

Jan. 12, 1932.

W. F. RICHARDS

1,840,848

LUBRICATING DEVICE

Filed May 17, 1927

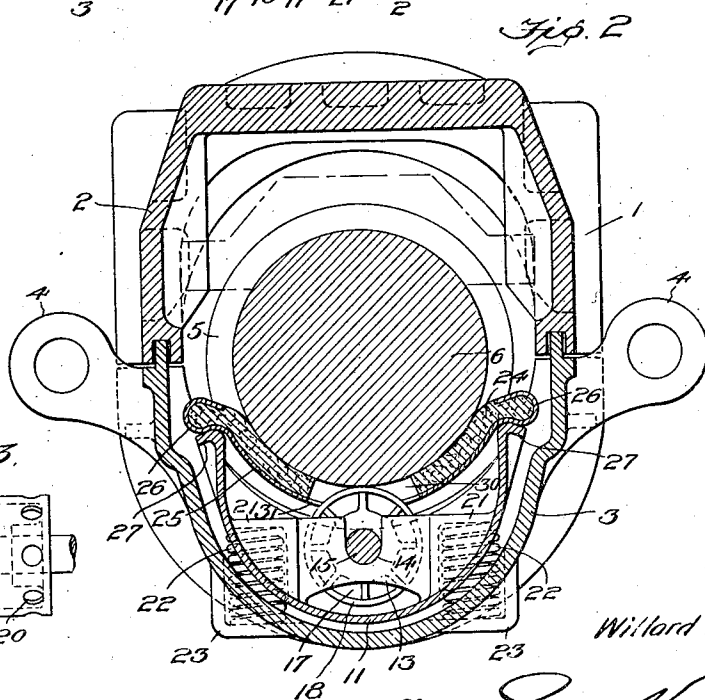
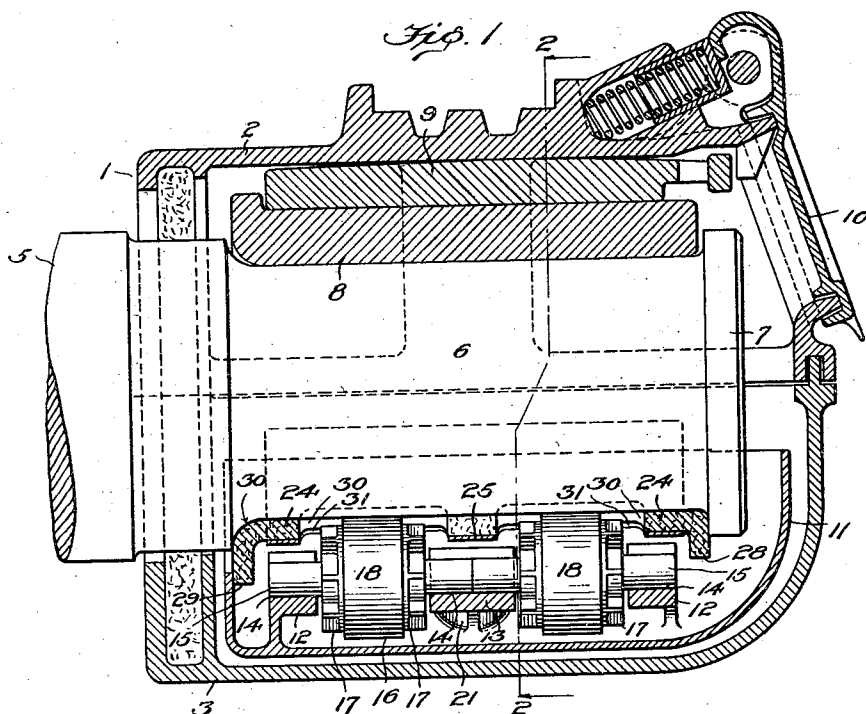
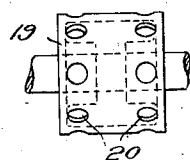


Fig. 3.



Inventor

Willard F. Richards

By *Ernest M. Richlin*
Attorney

UNITED STATES PATENT OFFICE

WILLARD F. RICHARDS, OF DEPEW, NEW YORK, ASSIGNOR TO THE SYMINGTON COMPANY, OF NEW YORK, N. Y., A CORPORATION OF MARYLAND

LUBRICATING DEVICE

Application filed May 17, 1927. Serial No. 192,093.

