June 17, 1930. M. WICKIZER 1,764,541

JOURNAL BOX

Filed June 30, 1927

Fig.1.

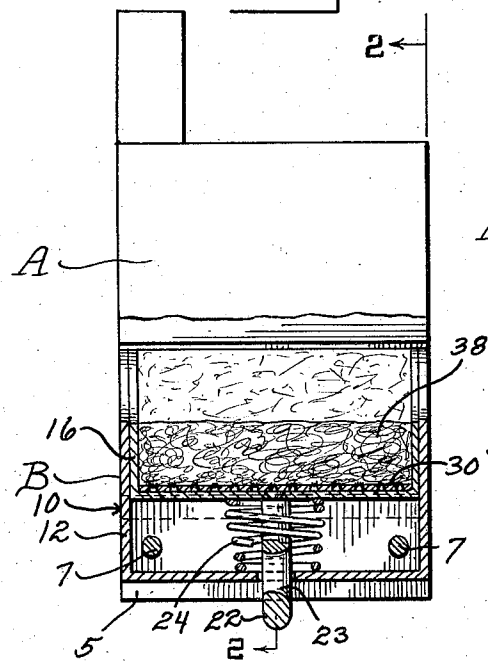


Fig.2.

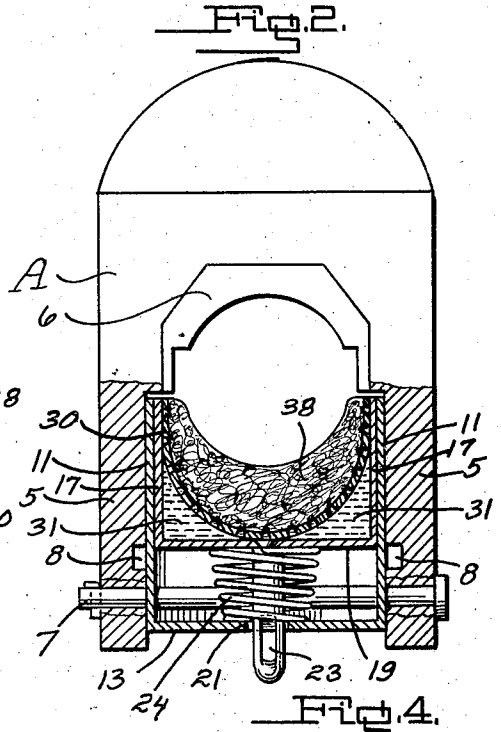


Fig.3.

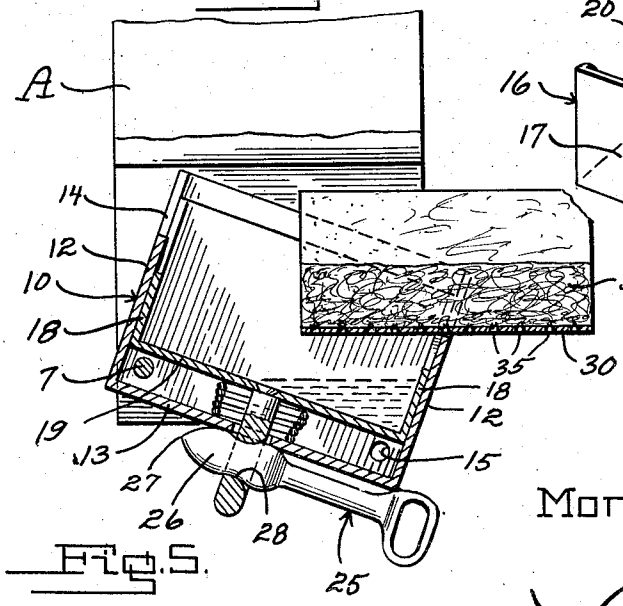


Fig.4.

