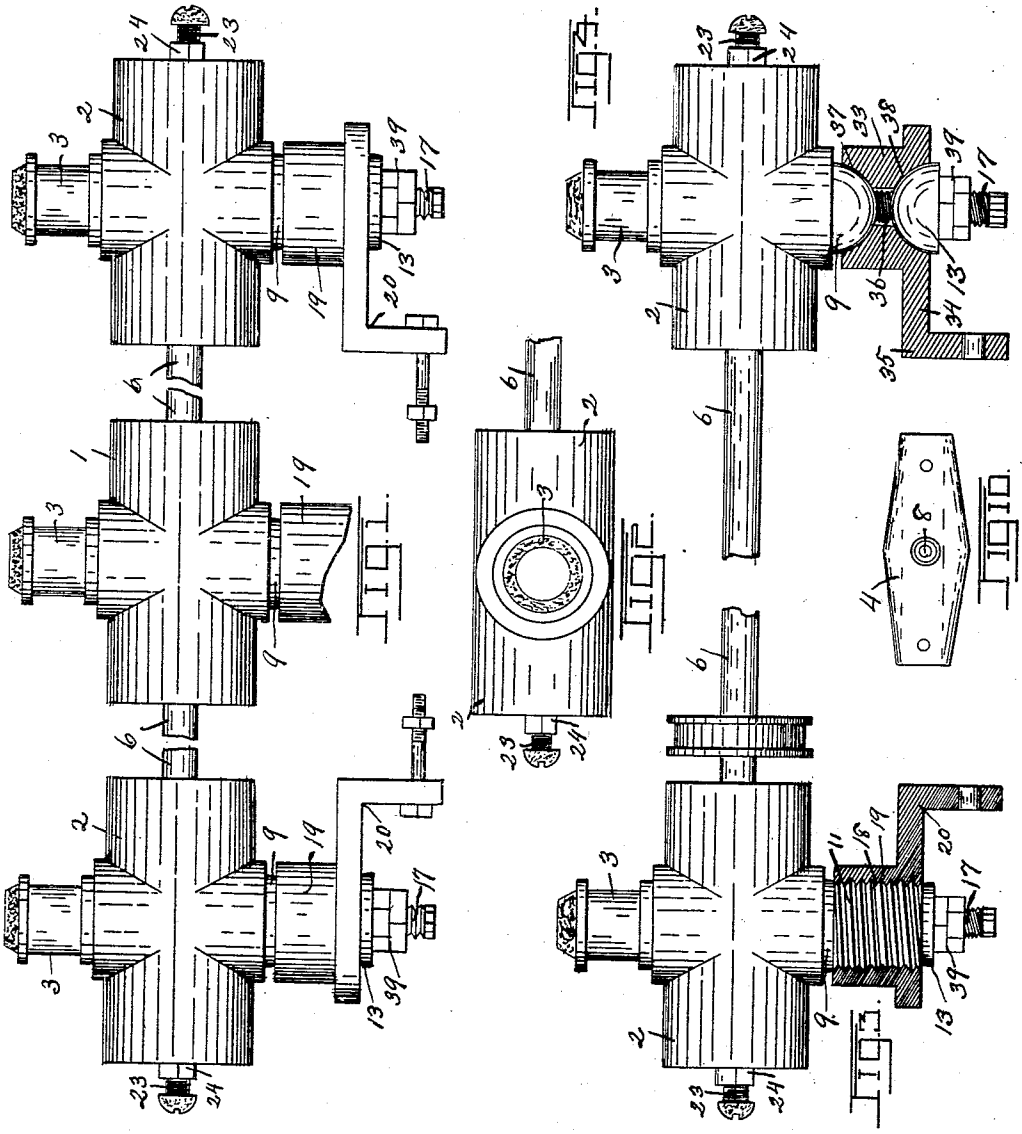
No. 684,183. Patented Oct. 8, 1901.

M. E. BRINSER.

JOURNAL BEARING.

(Application filed June 20, 1900.)

