

No. 618,854.

Patented Feb. 7, 1899.

C. N. DUTTON.
ADJUSTABLE BEARING.

(Application filed Oct. 27, 1897.)

(No Model.)

3 Sheets—Sheet 1.

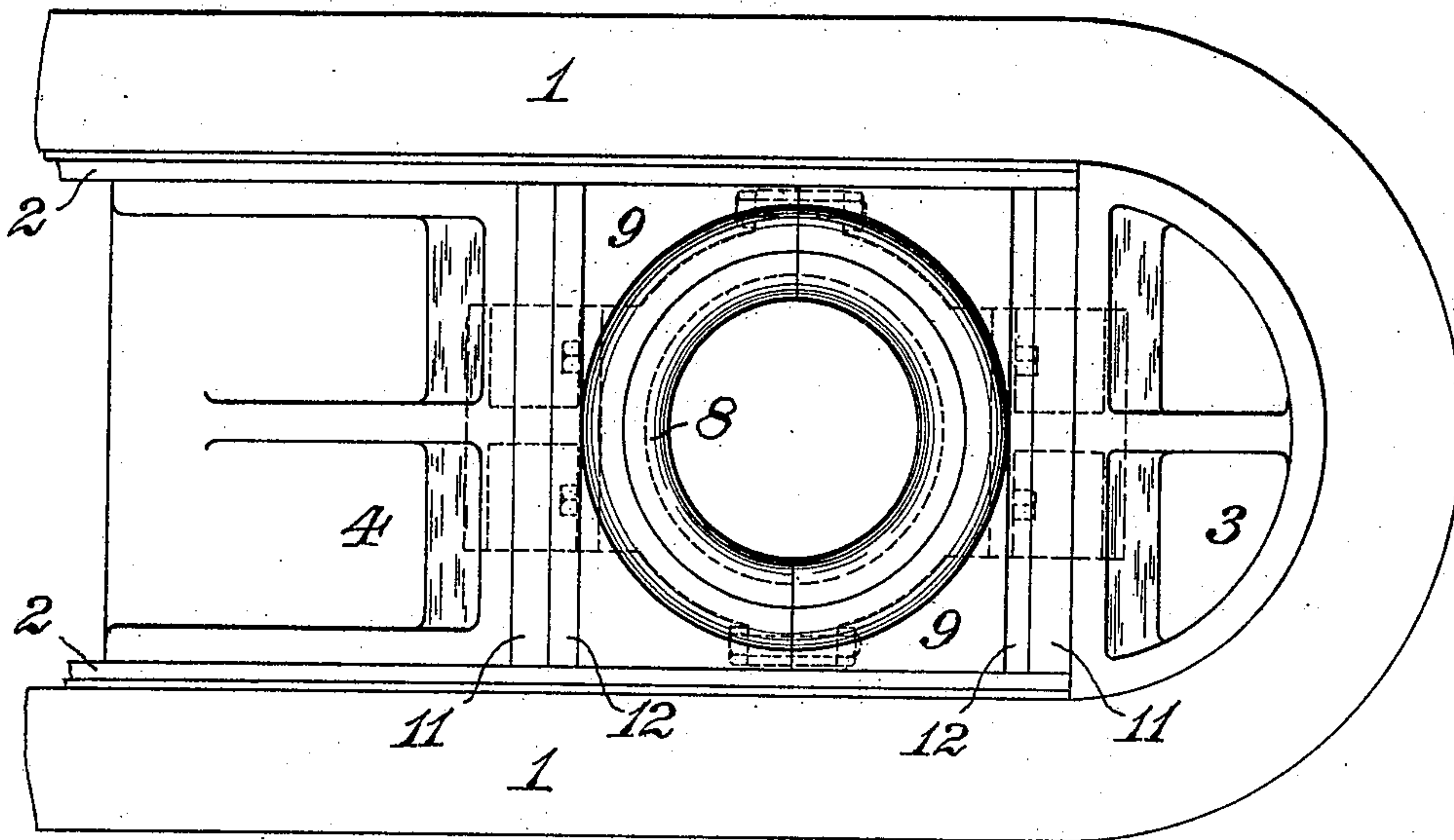


FIG-2-