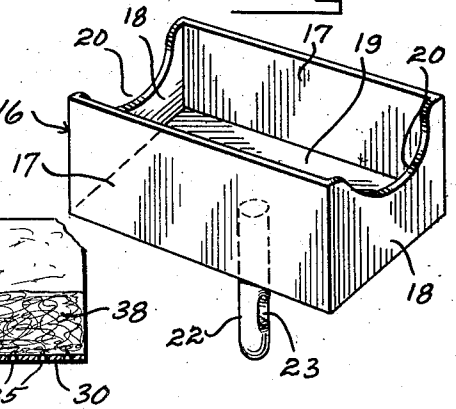
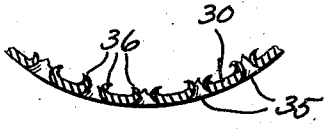


Fig.5.



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UNITED STATES PATENT OFFICE

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JOURNAL BOX

Application filed June 30, 1927. Serial No. 202,702.

The present invention relates to improvements in journal boxes and more particularly to an improved waste or lubricant cellar particularly well adapted for use in connection with journal boxes such as employed upon locomotives and other railway rolling stock.

With certain types of cellars now in use, the lubricating material is in the form of a number of independent rolls of oil-saturated and twisted pieces of waste which are placed loose in the cellar box. This waste is supposed to remain in contact with the axle journal for lubrication thereof, but no means is provided for retaining the waste in contact with the journal and the waste, due to vibration, often pounds down and twists away from the journal so that the journal is not properly lubricated and quite often runs dry resulting in delaying of the train.

It is therefore a primary object of the present invention to provide an improved cellar for engine truck journal boxes embodying features whereby the lubricating material is retained in constant contact with the journal for effective lubrication thereof.

A further object of the invention is to provide a journal box cellar which may be readily and easily attached and detached from the journal box when inserting or replenishing of the lubricating medium becomes necessary.

A further object of the invention is to provide a filler of the class described embodying an arrangement whereby the waste for lubrication of the journal is held against shifting movement during vibration caused by travel of the locomotive, and which waste is so associated with a carrier member as to allow for the waste to be properly positioned within the cellar or removed therefrom when repacking and oiling becomes necessary.

A still further object of the invention resides in the provision of an improved cellar embodying a follower or lubricant retaining cup for supporting of the waste filler, and embodying an arrangement whereby the follower cup may be moved laterally away from the journal and retained in its retracted position for enabling ready and easy repacking of the waste filler.

Other objects and advantages of the invention will be apparent during the course of the following detailed description, taken in connection with the accompanying drawing forming a part of this specification and in which drawing:

Figure 1 is a view part in side elevation and part in central vertical section through a conventional type of journal box shown with the improved cellar applied thereto.

Figure 2 is a vertical section taken substantially on the line 2—2 of Figure 1.

Figure 3 is a view showing the cellar in longitudinal section and showing the manner in which the cellar may be swung with respect to the journal box, and the follower or lubricant container retracted for ready removal and replacing of the journal lubricating means.

Figure 4 is a perspective view of the follower cup for retention of the lubricant.

Figure 5 is an enlarged fragmentary section through a carrier plate for the waste filler.

Referring to the drawing in detail, and wherein similar reference characters designate corresponding parts throughout the several views, the letter A designates an engine truck journal box of conventional construction shown provided with the improved cellar B adapted to serve as a lubricating means for the axle journal supported in the box A but not shown in the drawing.

The journal box A, and which is of conventional construction is of inverted U-shaped formation and embodies depending side arms 5 between which the improved cellar B is mounted, and arranged between the upper ends of the arms is the usual brass or bearing 6 for engaging the journal adapted to extend through the box between the arms 5. Extending transversely through the lower ends of the arms 5, and one adjacent each end of the box, are the usual cellar bolts or pins 7 which in ordinary practice serve to removably retain the ordinary type of cellar in position between the arms 5 for lubrication of the journal extending through the box. These bolts or pins 7 in usual practice permit of ready removal and replacing of the

journal box cellars for replenishing of the waste filler serving to lubricate the journal. The type of cellar as employed in the type of journal box shown, is provided at each side with flanges which are intended to fit in the channels 8 when the cellar is slid longitudinally between the depending arms 5, and this longitudinal movement of the usual type of fillers quite often results in the twisted and oiled rolls of waste to be moved out of proper position and thus not serve to effectively lubricate the journal.