(No Model.) 3 Sheets—Sheet 1.



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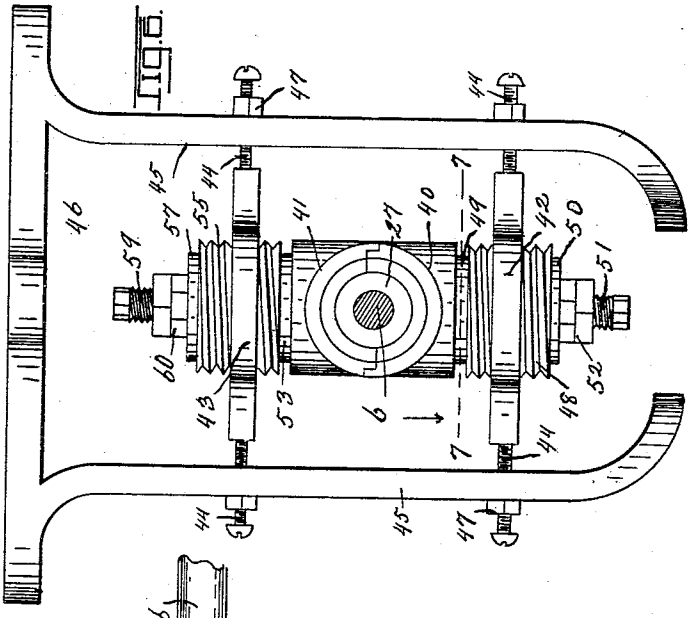


Fig. 6.

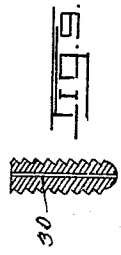


Fig. 9.

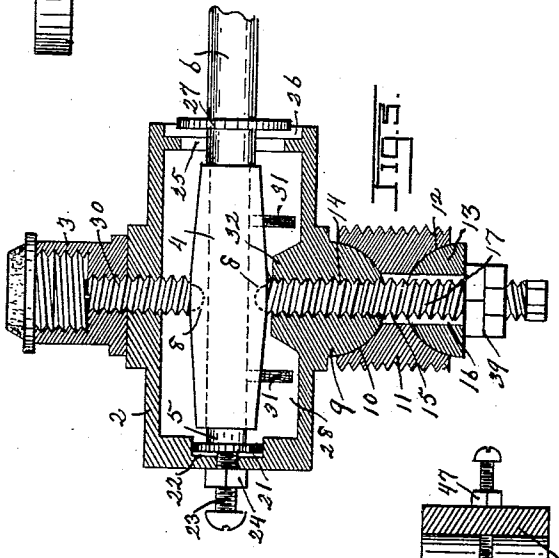


Fig. 5.

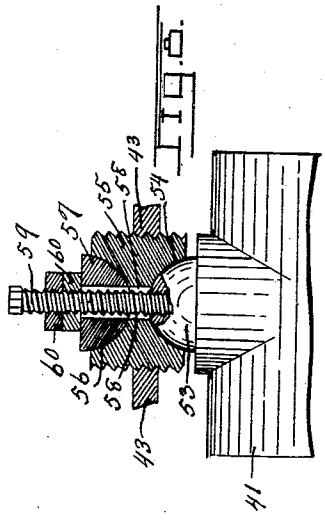


Fig. 8.

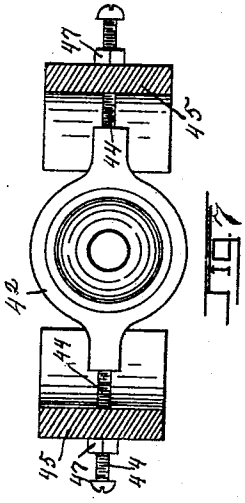


Fig. 7.

