No. 648,065. Patented Apr. 24, 1900.

E. B. BROWN.

JOURNAL LUBRICATOR.

(Application filed July 13, 1899.)

(No Model.)

Fig. 1.

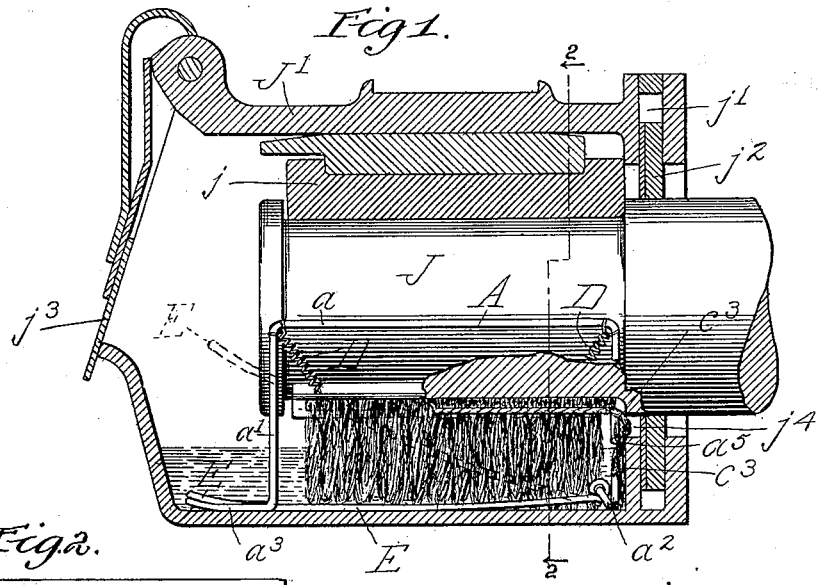


Fig. 2.

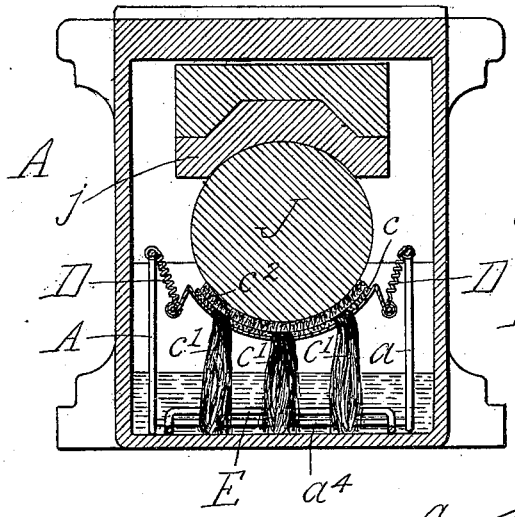


Fig. 3.

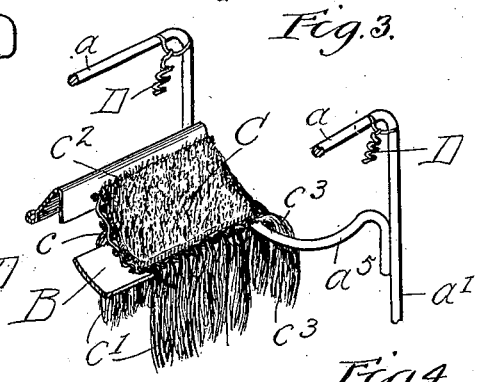
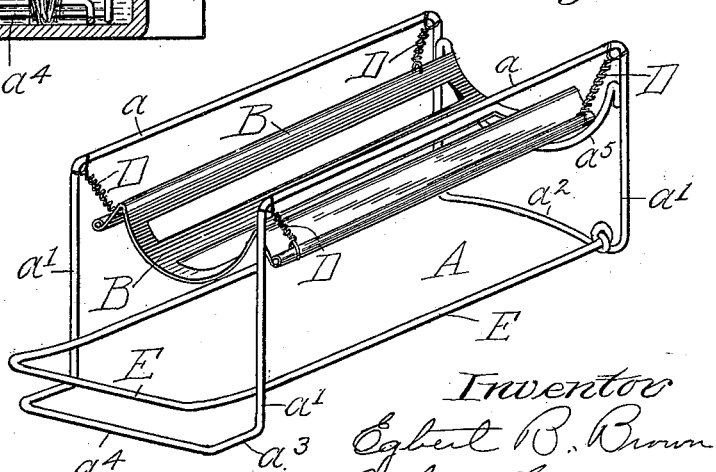


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

EGBERT B. BROWN, OF MAYWOOD, ILLINOIS.

JOURNAL-LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 648,065, dated April 24, 1900.

