May 16, 1944. W. H. KORN 2,348,911

CAR AXLE LUBRICATOR

Filed Dec. 7, 1940

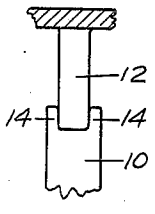


FIG. 5

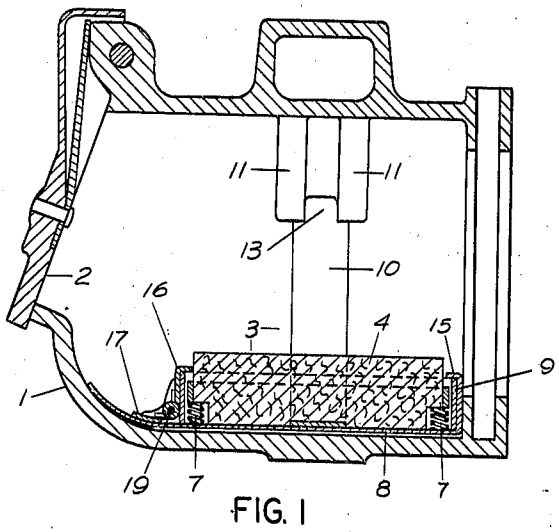


FIG. 1

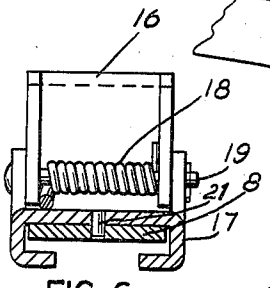


FIG. 6

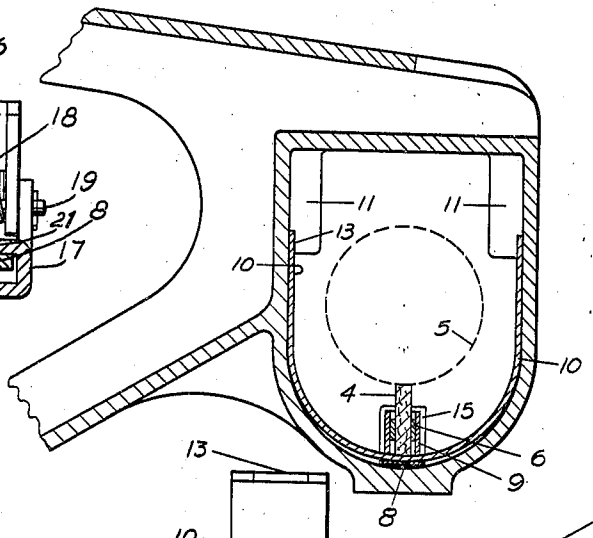


FIG. 2

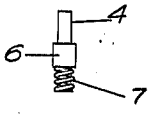


FIG. 7

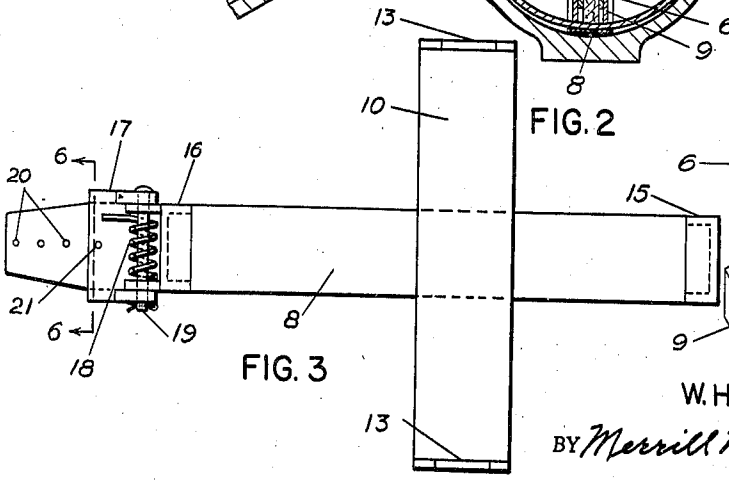


FIG. 3

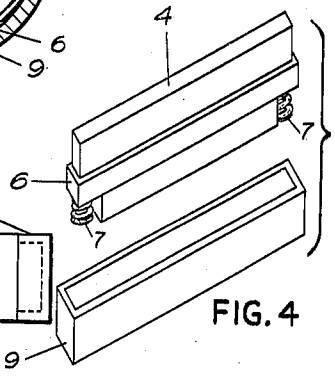


FIG. 4

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CAR AXLE LUBRICATOR

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3 Claims. (Cl. 308—88)