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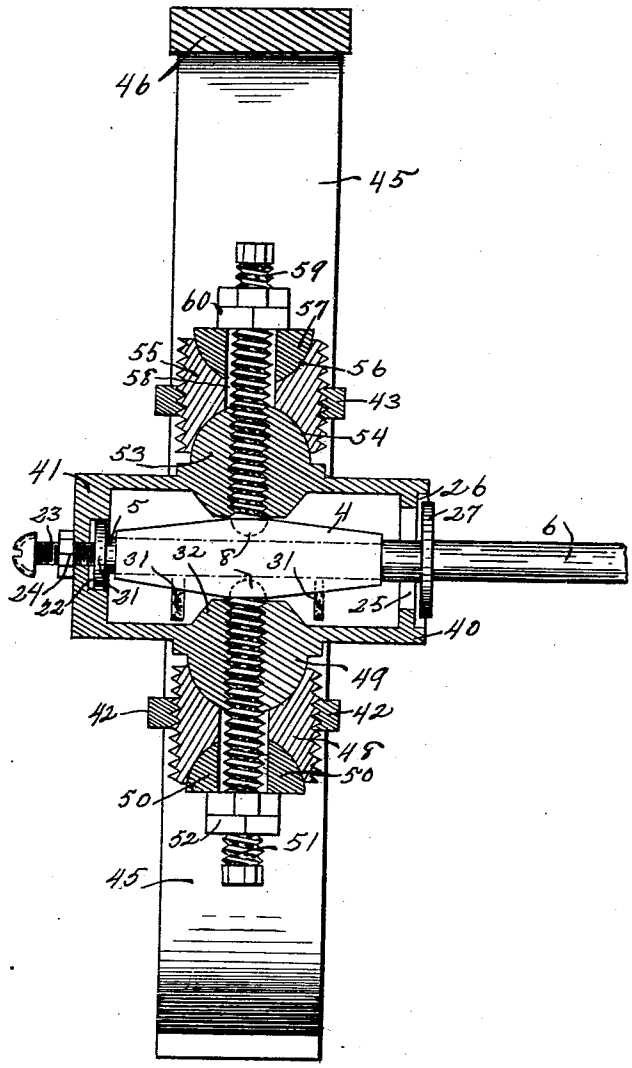


FIG. 1.

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UNITED STATES PATENT OFFICE.

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JOURNAL-BEARING.

SPECIFICATION forming part of Letters Patent No. 684,183, dated October 8, 1901.

Application filed June 20, 1900. Serial No. 20,922. (No model.)

To all whom it may concern:

Be it known that I, MILLARD E. BRINSER, a citizen of the United States, and a resident of Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain Improvements in Journal-Bearings, of which the following is a specification.

This invention relates to improvements in oscillatory journal-bearings, and it is applicable both to bearings of that class supported from below and to those supported by suspended hangers; and the objects of these improvements are, first, to provide bearing-blocks that will automatically adjust themselves to a correct horizontal and vertical alinement, one or both; second, to provide means for a vertical and horizontal alinement of the case or housing wherein the bearing-block is located; third, to provide a suspended hanger especially adapted to be used with journal-bearings of this class, and, fourth, to combine oil-cups with the bearing-blocks and means for conveying the oil from said cups to the surfaces requiring lubrication.

The invention consists in the construction and combination of the various parts, as hereinafter fully described and then pointed out in the claims.

In the accompanying drawings, which form a part of this specification, Figure 1 is a side view of a shaft supported at the ends and center by journal-bearings embodying my invention. Fig. 2 is a top view of the housing of one of said end journal-bearings. Fig. 3 is a side elevation of the same with the supporting-bracket in section and showing a screw for adjusting the housing vertically in relation to said bracket; and Fig. 4 is a side view of one of said housings and a sectional view of the bracket, but showing a direct connection between the housing and the bracket. Fig. 5 is a vertical section of the housing and its connections shown on the left of Fig. 1 and in Figs. 2 and 3, but with the bracket removed. Fig. 6 is a view of a journal-bearing supported by a suspended hanger; Fig. 7, a top view of the adjusting-screw seen below broken line 7 7 of Fig. 6 and of the pivoted plate supporting said screw, the parts above the screw being removed; and Fig. 8, a side view of the upper portion of the housing shown in Fig. 6 and a vertical section of the devices connecting it with the pivoted plate supporting it. Fig. 9 is a vertical section of the screw securing the oil-cup on the case of the bearing, and Fig. 10 is a top view of one of the oscillating bearing-blocks. Fig. 11 is a longitudinal vertical section of the journal-bearing and its supports shown in Fig. 6.

