No. 712,392. Patented Oct. 28, 1902.

E. O. LEAN.

SHAFT HANGER AND BEARING.

(Application filed Aug. 14, 1901.)

(No Model.)

Fig. 1.

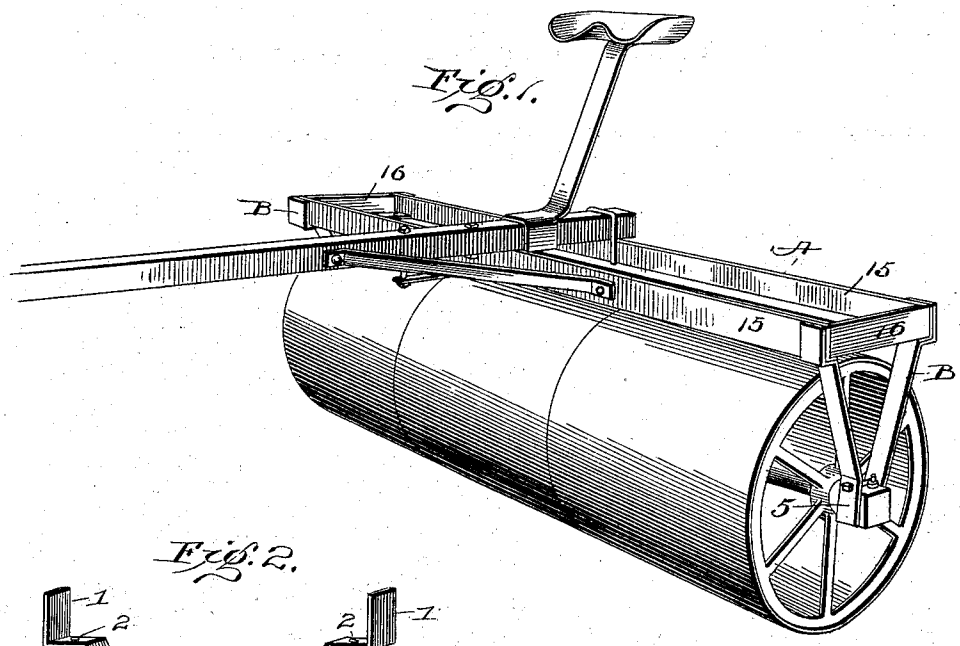


Fig. 2.

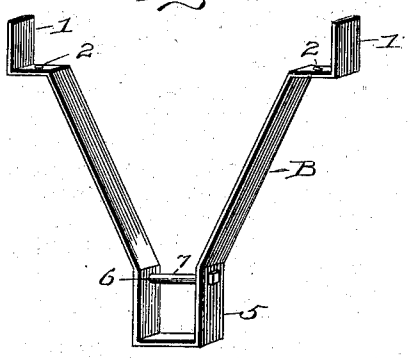


Fig. 3.

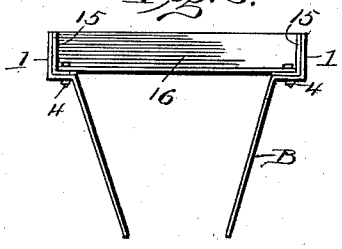


Fig. 4.

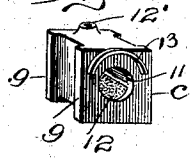


Fig. 5.

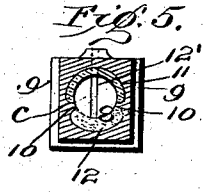


Fig. 6.

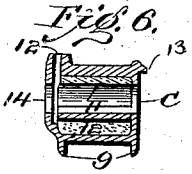
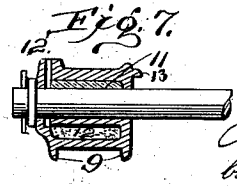


Fig. 7.



Witnesses:
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EMERSON O. LEAN, OF MANSFIELD, OHIO.

SHAFT HANGER AND BEARING.

SPECIFICATION forming part of Letters Patent No. 712,392, dated October 28, 1902.

Application filed August 14, 1901. Serial No. 72,059. (No model.)

To all whom it may concern:

Be it known that I, EMERSON O. LEAN, a citizen of the United States of America, and a resident of Mansfield, county of Richland, and State of Ohio, have invented certain new and useful Improvements in Shaft Hangers and Bearings, of which the following is a specification.

My invention relates to improvements in shaft hangers and bearings, its objects being strength and cheapness, combined with simplicity and compactness of construction, as well as providing a continuously-lubricated bearing for the shaft or axle to which it may be applied.

A further object is to provide a construction wherein the bearings may be easily and quickly removed and replaced for the purpose of rebabbitting or to insert a new bearing-box.

My invention further consists in certain novel features of construction and combinations of parts, as will be more fully described hereinafter and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 shows a perspective view of my improvement as applied to an axle of a roller, disclosing the frame, hanger, and bearing-box in position. Fig. 2 is an enlarged view of the hanger detached, showing the means of securing the bearing-box therein. Fig. 3 is a detail view of the frame. Fig. 4 is a detail view in perspective of the bearing-box, showing the rear end thereof. Fig. 5 is a vertical section of the bearing-box looking toward the front end thereof; and Figs. 6 and 7 are vertical longitudinal sectional views of a modification of the bearing-box shown in Figs. 4 and 5, the latter view showing the manner of securing the shaft or axle in the bearing-box.