The present invention relates to lubricating means for car axles, the same being designed to be removably mounted in the car journal box. At the present time it is the common practice to pack journal boxes with cotton waste and saturate this with the lubricant which is to be transferred to the axle for the lubrication thereof. This cotton waste clings to the axle and winds up thereon, resulting in what is known as a hot box. The primary purpose of the present invention is to provide a means for lubricating the axle and its bearings which will be entirely free from the above indicated trouble. Other objects are to provide a structure for the purpose indicated which may be readily installed without removing the axle or the journal bearing and wedge from the box; to provide a structure for the purpose indicated which is automatically self-adjusting to compensate for the wear of the axle, its journal and bearing, and the lubricating pad and pad container so that the oil-feeding means will be constantly in contact with the axle; to provide a structure for the purpose indicated which may be easily removed and replaced in case of necessity; and such further objects, advantages, and capabilities as will hereafter appear and as are inherent in the construction disclosed herein. My invention further resides in the combination, construction, and arrangement of parts illustrated in the accompanying drawings, and, while I have shown therein what is now regarded as the preferred embodiment of this invention, I desire the same to be understood as illustrative only and not to be interpreted in a limiting sense.

In the drawings annexed hereto and forming a part hereof,

Fig. 1 represents a longitudinal section of a journal box with the axle removed therefrom and with my improved lubricator mounted therein;

Fig. 2 represents a transverse vertical section through the structure shown in Fig. 1, approximately centrally thereof;

Fig. 3 represents a plan view of the holder for the lubricating wick and its carrier mechanism;

Fig. 4 represents, in perspective, an expanded view of the lubricating wick and its carrier box;

Fig. 5 represents a modified form of the holder spring and cooperating lug by which the spring is held in position in the box;

Fig. 6 represents a cross-section substantially along the plane indicated by the line 6—6 of Fig. 3; and

Fig. 7 represents an end view of the upper unit in Fig. 4.

Reference will now be made in greater detail to the annexed drawings for a more complete disclosure of this invention. As is common practice, the journal box 1 is provided with a spring actuated door 2 to normally keep the box closed and to permit of its being opened for inspection of the lubricating means 3 and the oil in the box. The lubricating means comprises a suitable wick 4 and mechanism for holding this in place in the bottom of the journal box. In Fig. 2, the position of the axle in the box is indicated by the broken line circle 5, and it is apparent from this figure that the wick 4 normally bears against the axle and feeds lubricant thereto.

As is clear from Fig. 4, the wick 4 extends through a loop 6, projecting both above and below the loop and fitting fairly closely therein so that it will not be inadvertently removed from the loop. As is clear from Figs. 1 and 4, notches are formed in the lower corners of the wick for the reception of springs 7 which rest upon the flat spring member 8 and press upwardly against the pad container 6 to carry the wick 4 upwardly into engagement with the axle. The wick, loop, and springs are received within a box 9, open at its top and bottom so that the wick may project both upwardly and downwardly therefrom. The lubricant thus has access to the lower edge of the wick 4 and is carried thereby, by capillary action, to the upper edge of the wick where it is applied to the axle to keep this constantly lubricated.

The supporting means for the parts 4, 6, 7, and 9 is shown in Fig. 3. The spring 8 has a cross spring 10 of U-shape, as shown in Fig. 2, secured approximately centrally thereof, its arms, when applied in a journal box, extending upwardly along the sides of the box. The lateral walls of the box are customarily provided with a pair of lugs 11, though they are sometimes provided with a single lug 12, as shown in Fig. 5. The end of the spring 10 may be reduced in width, as shown at 13 in Fig. 1, so that these ends 13 may be received between the lugs 11 to assist in holding the lubricator in position in the bottom of the journal box. As shown in Fig. 5, the end of the spring 10 is provided with a pair of arms 14 to leave a notch for the reception of the single lug 12, when a single lug is used. It is obvious that the upper ends of the spring 10 may be made wider and provided with a pair of arms 14 to engage outside of the lugs 12 when two of these are formed upon each side of the journal box, provided this is desired. With this structure, the projection 13 may be provided, as

shown in Fig. 1, or, if desired, this may be omitted entirely.