Similar numerals indicate like parts throughout the several views.

My journal-bearing comprises a bearing-block and a case or housing wherein said bearing-block is located.

Referring to the details of the drawings, 1 indicates the central housing in Fig. 1, and 2 the end housings in Fig. 1 and the housing in Figs. 2, 3, 4, and 5. All of these housings and the parts therein are constructed and arranged as shown in Fig. 5, excepting that in the construction shown in Figs. 1, 2, 3, and 4 the oil-cup 3 is formed with the housing, while in Fig. 5 the oil-cup is removably secured to said housing, and in housing 1 both ends are constructed to permit the passage through them of the shaft, as will be explained. Each of the housings shown in these five figures has all its parts formed integrally the one with the other.

As illustrated in Fig. 5, 4 indicates an elongated sleeve through which passes the journal 5 of shaft 6 and which serves as the bearing-block for said journal. As shown, the general outline of the outer surface of the bearing-block is convex, and in opposite sides thereof are sockets 8, preferably hemispherical in shape, and the mouths of which are circular in plan view. On the under side of the housing is an integral rounded boss 9, having an aperture therethrough and which is adapted to engage a similarly-shaped socket 10 in the inner end of a tubular adjusting-screw 11, through which the housing is supported, thus forming a ball-and-socket joint between the housing and its support. Said screw 11 also has a socket 12 in its outer end similar to that in the inner end. Socket 12 is engaged by a rounded block 13, also having an aperture therethrough, and the apertures 14 through boss 9, 15 through adjusting-screw 11, and 16 through block 13 all range the one with the other; but the aperture 14 through boss 9 is threaded and is smaller than the apertures

through adjusting-screw 11 and block 13, and the apertures through said adjusting-screw and block have smooth surfaces. Through these three apertures passes a set-screw 17, which engages the thread in boss 9. The inner end of set-screw 17 is rounded and engages the socket 8 in the under side of bearing-block 4.

Adjusting-screw 11 is constructed to engage the threaded opening 18 of a seat 19 of the horizontal arm of bracket 20 or any other threaded opening suitable for the purpose, and through this connection of said adjusting-screw with the bracket vertical adjustment of the journal-bearing can be made without altering the relation of any of the parts of said bearing the one to the other.

The journal 5 of shaft 6 passes entirely through bearing-block 4, and when the journal forms the extremity of the shaft the end thereof abuts against a washer 21, preferably made of some resilient material and which is located in a socket 22 in the outer end of the housing, and this washer is held to its bearing against the end of the journal by a screw 23, passing through a threaded opening in the outer end of said housing, and is prevented from accidental movement by a nut 24. The opening 25 in the inner end of the housing through which the shaft 6 passes is of such size as to allow the bearing-block to be passed through it when the parts of the journal-bearing are assembled, and in the outer face of this inner end of the housing and surrounding opening 25 is a socket 26, and around the shaft and seated in said socket is a washer 27 of somewhat less diameter than socket 26 and that serves to close the opening 25 against the entrance of foreign matter.

When the shaft passes entirely through the journal-bearing, as shown in the center bearing in Fig. 1, both ends of the housing are constructed, as is the inner end of a housing of a journal-bearing at the end of a shaft, as has just been described in the preceding paragraph.

