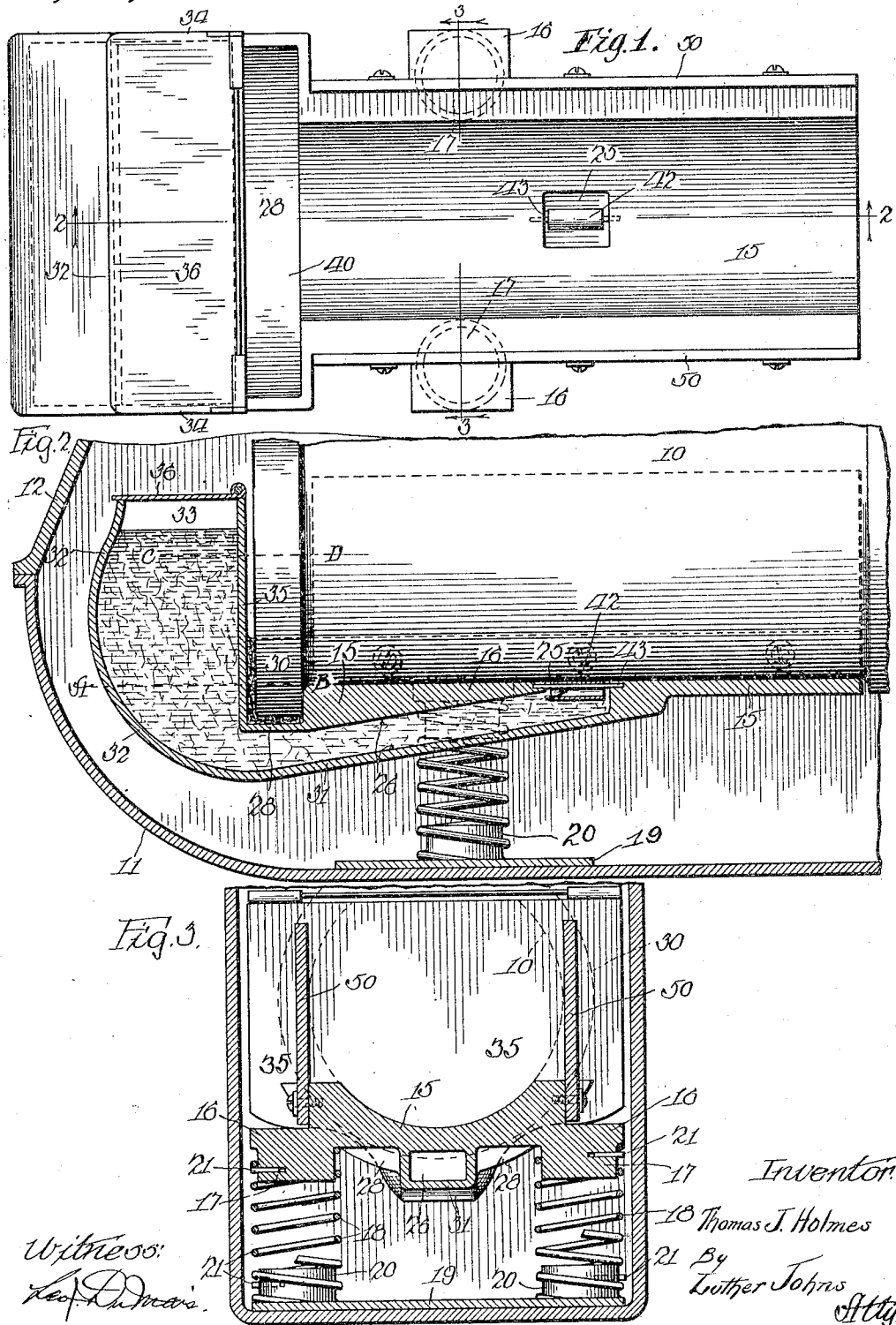


T. J. HOLMES.
CAR JOURNAL LUBRICATOR.
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Witness:
Leo D. Davis.

Inventor:
Thomas J. Holmes
By
Luther Johns
Atty.

UNITED STATES PATENT OFFICE.

THOMAS J. HOLMES, OF CHICAGO, ILLINOIS.

CAR-JOURNAL LUBRICATOR.

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To all whom it may concern:

Be it known that I, THOMAS J. HOLMES, a citizen of the United States, and a resident of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Car-Journal Lubricators, of which the following is a specification.

My invention relates to devices for lubricating car journals.

