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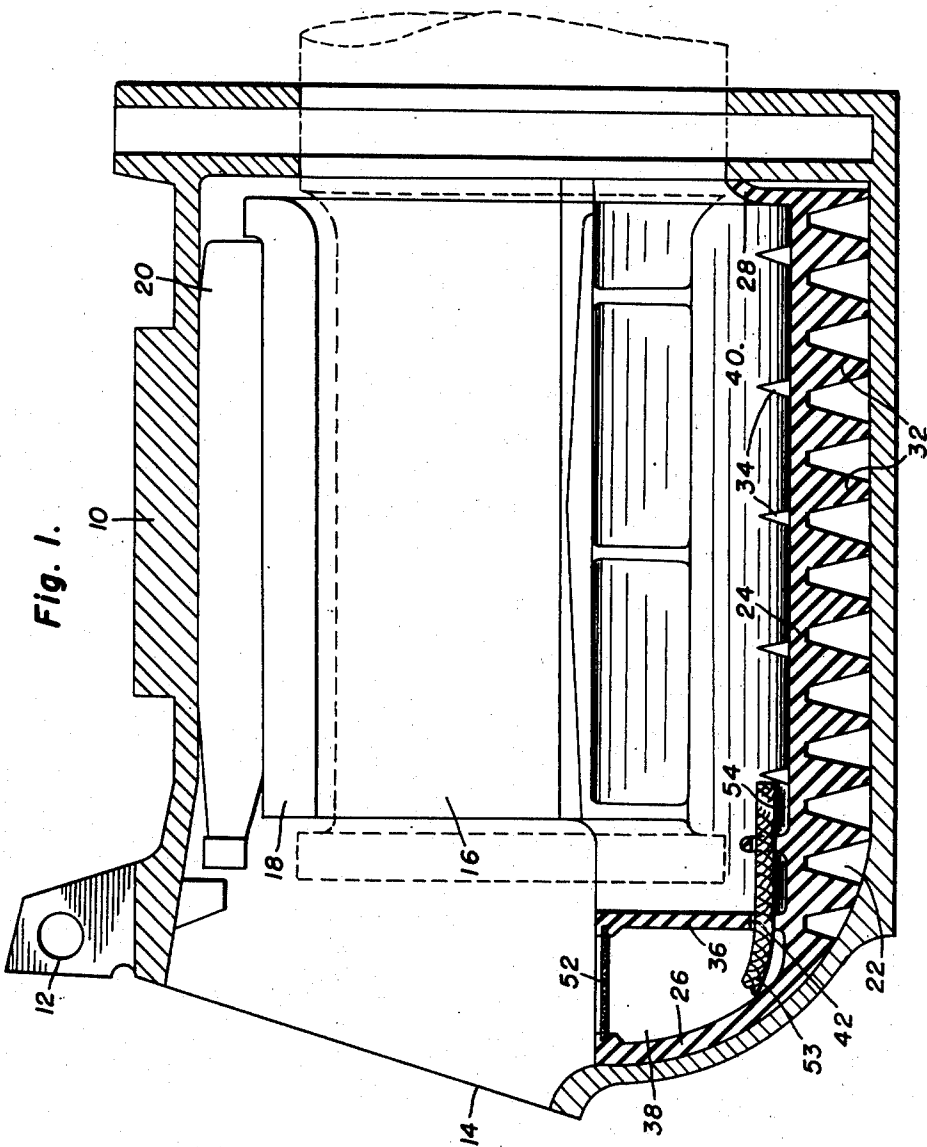
G. H. MASSY

2,534,045

JOURNAL BEARING LUBRICATOR

Filed Jan. 23, 1947

2 Sheets-Sheet 1



Inventor

George H. Massy

By

Clarence A. O'Brien
and Harvey B. Jacobson
Attorneys

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Fig. 2.