As shown at 28, Fig. 5, the bottom of the housing forms an oil-receptacle, whereto a lubricant is fed from oil-cup 3 through tubular screw 30, and from said receptacle the lubricant is conveyed into bearing-block 4 by wickings 31, passing through openings in the bottom of said bearing-block 4, wherein they are fitted. In this figure the oil-cup 3 is shown as being made separately from the housing and then secured thereto by said tubular screw 30. The inner end of screw 30 is rounded and engages the socket 8 in the upper side of bearing-block 4, and the opening in the housing through which said screw passes ranges with the aperture 14 in the bottom thereof, through which passes the upper end of set-screw 17. Between the points of these two screws the bearing-block is swiveled, and it has automatically both a vertical and a horizontal movement about those points, and by means of these screws the bearing-block can also be adjusted vertically in its relation to the housing. When the oil-cup is formed with the housing, screw 30 simply serves as an oil-conductor and as one of the swivels of the bearing-block. Oil is prevented from escaping through aperture 14 by a boss 32, surrounding said aperture inside of the housing, as shown in Fig. 5.

In Fig. 4 is shown a construction wherein adjusting-screw 11 is dispensed with and where the housing is supported directly by the seat 33 of arm 34 of bracket 35 through a ball-and-socket joint. In seat 33 is an aperture 36 of greater width than set-screw 17 and through which said set-screw passes, and boss 9 is seated in a rounded socket 37 in the upper face of said seat, and block 13 in a rounded socket 38 in the lower face thereof.

The action of set-screw 17 is alike in the constructions shown in Figs. 1, 2, 3, 4, and 5. When it is desired to adjust the direction of the housing either vertically or horizontally, the nuts 39 on the lower end of set-screw 17 are loosened, allowing boss 9 and block 13 to ride loosely in the sockets wherein they are seated. After said adjustment is effected said nuts are again tightened up, clamping the boss 9 and block 13 in their adjusted positions in said sockets. As will readily be understood from an inspection of the drawings, vertical adjustment of the bearing-block in the housing is had without disturbing the relation of boss 9 and block 13 to their seats, and it will also be observed that screw 17 is a set-screw in its relation to bearing-block 4 and a threaded stem in its relation to the housing, through which stem and nuts 39 the boss 9 and the block 13 are clamped and held in their proper positions in the support of the journal-bearing.

In Figs. 6, 7, and 8 is shown the construction whereby one of my journal-bearings is supported by a suspended hanger. In this case the housing is divided horizontally through the center into sections 40 and 41, and each of said sections is supported through a tubular adjusting-screw engaged in a pivoted plate. These pivoted plates 42 and 43, respectively, are located the one above the other, and on opposite sides of each of them are arms having threaded journals 44 on their outer ends, which journals pass loosely through and have their bearings in openings in limbs 45 of the hanger 46. On the ends of these journals and outside of limbs 45 are nuts 47, whereby said plates are adjusted transversely of the hanger. The adjusting-screw 48 engages pivoted plate 42 and has sockets in the ends thereof engaged, respectively, by the boss 49 on the bottom of housing-section 40 and by the tubular block 50, and the set-screw 51 and nut 52 bind said parts together, and said set-screw also engages the socket in the under side of the bearing-block located in housing 40 41, all precisely in the same manner as is done by similar parts shown in Figs. 1, 3, and 5 and as illus-

trated in Fig. 11. As shown in Fig. 8, the housing-section 41 has on top a rounded tubular boss 53, that engages a socket 54 in the under side of adjusting-screw 55, in a similar socket 56 in the top whereof is engaged the tubular block 57, and through said tubular block 57, the aperture 58 in adjusting-screw 55, the boss 53, and into the housing passes the set-screw 59, having on its outer end the nuts 60. The inner end of said set-screw is rounded and engages a socket in the top of said bearing-block in the same manner as the end of screw 30 engages the socket in the top of bearing-block 4 in Fig. 5.

I do not restrict myself to the details of construction herein shown and described, as it is obvious that many alterations may be made therein without departing from the principle and scope of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a journal-bearing, of a housing having a shaft-opening in one end and a socket in the outer face of said end and surrounding the shaft-opening, an oscillatory bearing-block in the housing, a shaft passing through said opening in the housing and engaged in the bearing-block, and a washer surrounding the shaft and seated in, but of less diameter than, said socket, for the purpose specified.