The invention relates to journal boxes and has special reference to lubricating means embodied therein for constantly applying suitable lubricant to the journal of a car axle or the like.

The object of the invention, generally stated, is to provide a novel cellar removably mounted within the bottom of the journal box and carrying or equipped with special means for applying lubricant constantly to the journal.

An important object of the invention is to provide an oil or other lubricant cellar having roller means therein dipping into the supply of lubricant and bearing frictionally against the journal for transferring lubricant thereto, means being provided for urging the rollers into yielding engagement with the journal for ensuring a positive feed of lubricant thereto.

Another object of the invention is to provide a lubricating device of this character having means for distributing the lubricant along the axle in either direction so that the brass engaging area will be uniformly lubricated, while waste of material and passage thereof to undesired localities is avoided.

Another object of the invention is to provide a two-part journal box having a hinged lower part within which the cellar is mounted, the means for urging the cellar toward the journal serving also to prevent displacement of the cellar either longitudinally or laterally with respect to the box whereby any other securing means will be unnecessary.

A further object of the invention is the provision of lubricating means of this character which may be fully assembled prior to its installation within the journal box so that replacements may be effected with the maximum ease and in the minimum time.

An additional object is to provide a device of this character which will be simple and inexpensive to manufacture, positive in action, economical in the consumption of lubricant, efficient and durable in service, and a general improvement in the art.

With the above and other objects and advantages in view, the invention preferably consists in the arrangement and combination

of parts and the details of construction to be hereinafter more fully described and claimed, and illustrated in the accompanying drawings in which:

Figure 1 is a vertical longitudinal section through a journal box equipped with the invention, the journal itself being shown in elevation.

Figure 2 is a vertical cross sectional view taken on the line 2—2 of Figure 1.

Figure 3 is an elevation of a modified or alternative form of lubricant applying roller.

Referring more particularly to the drawings, the numeral 1 designates generally a journal box here represented as of the two-part type including a top part or section 2 and a lower part or section 3 interfitting therewith at the edges and provided at opposite sides with apertured ears 4 adapted to be mounted or secured by any suitable detachable means, not shown, the intention being that the lower part or section may be swung down from one side or the other to permit access to the cellar to be described. The numeral 5 designates a portion of a car axle or the like having a journal 6 thereon terminating in the usual enlargement or flange 7. A brass 8 is located above and in engagement with the journal and is held in place by any ordinary or preferred wedge 9 as is customary. The upper section or part is disclosed as having an opening normally covered by a spring-pressed lid 10 of more or less conventional type.

Removably mounted within the lower part or section 3 is the lubricating device which includes a cellar 11 of suitable size and shape to closely nest or fit readily in place and to have limited vertical movement with respect to the journal and the box. This cellar is of course adapted to contain oil or other lubricant to be applied to the journal. This cellar is formed or otherwise provided interiorly with upstanding portions 12 and 13, the former being located near but in spaced relation to the ends of the cellar and the latter being located at substantially the center thereof. These projections are notched or recessed at 14 to provide seats or bearings for shafts 15 carrying rollers 16 lo-

cated between the projections 12 and 13 and contacting with the journal 6. While it is conceivable that a single shaft 15 may be provided carrying two rollers, I have disclosed the shaft as formed of the two sections arranged in end to end relation. Practically, it is immaterial which construction is adopted in this respect.

The rollers 16 disclosed in Figures 1 and 2 are preferably constructed of metallic side pieces or members 17 between which is a central member 18 of wood. It should, however, be understood that there is no particular limitation in this respect as I may employ the alternative construction disclosed in Figure 3 wherein I have illustrated a roller 19 of hollow metal construction or at least having hollow ends and provided in its periphery with perforations 20. In either instance the purpose of the rollers is to transmit oil or other lubricant in the cellar to the journal.

In order that the rollers may be maintained in constant contact with the journal, I provide resilient means urging the cellar upwardly. While this might be accomplished in various ways, a preferred construction is to provide pockets or sockets 21 at the end portions of the intermediate extension 13, these sockets being for the accommodation or reception of helical springs 22 seated within corresponding pockets or sockets 23 formed in the lower part or section 3 of the journal box. Clearly, these springs will operate to urge the entire cellar upwardly so that the rollers will engage the journal.