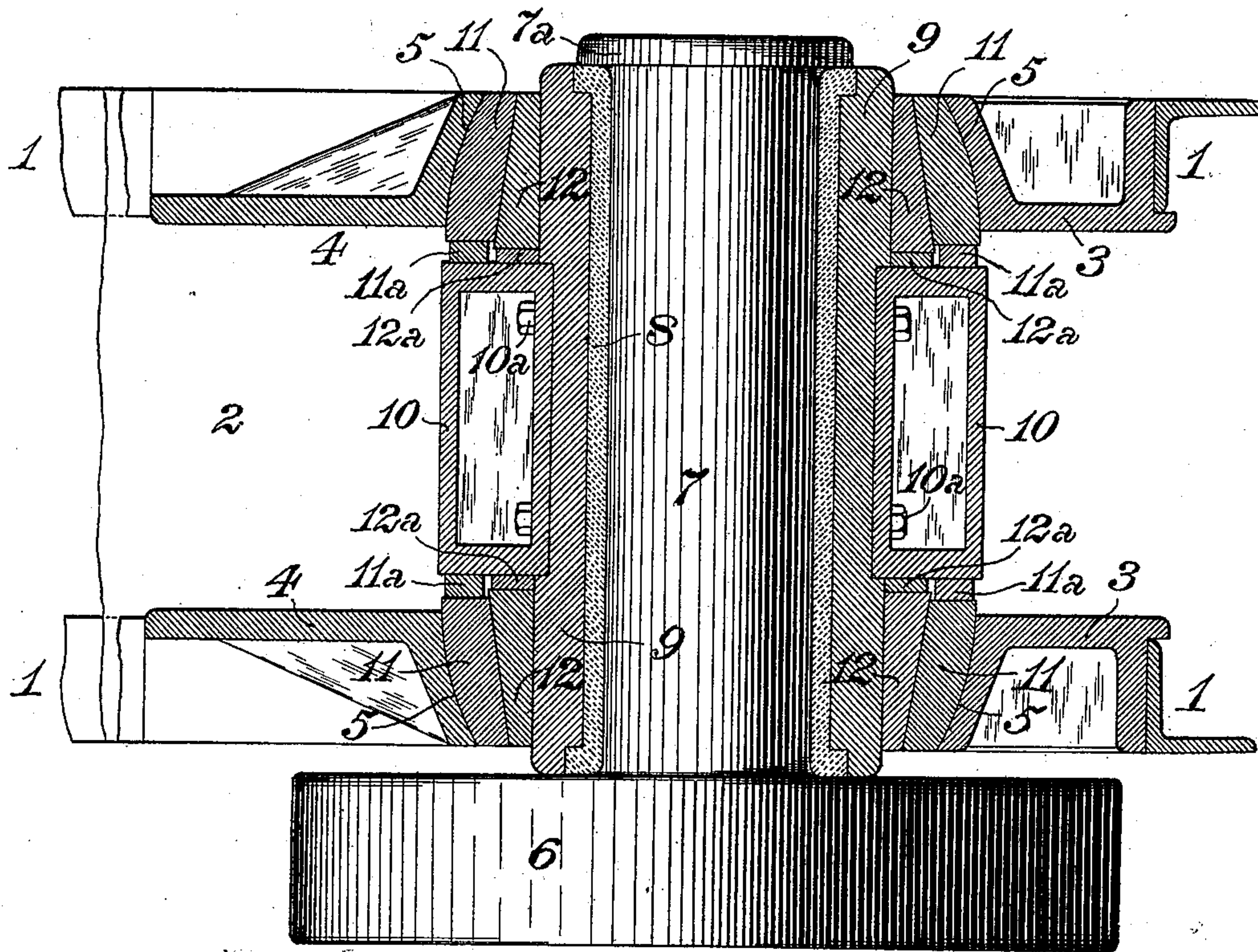


FIG-1-

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FIG-3-