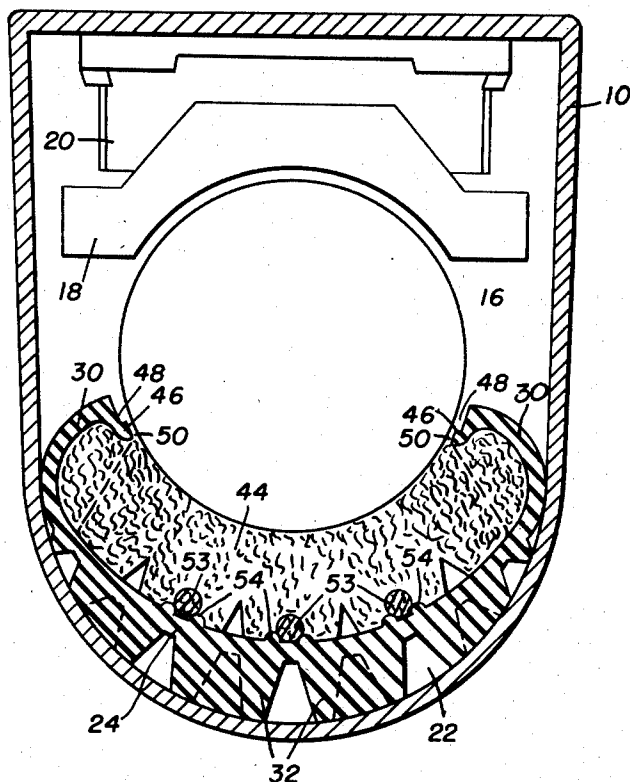
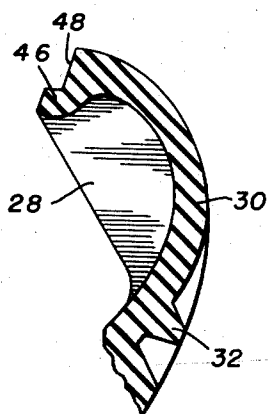


Fig. 3.



Inventor

George H. Massy

By

Clarence A. O'Brien
and Harvey B. Jacobson
Attorneys

UNITED STATES PATENT OFFICE

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JOURNAL BEARING LUBRICATOR

George H. Massy, Union Township,
Union County, N. J.

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5 Claims. (Cl. 308—87)

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This invention resides in novel and useful improvements in apparatus for lubricating journal bearings and more specifically pertains to a replaceable flexible unitary assembly adapted for insertion into a conventional railway journal box.

The principal objects of this invention reside in providing an improved means for directly applying lubricant to a railway axle in a journal box; in providing means for dispensing the lubricant to the axle in predetermined quantities; in providing a novel arrangement for dispensing lubricant throughout a substantial portion of the surface of the axle in a journal box; in providing means for removing excess lubricant from the axle and returning this lubricant to the lubricant dispensing means; and in providing means for insuring and maintaining the lubricant dispensing means against an axle in a journal box with an even and uniform pressure throughout the life of the device.

Additional important objects of the invention reside in providing an appliance in accordance with the preceding objects, which may be readily constructed of a deformable and resilient yielding material; which is ideally adapted to be formed and applied as a unitary assembly and construction; which may readily be employed as a lubricant replacement means in any conventional type of railway journal box; which is integrally provided with means for holding the appliance, once inserted in a journal box, against displacement therein; which makes satisfactory provision for maintaining a lubricant dispensing means within the assembly in a manner to prevent displacement thereof; which is adapted to provide a filling reservoir, a lubricant dispensing chamber and a feeding means therebetween for maintaining a definite feed of lubricant in the dispensing chamber.

Additional subordinate objects of the invention are to provide a device which is sufficiently flexible in nature to permit its easy insertion in or removal from a conventional railway journal box, which is provided with an inherent bias or resiliency for maintaining the device in contact with a railway car axle throughout an appreciable portion of its circumference in a journal box; which is durable and dependable in operation and which is inexpensive to manufacture and install.

These, together with the various ancillary objects of the invention which will later become apparent as the following description proceeds, are realized by this invention, one embodiment only of which has been illustrated, merely by

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way of example for setting forth the principles of the invention, in the annexed drawings, wherein:

Figure 1 is a longitudinal sectional view through a conventional type of railway journal box, depicting the axle and the axle journal therein and the new attachment applied thereto;

Figure 2 is a transverse vertical sectional view taken through the construction shown in Figure 1; and

Figure 3 is an enlarged detail view of a portion of the device shown in Figure 2.