Application filed July 13, 1899. Serial No. 723,670. (No model.)

To all whom it may concern:

Be it known that I, EGBERT B. BROWN, of Maywood, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Journal-Lubricators, of which the following is a specification.

This invention relates to improvements in lubricators for railway-car or other journals of that class in which a lubricating mat or pad provided with wicks for drawing up the lubricant from a subjacent reservoir is supported in contact with the journal by a trough-shaped basket that is resiliently held against the journal, as by being suspended by suitable springs from a supporting-framework which is removably inserted in the journal-box, as shown, for example, in my United States Letters Patent No. 628,921. The invention contemplates improvements in such lubricator as a whole, improvements in the supporting-framework, and improvements in the pad or mat by which the oil is applied to the journal. It also particularly contemplates certain features which render the lubricator effective as a dust-guard for preventing the entrance of dust and dirt at the inner end of the journal-box through the opening out of which the axle passes.

The invention consists in the matters herein set forth, and particularly pointed out in the appended claims and will be fully understood from the following detailed description when considered in connection with the accompanying drawings, in which—

Figure 1 is a central longitudinal section of a journal-bearing provided with a lubricator constructed in accordance with my invention. Fig. 2 is a transverse section thereof, taken on line 2 2 of Fig. 1. Fig. 3 is a perspective detail, partly in section, of the lubricator frame and pad. Fig. 4 is a perspective detail of the supporting-frame of the lubricator removed from the journal-box.

In said drawings, J designates the car-axle journal, and J′ the axle-box, within which said journal has its bearing. As herein shown, this box is of the usual rectangular shape in cross-section and contains in its upper portion the bearing-brass j, against which the journal rotates. The box is shown as recessed at j' at its inner end to contain the usual dust-guard j^2, of wood, felt, or other suitable material, and the outer end of the box is provided with a door j^3, through which access is had to the interior of the box. These features, however, will be understood as involving no part of my invention, being referred to merely for the purpose of rendering the construction clear and being subject to wide variations without in any way affecting the construction or operation of the lubricator itself. The latter comprises a supporting-framework A, by means of which a hollowing or trough-shaped basket B is resiliently suspended beneath the journal J in such manner that when said basket is lined with a suitable oil-conducting mat or pad C, having wicks of fibrous or capillary material that depend into the oil in the lower part of the box, the journal will be continuously and perfectly lubricated thereby. The framework A is of such shape that it can be inserted and removed through the door j^3 of the box. As herein shown, it is made of wire, which is bent to provide longitudinally-extending reaches a, located on opposite sides of the journal and supported at their ends by vertical standards a'. The latter at the inner end of the frame are connected at their lower ends by a cross bar or wire a^2. At the outer end of the frame they are herein shown as bent to extend along the bottom of the box, as shown at a^3, nearly to the front wall thereof, where they are connected by a cross bar or wire a^4. In this manner the frame is made long enough on its base to substantially fit between the ends of the ordinary journal-box and be held thereby against longitudinal displacement.

The basket B is shown as supported from the upper corners of the framework A by springs D, the lower ends of which are hooked into marginal apertures of the basket. These springs normally hold the basket yieldingly against the lower side of the journal, but can be readily elongated to permit the basket to be depressed beneath the end of the journal when the lubricator-frame is being inserted in the box and tipped up at the angle necessary to permit of its passing over the lower front wall of the box. In order to prevent the frame from being bent or permanently distorted by the contact of its lower inner end upon the bottom of the box when thus inserted in the latter, a thrust-frame E is provided

in the form of a rectangular loop that is pivoted at its inner ends e to the lower inner corners of the frame A. This thrust-frame is free to swing up, as shown in dotted lines in Fig. 1, and when in this position does not interfere with the laterally-open configuration of the base of the frame A, which enables the latter to be inserted through the door of the box and over the lower front wall thereof. At the same time it provides means for applying a direct thrust against the lower inner edge of the frame, which enables it to be pushed home without being bent or distorted.

