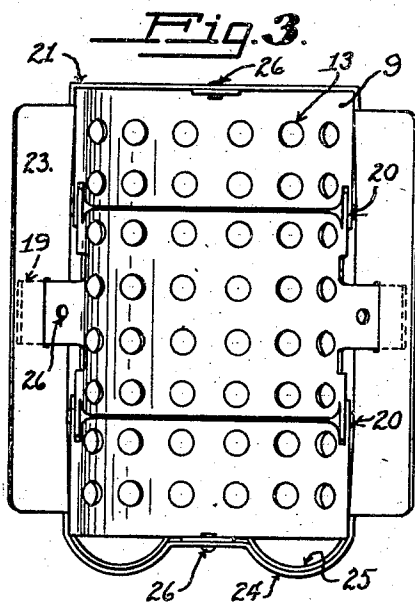
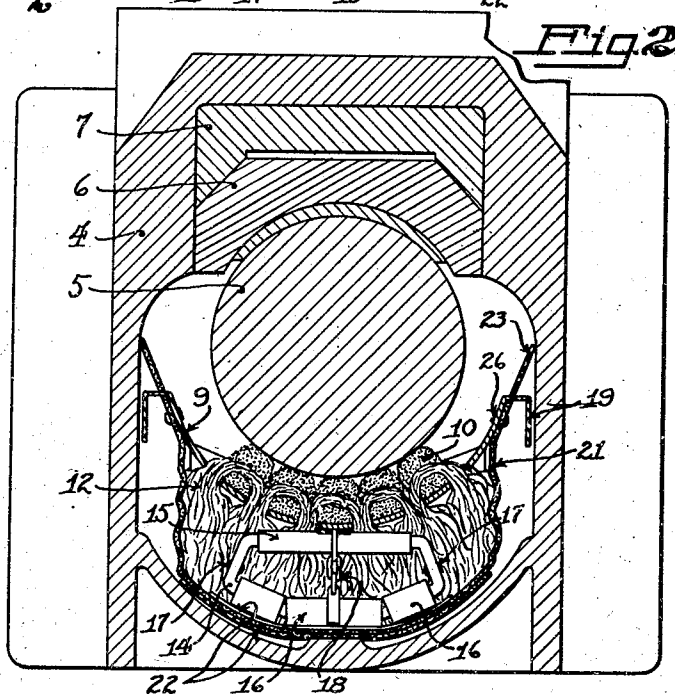
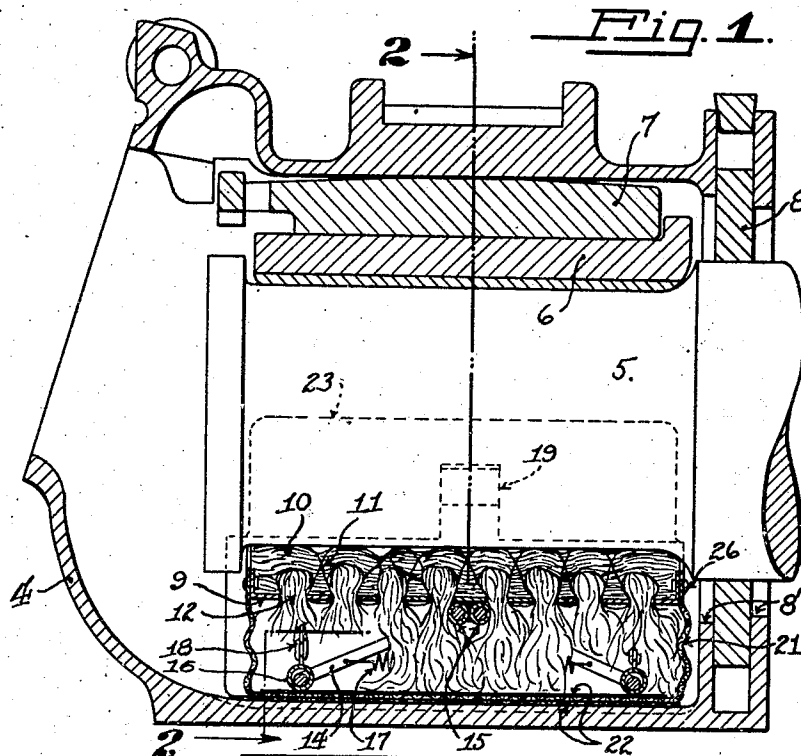


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JOURNAL BOX LUBRICATOR

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JOURNAL BOX LUBRICATOR

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6 Claims. (Cl. 308—88)

The present invention relates to lubricators for rotating shafts, and is especially adapted for the axle journals of railway cars and locomotives.

