

(No Model.)

B. LOBEE.
HANGER FOR SHAFTING.

No. 577,689.

Patented Feb. 23, 1897.

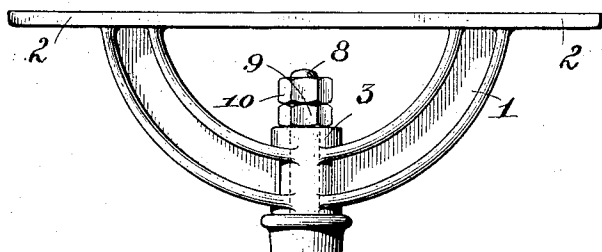


Fig. 1.

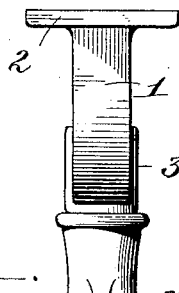


Fig. 2.

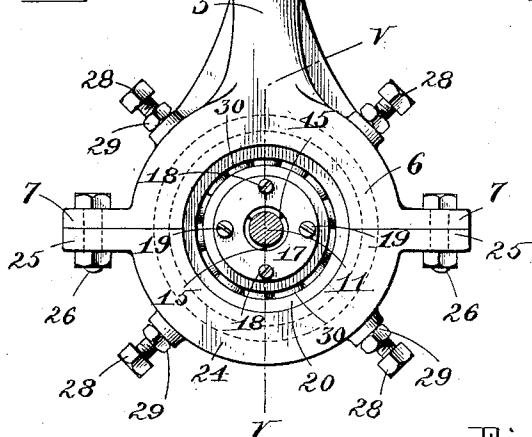


Fig. 3.

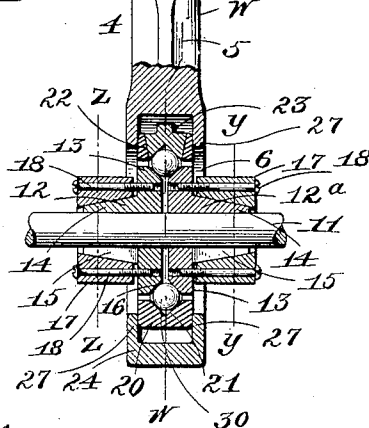


Fig. 4.

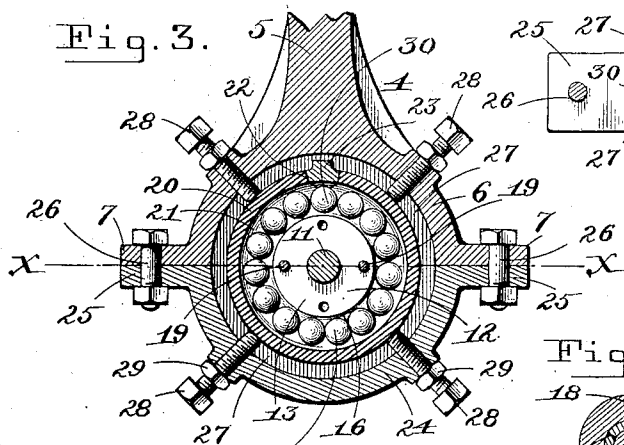
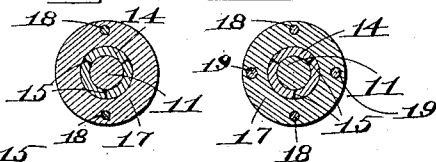


Fig. 5.

Fig. 6.

Fig. 7.



Witnesses:

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UNITED STATES PATENT OFFICE

BART LOBEE, OF BUFFALO, NEW YORK, ASSIGNOR OF TWO-THIRDS TO
GEORGE DUCHSCHERER AND FRANK W. CARTER, OF SAME PLACE.

HANGER FOR SHAFTING.

SPECIFICATION forming part of Letters Patent No. 577,689, dated February 23, 1897.

Application filed July 17, 1896. Serial No. 599,528. (No model.)

To all whom it may concern:

Be it known that I, BART LOBEE, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Hangers for Shafting, of which the following is a specification.

My invention relates to improvements in hangers for shafting of the ball-bearing type, the objects being to secure a more efficient bearing, capable of adjustment in any desired direction, to adjust the raceways so as to compensate for wear, and certain details of construction, as will hereinafter more fully appear, and be set forth in the claims.

While the invention is shown applied to a hanger for shafting, I do not wish to be understood as restricting myself to that particular class of bearings.

