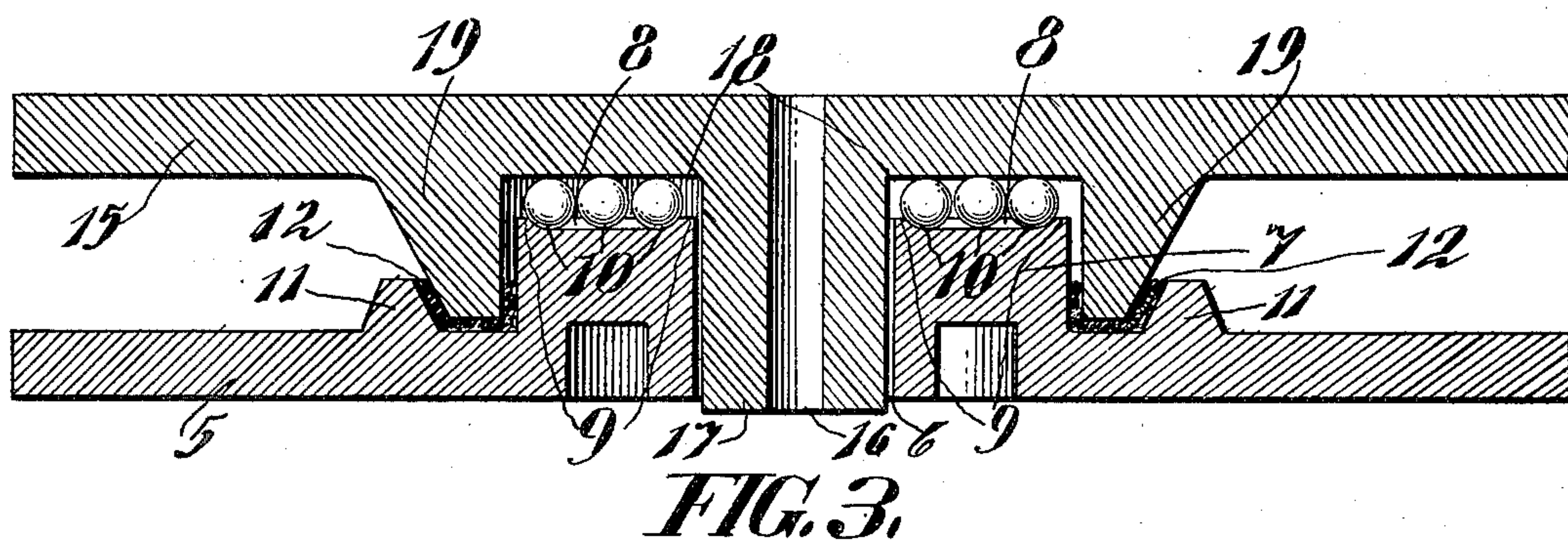
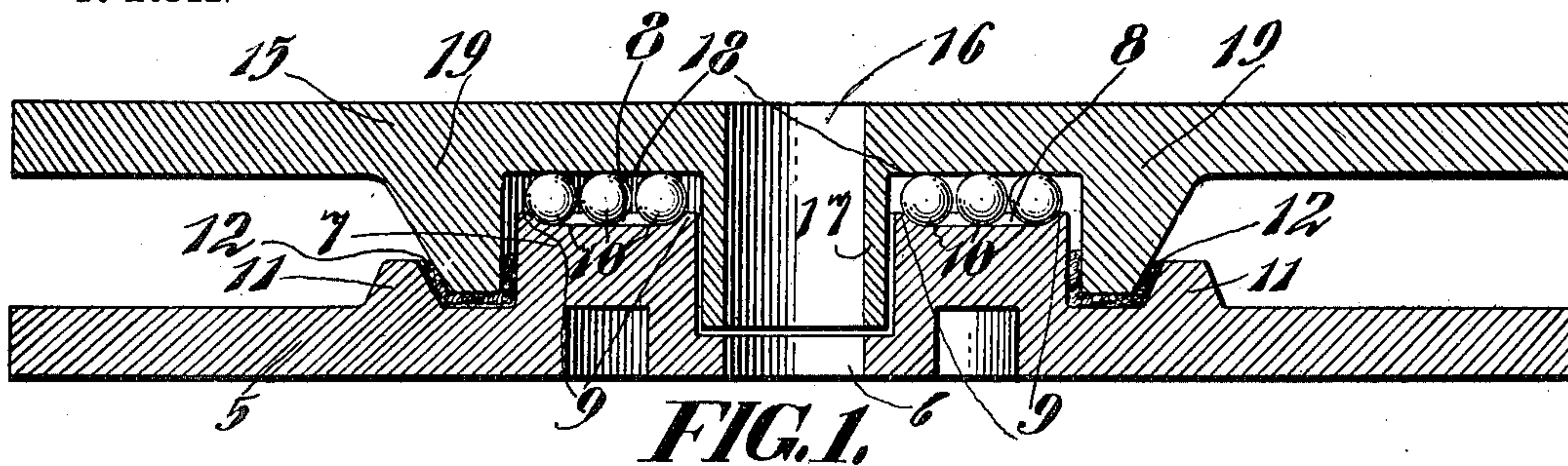
No. 736,539.

PATENTED AUG. 18, 1903.

J. E. NORWOOD.
CENTER BEARING.

APPLICATION FILED OCT. 18, 1902.

NO MODEL.



Witnesses
F. E. Alden.
Harry Ellis Chandler

J. E. Norwood, Inventor.
By
Charles Chandler.
Attorney

UNITED STATES PATENT OFFICE.

