E. B. BROWN.

JOURNAL LUBRICATOR.

APPLICATION FILED MAY 17, 1909.

969,838. Patented Sept. 13, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

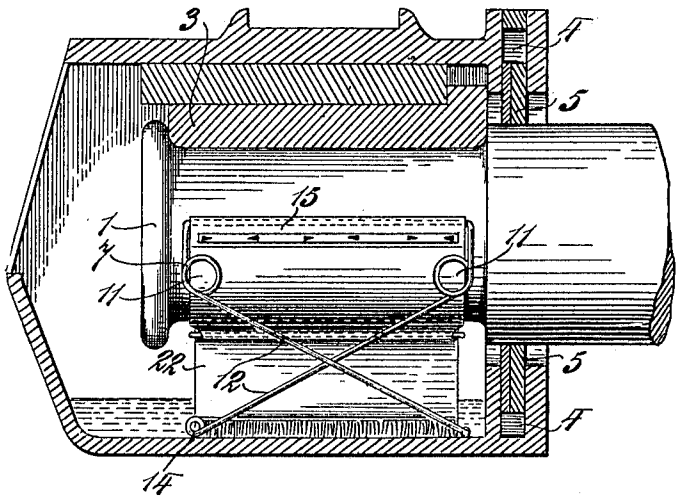


Fig. 2.

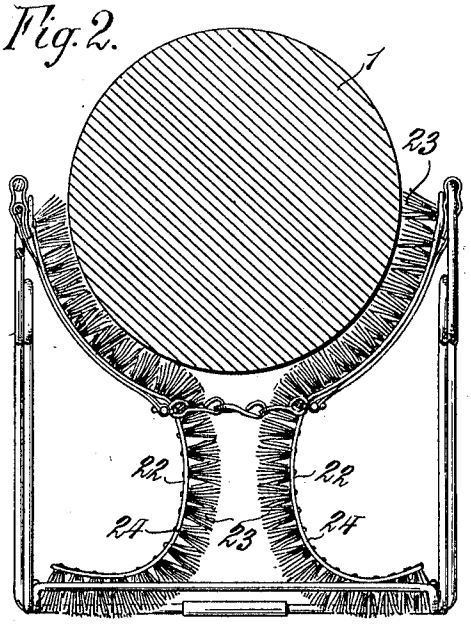
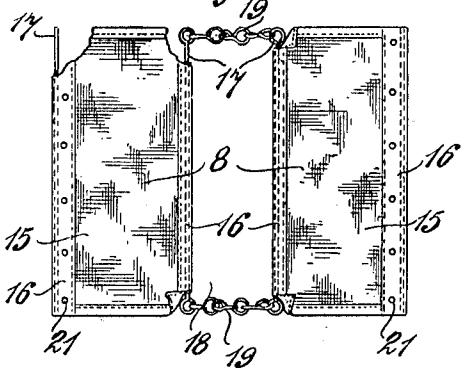


Fig. 3.



Witnesses,

F. F. Montgomery

Geo. W. McCoy.

Inventor,

Egbert B. Brown

E. B. BROWN.

JOURNAL LUBRICATOR.

APPLICATION FILED MAY 17, 1909.

969,838.

Patented Sept. 13, 1910.

2 SHEETS—SHEET 2.

Fig. 4.

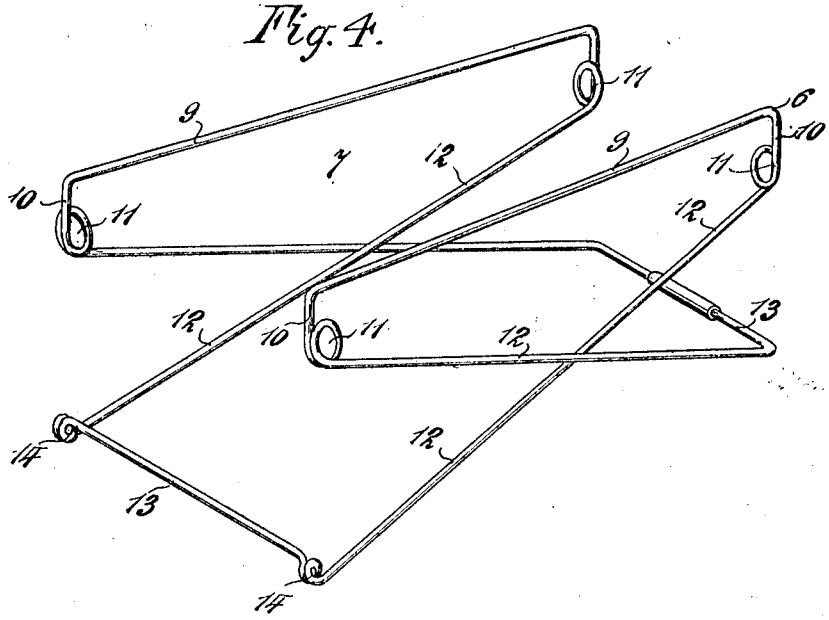


Fig. 5.