In the accompanying drawings, Figure 1 represents a front elevation of the hanger. Fig. 2 is a vertical transverse section in line *v v*, Fig. 1. Fig. 3 is a vertical longitudinal section in line *w w*, Fig. 2. Fig. 4 is a horizontal section in line *x x*, Fig. 3. Fig. 5 is a vertical cross-section in line *y y*, Fig. 2. Fig. 6 is a similar section in line *z z*, Fig. 2. Fig. 7 is a perspective view of one of the collars adapted to form the inner ball-raceway.

Like numerals of reference refer to like parts in the several figures.

The numeral 1, Figs. 1 and 2, represents the stationary hanger-frame, adapted to be secured to any suitable framing, ceiling, or floor of a building by bolts which pass through holes in the lateral extension 2 in the usual manner. The lower part of the hanger-frame is provided with a hollow portion 3, adapted to support the bearing-frame 4. This bearing-frame consists of the central or body portion 5 and an enlarged semicircular portion 6, provided with lugs 7 at its lower end and a shank 8 at its upper end. This shank is adapted to extend up through the hollow portion 3 of the hanger-frame, and is held in position by the nut 9 and jam-nut 10, which screw onto the outer screw-threaded portion of the shank.

If the alinement of the shaft should require adjustment on account of the warping or

sinking of beams, as is a common occurrence where hangers are secured to the ceiling or floor, the adjustment is readily effected by means of the nuts 9 and 10, which may be either loosened or tightened, as the case may require.

11 represents the shaft, and 12 and 12^a collars secured to the shaft, which form the inner separable and adjustable raceway. Each collar is formed with an enlarged portion 13 and a tapering extension 14 at its outer end provided with slits 15. The inner ends of the collars are chamfered, as at 16, preferably at an angle of forty-five degrees, but any angle or curve may be used, if desired. The chamfered edges together form the inner half-raceway for the balls. The collars are secured to the shaft by means of the clamping-sleeves 17, which are provided with tapering bores to correspond to and fit over the tapering extensions 14. When the clamping-sleeves are set over the slotted tapering extensions, they are drawn up onto the latter by means of screws 18, which pass through the clamping-sleeves and into the enlarged portions 13 of the collars. By this construction the collars are readily secured to the shaft by simply tightening the screws 18, which force the clamping-sleeves up onto the slotted extensions 14 and contract the latter onto the shaft, thereby securely fastening the collars to the latter.

The collars forming the inner half-raceway are adjustable toward and from each other, so as to compensate for wear, by means of the adjusting-screws 19, which pass through one of the clamping-sleeves and collar 12 and into the collar 12^a. By tightening or loosening these screws the collars may either be drawn to or forced from each other, as may be desired. By this construction it is possible to adjust the raceway to the balls.

20 is a bearing-ring which is set over the inner half-raceway. The inner side thereof is provided with an annular V-shaped groove 21, which acts as the outer half-raceway and is similar in shape to the inner half-raceway. The balls are inserted into the raceway through a ball-introducing passage 22, which is closed by a removable plug 23. The inner

end of the latter is cut V shape to correspond with the half ball-raceway in the bearing-ring 20.

The adjustable collars forming the inner V-shaped half ball-raceway and the outer V-shaped half ball-raceway formed on the inner side of the bearing-ring together form a four-cornered or diamond-shaped raceway. By this special construction and shape the wear is readily taken up at the four bearing-points of the raceway by the adjusting-screws 19.

The bearing-ring, shaft, and parts secured thereto are set into the enlarged semicircular portion 6 of the bearing-frame and held therein by the semicircular cap 24, which is provided with lugs 25. The cap is secured to the semicircular portion 6 by bolts 26, which pass through the lugs formed on the latter and the lugs 25 of the cap.

The bearing-ring, shaft, and parts secured thereto are held from movement in the direction of the length of the shaft by inwardly-projecting flanges 27, which overlap the outer edges of the bearing-ring. These flanges project inwardly from the enlarged semicircular portion 6 of the bearing-frame and from the cap 24.

28 represents radially-arranged adjusting-bolts passing through the semicircular portion 6 of the bearing-frame and through the cap 24 and bearing against the outer face of the bearing-ring, thereby holding the entire bearing rigidly in any desired position.

29 are jam-nuts for securing the bearing in place after being adjusted. The bolts 28 are adapted to adjust the alinement of the shaft in any direction if it is found that the latter is sprung slightly.