To properly distribute the lubricant and prevent creeping thereof beyond the outer end of the journal or from the journal onto the axle proper, I provide a pad or packing member 24 of suitable yieldable or flexible material such, for instance, as felt or its equivalent, this pad or packing engaging against the lower portion of the journal and being supported by the cellar. In order to maintain the packing in proper shape I have found it preferable to provide a concavo-convex retainer or support 25 which has its side edges curled or crimped over the edges of the packing, as indicated at 26, the retainer resting upon the upper edges of the cellar, these upper edges being preferably outwardly flanged as at 27 to increase the bearing area. This packing extends the full length of the journal and has its ends downwardly directed as at 28 and 29 to bear respectively against the enlargement or flange 7 and the curved shoulder 30 at the inner end of the journal. The retainer 25 terminates short of these points particularly for the reason that it need not be nearly as long as the journal and for the additional reason that danger of contact thereof with the journal will be avoided. The packing and the re-

tainer or support 25 therefor are formed with registering openings 30 and 31, respectively, for the passage of the rollers so as not to interfere with the engagement thereof with the journal.

In the use of the device, it is apparent that when the lower part or section 3 of the box is swung downwardly from either side into open position the cellar and lubricating mechanism therein may be readily installed. When the lower part or section 3 is subsequently raised to its operative position, the springs 22 urging the cellar 11 upwardly will cause the rollers 18 or 19, as the case may be, to engage the journal. The engagement of the springs within the sockets 21 and 23 performs the additional function of preventing displacement of the cellar either longitudinally or transversely of the box without the employment of any other securing means. When the journal is rotated during the travel of a car or the like, the rollers will of course also be rotated and as they dip into the oil or other lubricant within the cellar they will transfer the oil to the journal in small but sufficient quantities to ensure thorough lubrication which is, moreover, continuous. The packing 24 operates by capillary action to distribute lubricant to all portions of the journal and to prevent creeping of an undesired quantity as above explained, and any repetition of the description of the action is therefore unnecessary. It is believed that the construction, operation and advantages will be readily apparent to one skilled in the art without the addition of further explanatory matter.

While I have shown and described the preferred embodiment of the invention and a certain modified form of roller, it should be understood that the disclosure is merely an exemplification of the general principles involved and that I reserve the right to make all such changes and variations in the structure as will not depart from the spirit of the invention or the scope of the claims hereunto appended.

Having thus described the invention, I claim:

1. Lubricating means for a journal box comprising a cellar adapted to hold lubricant, rollers pivotally mounted in said cellar, capillary means carried by said cellar and adapted to bear against an associated journal for distributing lubricant, and a support for retaining the capillary means in conforming engagement with the journal, said support and said means having registering openings for allowing portions of the rollers to extend therethrough into engagement with the journal.

2. Lubricating means for a journal box having an imperforate movably mounted bottom and a journal extending thereinto, comprising a cellar closely nesting within the

bottom of the box, rollers journally supported by the cellar, the cellar and the bottom of the box being formed with corresponding sockets, springs located within said sockets and urging the cellar upwardly for maintaining the rollers in engagement with the journal, capillary means carried by the cellar at the edges thereof and bearing against the journal near the ends thereof for distributing lubricant, and a support for the capillary means for retaining the same in conforming engagement with the journal, the support and said means having registering openings therein for the passage of the rollers.

3. Lubricating means for a journal box having a journal extending thereinto, comprising a cellar located within the bottom of the box, rollers journally supported by the cellar, the cellar and the bottom of the box being formed with corresponding sockets, springs located within said sockets and urging the cellar upwardly for maintaining the rollers in engagement with the journal, a packing member carried by the cellar at the edges thereof and bearing against the journal near the ends thereof for distributing lubricant on the journal, and a support for the packing for retaining the same in conforming engagement with the journal, the support and the packing having registering openings therein for the passage of the rollers, the support being of less length than the journal whereby the packing will project beyond the ends of the support, the projecting ends of the packing being extended downwardly to define flanges.

In testimony whereof I affix my signature.
WILLARD F. RICHARDS.

40

45

50

55

60