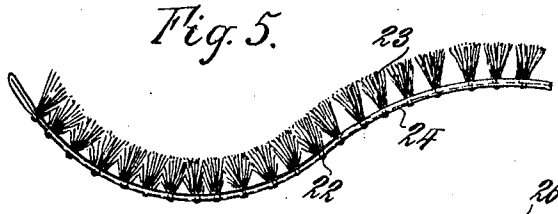
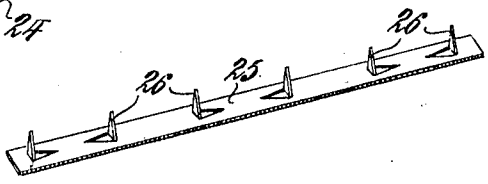


Fig. 6.



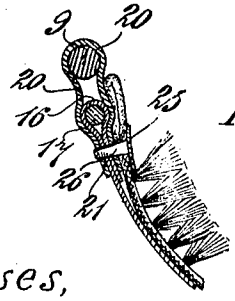


Fig. 7.

Witnesses,

F. Hollowerde.

Geo. N. McCoy

Inventor,

Egbert B. Brown

UNITED STATES PATENT OFFICE.

EGBERT B. BROWN, OF LOS ANGELES, CALIFORNIA.

JOURNAL-LUBRICATOR.

969,838. Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed May 17, 1909. Serial No. 496,546.

To all whom it may concern:

Be it known that I, EGBERT B. BROWN, a citizen of the United States, and resident of the city of Los Angeles, county of Los Angeles, State of California, have invented certain new and useful Improvements in Journal-Lubricators, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a longitudinal vertical sectional view of the car journal box showing the lubricator in side elevation; Fig. 2 a transverse sectional view of the journal showing the lubricator applied, a portion of the lubricator frame being broken away to more clearly show its construction; Fig. 3 a plan view of the flexible basket, a portion being broken away to more clearly show its construction; Fig. 4 a perspective view of the lubricator supporting frame; Fig. 5 an edge view of one of the lubricating mats; Fig. 6 a detail perspective view of the mat fastening means; and Fig. 7 a detail sectional view showing the manner of fastening the lubricator mat to the basket and the basket to the supporting frame.

This invention relates to lubricators for railway car journals, electric car journals, and other forms of journals. It is an improvement in that class of lubricators in which a lubricating mat or pad is supported in contact with the journal by a trough-shaped basket, the basket being supported by a suitable resilient frame removably inserted in the journal box, the basket being flexible and arranged to conform to the surface of the journal, whereby the mat will be shaped to the journal and will be held in contact with a larger portion of its surface.

The invention contemplates improvements in such lubricator as a whole; improvements in the supporting frame; in the basket for supporting the mat; and in the mat by which the oil is applied to the journal.

Referring to the various parts by numerals 1 designates the axle journal; said journal has its bearing in the axle box in the usual manner. As herein shown this box is of the usual shape and contains in its uppermost portion the bearing brass 3 against which the journal rotates. The box is shown as recessed at 4 at its inner end to contain the usual dust guard 5 of wood or other suitable material. It will be understood that these features form no part of my present invention and may be varied as desired.

The lubricator proper comprises a supporting frame 7 which is formed of spring wire and is designed to resiliently support the basket 8 and to yieldingly press the same up around the journal 1. This supporting frame is formed of two parallel side bars or reaches 9—9 to which the longitudinal edges of the basket 8 are secured in a manner which will be hereinafter described. At each end of the reaches the spring wire of which the frame is formed is bent downwardly at right angles to form the short vertical portions 10, and at the lower ends of these vertical portions the wire is bent inwardly and then brought upward and around to form the coils 11. From the lower sides of these coils the wire is carried inwardly and downwardly to a point directly below the opposite ends of the reaches to form the inclined resilient supporting legs 12. The legs on each side cross each other at a point directly below the center of the reach and about midway the height of the lubricator frame. The lower ends of the legs on one side of the lubricator frame are connected with the lower ends of the corresponding legs on the other side of the frame by means of transverse horizontal cross bars 13. As this supporting frame is formed of spring wire of the proper gage and temper it will be readily understood that it forms an exceedingly resilient support for the basket, the coils 11 permitting the frame to be collapsed vertically under pressure and restoring it to its normal position whenever the pressure is removed. It will be noted that as the lower ends of the legs 12 are free to slide on the bottom of the journal box either end of the basket may be depressed without materially altering the height of the opposite end of the basket. This is of advantage as it permits the basket to follow the journal in all its vibrations which are considerable when the car is running over rough or uneven tracks. This feature is also of advantage when the car is rounding curves because of the inclination of the tracks, as it permits the basket to adjust itself to whatever variation there may be in the relative positions of the journal and the bottom of the journal box. It will also be