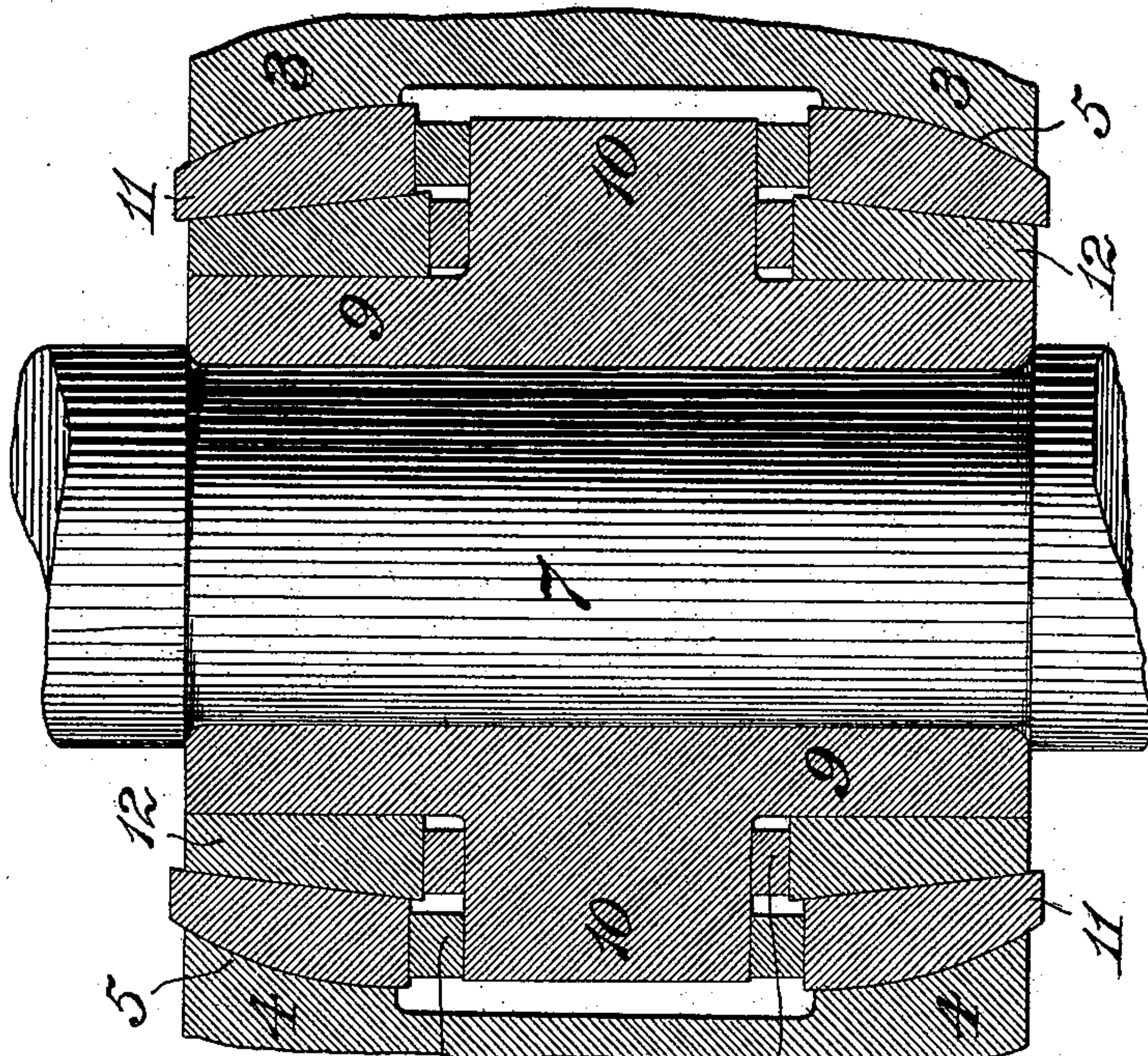
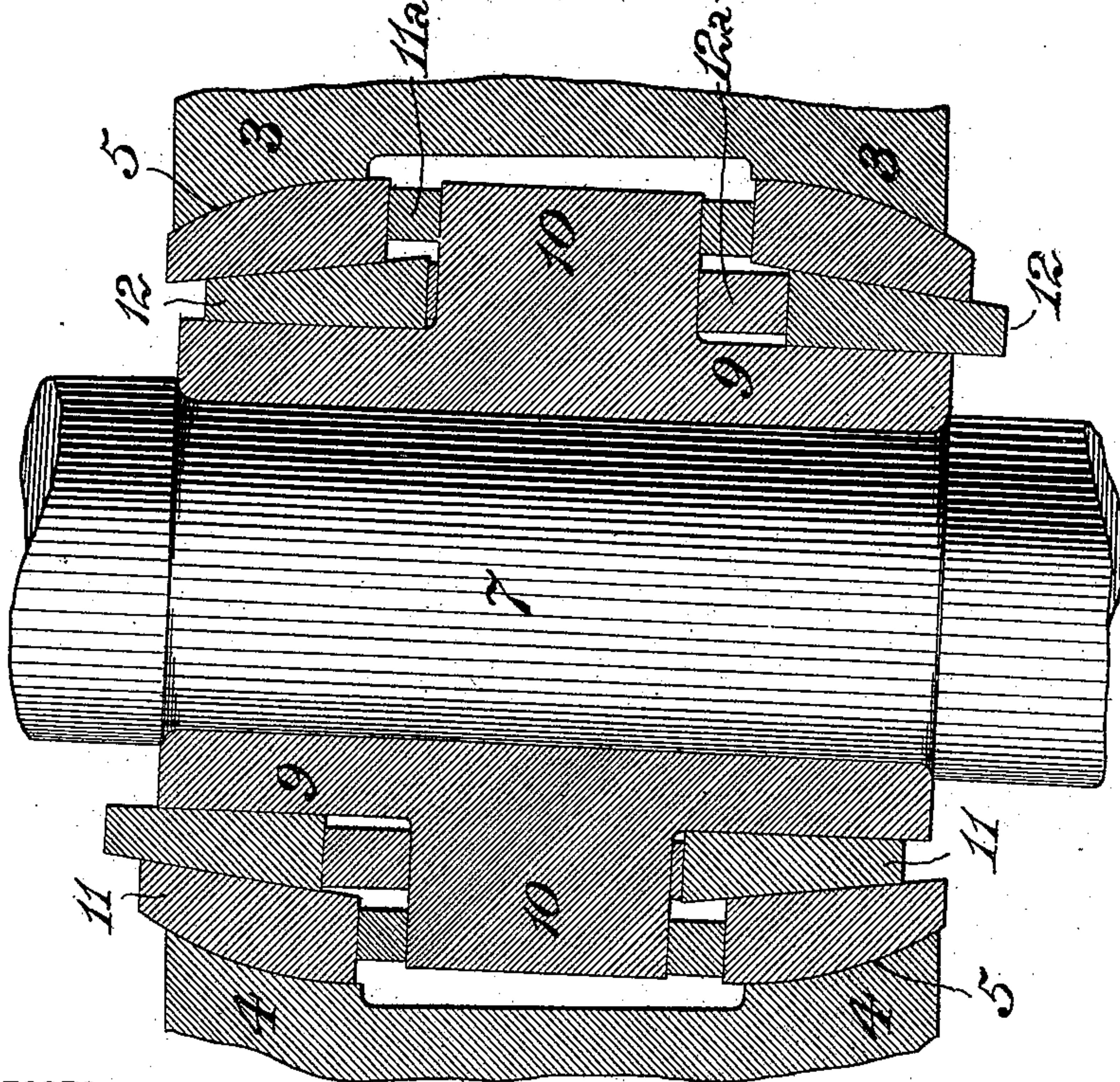


