(No Model.)

J. J. BUSENBENZ.

HANGER FOR HORIZONTAL SHAFTING.

No. 550,589. Patented Dec. 3, 1895.

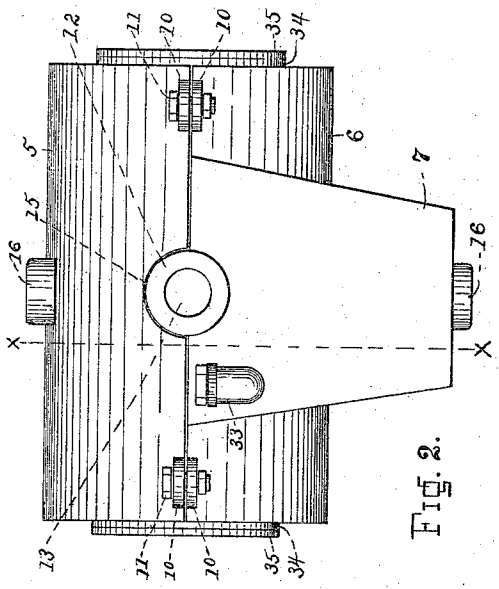

FIG. 2.

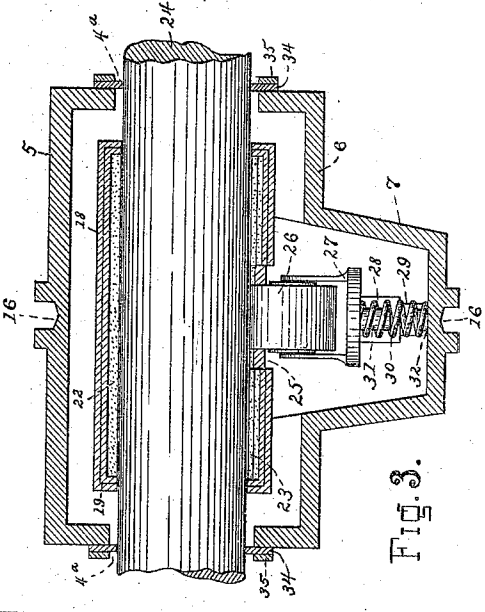

FIG. 3.

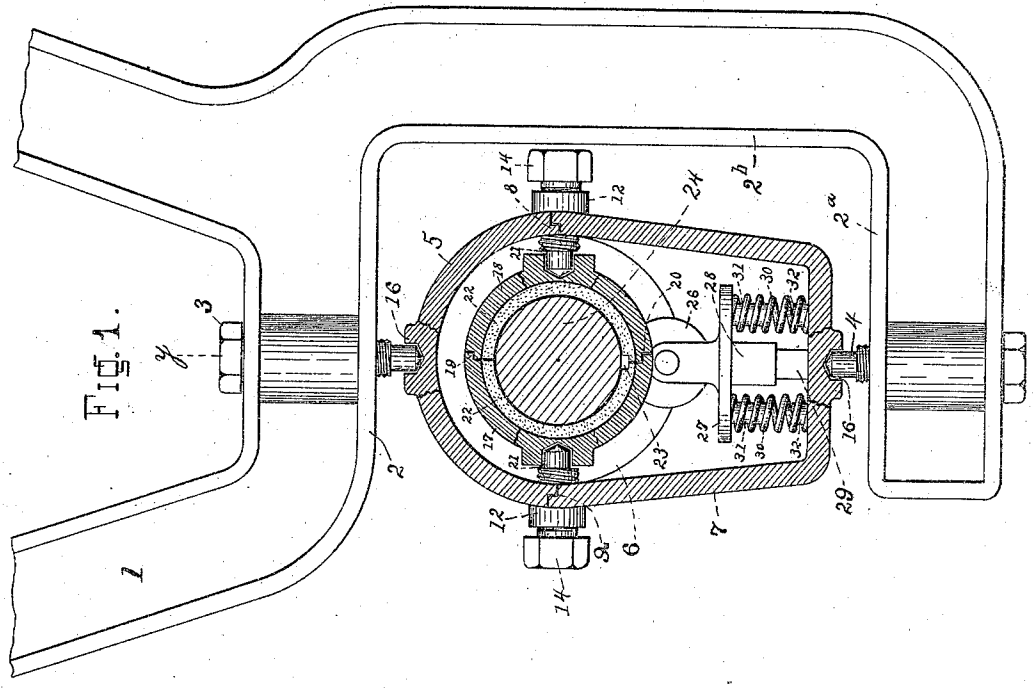

FIG. 1.