In my U. S. Letters Patent No. 1,230,299 of June 19, 1917, No. 1,253,036 of January 8, 1918, and No. 1,297,850 of March 18, 1919, I have shown somewhat similar devices, all of which, like the present invention, are directed to the utilization of rather heavy grease as distinguished from the fluid oils which have been chiefly, if not almost exclusively, used in car journal boxes. I have found the utilization of such heavy greases as the "candle" material mentioned in my said patents, or greases of somewhat lighter consistency than that, and yet being thick and "heavy", to be of great value in the lubrication of car journals, and for several reasons. Among these may be mentioned the fact that a relatively small quantity of such grease, when applied to the journal in the requisite amount for lubrication, will suffice for a surprisingly large mileage, and its proper application avoids the necessity of frequent oiling or attention of any kind. Thus a great saving of expense is effected as to labor and as to the lubricant and other materials involved, and, in addition the journal may be more satisfactorily lubricated for the heavy work it is doing than can be done with the fluid oils.

My present invention has for its principal objects the provision of more simple and more easily operated means for applying to a car journal bearing continuously when in operation a desired amount of thick and heavy grease than suggested in my former patents, and in that respect to provide an improvement upon those inventions, and, with respect to the art generally, to provide for the utilization of thick and heavy grease by means of a device of few parts, of simple construction, one which is strong and durable, which contains no parts likely to get out of order, which is highly effective in suitably lubricating the journal with substantially the minimum of lubricant, which will so lubricate the journal for a very large mileage without recharging or other attention, and, withal, to provide a device which

may be installed in the present standard journal box casing, and which, when installed is substantially secure against unauthorized removal. Other objects and advantages will appear hereinafter.

In the accompanying drawings, which form a part of this specification, Figure 1 is a top plan of my improved lubricating device; Fig. 2 shows a medial vertical section of the same, as on the line 2—2 of Fig. 1, the device being in its operative position in a journal box casing fragmentarily shown; and Fig. 3 is a transverse vertical section of the device as on the line 3—3 of Fig. 1, all views being in the directions of the arrows respectively.

The journal 10 and the journal box or casing 11, having a door at 12, are shown in the usual form.

The friction piece 15 is of metal, suitably cast brass or bronze. It has laterally extended ears 16, preferably positioned somewhat forward of the middle of the friction piece 15 to balance the spring pressure, and these ears 16 are provided with integral bosses 17 adapted to accommodate the coiled springs 18 respectively, which springs are held in position at their lower end upon the base plate 19 by the bosses 20 thereon, pins 21 projecting from the bosses retaining the springs.

The friction piece 15 has a bearing surface which conforms to the surface of the journal, as in my former patents mentioned, and it is provided with a discharge opening at 25, at about the middle of the friction piece, which opening is shown substantially rectangular in conformity with the general shape of the conduit 26 terminating thereat. This opening 25 is encompassed or surrounded by the surface of the friction piece adapted to contact the journal.

The conduit 26 is formed by walls preferably cast integral with the friction piece 15. These conduit walls extend in a forwardly and downwardly direction from the discharge opening whereby the conduit 26 passes beneath the lowermost portion of an arcuate wall 28 forming the bottom of a receptacle adapted to contain lubricant for the inner surface of the flange 30 of the journal 10. The bottom wall 31 of the conduit 26 then extends forwardly and upwardly as the wall 32, preferably in the directions shown in cross section in Fig. 2, and constituting the front wall of a reser-

voir 33 adapted to contain a material quantity of relatively thick and heavy grease. The reservoir 33 has side walls 34 and a rear wall 35, which rear wall is substantially close to the end of the journal 10.

The reservoir walls extend upwardly a material distance above the dotted line A—B, Fig. 2, which line indicates the lowermost portion of the surface of the friction piece 15 adapted to bear against the journal and also the line at or about which grease from the conduit 22 emerges to contact the journal. As illustrated in Fig. 2 the reservoir extends above the line A—B somewhat above the axis of the journal, which is indicated by the line C—D, but in any event this reservoir extends sufficiently above the line A—B to provide a good hydrostatic head of the grease within it, as well as to provide for the accommodation of a material quantity of such grease.

The hinged lid 36 closes the top opening of the reservoir and preserves the grease therein clean, while permitting inspection of the quantity of grease at any time remaining, and provides also for easy refilling.

The several parts including the friction piece, the conduit walls and the reservoir walls are all cast as a unit, according to the preferred construction, and this may be done by casting methods well understood.