FIG-4-



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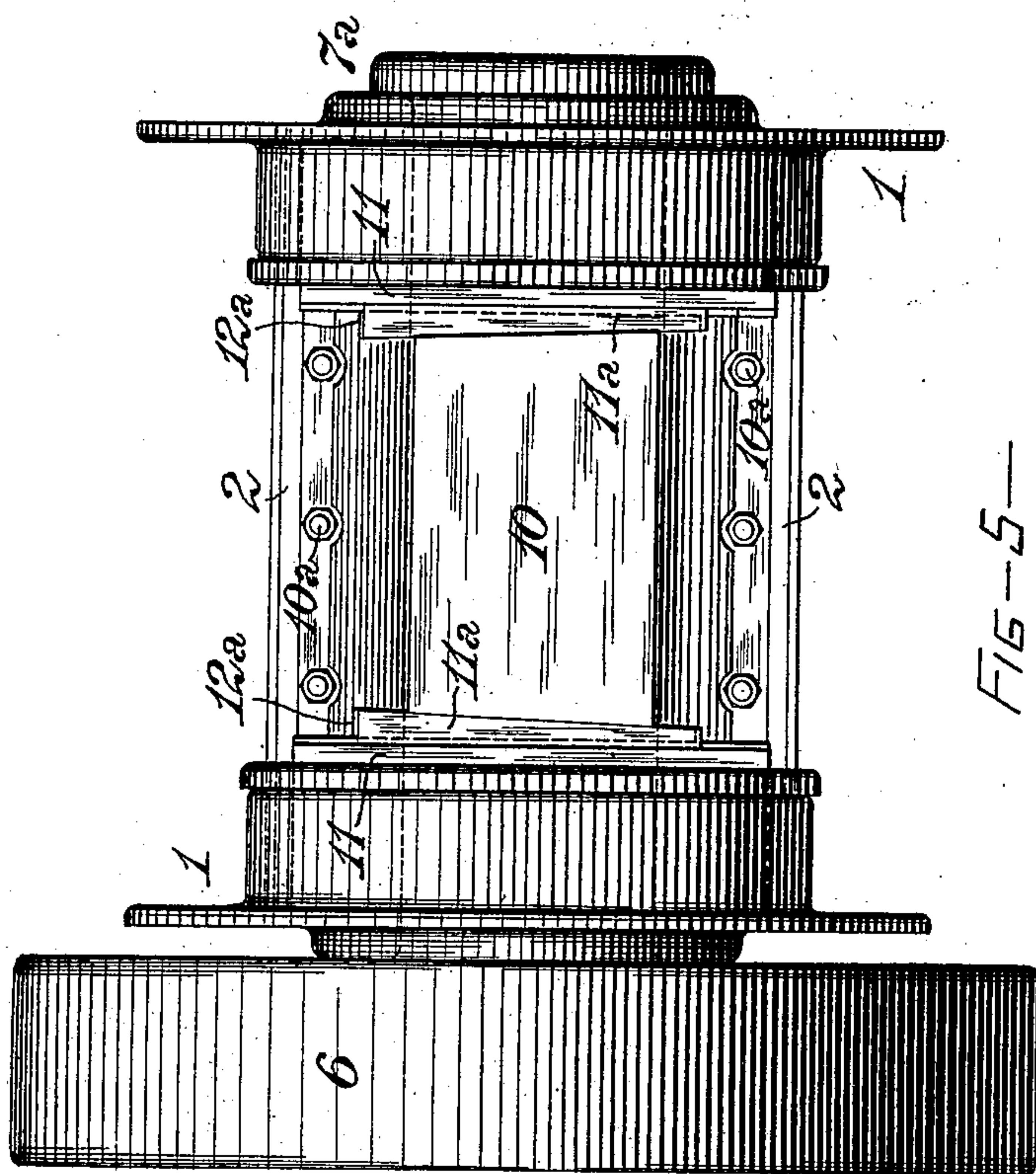
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3 Sheets—Sheet 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHAUNCEY N. DUTTON, OF NEW YORK, N. Y.