The objects of the invention are to provide an oil saturated pad in contact with the axle which will not shed strands or fibers to work between the journal and the bearing; to provide means for preventing entrance of dust and sand into the oil, and for preventing waste of oil through splashing and leakage; to provide a lubricator which can be installed in and removed from the standard journal box without necessitating alterations thereon and without taking the journal box assembly apart; and to reduce the time and cost of labor necessary to maintain the journal in proper condition.

These and other objects and advantages of the invention will become apparent from the following specification, which should be read with the understanding that the form, construction and arrangement of the several parts described and shown in the accompanying drawing can be varied, within the limits of the claims hereto appended, without departing from the spirit of the invention.

A preferred form of the invention is fully described herein with reference to the drawing, in which

Fig. 1 is a longitudinal vertical section of a car journal box with my lubricator installed therein.

Fig. 2 is a transverse section taken approximately on the line 2—2 of Fig. 1.

Fig. 3 is a plan view of the lubricator with the absorbent pad removed.

In the drawing, the reference numeral 4 designates a standard railway journal box, 5 is the journal of the axle, 6 is the usual journal bearing and 7 is the wedge. 8 represents an oil retainer of any suitable form, mounted in the usual rear opening 8' of the box.

My lubricator comprises a base member preferably in the form of a perforated metal plate 9, having a curvature approximately coaxial with the axle 5, and extending almost the full length of the journal. The plate 9 is spaced below the axle, as shown, and carries a pad 10 of absorbent material which preferably consists of longitudinally disposed bundles of waste tied together and fastened to said plate by wrappings or bindings 11. Wicks 12, preferably in the form of loosely twisted cords, are embedded in the pad 10 and extend downwardly through the holes 13 in the plate into a body of oil confined in the lower portion of the box.

Resilient supporting means are provided for pressing the plate 9 upwardly to maintain the pad 10 in contact with the axle. A preferred form of such supporting means comprises two rods bent into closed loops 14, the upper cross bars of said loops being horizontal and rotatably mounted in transverse tubes 15 welded or otherwise secured to the bottom of the plate 9 midway between its ends. The loops 14 are inclined outwardly and downwardly, as shown in Fig. 1, and their lower cross bars are provided with loosely fitting rollers 16 which travel upon the bottom of the box. The lower cross bars of said loops are bent, as shown in Fig. 2, to conform to the transverse curvature of the bottom of the box.

Springs 17 connect the legs of the loops, and by drawing them together, support the plate 9 and press it upwardly. There are two such springs, one on each side, either one being strong enough even in the event of the breaking of the other, to press the pad 10 firmly against the axle. Chains 18 extending between the bottom of the plate and the lower cross bars of the loops limit the movement of said loops when the apparatus is removed from the box.

It will be seen from the foregoing that the loops 14 and springs 17 provide a resilient and flexible support for the plate and its pad, and by having their upper cross bars at the center of said plate and their lower cross bars spread apart, they provide a firm support and press the pad 10 evenly against the axle throughout the length of the journal. The plate is provided with laterally extending ears 19 which prevent it from rotating by contact with the sides of the box, as shown particularly in Fig. 2.

The plate 9 is preferably formed in sections connected by transverse hinged joints 20, Fig. 3, so that it can be partially folded to enable it to be put into and taken out of the box from the outer end, without removing the axle. As will be seen from Fig. 1, the entire lubricator can be pulled out endwise from under the axle, by bending or partially folding the plate at the joints shown in Fig. 3. The joints 20 are formed in such a manner that the sections of the plate will bend upwardly, but not downwardly below a straight line, so that said plate, when pressed upwardly at its center by the resilient supports, forms a rigid base for the lubricating pad.