Referring now to the improved cellar construction B, the same embodies a cellar proper or mounting 10 of box like formation for providing a pair of parallel side walls 11, end walls 12, and a bottom wall 13 forming a closure for the bottom of the box like housing 10. The upper edges of the end walls 12 are recessed as at 14 for providing a suitable clearance for the journal which is intended to extend longitudinally of the housing between the upper edges of the side walls 11. The cellar proper or housing 10 is of a width substantially equal to the spacing between the depending arms 5 of the journal box A, and provided adjacent each end of the side walls 12 in slightly spaced relation above the bottom wall 13, are suitable circular shaped openings 15 which align transversely of the housing and through which the bolts or pins 7 extend for supporting of the housing between the arms 5.

Mounted for vertical sliding movement within the housing 10 is a waste cellar 16 of box like formation and embodying parallel side walls 17, end walls 18, and a flat bottom wall 19 forming a closure for the bottom of the waste cellar. This waste cellar 16 is of a depth less than that of the housing 10 and is adapted to have its side walls snugly engage the inner surfaces of the walls of the housing 10 whereby the cellar is held against lateral shifting within the housing. The upper edge of each of the end walls 18 is recessed as at 20 for accommodating the journal intended to extend longitudinally of the cellar between the upper edges of the side walls 17. Thus it will be seen that the cellar 16 by reason of its being of box like formation and closed at its bottom by the flat wall 19, serves as a suitable receptacle for the retention of a lubricant such as oil.

Rigidly connected in any suitable manner at its upper end to the flat bottom wall 19 of the waste cellar 16 and projecting through a suitable guide opening 21 provided in the bottom wall 13 of the housing 10, is a plunger post 22 provided adjacent its lower end with a longitudinally extending opening or key way 23. Encircling the post 22 between the bottom walls 13 and 19 of the housing and waste cellars 10 and 16 respectively, is an expansion coil spring 24 which acts for normally urging the waste cellar upwardly or outwardly of the housing 10 and toward the journal box bearing 6. This spring 24 is preferably secured at its upper end in any suitable manner to the flat bottom wall 19 of the waste cellar.

A retracting means 25 is provided for withdrawing and retaining the waste cellar in its retracted position adjacent the bottom of the cellar proper 10, and this means is preferably in the form of a key provided at one end with an elongated keeper head 26 which is intended to be inserted into the plunger post opening 23 in a manner for forcibly moving the waste cellar downwardly in the cellar proper in a manner as illustrated in Figure 3. This keeper head 26 is provided with a pointed terminal 27 for ready guiding of the head into the opening 23, and the intermediate portion of the head is concaved as at 28 so that when the head is inserted into the opening the plunger bolt will engage in the concavity in a manner for retaining the key in position so that the same will act to hold the waste cellar retracted by contact of one edge of the head with the under surface of the bottom wall 13 of the cellar proper. By observing Figures 1 and 2 it will be seen that a portion of the plunger post opening 23 normally projects below the bottom wall 13 of the cellar proper when the waste cellar is in operative engagement with the journal, and thus allows ready insertion of the keeper head 26 for retraction of the waste cellar.