ADJUSTABLE BEARING.

SPECIFICATION forming part of Letters Patent No. 618,854, dated February 7, 1899.

Application filed October 27, 1897. Serial No. 656,519. (No model.)

To all whom it may concern:

Be it known that I, CHAUNCEY N. DUTTON, of the city, county, and State of New York, have invented a certain new and useful Improvement in Adjustable Bearings, of which improvement the following is a specification.

My invention relates more particularly to bearings for the shafts of retaining-wheels employed in the connection of one comparatively large and heavy body to another, with the capacity of a limited degree of relative movement under rolling friction, as exemplified in the means for connecting an aqueduct and lock which are set forth in an application for Letters Patent for improvement in aqueducts filed by me October 7, 1897, Serial No. 654,341. My present invention is, however, not limited to such specific application, but may be utilized without change of structural or operative principle in the bearings of wheels of other constructions or mechanisms.

The object of my invention is to provide a shaft-bearing by means of which the slipping of the wheel from operative contact with the member on which it bears will be rendered impossible without rupture of the supporting-frame and all probable ranges of adjustment shall be effectually provided for.

The improvement claimed is hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a horizontal central section through an adjustable bearing, illustrating an application of my invention; Fig. 2, a side view in elevation with the wheel removed; Figs. 3 and 4, horizontal sections through an adjustable bearing in which the bearing-block and distance-block are formed integral with the bearing-sleeve, the shaft being shown in line with the axis of the bearing and at angle thereto, respectively; and Fig. 5, a side view in elevation.

In the practice of my invention the bearing is mounted and supported in a suitable frame, which in this instance is shown as formed of two angle-bars 1 1, which are bent into U form and surround the bearing at each end thereof, said bars being connected by plates 2 2 above and below the horizontal axial plane of the shaft, so as to form a stiff bearing-head. Housing-blocks 3 4 are fixed in each

of the frame-bars 1 1, and the inner faces 5 of the housing-blocks or those next the shaft are turned out curvilinearly or in the form of a surface of revolution about an axis transverse to the bearing frame and shaft, preferably a cylindrical surface.

The shaft 7, upon which the wheel 6 is suitably secured, is journaled in a bearing bushing or sleeve 8, which is made in two parts, said sleeve fitting between a shoulder on the wheel and a collar 7^a on the shaft. When the bearing-sleeve is placed upon the axle, it is lined to an easy-running fit, and a bearing-block 9, which is made in two parts and bored to fit the bearing-sleeve 8, is bolted about said sleeve and the shaft 7 and lined thereon, so that the shaft may turn without undue friction and at the same time be free from slackness or lost motion. The two sections of the bearing-block fit closely between the plates 2 2 of the frame, which are faced to receive and fit the sections of the bearing-block. After the wheel is secured upon the shaft and the bearing-sleeve and bearing-block fitted upon the shaft the shaft, together with the sleeve and block, is pushed into the space between the plates 2 2.

The shaft 7 is adjusted so that the wheel 6 shall run truly in desired position or relation to the working parts which function with it by adjustable main gibs 11 and backing-gibs 12, which are fitted between the curvilinear bearing-faces 5 of the housing-blocks 3 4 and the sides of the bearing-block 9 at each end thereof. The gibs 11 and 12, which are provided to perform the functions of wedging members, are disposed in pairs on each side of the shaft, the outer or main gibs 11 having their outer faces curved conformably with the bearing-faces 5 of the housing-blocks 3 4 and their inner faces inclined to the vertical axial plane of the bearing. The inner or backing gibs 12 have their outer faces inclined correspondingly with the adjacent faces of the main gibs 11, and their inner faces, which abut against the sides of the sections of the bearing-block 9, are parallel with the vertical axial plane of the bearing, so that the gibs 11 may adjust against the housing-blocks, with the angles included between them and the sides of the bearing-block equal to the angle of the backing-gibs 12, and that the latter may fit tightly

between the main gibs and the bearing-block and wedge all the parts together.