noted that the two sides of the frame 7 are connected together only at the lower ends of the legs. This permits the frame to be expanded laterally at the top to enable the basket to adjust itself to large journals. This feature is of importance as it permits of the automatic adjustment of the lubricator to journals of various sizes, the upward pressure of the spring frame being sufficient to accomplish this automatic adjustment. The cross bars 13 give the lower part of the frame sufficient strength to enable it to resist whatever lateral strain is brought on it. To give the frame additional strength, coils 14 are formed at the junction of one cross bar 13 with one pair of legs 12. The frame is formed of wire and the sides thereof are unconnected at their upper end by rigid or metallic cross bars to enable the lubricator to be readily passed into journal boxes.

The basket 8 which carries the lubricating mat is formed of two rectangular pieces of strong closely woven fabric, preferably canvas, which form basket sections 15, each of which is turned over and hemmed along its longitudinal edges, as at 16, to receive the spring steel marginal wires 17. These basket sections are arranged a short distance apart to form the opening 18 between them and the ends of the adjoining marginal wires 17 are connected together by chain links 19 so that the two basket sections are flexibly connected together.

To secure the outer longitudinal edges of the basket sections to the reach wires 9 of the supporting frame, clamping strips 20 are employed. These clamping strips are formed of sheet metal and are bent or folded over the reach wires and receive between their folded edges the outer longitudinal edges of the basket sections. Eyelets 21 are passed through the clamping strips near their edges and through the fabric of the basket sections, as shown clearly in Fig. 7, and permanently connect the basket sections to the supporting frame. It will thus be seen that an exceedingly strong and flexible basket is produced, the fabric being pivotally secured to the reach bars so that it will readily fold and conform to the cylindrical journal and permit the lubricating mat to be pressed closely against the journal. It will also be noted that the basket will be automatically adjusted to the journal by the upward pressure at its longitudinal edges and will, therefore, bring a greater area of the lubricator mat in contact with the journal than could possibly be secured by means of stiff non-resilient basket.

The lubricator mat is formed of two sections 22 which are equal in width to the length of the basket and are of sufficient length to extend from the upper longitudinal edges of the basket down through the opening 18 between the basket sections and to the bottom of the journal box, as shown clearly in Figs. 1 and 2. Each mat section is preferably formed with an upper soft wearing surface 23 of long fluffy animal and vegetable fiber such as wool and cotton and a woven stronger vegetable fiber under-body or backing 24, the two bodies being interwoven in any suitable manner as by knitting or weaving. The two bodies forming what may be termed a tufted or pile fabric with the free ends of the fiber extending upwardly and outwardly from the underbody or backing 24. One longitudinal edge of each mat section is detachably connected to the basket near the upper longitudinal edge thereof just below the reach wire 9. For this purpose I provide the connecting bar 25 which is provided with fastening fingers 26. These fingers are spaced apart to correspond with the positions of the eyelets 21 and to secure the mat sections in place they are passed through the mat sections, through the eyelets 21, their outer ends being bent over against the outer surface of the basket, as shown clearly in Figs. 1 and 7. By this means the mat sections may be readily removed by removing the connecting bar 25. The mat sections are of sufficient length to permit their free edges to hang down through the opening 18 and rest on the bottom of the journal box, these depending portions of the mat sections forming feeders by which the lubricating material is drawn from the bottom of the journal box up to that portion of the mat which is in contact with the journal. By reference to Fig. 2 it will be noted that the fibers of the wool portion of the mat, where the mat contacts with the journal, are substantially radial to the car journal so that the ends of said fibers bear on the journal. This is very important as the fiber in this position will be worn at its ends and the mat will last until the entire length of the fiber has been worn down. This will materially increase the life of the mat and prevent heating and the consequent carbonizing of the fiber.

By forming the mat sections as described when the upper portions thereof become worn they may be reversed and the unworn sections be brought to bear on the journal, the worn sections being arranged to extend down into the journal box to act as feeders.