Referring now more particularly to the accompanying drawings, wherein like numerals indicate similar parts throughout the various views, 10 designates a portion of a journal box of a railway car, this journal box being of well known and conventional design. The journal box at its outer upper end is provided with an upstanding lug 12 which is apertured to pivotally support the conventional journal box door or cover, not shown, and which is adapted to close the opening 14 of the journal box. As shown in dotted lines in Figure 1, a portion 16 of a railway car axle is received within the journal box and supports the car structure, not shown, in a conventional and well understood manner, by means of a removable bearing block 20, superimposed upon a bearing 18.

As shown in Figures 1 and 2, the lower portion of the journal box 10 provides a chamber 22 which heretofore has customarily been filled with waste or packing which has been tightly pressed into engagement with the lower surface of the journal 16. In accordance with conventional practice, a supply of oil, determined by the discretion of the oiler, is supplied through the opening 14 into the waste below the journal from which it is fed by capillary action to the revolving surface of the journal 16. There has heretofore been no provision for maintaining a predetermined rate of feed of oil through the wicking and packing to the rotary surface of the journal, and as a result thereof, the haphazard manner of supplying lubrication has frequently resulted in overheated journals, burnt out bearings and broken axles.

In accordance with this invention, a unitary lubricating assembly is adapted to be inserted through the opening 14 into the chamber 22 and below and in contact with the lower surface of the journal 16. This unitary assembly preferably consists of a casing or container 24 of resilient material such as rubber or the like, and which

is provided with front and rear walls 26 and 28 respectively adapted to snugly engage the corresponding walls of the journal box. The unitary assembly is generally cup-shaped and provided with longitudinally extending walls 30 which at their upper ends are bent in upon themselves for a purpose to be later set forth.

Integrally formed upon the exterior and lower surface of the casing or container 24 are a plurality of integral protuberances 32 while other protuberances 34 are positioned upon the interior surface of the container. The projections 32 are adapted to engage the inner surface of the box 10 and serve the dual function of yieldingly urging the container 24 upwardly toward the lower surface of the journal 16 and also serve to frictionally engage the box 10 and prevent displacement of the unitary assembly therein.

Near the end of the unitary assembly adjacent the opening 14, is provided an integral transversely extending partition member 36 which divides the interior of the unitary assembly into two chambers 38 and 40 constituting lubricant reservoir and lubricant dispensing chambers respectively. At the base of the partition member 36 are provided one or more apertures 42 establishing communication between the reservoir and the dispensing chamber which apertures are provided with wicks 53 resting on bottom of reservoir between ridges 54, said wicks serving to feed the lubricant from reservoir 38 to chamber 40 by capillary action thus maintaining a definite feed of lubricant in the dispensing chamber. Received in the container 24 between the front and rear walls 36 and 28 and side walls 30, is a mass of packing material 44 of any suitable type such as waste or the like, which constitutes a lubricant dispensing means for supplying by capillary action lubricant from the level maintained by the apertures 42 and wicks 53 in the dispensing chamber 40 to the lower rotating surface of the journal 16.

The side walls 30 of the unitary assembly are bent inwardly as above mentioned into close juxtaposition and even contact with the surface of journal 16. As shown in Figure 2 and shown best in detail in Figure 3, the longitudinal inward edges of the walls 30 are provided with a rib 46 and a recess or pocket 48 thereabove, adapted to have wiping engagement with the rotary surface of the journal 16, while a slight clearance or channel 50 establishes communication between the oil collecting pocket 48 and the lubricant dispensing chamber 40 within the unitary assembly.

By this construction, lubricant is evenly and continuously applied to a large area of the rotating surface of the journal 16 by means of the contact with the packing 44 and any excess lubricant upon the journal 16 is wiped from the journal by the oil wiper rib 46 and oil pocket 48 of the row towards which the journal surfaces rotates. This excess oil removed from the journal and collected in the pocket 48 is then returned by the restricted channel 50 to the mass of lubricant dispensing means 44 for subsequent reuse.