So far as the foregoing details of construction of the lubricator-frame are concerned, the pad or mat C, which constitutes the lubricating-lining of the basket B, may be made of any suitable material or in any manner found satisfactory for the purpose. The peculiar construction of mat herein shown and described, however, has been found particularly advantageous and constitutes a very important feature of the present improvements. The chief peculiarity of my improved mat is its wearing-surface, which consists of a long fibrous fluff, which in practice may be satisfactorily made three-quarters of an inch or thereabout in length, with the result that such particles of grit and dust as find their way into the bearing and collect upon the mat work down in between the fibers of the fluff and become innocuous instead of forming a glaze over the lubricating-surface, as commonly occurs with felt and similar lubricating pads or mats such as have been usually heretofore employed. As herein shown, the body or backing c of the mat is formed of a woven or knitted fabric, to which the depending wicks c' are secured. The wearing surface or fluff c^2 is provided on this backing in any suitable manner, as by looping pieces of yarn through the meshes of the fabric and leaving their ends projecting upward to unitedly form the lubricating-surface which comes in contact with the journal. In its broad aspects any suitable material may be employed in a construction of such improved mat without departing from the spirit of the invention. In practice it is, however, found that animal fiber, such as wool, will best resist the tendency to become carbonized, brittle, and inelastic, and to thereby lose the power of capillary attraction which is depended on to transmit the oil to the bearing, while vegetable fiber, such as cotton, has greater initial capillary capacity to absorb and distribute the lubricant. As a further improvement, therefore, the backing and wicks of the mat are desirably made of vegetable fiber or cotton and the wearing surface or fluff of animal fiber or wool. The distance which the oil must be transmitted by the wool fiber in this construction is so short that the mat as a whole possesses oil conducting and distributing properties substantially equal to those of a completely-cotton mat, while at the same time the perfect wearing and non-carbonizing qualities of the wool surface are retained and actual test has demonstrated the eminently-superior wearing and lasting qualities of mats thus constructed.

A further very important feature of the present improvements consists in the provision of a mass or layer of fibrous material or wicking at the extreme inner end of the lubricator-frame and in such position as to act effectively in aiding to close the opening around the under side of the axle where it enters the bearing-box, the exclusion of dust at this point being very imperfectly accomplished by the wooden, felt, or other dust-guard j^2 ordinarily provided for this purpose located exterior to the oil-receptacle. The fibrous dust-guard of this improvement is herein shown as formed by extending the longitudinal yarns or ropings of the cotton backing of the mat past the inner end of the basket B, so that they depend in a fringe, curtain, or layer c^3 at the inner end of the lubricator or supporting frame and interposed between it and the inner end wall of the box adjacent to the opening j^1 in the latter, out of which the axle passes, a curved cross-bar a^5, conforming to the curvature of the axle, being furthermore desirably provided to better maintain said depending layer of yarn closely over said aperture. The insertion of the lubricator in the box brings the dust-guard thus provided into its proper position without special care, and it is found to act effectively in excluding grit and dust from the journal.

It will be understood that each of the features of improvement set forth may be employed independently or in connection with various modifications of the other features described without departing from the invention claimed.

I claim as my invention—

1. The combination with a bearing-box, and an axle journaled therein, of a support arranged beneath the journal and adjacent to the inner end of the box, and a mass or layer of fibrous material depending from the support and interposed between the same and said inner end of the box.

2. The combination with a bearing-box and an axle journaled therein, of a lubricator-frame removably inserted in the box, and a mass or layer of fibrous material supported on the inner end of the lubricator-frame and interposed between said frame and the inner end of the box and serving as a dust-guard for the opening through which the axle enters the box.

3. The combination with a bearing-box and an axle journaled therein, of a lubricator-frame removably inserted in the box, and a lubricating-mat of fibrous material engaging the journal and depending in a layer between the inner end of the lubricator-frame and the inner end of the box to form a dust-guard for the opening through which the axle enters the box.

4. A journal-lubricator comprising a frame

adapted to be inserted in the journal-box, a trough-shaped basket supported therein, and a fibrous mat lining said basket and depending in a layer between the inner end of the basket and the inner end of the box to form a dust-guard.

5. A journal-lubricator comprising a frame adapted to be inserted in the journal-box, a trough-shaped basket supported therein, a fibrous mat lining said basket and depending in a layer at the inner end of the basket to form a dust-guard, and a curved cross-bar on the frame over which said layer depends, substantially as described.

6. A lubricator-mat comprising a backing of vegetable fiber provided with depending wicks, and a wearing-surface of animal fiber, substantially as described.

7. A lubricator-mat comprising a backing of fabric provided with depending wicks and with a marginal depending wick or dust-guard, and a wearing-surface consisting of a long fibrous fluff intimately united to the fabric backing, substantially as described.

8. A journal-lubricator provided with a frame adapted to be removably inserted in the journal-box and consisting of upper longitudinally-extending reaches, uprights supporting the ends of the reaches and transverse connections between the lower ends of the uprights, a thrust-frame pivoted to the lower front edge of the lubricator-frame and extending to the opposite end of the latter, a trough-shaped basket supported from the upper reaches, a fibrous lining in said basket, and wicks depending from said lining.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two subscribing witnesses, this 8th day of July, A. D. 1899.

EGBERT B. BROWN.

Witnesses:
S. H. SMITH,
D. PAUL HUGHES.