Lateral projections or distance-blocks 10 10 are shown in Fig. 1 as made separate from and fitting in lateral recesses in the sections of the bearing-block 9 and as connected thereto by bolts 10^a, while in Figs. 3 and 4 they are formed integral with the bearing-block and bearing-bushing sections. For the purpose of preventing the gibs 11 and 12 from backing out or loosening the ends of the distance-blocks are inclined relatively to a vertical transverse plane of the bearing, and supplemental gibs 11^a 12^a are respectively interposed between the inclined ends of the distance-blocks and the adjacent vertical ends of the gibs 11 12.

In assembling the parts the bearing-sleeve and bearing-block are adjusted upon the shaft and inserted with the shaft in the frame between the plates 2 2 and the housing-blocks 3 4, and the shaft is adjusted so that the wheel may run in proper relation to the member on which it bears by carefully adjusting and tapping the several members of the four pairs of gibs 11 12, so that all their contact-faces come to a proper bearing, any misalignment being taken up by adjusting the gibs one upon another, as shown in Figs. 3 and 4, which illustrate the shaft as in and out of line, respectively, with the axis of the bearing. After the primary gibs are in position and driven home to a perfect bearing the distance-blocks 10, if made separate from the bearing-block sections, are secured thereto by the bolts 10^a, and the supplemental gibs 11^a 12^a are inserted and driven to a bearing between the ends of the distance-blocks and the adjacent faces of the respective primary gibs and may be secured, if considered necessary or desirable, in any of the ordinary ways well-known to mechanics. Any other known means of holding the gibs 11 12 in adjusted position—as, for example, straight liners made a tight fit by bolts or screws—may be employed if preferred.

It will be seen that it is impossible for the wheel to slip from its normal bearing on the member with which it makes operative contact so long as the frame, which is of course made of proper strength, remains intact and also that adjustment within any probable range and direction is provided for. It is also obvious that if greater range of adjustment be desired it is only necessary to provide new gibs of proper form.

I claim as my invention and desire to secure by Letters Patent—

1. The combination, substantially as set forth, of a supporting-frame, having two pairs of opposite curvilinearly-turned bearing-faces, a bearing-block fitting in said frame, a shaft journaled in said bearing-block, adjustable main gibs interposed between the sides of the bearing-block and the curvilinearly-turned bearing-faces, at each end of the bearing-block, and backing-gibs interposed between the adjustable main gibs and the bearing-block.

2. The combination, substantially as set forth, of a supporting-frame, having two pairs of opposite curvilinearly-turned bearing-faces, a bearing-block fitting in said frame, a shaft journaled in said bearing-block, and pairs of gibs interposed between the sides of the bearing-block and the curvilinearly-turned bearing-faces, at each end of the bearing-block, the members of said pairs abutting by inclined faces, and the outer members having faces curved conformably with the bearing-faces of the frame.

3. The combination, substantially as set forth, of a supporting-frame composed of side bars and connecting-plates, housing-blocks fixed to the frame-bars and having curvilinearly-turned bearing-faces, a bearing-block supported between the frame-plates and between said bearing-faces, a shaft journaled in said bearing-block, pairs of gibs interposed between the sides of the bearing-block and the bearing-faces of the housing-blocks, at each end of the bearing-block, the members of said pairs abutting by inclined faces, and the outer members having faces curved conformably with the bearing-faces of the housing-blocks, and retaining devices for holding said gibs in adjusted position.

4. The combination, substantially as set forth, of a supporting-frame, having curvilinearly-turned bearing-faces, a bearing-block fitted in said frame, a shaft journaled in said bearing-block, pairs of main gibs interposed between the sides of the bearing-block and the curvilinearly-turned bearing-faces, at each end of the bearing-block, the members of said pairs abutting by inclined faces, and pairs of supplemental gibs, each member of which is interposed between one of the main gibs and an inclined end face on a lateral projection on the bearing-block.

CHAUNCEY N. DUTTON.

Witnesses:

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