

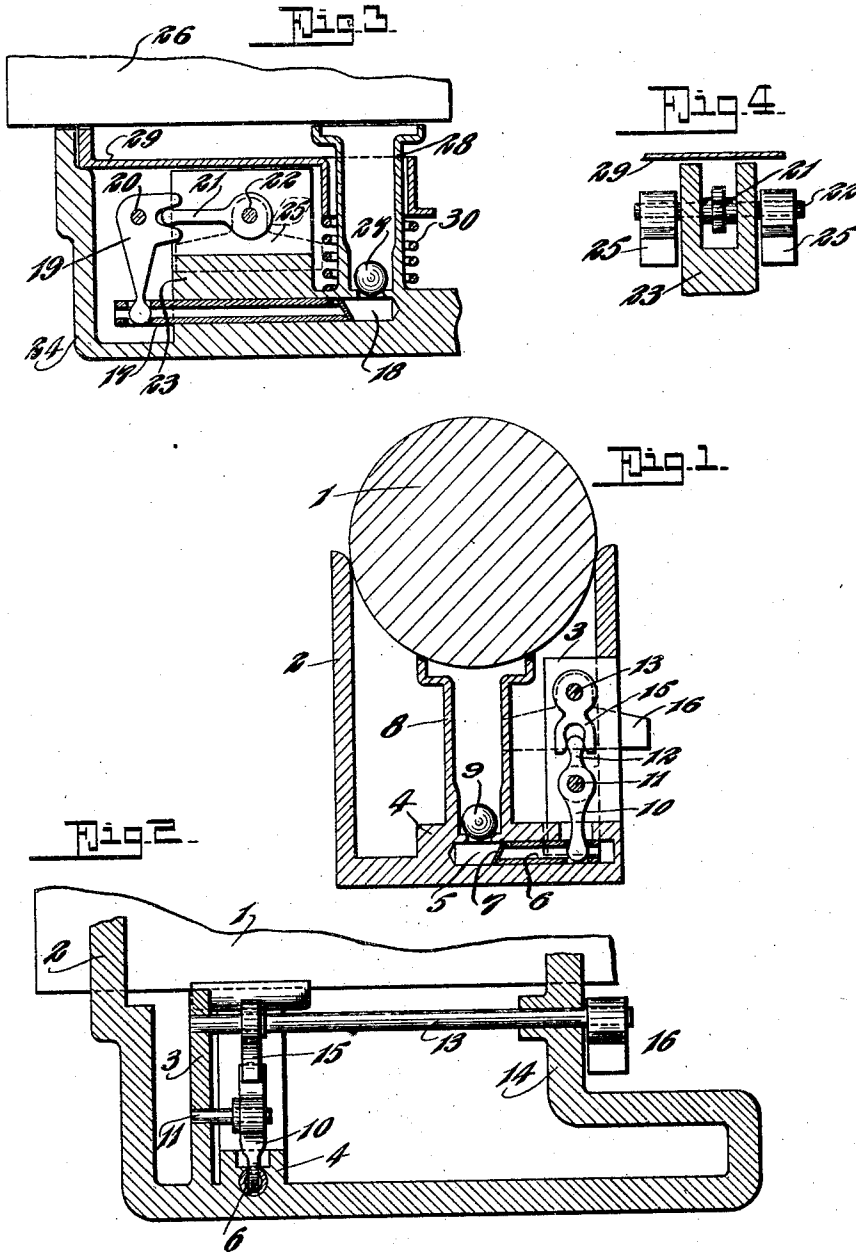
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LUBRICATOR

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UNITED STATES PATENT OFFICE.

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LUBRICATOR.

Application filed May 31, 1923. Serial No. 642,692.

My invention relates to lubricating devices especially adapted for use in railway rolling stock journal boxes and consists in a construction somewhat resembling that shown in my Patent No. 1,265,199 and in my co-pending application Serial Number 640,646, filed May 22, 1923.

The main object of my invention is to provide lubricant pump operating mechanism which is adapted to operate under certain conditions in which the mechanism in the above described disclosure will not operate or will operate less efficiently than the present mechanism.

Another object of my invention is to reduce the expense of manufacturing lubricant pump mechanisms and to eliminate certain parts which are likely to break or decrease in efficiency during their life.

In the accompanying drawings illustrating my invention—

Figure 1 is a vertical section taken transversely of the car axle and showing my lubricator device applied thereto.

Figure 2 is a vertical section taken at right angles to Figure 1 and showing the same parts.

Figure 3 is a section corresponding to Figure 2 but illustrating a modified construction.

Figure 4 is a fragmentary section taken at right angles to Figure 3.

It will be understood that the axle 1 will be provided with a journal box (not shown) of any approved type in which journal box the lubricator body 2 is seated. This lubricator body is so shaped as to form a lubricant reservoir in its lower portion and to have upstanding walls at the sides and ends thereof and an intermediate upstanding wall 3 for the purpose of mounting pump actuating mechanism. The lower portion of the lubricator body is provided with a suitable boss 4 which is recessed as indicated at 5 to form a pump cylinder. In this cylinder there is a pump plunger here shown as a tube 6 having a flop valve 7 at the inner end thereof. A vertical tube 8 leads from the inner end of recess 5 to the axle 1 and this tube may be formed integrally with the lubricator body or be separately formed and assembled therewith. The passage between recess 5 and tube 8 is provided with a check valve 9 to prevent the escape of any lubricant forced into the tube.