JOHN E. NORWOOD, OF BALTIMORE, MARYLAND, ASSIGNOR TO BALTIMORE BALL BEARING COMPANY, OF BALTIMORE, MARYLAND, A CORPORATION OF MARYLAND.

CENTER-BEARING.

SPECIFICATION forming part of Letters Patent No. 736,539, dated August 18, 1903.

Application filed October 18, 1902. Serial No. 127,850. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. NORWOOD, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Center-Bearings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the bearings employed between the bodies and trucks of railway-cars, and more particularly to the center-bearings therefor; and it has for its object to provide a construction which may be manufactured at a minimum cost in which the parts will be held securely against displacement in action, while they may be easily separated without loss of the bearing-bodies when it is desired to raise the body of the car from the truck.

Other objects and advantages of the invention will be understood from the following description.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a vertical section taken centrally through the bearing, the balls being shown in elevation. Fig. 2 is a top plan view of the lower bearing-plate. Fig. 3 is a transverse section showing a modification.

Referring now to the drawings, there is shown a center-bearing including a lower bearing-plate 5 of annular form having a central opening 6, which receives the usual king-bolt.

The central portion of the plate 5 is of much greater thickness than the remaining portion, so that the central perforation is surrounded by an annular flange 7, on the upper face of which is formed the lower race 8 of the bearing. The upper face of the flange 7 is chilled or otherwise hardened and is ground or otherwise formed smooth and is slightly concaved, there being a slight wall 9 at the inner and outer edges, respectively, of the flange to prevent the balls 10 or other friction devices from rolling from the race when the bearing-

plates are separated, as when lifting the body of the car from the truck.

Surrounding the flange 7 is a second flange 11, concentric therewith and spaced therefrom, so that there is an annular channel 12 between the two, the flange 11 being of lesser height than the flange 7.

In connection with the lower bearing-plate 5 there is employed an upper bearing-plate 15, having also a central perforation 16 of the same diameter as the perforation 6 to receive the king-bolt, and surrounding the perforation and on the under face of the plate is formed a cylindrical boss 17 of a length and of such dimensions as to fit snugly within the countersink of the perforation or opening 6, while permitting of rotation of the plates with respect to each other.

The face of the plate 15 directly surrounding the boss 17 forms the upper race of the bearing and is chilled or otherwise hardened and is smoothed up to form an even bearing-surface, and exterior to the upper race (shown at 18) there is formed a depending annular flange 19, which engages around the flange 7 and in the channel 12, in which latter it fits loosely and terminates short of the bottom thereof.

In practice the plate 5 is secured to the truck-bolster, while the plate 15 is secured to the body-bolster of the car, and before placing the body upon the truck a quantity of loose balls or rollers are placed upon the lower race within the inclosure of the wall thereof. The body is then lowered into place, so that the boss will take into the central opening of the plate 5 and the flange 19 will engage the channel 12.

In the channel 12, in contact with the flange 19, may be placed waste, sand, or other material which will not interfere with the action of the truck, but will prevent dust from passing to the races, the countersinking of the opening 6 and the corresponding formation of the boss 17 preventing access of dust, which might work up or down along the king-bolt.

It will be noted that in the present construction there is provided a simple yet efficient form of bearing in which displacement

of the parts is prevented in action and in which the balls in action are completely incased, the entire structure, with the exception of the friction devices, consisting of but two 5 castings.

What is claimed is—

1. A center-bearing comprising upper and lower plates, the lower plate having a central countersunk perforation and a surrounding 10 ing flange having a race on its upper face, and the upper plate having a central boss fitted rotatably in the countersink of said perforation and having a central perforation through the boss, the upper plate having a 15 depending flange surrounding the flange of the lower plate and a race between it and the boss, and a plurality of antifriction devices disposed loosely between the races and movable laterally and longitudinally thereover.

2. A center-bearing comprising upper and lower plates, one of which has a central countersunk perforation and a surrounding 20 flange having a race, and the other plate having a central boss fitted rotatably in the countersink of the perforation and having a central perforation through its boss, the last-named plate having a flange surrounding the 25 flange of the first-named plate and having a race between it and the boss, and a plurality of antifriction devices disposed loosely between the races and movable laterally and 30 longitudinally thereover.

3. A center-bearing comprising upper and lower plates, the lower plate having a central 35 perforation which is countersunk at its upper end, a flange surrounding the perforation and having its upper face provided with inner and outer walls and a race therebetween

and a second flange concentric with and spaced from the first flange to form a channel 40 therebetween, the upper plate having a central depending boss rotatably fitted in the countersink of the perforation of the lower plate the upper plate having also a depending 45 flange engaging the channel of the lower plate and spaced from the walls thereof to receive a packing and having a race between it and the boss, and friction devices disposed between the races.

4. A center-bearing comprising upper and 50 lower plates having annular races disposed one above the other, said plates having central openings to receive a bolt to hold the races in axial alinement and a plurality of 55 antifriction devices disposed loosely between the races and movable freely in all directions over the races.

5. A center-bearing comprising upper and lower plates having annular races disposed 60 one above the other, said plates having central openings to receive a bolt to hold the races in axial alinement, a plurality of antifriction devices disposed loosely between the 65 races and movable freely in all directions over the races, and means for holding the antifriction devices against lateral displacement from the races, said means being spaced apart greater than a plurality of diameters of anti- friction devices.

In testimony whereof I affix my signature 70 in presence of two witnesses.

JOHN E. NORWOOD.

Witnesses:

WM. D. ALLEN,
W. J. HARDY.