30 represents the balls, which are inserted through the ball-introducing passage into the raceway.

If it is found that there is a transverse strain due to the belt-pressure being exerted more on one side than on the other of the shaft and wearing the bearing-ring accordingly, it is only necessary to unscrew the adjusting-bolts and turn the bearing-ring in position so as to present a new or unworn part to the pressure, when the device is again in perfect condition after tightening the bolts.

In order to secure my device to the shaft, the collars and clamping-sleeves are slipped over the shaft, the bearing-ring over the collars, and the balls inserted through the ball-introducing passage. The collars are then adjusted to the balls by means of the adjusting-screws 19 and secured to the shaft by tightening the screws 18. It is then set into the semicircular portion 6 and the cap 24 secured to the latter, the whole forming a simple and efficient bearing adjustable in any direction.

I claim as my invention—

1. In a hanger for shafting, the combination with the bearing-frame provided with a circular opening in its end, of a bearing-ring,

having an annular groove forming the outer half-raceway, secured within the opening, means for adjusting the ring in said opening, collars adjustably secured to the shaft and provided with chamfered or grooved edges which form the inner half-raceway, and means for adjusting them so as to compensate for wear, and a series of balls located within the raceway, substantially as set forth.

2. The combination with the shaft, of collars secured thereto, and provided with chamfered edges which form the inner V-shaped half-raceway, a bearing-ring set over the collars, and provided with a V-shaped annular groove on its inner side which forms the outer half-raceway, and means for adjusting the bearing-ring in the bearing-frame, substantially as set forth.

3. In a hanger for shafting, the combination with the hanger-frame and a bearing-frame vertically adjustable, secured thereto, provided with a semicircular portion at its lower end, of a semicircular cap adapted to be secured to the latter, so as to form a circular opening, a bearing-ring set within the opening and held from movement in the direction of the length of the shaft, by annular flanges projecting inwardly from the bearing-frame and cap, radially-arranged bolts passing through the bearing-frame and cap, for adjusting the bearing-ring in the opening, an annular V-shaped groove on the inner side of the bearing-ring, which forms one part of the raceway, collars secured to the shaft having chamfered edges, and adjustable toward and from each other, which form the other V-shaped part of the raceway, and a series of balls set within the raceway, substantially as set forth.

4. The combination with the stationary hanger-frame and the bearing-frame pivotally secured thereto, of a bearing-ring provided with a groove on its inner side to form one part of the raceway, secured in the bearing-frame, collars provided with split tapering extensions, secured to the shaft and adapted to form the other part of the raceway, a series of balls set within the raceway, and clamping-sleeves set over the split tapering extensions adapted to contract the latter onto the shaft, substantially as set forth.

5. A bearing for hangers, consisting of a bearing-ring provided on its inner side with a V-shaped half-raceway, a pair of collars adjustably secured to the shaft, having chamfered edges, and together forming the other V-shaped half-raceway, balls inserted between the two half-raceways, and means for adjusting the collars toward and from each other so as to take up the wear at the four bearing-points of the raceway, substantially as set forth.

6. In a hanger for shafting, the combination with the stationary hanger-frame and bearing-frame pivotally secured thereto, of a bearing-ring adjustably secured in its lower end, and having a V-shaped groove on its in-

ner side forming one part of the ball-race-
way, collars provided with split tapering ex-
tensions forming the other part of the ball-
raceway, and adapted to be secured to the
5 shaft by means of clamping-sleeves having
tapering bores to fit over the tapering exten-
sions of the collars, screws passing through
the clamping-sleeves and into the collars, for
10 drawing the sleeves up onto the tapering ex-
tensions and contracting the latter onto the
shaft, screws for adjusting the collars toward
and from each other passing through one of
the clamping-sleeves and collars, and into the
15 other collar, whereby the wear is compen-
sated for at the four bearing-points of the
raceway, substantially as set forth.

7. The combination with the shaft, of an
inner half-raceway secured thereto, a bear-

ing-ring provided with an annular groove on
its inner side, forming the outer half-race- 20
way, a series of balls set between the two,
the whole adapted to be set within a circular
opening, formed by the bearing-frame and
cap secured thereto, flanges projecting in-
wardly from the bearing-frame and cap, and 25
adapted to hold the bearing-ring, shaft and
parts secured thereto from moving in the di-
rection of the length of the shaft, and bolts
passing through the bearing-frame and cap
adapted to bear against the outer face of the 30
bearing-ring for adjusting the same, substan-
tially as set forth.

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Witnesses:

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