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HANGER FOR HORIZONTAL SHAFTING.

SPECIFICATION forming part of Letters Patent No. 550,589, dated December 3, 1895.

Application filed October 3, 1892. Renewed April 25, 1895. Serial No. 547,197. (No model.)

To all whom it may concern:

Be it known that I, JACOB J. BUSENBENZ, a citizen of the United States, residing at Rock Island, in the county of Rock Island and State of Illinois, have invented a new and useful Hanger for Horizontal Shaftings, of which the following is a specification.

My invention relates to suspended bearings or hangers for horizontal shafts; and it consists of a housing combined with a lubricant-storage compartment, such housing being supported in the hanger-frame by the points of two vertical set-screws in line, such housing inclosing the box or shaft-bearing, which is supported by the points of two horizontal set-screws in line, which pass through the sides of the housing and lubricating the shaft by means of a roller seated within the housing and forced against the shaft by spring-power.

The objects of my invention will be hereinafter set forth and claimed, and these objects are accomplished by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a side view of the hanger, the housing and box being shown in vertical cross-section, the housing being shown on the line $x\ x$ of Fig. 2, having sufficient cut out at the top and bottom to show the vertical set-screws and the upper portion of the frame being broken away. Fig. 2 represents a side view of the housing; and Fig. 3 represents a view of a longitudinal vertical section of said housing and box, taken on the line y of Fig. 1, the lubricant device and a longitudinal section of the shaft being shown within the housing.

Similar numerals of reference refer to similar parts throughout the several views.

The hanger-frame 1 may be made in any desired form, and preferably its lower part is provided with two parallel bars 2 and 2^a in vertical line, each connected at one end with the vertical bar 2^b, these bars being preferably integral with the frame, and such space between said bars being provided for the reception of the housing, as will be hereinafter explained. The horizontal bars 2 2^a are perforated and threaded to accommodate the set-screws 3 and 4, so that said set-screws will be in vertical line.

The housing consists of a hollow body of cylindrical form having its end pieces circularly perforated, as at 4^a, to accommodate the shaft, such body being horizontally and longitudinally bisected, so as to form the two halves or members 5 and 6, and the lower member 6 is provided with a communicating lubricant-storage compartment 7 of any desired form and preferably integral with said lower member. The edges of the members forming said housing are rabbeted, as at 8 and 9, to register, so as to break the joints and assist in holding the members together, and, if desired, each member may be provided with corresponding lugs 10, perforated and threaded to receive the bolts and nuts 11, and if the lugs, bolts, and nuts be used to secure said members together the edges of the members need not be rabbeted, if desired. The edges of the lower member 6 midway its length are correspondingly extended, as at 12, and perforated crosswise and in line, and threaded, as at 13, to accommodate the threaded set-screws 14, and the corresponding edges of the upper member 5 are cut out, as at 15, to accommodate said extended parts 12. In vertical line midway the lengths of said members 5 and 6, in the top of the former and bottom of the latter, countersunk depressions 16 are made to accommodate the inner ends of the set-screws 3 and 4, as shown in Fig. 1.