The plunger 6 is actuated by one arm of a lever 10. The lever is pivoted on wall 3

by a pin 11 and its other arm 12 extends upwardly. A horizontal rod 13 is journaled in wall 3 and in the side wall 14 of the lubricator body and between its journals passes over lever 10. An arm or crank 15 is fixed on rod 13 and pivotally engages arm 12 of lever 10 and serves to move the latter back and forth when rod 13 is oscillated.

Rod 13 projects through lubricator wall 14 to the exterior of the lubricator and is there provided with a pendulum-like weight 16 which in its normal position holds rod 13, arm 15, and lever 10 in position as indicated in the drawings.

When the car is started or stopped, there will be a corresponding movement produced in the weight 16 which will oscillate rod 13 and actuate the pump plunger, forcing lubricant received from the lubricant reservoir forming portion of the body through cylinder 5 and tube 8 to the axle 1. During the travel of the car any sudden decrease or acceleration in its speed will produce a swinging movement of the weight and operate the pump. In other words, it is not necessary for the car to start and stop in order for my device to function.

By placing the weight outside of the lubricant reservoir it will be unaffected by the height of lubricant in the reservoir and its operation may be inspected whenever desired without removing the lubricator from the journal box.

In the modification illustrated in Figures 3 and 4 the same principle of operation is retained, the plunger 17 being reciprocated in cylinder 18 by a bell crank lever 19 which is pivoted at 20 and is actuated by an arm or crank 21 fixed on a rod 22 journaled in the wall 23 extending upwardly from the bottom of the lubricator body 24. The rod 22 extends on each side of wall 23 and mounts a pair of swinging weights 25 which swing to and fro and oscillate rod 22 to operate the pump. In this modification the axis of the weighted rod extends transversely of the axis of journal 26 and the swinging movements of weights 25 are caused by swaying movements from side to side of the car or engine truck. As there is a constant to and fro movement of the axles of a car truck across the track there will be a continual oscillation of rod 22 varying in amount but always sufficient to provide movement of the plunger so as to force lubricant past check valve 27 and through tube

28 to the axle journal 26. In this modification I illustrate a waste carrying pan 29 which is yieldingly supported by a spring 30. This pan, when packed with waste, serves to retain a supply of lubricant adjacent the journal and is a feature of lubricating devices hitherto patented by me.

The parts are simple and economical to manufacture and are easily assembled. There is practically nothing to get out of order or to wear sufficiently to seriously affect the operation of the device.

Obviously the arrangement of the pump and its operating members may be varied according to different conditions under which the lubricator must be manufactured and applied and I contemplate such modifications in my invention as may be included in the following claims.

I claim:

1. In a lubricator, for operation in a railway journal box, a lubricant pump, an actuating lever for said pump, a shaft journaled in said lubricator at a level substantially above said pump, a pendulum-like weight on said shaft, an arm fixed on said shaft spaced from said pendulum and operatively engaging said lever.

2. In a lubricator, a lubricant reservoir, a horizontal cylinder near the bottom of said reservoir, a plunger slidable in said cylinder, a lever pivoted above said plunger and having an arm pivotally connected to said plunger, a shaft pivoted in said lubricator and having a crank pivotally connected to another arm of said lever, and pendulum-like means for oscillating said shaft.

3. In a lubricator, a lubricant reservoir, an upstanding wall in said reservoir having a horizontal passage in the lower portion thereof forming a pump cylinder, a plunger

slidable in said passage and extending outwardly beyond the end of the same, a pivoted lever having an arm engaging the outwardly extending portion of said plunger, a shaft journaled in said wall above said passage, a weight depending from said shaft and adapted to oscillate the same as the lubricator moves bodily, and a connection between said shaft and said lever for operating the latter to move said pump plunger.

4. In a lubricator for operation in railway journal boxes, a lubricant reservoir a lubricant pump, a shaft located a substantial distance above said pump, a pendulum for oscillating said shaft and located outside of said reservoir, and a lever pivoted on said lubricator and forming an operating connection between said shaft and pump.

5. In a lubricator, a lubricant pump, an upwardly extending actuating lever for said pump, a shaft above said pump journaled in said lubricator and extending exteriorly of the same, a pendulum-like weight on said shaft outside of the lubricator, and a downwardly extending arm on said shaft inside of the lubricator and operatively engaging said lever.

6. In a lubricator for insertion and operation in a railway journal box, a horizontal pump cylinder, a plunger therein, a swinging weighted member pivoted on the lubricator, and a substantially vertical lever pivoted between its ends on the lubricator, the lower end of said lever engaging said plunger and the other end of said lever being operated by said member to actuate said plunger.

In testimony whereof I hereunto affix my signature this 22 day of May, 1923.

JAMES J. HENNESSY.