The resiliency of the lubricator frame provides for the lateral movement of the rotating journal, the jar of the axle and the movement of the box in starting and stopping, and makes it absolutely impossible for the journal to get away from the oiled lubricator mat; hence it renders a perfect lubrication at an infinitesimal cost.

The lower ends of the lubricator mat sections serve to prevent the oil sloshing backward and forward in the journal box.

It will be readily understood from the

foregoing that the lubricator may be readily placed in a journal box and withdrawn therefrom. The spring supporting frame will be collapsed and when in position it will hold the mat sections pressed against the car journal with just sufficient force to insure perfect lubrication with the slight amount of pressure and the consequent wear of the mat.

It will be understood that I avoid the use of the ordinary waste. Practical tests have shown that my lubricator effects a saving of fifty per cent. in the use of oil; fifty per cent. of the amount of oil used in the ordinary lubricating journal boxes in which waste is used, besides effecting a saving of fifty per cent. in the wear of brasses and a great saving in the amount of labor in packing a journal box.

The journal lubricator is practically indestructible; may be cheaply manufactured and is extremely simple in construction.

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

1. A journal lubricator comprising a flexible fabric basket folded along its longitudinal edges, marginal wires inclosed in said folds, a spring wire supporting frame formed with longitudinal parallel reach bars, and tubular clamping strips inclosing the reach bars and the marginal wires of the basket, said clamping strips being permanently secured to the basket below the marginal wires whereby the basket will be permanently and pivotally secured to the reach bars of the supporting frame, an independent flexible lubricator mat carried within said basket and detachably secured thereto and having an upper soft wearing surface and a backing of fibrous material, said backing being in close contact with the upper surface of the fabric basket.

2. A journal lubricator comprising a flexible fabric basket folded along its longitudinal edges, marginal wires secured within said folds, a supporting frame adapted to be collapsed vertically and formed with upper parallel horizontal reach bars, coils at each end of said reach bars, downwardly and inwardly inclined legs, said legs extending from said coils and the legs connected to each bar crossing each other at about the longitudinal center of the frame, and lower bars connecting the lower ends of the legs which extend in the same direction, tubular clamping strips each of which is adapted to inclose one reach bar and the adjacent marginal wire of the basket, and means for permanently securing the clamping bars to the edges of the basket.

3. A journal lubricator comprising a flexible fabric basket, marginal wires secured to the longitudinal edges thereof, a supporting frame formed with longitudinal reach bars, and clamping strips adapted to engage the reach bars and the marginal wires of the basket and to secure the longitudinal edges of the basket to the reach bars, substantially as described.

4. A journal lubricator comprising a flexible basket formed in two sections separated a suitable distance from each other and secured together by a flexible connecting means whereby a space will be formed between said two sections, a resilient supporting frame, means for connecting said frame to the outer longitudinal edges of the basket sections, a lubricating mat connected to the basket sections and extending down through the opening between said basket sections, the part extending through said opening forming a feeding means for the mat.

5. A journal lubricator comprising a flexible fabric basket formed in two sections separated a suitable distance from each other and secured together at their ends by a connecting means, a spring supporting frame connected to the outer longitudinal edges of the basket, a two-part lubricating mat, one of said parts fitting within each basket section and extending down through the opening between said basket sections, means for detachably connecting the upper edge of each mat section to the upper edge of the basket, whereby the lower parts of the mat sections will serve as feeding means for the mat and the mat sections may be reversed end for end.

6. A journal lubricator comprising a flexible basket formed of two sections separated a suitable distance from each other to form an opening between said sections, a resilient supporting frame, means for connecting said frame to the outer longitudinal edges of the basket sections, said basket sections being connected together at their ends whereby said sections will conform to the curvature of the journal, a two-part lubricating mat, one of said parts being connected and linked within each basket, the lower portion of each of said mat sections extending down through the opening between the basket sections to form a feeding means, the feeding means being of the same construction and of substantially the same area as the lubricating portion, whereby said mat sections may be reversed end for end.

7. A journal lubricator comprising a flexible resilient supporting frame, a flexible fabric basket carried by said frame and adapted to conform to the curvature of the journal and provided with a longitudinal opening in the bottom thereof, thereby separating the basket into two sections, a lubricating mat secured within each basket section and conforming to the shape thereof, and adapted to be held with the basket in engagement with the journal, the lower end

of said mat extending through the basket and below the same, and serving as a feeding means, the feeding part of the mat being of substantially the same area as the lubricating part of the mat, whereby said mat may be reversed end for end.

In testimony whereof I hereunto affix my signature in the presence of two witnesses this third day of May 1909.

EGBERT B. BROWN.

Witnesses:
JAMES L. BOYLE,
FLOYD J. HICKEY.