A represents the frame. This is constructed in any suitable manner; but preferably it may be composed of angle-iron joined together in any approved way. At each end of the frame hangers B depend. These hangers have a V-shaped contour in general outline. The upper ends 1 of the hangers are of an L-shaped form, or they may be of any other form suitable for the purpose. Apertures 2 2 are formed through each side of that portion of the hanger forming the angle. The upper ends of the hanger are designed to embrace and clasp the ends of the frame, as shown. Pieces of angle-iron 16 16 are inserted between the longitudinal pieces 15 15 of frame A and the hangers B, which pieces 16 16 are adapted to coincide and nest into the angles formed at the upper ends of the hangers. In the drawings these hangers B B are shown as having their upper ends 1 1 of right-angle form; but it is obvious that any other form could be used without departing from the invention. Bolts 4 4 are inserted through apertures 2 2 in the hangers and similar registering holes in the angle-irons and frame, whereby to fasten the hangers and angle-irons rigidly and securely to the frame. The idea of the angle-irons is to add strength and rigidity to that part of the construction. The lower closed ends 5 5 of the hangers form yokes and may be of any desired shape, but are preferably angular, as shown. Apertures 6 6 are formed near the upper end of the angular portion for the reception of a bolt 7, for a purpose hereinafter described.

The bearing-boxes C, as shown, (but, however, they can be made separate,) consist of one integral piece of metal having an irregularly-shaped recess 8 formed therein. These bearing-boxes are designed to receive and fit upon an axle or a shaft, as may be. Flanges 9 9 are formed upon and extend outward from the box on three sides thereof, forming ways therebetween. These boxes are adapted to be received in the yokes formed by the hangers, the straps composing the hangers fitting between the flanges 9 9, which embrace the sides of the hanger, and the bolts 7 are then passed through the hangers above and in contact with the bearing-boxes, whereby the boxes are removably and securely retained in the hangers. The boxes are provided with arc-shaped flanges 13, as shown in Fig. 4, on their inner sides, which act as dust-protectors.

The upper portion 11 of the irregular recess 8 in the bearing-box is designed to receive and removably retain an arc-shaped piece of antifriction or Babbitt metal, shoulders 10 10 being formed in the recess, upon which the ends of the bearing metal rest. This bearing metal may be easily removed in

any convenient way and replaced by a new piece when necessary or desirable. The lower portion 12 of the recess 8 is cup-shaped and is designed to receive waste saturated with lubricant, whereby to keep the revolving shaft or axle properly greased at all times. A lubricating groove or duct 12′ is formed through the top of and continued on the interior face of the bearing-box C, whereby the lower recessed portion 12 may be kept continually lubricated.

As shown in Figs. 1 to 5, inclusive, of the drawings, the recessed portion of the bearing-box C extends through only one end thereof, the opposite or outer end 14 being closed to form a dust-protector for the bearing-box, or the shaft can be left projecting and a washer placed thereon for the purpose of a dust-protector and to keep the hangers from spreading, as shown in Figs. 6 and 7.

The above-described construction is simple, neat, compact, and strong, and may be applied in a variety of ways to several different arts, and therefore it is evident that slight changes might be made in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein set forth; but,

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

1. A frame comprising sides and ends of angle-pieces, the end pieces received between and resting upon the side pieces, a hanger, comprising a closed lower end, converging sides and an open upper end, the upper ends of the sides of the hanger having angular recesses therein for the reception of the frame, bolts extending through the upper ends of the sides of the hanger and through the side and end pieces of the frame to secure the parts together, a bearing-box received and held in the closed lower end of the hanger and means for removably retaining it in place.

2. A shaft hanger and bearing comprising a plurality of longitudinal L-shaped pieces, a plurality of similarly-shaped end pieces received between and resting upon the horizontal flanges of the longitudinal pieces, depending integral hangers consisting of converging arms closed at their lower ends, the longitudinal pieces embraced by and resting upon the upper ends of the hangers, a single securing means extending through each arm of the hanger and through the longitudinal pieces and the end piece whereby to secure the entire structure together and a bearing-box received and retained in the closed lower end of the hanger.

3. A shaft hanger and bearing comprising a suitable support consisting of longitudinally and laterally extending angle-irons, the laterally-extending angle-irons received between the longitudinally-extending angle-irons, and hangers, the upper ends of which are provided with shoulders upon which the longitudinal angle-irons rest, there being upstanding ends on the shoulders which embrace the longitudinal angle-irons and securing means extending upward through the respective shoulders, through the respective longitudinal angle-irons and through each end of the respective lateral angle-irons whereby to fasten the structure together.

4. A shaft hanger and bearing comprising a suitable support, depending integral hangers consisting each of a pair of converging arms having closed lower ends, bearing-boxes received between the converging arms in the lower closed ends and resting thereon, and removable means extending between the converging arms above the bearing-box to retain the latter in place.

5. A shaft hanger and bearing comprising a frame, the frame consisting of angular side pieces, and angular end pieces received between and supported upon the horizontal flanges of the side pieces, integral hangers closed at their lower ends, the hangers consisting of two converging arms, the upper ends of the arms provided with angular extensions corresponding in shape to the angular pieces of the frame, the frame resting upon the angular extensions and embraced thereby, securing means passing through each arm of the hanger, the side pieces and the end pieces, and bearing-boxes adapted to be slid into and out of the hangers, the boxes supported by the closed portion of hangers which conform in shape to the shape of the boxes and removable means passing through and connecting the arms of each hanger above the boxes, the removable means contacting with the upper ends of the boxes to retain them in place.

Signed by me at Mansfield, Richland county, Ohio, this 7th day of August, 1901.

EMERSON O. LEAN.

Witnesses:
ARTHUR H. GLENDINNING,
LOUIS M. HIPP.