The entire device, except the lateral ears 19, is surrounded by a bag 21 formed of some flexible oil-proof material such as heavy enameled canvas. The bottom of said bag is preferably reinforced, both inside and outside, as shown

at 22 in Fig. 2, and the inner reinforcement may well be made as a metal plate to prevent wear from the support rollers 16. The sides of the bag are extended upwardly above the sides of the plate, and flared outwardly against the sides of the box, as shown at 23, to catch any oil thrown out from the rotating axle. The ends of the bag, as shown in Fig. 1, are extended upwardly almost to the bottom of the journal, so that said bag forms an oil container, inside the box, whose sides extend upwardly above the bottom of the rear opening 8' of the box, so that the oil level in the bag can be maintained at a higher level, i. e. closer to the journal, than is permitted in the ordinary arrangement wherein no inner container is provided. The forward end of the bag is formed with extensions or bulges 24, Fig. 3, held out away from the end of the plate by curved metal ears 25 secured to said plate, these extensions providing apertures through which oil may be poured into the bag. The bag is attached to the plate at suitable points as indicated at 26.

The purposes of the bag 21 are to confine the supply of oil to the immediate vicinity of the wicks 12, to prevent loss of oil by splashing, to exclude dust and sand from the oil and the wicks, and as described above, to raise the level of the oil above the rear opening of the journal box.

It will be seen from the foregoing that my lubricator is a self-contained unit which can be quickly installed in a standard journal box without disassembling or altering the box structure, and which can be removed and replaced with equal facility, and that it provides a reliable and continuous supply of clean oil to the journal without loss through splashing and leakage.

I claim:

1. A lubricator adapted to be inserted into and withdrawn from the journal box of a railway car axle, comprising a base member spaced below the axle, a flexible lubricant container secured to and depending from said base member, an absorbent pad between said base member and the axle, resilient supporting means disposed within said container including a pair of oppositely inclined toggle arms hinged at their upper ends to said base member with their lower ends adapted to rest within said container upon the bottom of the box, and a spring interconnecting said arms acting to press said base member and said pad upwardly against the axle, and means for supplying lubricant from within said container to said pad.

2. A lubricator for the journal box of a railway car axle comprising a perforated base plate spaced below the axle, said plate being curved coaxially with the axle and having lateral extensions contacting the sides of the box to prevent shifting, an absorbent pad between said plate and the axle, resilient supporting means for said plate to maintain said pad in contact with the axle, a flexible lubricant containing bag secured to and depending from said plate, the

sides of said bag being extended upwardly beyond the side edges of the plate into contact with the sides of the box, and wicks extending from said pad downwardly through said plate into said bag.

3. A lubricator for the journal box of a railway car axle, comprising an articulated base member spaced below the axle and having lateral extensions contacting the sides of the journal box to prevent shifting, an absorbent pad mounted on the upper surface of said base member in contact with the axle, a flexible, non-metallic lubricating oil container secured to and depending from said base member, and means for supplying oil from said container to said pad.

4. A lubricator for the journal box of a railway car axle, comprising a base member spaced below the axle, an absorbent pad mounted on the upper surface of said base member, a pair of angularly disposed arm members hingedly connected at their upper ends to said base member, spring means interconnecting said arm members adjacent their lower ends to press said base member and pad upwardly against the axle, a flexible lubricant container secured to and depending from said base member and means for supplying lubricant from within said container to said pad.

5. A lubricator for the journal box of a railway car axle, comprising an articulated base member spaced below the axle, an absorbent pad mounted on the upper surface of said base member, a pair of angularly disposed arm members hingedly connected at their upper ends to said base member, spring means interconnecting said arm members adjacent their lower ends to press said base member and pad upwardly against the axle, a flexible, non-metallic lubricant containing bag secured to said base member and housing said arm members and said spring means, and means disposed within said bag for supplying lubricant to said pad.

6. A lubricator for the journal box of a railway car axle, comprising a base member adapted to be inserted in the journal box below the axle and having lateral extensions for contacting the sides of the box to prevent shifting, an absorbent pad mounted on the upper surface of said base member, a pair of angularly disposed arm members hingedly connected at their upper ends to said base member, spring means interconnecting said arm members to press said base member and pad upwardly against the axle, means interconnecting the lower ends of said arm members and said base member to limit movement of said arm members by said spring means when the lubricator is removed from the journal box, a flexible lubricant container secured to and depending from said base member, and means for supplying lubricant from within said container to said pad.

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