Adapted to be removably positioned within the waste cellar 16, is a carrier plate 30 which is preferably formed from sheet metal, and which plate is transversely arcuated throughout its length as clearly illustrated in Figure 2. This transversely arcuated carrier plate 30 is of a length equal to the distance between the end walls 18 of the waste cellar 16, and when positioned within the cellar is intended to have its free marginal edges yieldably contacting with the upper portion of the side walls 17 of the cellar, and the convex side of its crown portion contacting with the upper surface of the flat bottom wall 19 for forming a pair of longitudinally extending oil pockets 31. Thus it will be seen that by so forming the waste cellar 16 with the flat bottom wall 19 and parallel side walls 17, that a relatively large oil space is provided longitudinally of each side of the carrier plate, and that a substantial portion of the convex surface of the carrier plate is disposed so as to contact with the oil retained in the pockets 31. The carrier plate 30 is formed throughout its entire area with a series of perforations 35 which are preferably formed by suitable plungers entering the plate from the convex side thereof in a manner whereby the metal is caused to be curled at the inner side of the plate for formation of hook shaped pro-

jections 36 as clearly illustrated in Figure 5. These hook shaped projections may be formed by driving pointed instruments through the plate. The perforations 35 and as will be observed in Figure 5 are of frustoconical formation and are of less diameter at the inner side of the plate so that they form a vacuum for ready passage of the oil from the pockets 31 through the plate to the inner concaved side thereof. These projections 36 and which as will be observed provide a roughened inner surface for the carrier plate, are adapted to engage the fibers of a suitable waste filler 38 in a manner whereby the filler is effectively held against lateral and longitudinal shifting within the transversely arcuated carrier plate. By observing Figure 2 it will be seen that the oil in the longitudinal pockets 31 is allowed to freely pass through the carrier plate apertures 35 for saturation of the waste filler 38.

When desiring to inspect or renew the waste filler 38 it is merely necessary to insert key 25 in opening 23, remove one of the filler bolts or pins 7 and allow the cellar to be swung downwardly at one end to a position as illustrated in Figure 3 and from which it will be observed that the condition of the waste filler may readily be observed. Should it become necessary to renew or replace the waste filler, the key 25 is inserted through the opening 23 of the plunger post 22 for retracting the waste filler 16 and allowing for ready removal of the waste filler together with its carrier plate 30 in a manner as illustrated in Figure 3. During positioning and removal of the carrier plate 30 and the waste filler 38 in a manner as illustrated in Figure 3, it will be seen that the carrier plate by reason of the projections 36, will serve to prevent the waste filler from being doubled out of shape so that certain portions of the filler are prevented from contacting with the journal intended to be lubricated by the filler. Thus it will be seen that the filler 38 and carrier plate 30 may constitute a lubricating medium for ready insertion into the oil retaining waste cellar 16 as a unit.

After the carrier plate together with the waste filler has been inserted into the waste cellar 16, the entire cellar structure may be swung upwardly and the pin 7 replaced for retention of the filler between the journal box arms 5. The key 25 may then be withdrawn and allow the spring 24 to urge the waste filler upwardly so that the waste filler 38 is moved into contact with the journal to be lubricated.

From the foregoing description it will be apparent that a novel and improved cellar construction for use in connection with engine truck journal boxes has been provided embodying a novel arrangement whereby the waste filler may be readiy and properly associated with the journal to be lubricated thereby and held in engagement with the journal by means of a yieldably mounted oil retaining cellar slidably disposed in a pivotally mounted cellar proper.

Various changes may be made to the specific form of the invention as herein shown and described, without departing from the spirit of the invention or the scope of the following claim.

I claim:

In a cellar for journal boxes of the class described, the combination of a housing including end, side and bottom walls, a waste cellar including end, side and bottom walls, mounted for vertical sliding movement within said housing, a plunger post secured to the bottom wall of the waste cellar and projecting downwardly through an opening in the bottom wall of said housing, said post having an opening provided therein adjacent its lower end, an expansion coil spring encircling the post between said bottom walls of the housing and waste cellar for normally urging the waste cellar upwardly in the housing, a key embodying an elongated head insertible transversely through the opening in said plunger post and engageable with the under surface of the bottom wall of said housing for drawing the waste cellar downwardly within the housing and retention of the waste cellar in its retracted position, a perforated carrier plate removably supported in the waste cellar, and a waste filler carried by the upper side of the carrier plate for vertical movement with the waste cellar.

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