I have found that it frequently happens in practice that the inner surface of the flange 30, which bears against the journal box or "brass", is not adequately lubricated, and I have provided a remedy for this objection in an arcuate trough-like receptacle 40 adapted to accommodate the flange 30. This trough 40 is defined by its lower wall 28, the lower part of the wall 35, and by the front end of the friction piece 15. It terminates at the top surface of the friction piece. Lubricating oil or grease may be placed in this receptacle 40 from time to time, and it will also receive some supply from between the friction piece and the journal.

In the discharge opening 25 I provide a roller 42, loosely mounted for rotation on the rod 43 secured longitudinal in the lower middle of the friction piece so that the top surface of the roller is substantially on the line A—B, Fig. 2, or, in other words so that the roller will contact the journal when the device is normally in use. As the journal rotates the roller is rotated also, and, since the lower part of it is within the body of the grease, the effect of the rotation is to carry the grease upward and into contact with the journal. This roller feature is advantageous in cases where for any reason the grease at the opening 25 has settled somewhat away from the opening and there might not be sufficient lubrication at and shortly after the time of starting. The

roller, in such cases will instantly provide adequate lubrication until other forces operate to make the lubrication positive and continuous.

These other forces consist, first, of the hydrostatic head of grease in the reservoir 33. This "head" is a peculiarly valuable feature where the grease is heavy, thick and viscous, and by its constant urge maintains the desired quantity of grease at the opening 25.

Another force is the heat generated in the friction piece 15, chiefly by absorption from the journal. This heat is transmitted to the grease and renders it more fluid, especially around the walls defining the conduit 26, whereby the flow of grease is facilitated. A third force is the jarring of the parts when the car is in motion, this jarring acting upon the grease in receptacle 33 and causing the hydrostatic head of such grease to be increased at intervals by sharp impacts insuring the constant onward movement of the grease. Another force is that of suction at the opening 25 when the car is in service, the surface of the journal passing the opening 25 tending to create a vacuum there, and thus the grease is drawn into contact with the journal.

I have thus provided a construction which results in the maintenance of a suitable supply of grease to the journal for a very large mileage, which supply is substantially the minimum necessary for proper lubrication, and which substantial minimum supply cannot be exceeded owing to the fact that the friction piece fits the journal tightly about the opening 25 and only the amount of grease which will adhere to the journal at the opening 25 will be taken at any time. This grease taken spreads over the whole inner surface of the friction piece 15 and thus the entire journal is lubricated.

I have also shown flexible protecting flaps, wings or curtains 50 secured to the friction piece and adapted to maintain the journal substantially free of dirt and to operate in spreading and maintaining grease upon the surface of the journal.

My invention is not limited to the particular construction or arrangement of parts illustrated and described herein, and reference should be made to the appended claims to determine what I contemplate as being within the scope of the invention herein set forth.

I claim:

1. In a lubricating device for a journal, the combination of a friction piece having a friction surface substantially conforming to the bearing surface of the journal to be lubricated, means for yieldingly forcing said friction piece against said journal when the device is normally in use, said friction piece having an opening surrounded by said

friction surface, walls forming a continuous pipe-like channel for grease extending normally forward longitudinally beneath said friction surface and in communication with said opening, and walls forming a reservoir for grease in communication with said channel, said reservoir walls extending upward materially above said friction piece opening to provide a hydrostatic head for the grease substantially filling said reservoir.

2. In a lubricating device for a journal, the combination of a friction piece having a friction surface substantially conforming to the bearing surface of the journal to be lubricated, means for yieldingly forcing said friction piece against said journal when the device is normally in use, said friction piece having an opening substantially in the lower middle portion of said friction surface, walls forming a continuous pipe-like channel beginning at said opening and extending downward and forward

ward and terminating in an upwardly extending reservoir for grease normally in front of the journal to be lubricated, the walls of said reservoir extending to a material height above said opening to provide a hydrostatic head of the grease substantially filling said reservoir.

3. In a lubricating device for a journal, the combination of a friction piece having a friction surface substantially conforming to the bearing surface of the journal to be lubricated, means for yieldingly forcing said friction piece against said journal when the device is normally in use, said friction piece having an opening surrounded by said friction surface, means for supplying grease to said opening, and a roller at said opening loosely mounted for rotation on an axis extending substantially parallel with the axis of the journal and adapted to contact the journal and be rotated thereby for feeding grease through said opening.

THOMAS J. HOLMES.