(No Model.)

T. A. EDISON.

DUST PROOF BEARING FOR SHAFTS.

No. 472,288. Patented Apr. 5, 1892.

Fig. 1.

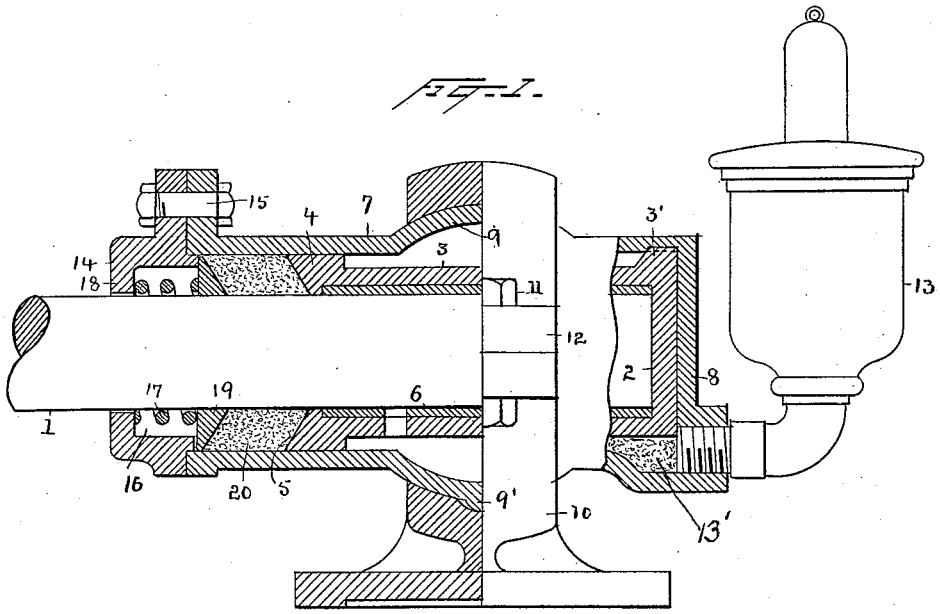
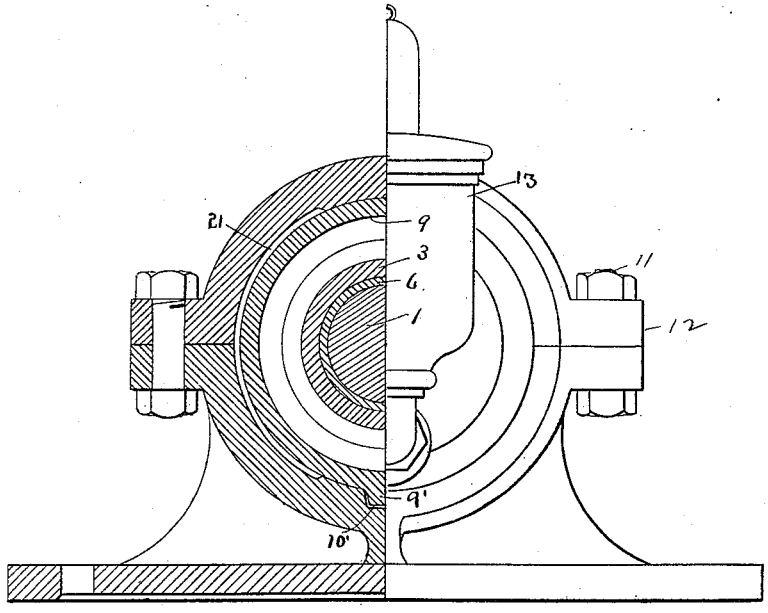


Fig. 2.



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UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF LLEWELLYN PARK, NEW JERSEY.

DUST-PROOF BEARING FOR SHAFTS.

SPECIFICATION forming part of Letters Patent No. 472,288, dated April 5, 1892.

Application filed October 1, 1891. Serial No. 407,458. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. EDISON, a citizen of the United States, residing at Llewellyn Park, in the county of Essex and State of New Jersey, have invented a certain new and useful Improvement in Dust-Proof Bearings for Shafts, (Case 937,) of which the following is a specification.

The present invention relates to means for excluding dust from shaft-bearings and especially from bearings at terminals of shafts, as hereinafter described.

In the accompanying drawings, Figure 1 is a side view, partially in section, of the improved bearing and joint; and Fig. 2 is an end view, partially in section, of the same.

1 is a shaft terminating at 2. Around the end of the shaft is a bearing composed of a box 3, preferably, but not necessarily, closed over the end of the shaft and having at its opposite end an enlargement 4, the face of which is undercut or beveled, as indicated at 5. At the closed end of the box is a short rib 3′, extending into a depression in the surrounding casing and serving to prevent the box 3 from rotating with the shaft.

6 is a sleeve of Babbitt metal within the box 3 for reducing the friction on the shaft, as is well understood. Surrounding the bearing 3 is a journal or bearing box 7, closed at the end 8, but open at the opposite end and having a curved enlargement 9 at the center, which rests in the lower half of a strap or securing device 10. The upper and lower halves of this device are secured by suitable bolts 11 in lugs 12. At the center of the enlargement 9 at the bottom of the box is a projection 9′, which stands in a corresponding well 10′.

13 is an oil-cup which passes through the end 8 and communicates with the space 13′, which may be filled with an absorbent material. The closed end 8 is sufficient to exclude dust from the bearing at this end, even though the corresponding end of box 3 should be left open.

Over the open end of the box 7 and surrounding the shaft is a cap 14, secured to the box by bolts 15, and within the cap is a recess 16, in which is a spiral or other suitable spring 17, which bears at one end against the shoulder 18 and at the opposite end against the ring 19, one face of which is inclined or beveled, as shown. This arrangement leaves a chamber between the ring and the end 4, which is filled with braided cotton cord 20 or other packing material. It will be seen that when packing material is placed in the chamber and the cap is screwed or bolted onto the end of the box the ring 19 will be forced inward, the material being tightly wedged against the shaft at one end of the chamber and against the outer wall of the box at the other end by the action of the inclined ends of the chamber, and the ring will be constantly pressed forward by the spring.

It is evident that it is not essential to make both sides of the chamber inclined, as shown in the drawings, and while 19 has been referred to as a ring it is not essential that it should be a complete ring; but it should be of suitable form to be placed around the shaft and to press against the packing material. The strap or holding device is preferably cut away for a portion of the distance, as indicated at 21, so that it will not bear on the box all of the way round. The support described allows the bearing to yield or move slightly when by sudden strain or otherwise the shaft is slightly deflected.

What I claim is—

1. The combination, with a shaft, of a terminal bearing closed over the end of the shaft and having a journal or bearing box with a closed end over the end of the bearing and a dust-tight joint around the shaft at the opposite end of the bearing, substantially as described.

2. The combination, with a shaft, of a bearing closed over the end of the shaft, a bearing-box surrounding the same, packing material at the open ends of said bearing and box, a cap inclosing said material, and a spring between the cap and material, substantially as described.

This specification signed and witnessed this 28th day of August, 1891.

THOS. A. EDISON.

Witnesses:
CHARLES M. CATLIN,
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