The box or bearing for the shaft consists of a tube or sleeve vertically and longitudinally bisected, so as to form the two halves or members 17 and 18. The longitudinal edges of each are rabbeted, as at 19 and 20, so as to break the joints and assist in holding the members together, and each member midway in its exterior surface is provided with a countersunk depression 21, constructed to receive the inner end of a set-screw 14, as shown in Fig. 1. The interior surfaces of the said members 17 and 18 are each provided with a lining 22, of Babbitt metal or other suitable material, the lower interior surface of which where the members join is cut out, so as to form a longitudinal groove, as at 23, to allow the surplus lubricant thrown off from the shaft 24 to drain to the lubricant-storage compartment. Said members 17 and 18 and said lining midway of their lower edges where joined are cut out, so as to leave a rectangular or other suit-

able aperture 25 to accommodate the upper portion of the lubricant-roller 26, which roller is suitably mounted in bearings in the frame 27. The guide-block 28 is secured to the bottom of the frame and constructed so as to slide upon and over the guide-post 29, which is secured to the floor of the lubricant-storage compartment. A coiled spring 30 is interposed at either end of the frame between the bottom thereof, and said floor of the lubricant-storage compartment and such springs are held in position by the studs 31, projecting downward from the bottom of said frame, and the studs 32, projecting upward from the floor of said lubricant-storage compartment, a stud 31 and 32 being in vertical line, so as to be surrounded by a coiled spring, as shown in Fig. 1.

The lubricant-storage compartments are provided with a conductor and threaded cap 33 of any suitable form for supplying the same with the lubricant.

At the ends of the housing I provide rings or washers, which surround the shaft. The rings 35, which are of metal, having an aperture the same in diameter as the aperture 4^a in the housing, fit around the shaft and against the exterior surface of the rings 34 and are secured by suitable means to the end of the housing; but for convenience in removing or in securing said rings to the housing I prefer to construct the same in two halves, so each member forms a half-circle.

It will be observed that the housing, being supported in the hanger-frame by means of the set-screws 3 and 4, permits such housing and box within to swivel or swing upon its pivots in a horizontal plane, and the box within such housing, being supported by the set-screws 14 and the apertures in the ends of the housing being somewhat greater than the diameter of the shaft, permits such box to swivel or swing upon its pivots in a vertical plane independently of the housing, and as the shaft in rotating vibrates more or less this construction permits the box or bearing for the shaft to automatically adjust itself to such vibrations of said shaft, and it will also be observed that by combining with the housing a lubricant-storage compartment the lubricant roller and communicating aperture for the roller to be brought in contact with the shaft, such shaft is thoroughly lubricated—that is, the lubricant within the compartment is carried by such roller to the shaft, and the surplus lubricant thrown off by said shaft while rotating passes into the longitudinal groove 23 and from thence is returned to the lubricant-storage compartment. It will be further observed that by securing the ring 34, of felt or other suitable material, to the ends of the housing so the same will fit snugly around the shaft the same will exclude and prevent dust from entering the housing, and at the same time by reason of its flexibility it will adapt itself to the vibratory movements of the shaft within the apertures of the housing.

I am aware that heretofore a box or bearing for shafts has been described, commonly known as the "ball-and-socket hanger," which permits swiveling movement to such bearing both in vertical and horizontal planes. I am also aware that such bearings have been described constructed in such manner so the same could be placed in operative position or removed therefrom without taking down or removing the shaft; and I am also aware that in a car-journal axle there has been described a housing in which the box or bearing is supported, as also the lubricant is stored, together with a lubricant-roller held against the axle by spring-power for conveying the lubricant from such compartment to the axle, and therefore I do not separately claim any of these features, broadly.

What I claim as new, and desire to secure by Letters Patent, is—

The hanger for horizontal shafting, comprising, in combination the following elements: the hanger frame 1, presenting the opposite bars 2 and 2^a, set screws on said bars in line with each other, the housing having the extension affording a lubricating compartment, a spring controlled movable lubricating roller in said compartment, said housing having recesses 16 to receive the points of said set screws, whereby the housing is movable upon a vertical pivot, a box 18 located in said housing and having recesses 21 on opposite sides in line with each other, set screws 12 passing through said housing and entering said recesses 21, whereby the box is movable upon a horizontal pivot, said box having a recess for the introduction of the lubricating roller, the parts being arranged to operate substantially as described.

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Witnesses:
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