In some instances, it may be found desirable to provide a screen 52 between the front wall 26 and the partition 36 to protect the reservoir and to filter the oil supplied thereto. As will be readily understood, the journal box door, not shown, may be opened and lubricant introduced through the opening 14 and screen 52 into the reservoir 38. The lubricant supply may thus be replenished at regular intervals as desired and found convenient, since regardless of the height of the lubri-

cant in the reservoir 38, the apertures 42 and wicks 53 will maintain a definite feed of oil in the dispensing chamber 40, thereby insuring and maintaining a predetermined rate of feed of lubricant to the bearings.

In some instances, it may be found desirable to supplement the inherent resiliency and bias of the flexible casing 24 with additional or alternate spring means for yieldingly urging the lubricant dispensing means 44 and the container member 24 into yielding engagement with the journal 16.

It is to be distinctly understood that numerous modifications may be employed and that the accompanying drawings and specifications are to be regarded as illustrative only of the principles of the invention and that the latter is to be limited only in accordance with the attached claims.

What I claim is:

1. A replaceable lubricant assembly for a railway journal box comprising a resilient casing insertable within a journal box, a partition in said casing defining a reservoir, a lubricating chamber therein, lubricant dispensing means in said lubricating chamber, said casing having a bias urging said casing and said dispensing means into contact with an axle, and flexible lips on said casing engaging said axle and wiping excess lubricant therefrom.

2. A replaceable lubricant assembly for a railway journal box comprising a resilient casing insertable within a journal box, a partition in said casing defining a reservoir, a lubricating chamber therein, lubricant dispensing means in said lubricating chamber, said casing having a bias urging said casing and said dispensing means into contact with an axle, and flexible lips on said casing engaging said axle and wiping excess lubricant therefrom, said lips having a passage communicating with said lubricating chamber for returning excess lubricant thereto.

3. A lubricator for use in a journal box for holding a body of packing in contact with the journal, which comprises a vessel of flexible resilient material having an upwardly concave bottom adapted to hold a body of packing, projections on the under side of the bottom of the vessel adapted to be seated on the bottom of the journal box to support the vessel with its bottom elevated above the bottom of the box, side walls rising from the sides of the bottom of the vessel and adapted to engage the sides of the journal box, each side wall extending inwardly and adapted to terminate close to the surface of the journal on opposite sides of the journal axis and above the lowermost portion of the journal, said portions of the side walls being adapted to prevent portions of the packing from being carried along by the journal, as the latter rotates, and projections on the upper surface of the bottom of the vessel adapted to penetrate the packing and prevent its displacement.

4. A lubricating assembly for use in a railway journal box which comprises a vessel of flexible resilient material having an upwardly concave bottom, a body of packing in the vessel adapted to engage the journal, projections on the under side of the bottom of the vessel adapted to be seated on the bottom of the journal box to support the vessel with its bottom elevated above the bottom of the box, projections on the upper surface of the bottom of the vessel penetrating the packing and preventing its displacement, and side walls rising from the sides of the bottom of the vessel and adapted to engage the sides of the journal box, each side wall extending inwardly to

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overlie the packing and adapted to terminate close to the surface of the journal on opposite sides of the journal axis and above the lowermost portion of the journal, said portions of the side walls preventing portions of the packing from being carried along by the journal, as the latter rotates.

5. The combination with a railway car journal having a flange at its outer end, a journal box enclosing the journal, a bearing within the box resting upon the journal inwardly from the flange, a vessel of flexible resilient material within the box, the vessel having an upwardly concave bottom extending across the box from side to side, projections from the under side of the bottom of the vessel engaging the bottom of the box and holding the bottom of the vessel elevated above the bottom of the box, side walls rising from the sides of the bottom of the vessel and engaging the sides of the box, a front wall rising from the bottom of the vessel and engaging the front wall of the box, a rear wall rising from the bottom of the vessel and engaging the rear wall of the box, a body of packing within the vessel engaging the journal, and projections on the upper surface of the bottom of the vessel penetrating the packing and holding it in place, the side walls of the vessel extending inwardly over the packing and ter-

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minating close to the surface of the journal, the side walls extending substantially the full length of the journal inwardly from its flange with their free ends lying above the lowermost portion of the journal.

GEORGE H. MASSY.

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