2. The combination, in a journal-bearing, of a housing having a shaft-opening in its inner end and a socket in the inner face of its outer end, a washer in said socket, an oscillatory bearing-block in the housing, a shaft passing through said opening and through the bearing-block and having the end thereof abutting against the washer, and a set-screw passing through a threaded opening in the outer end of the housing and engaging said washer, for the purpose specified.

3. The combination, in a journal-bearing, of a housing having a shaft-opening in the inner end and of greater diameter than the shaft and a socket in the outer face of said end and surrounding the shaft-opening, a wall closing the outer end of the housing and having a socket in its inner face, an oscillatory bearing-block in the housing, a washer in the socket in the outer end of the housing, a set-screw passing through a threaded opening in the outer end of the housing and engaging the washer in said outer end, a shaft passing through the opening in the inner end of the housing and through the bearing-block and having an end thereof abutting against said washer, and a washer surrounding the shaft and seated in, but of less diameter than, the socket in the inner end of the housing, for the purpose specified.

4. The combination, in a journal-bearing, of a housing having a ball-and-socket connection with its support, a bearing-block in the housing and having a socket in one side thereof engaged by a point projecting from the side of the housing, a set-screw engaging a threaded opening in the side of the housing opposite that on which said projecting point is located, and a nut on the set-screw, through which and said set-screw the journal-bearing is secured in an adjusted position on its support, the point on the inner end of the set-screw engaging a socket in the side of the bearing-block.

5. The combination, in a journal-bearing, of a housing having a ball-and-socket connection with its support, a bearing-block in the housing and having sockets in opposite sides thereof, a set-screw passing through a threaded opening in one side of the housing and engaging one of said sockets in the bearing-block, a threaded set-screw, whereby the housing is secured in an adjusted position on its support, and which passes through a threaded opening in the side of the housing opposite the side thereof through which passes the first-mentioned set-screw, the point on the inner end of the last-mentioned set-screw engaging the other socket in the bearing-block.

6. The combination, with a tubular body having rounded sockets in the ends thereof, of a journal-bearing having a rounded boss thereon and engaging the socket in the inner end of the tubular body, a tubular and rounded block engaging the socket in the outer end of the tubular body, a threaded stem projecting from said boss on the journal-bearing and passing through the apertures in the tubular body and in said block, and a nut on the outer end of the threaded stem.

7. The combination, with a support having a threaded opening therethrough, of a tubular adjusting-screw engaging said threaded opening and having rounded sockets in the ends thereof, a journal-bearing having a rounded boss thereon and engaging the socket in the inner end of the adjusting-screw, a tubular and rounded block engaging the socket in the outer end of the adjusting-screw, a threaded stem projecting from said boss on the journal-bearing and passing through the apertures in the adjusting-screw and in said block, and a nut on the outer end of said stem.

8. The combination, with a tubular body having rounded sockets in the ends thereof, of a housing having a rounded boss thereon and engaging the socket in the inner end of the tubular body, a bearing-block in the housing and having a socket in one side thereof engaged by a point projecting from the side of the housing, a tubular and rounded block engaging the socket in the outer end of the tubular body, a set-screw passing through the aperture in said tubular block, through the aperture in the tubular body, through a threaded aperture in said boss and into said housing and engaging a socket in the side of the bearing-block opposite that on which said projecting point is located, and a nut on the outer end of the set-screw.

9. The combination, in a journal-bearing,

of a hanger, plates located one above the other and having pivot connections with the limbs of the hanger, tubular adjusting-screws having rounded sockets in the ends thereof and engaging threaded openings in said plates, a housing divided longitudinally into sections, each of said sections having a tubular boss thereon engaging the socket in the inner end of one of said adjusting-screws, a bearing-block in the housing and having sockets in opposite sides thereof, tubular and rounded blocks engaging the sockets in the outer ends of the adjusting-screws, and set-screws passing through the apertures in the tubular blocks, through the apertures in the clamp-screws, through threaded apertures in said bosses and into said housing and engaging the sockets in opposite sides of the bearing-block, for the purpose specified.

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