At one end, the spring 8 is provided with a box or receiving unit 15 for the reception of the wick-holding box 9, and it is apparent that one end of the box 9 may be shoved into the box or receiving unit 15 to be held in place therein. Adjacent the opposite end of the spring 8, which is curved upwardly, as shown in Fig. 1, is a second holder member for the box 9. This is made up of two relatively pivoted parts 16 and 17 which are connected by a spring 18 of any suitable form, causing them to turn relatively to each other about their pivot pin 19. The purpose of this spring is to hold the member 16, corresponding to the box or receiving unit 15, in close engagement with the box 9 whereby to hold this rigidly in place with relation to the supporting means shown in Fig. 3.

A plurality of holes 20 are provided in the end of the spring 8 for cooperation with a pin 21 or other projection extending downwardly from the member 17. This downward projection cooperates with the openings 20 to prevent inadvertent displacement along the spring 8 of the member 17. It is therefore apparent that when 16 and 17 have been moved inwardly into close engagement with the box 9, they will hold this in position and prevent any inadvertent displacement from the desired location.

If this lubricating means is to be put into a journal box before the axle has been inserted, the holder of Fig. 3 is inserted after the door 2 has been opened and then the arms 10 are aligned with the lugs 11, the spring arms 10 being bent inwardly, slightly, so that the extremities 13 may be inserted between the lugs 11. When this is done, the box or receiving unit 15 will bear against the end of the journal box, as shown in Fig. 1. Now, with the member 17 moved outwardly on the end of the spring 8, the parts shown in Fig. 4 may be assembled and the end of box 9 inserted under the box flange of box 15, as shown in Fig. 1. The unit 16, 17 is next shoved along the spring 8 until it engages the second end of the box 9, as shown in Fig. 1, and holds this in place with the wick 4 projecting upwardly to engage the axle. The assembly of the structure shown in Fig. 4 with that shown in Fig. 3 may take place either before or after the journal box has been applied to the axle and can be readily removed without removing the journal bearing or wedge. If the felt gets worn down to the point that it needs replacing, this can be done without separation of the journal box and axle, and without removal of the structure of Fig. 3 from the journal box. It is only necessary to lift the end of member 17 sufficiently to release the projection or pin 21 from the openings 20, and then slide this part outwardly along the end of the spring 8 until the structure of Fig. 4 is released sufficiently to be removed. A new assembly can then be inserted in its place and the holder 16, 17 shoved in against it until the parts are securely assembled and ready for operation. It is clear that the springs 7 will force the holder 6 and wick 4 upwardly until the wick engages the axle and is in position to cause lubrication thereof as the axle turns in its box.

It is clear from the foregoing description taken in connection with the annexed drawings that I have provided a structure which will accomplish the objects set forth above.

Having now described my invention, I claim:

1. A journal lubricator for mounting in a journal box provided on the internal surfaces of its lateral walls with lugs and in which a journal rotates; comprising a lubricant absorber and applicator to extend lengthwise of the box when mounted therein, and a U-shaped spring extending transversely of the position occupied by a journal when in the box and supporting said absorber and holding it against the journal when positioned therein, the ends of said spring being engageable with said lugs of the journal box to be held in position thereby and said spring being resiliently flexible throughout its length.

2. A journal lubricator for mounting in a journal box in which a journal rotates, comprising a lubricant absorber and applicator to extend lengthwise of the box when mounted therein, a U-shaped spring extending transversely of the position occupied by a journal when in the box and supporting said absorber and holding it against the journal when positioned therein, the ends of said spring being shaped to be received and held by the internal contour of the journal box, and said spring being resiliently flexible throughout its length, and means comprising a box-like structure connected to said U-shaped spring for receiving and holding the lubricant absorber in a position to engage a journal if and when placed in said journal box.

3. A journal lubricator comprising an elongated, flat, resilient, metal strip bent into U-shape, an approximately straight flat strip secured to the mid-portion of the first mentioned strip, upon the outer surface of the U, a box-like member mounted upon the inner surface of the U, opposite the second mentioned strip, said second mentioned strip having adjacent its ends holding boxes for the reception and holding of said box-like member, and an absorbent pad resiliently mounted in and movable in said box-like member for movement transversely of the two strips, the second mentioned strip having the holding box at one of its ends pivotally mounted and spring-pressed against said box-like member, the holding means for the last mentioned holding box being slidably mounted upon the end portion of the second mentioned strip.

WALDEMAR H. KORN.