

April 8, 1924.

1,489,353

J. E. JOHNSON
LUBRICATOR ATTACHMENT
Filed April 5, 1922

Fig. 1.

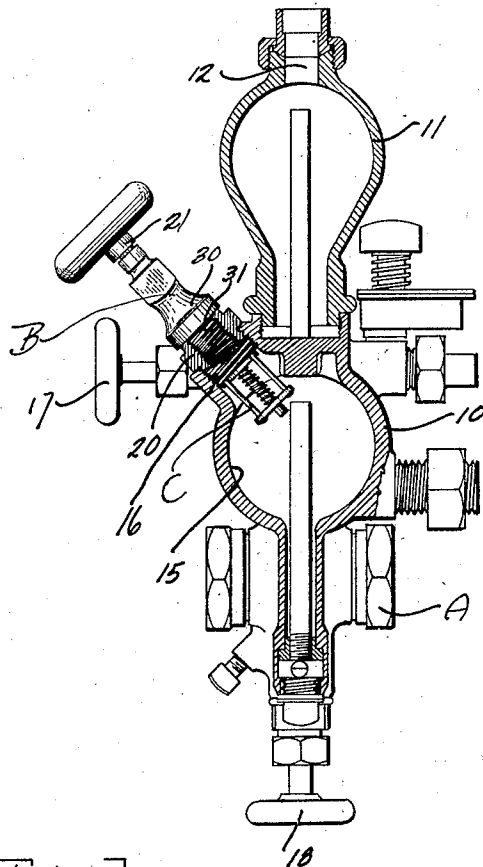


Fig. 2.

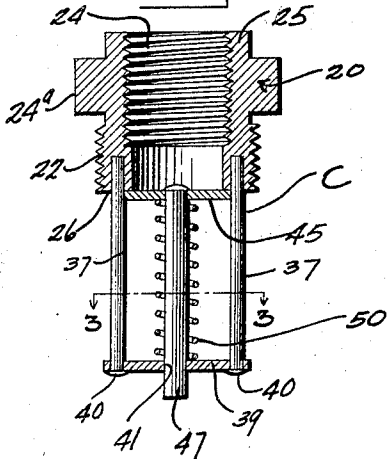
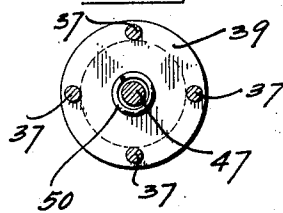


Fig. 3.



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JESSE E. JOHNSON, OF NASHVILLE, TENNESSEE.

LUBRICATOR ATTACHMENT.

Application filed April 5, 1922. Serial No. 549,908.

To all whom it may concern:

Be it known that I, JESSE E. JOHNSON, a citizen of the United States, residing at Nashville, in the county of Davidson and State of Tennessee, have invented certain new and useful Improvements in Lubricator Attachments, of which the following is a specification.

This invention relates to improvements in lubricators whereby an oil supply may be effectively controlled.

The primary object of the invention is the provision of an automatic valve control adapted for use in connection with the filling apparatus of a locomotive lubricator, for preventing the lubricant in the lubricator from accidentally discharging.

A further object of the invention is the provision of a novel check valve arrangement.

A further object of the invention is the provision of a check valve arrangement specifically adapted for use upon a detachable bushing such as used in connection with filling plugs of steam engine lubricators.

A further object of the invention is the provision of a check valve arrangement of the above mentioned character, adapted for specific use in connection with the lubricators of locomotives and the like; said lubricators ordinarily using a substance under pressure, such as steam, in the force feeding of the lubricant to any desired location.

Other objects and advantages will be apparent during the course of the following detailed description.

In the accompanying drawing, forming a part of this specification, and wherein similar reference characters designate corresponding parts throughout the several views,

Figure 1 is a longitudinal cross sectional view taken through an ordinary type of "bull's eye" locomotive lubricator, showing the improved attachment as used in connection therewith.

Figure 2 is a cross sectional view taken through the improved attachment, showing the check valve arrangement as a part thereof.

Figure 3 is a transverse cross sectional view taken on the line 3—3 of Figure 2.

In the drawing, wherein for the purpose of illustration is shown the preferred embodiment of my invention, the letter A designates any type of lubricator, such as

is ordinarily used in the lubrication of steam chests and bearings of locomotives. A filler plug arrangement B is provided as a part of the lubricator A embodying a novel type of valve structure C.

The lubricator A is of standard structure, including the body casing 10 having a condensing chamber 11 mounted upwardly thereon into which steam is admitted as through the passageway 12. The body 10 is provided with a chamber 13 adapted for receiving a lubricant, as through a filler opening 16, into which opening the means B is mounted. The chamber 15 ordinarily has communication with the chamber 11, said communication being controlled by a water valve 17. A regulating valve 18 is also provided as a part of the lubricator A, adapted for controlling the flow of lubricant to a specific location. Other incidental features may be found upon this type of locomotive lubricator.

In the operation of the same, it becomes necessary from time to time, to fill the chamber 15 with lubricant. This filling operation may be necessary during operation of the lubricator A, and after the same has been in operation for a considerable time. It is well known that, at times, the valve controlling the inlet of steam into the condenser 11 is opened. Likewise, the control valve 17 may be loosened and the steam and water have access to the chamber 15. Under such circumstances, the residue of oil within the casing 10 becomes highly heated, very often boiling, and creating considerable pressure in the chamber 15. Removal of the filler plug B at such time is at best, a dangerous procedure, since if the plug is removed at such a time, the lubricant within the chamber 15 will be violently blown out of the filler opening 16, very often painfully injuring an operator and losing all of the oil within the lubricator A.

The filler control arrangement B includes the bushing member 20, and the plug 21.

The bushing 20 is provided, in order that the plug 21 may conveniently seat therein. This bushing 20 is of hollow cylindrical formation, including a depending shank 22, externally screw threaded for detachable engagement with the screw threads in the filler opening 16. A polygonal flange 24 is provided, upwardly of the shank 22, whereby a wrench may conveniently attach or detach the bushing 20 in its opening

16. The interior of the bushing 20 is hollow, and provided with an internally screw threaded passageway 24 which opens at both ends of the bushing 20; these screw threads of the passageway 24 entering the same from the upper end 25 of the bushing and terminating short of the lower end 26.

The plug 21 is of standard construction, including the enlarged body portion 30, having the extending screw threaded shank 31 on the lower end thereof adapted for detachable insertion in the screw threaded passageway 24 of the bushing 20, in order that said passageway 24 may be sealed.

The check valve arrangement C is of novel construction, primarily designed to prevent accidental blowing of the lubricant out of the filler opening 16, under the circumstances above mentioned. A check valve for such arrangement will, of necessity, have to be of accurate and durable construction. To this end, four posts 37 of a good grade of steel are provided, depending from the screw threaded shank 22, extending parallel of the axis of the bushing 20. These posts 37 are relatively long and are embedded at their upper ends in the solid portion of the shank 22. The extreme free ends of the posts 37 receive a flat disc member 39, by having the ends 40 peened over, so that the plane in which the disc 39 is positioned is at right angles to the axis of the bushing 20. This disc 39 is provided with an aperture 41, centrally thereof, and aligning with the axis of the bushing opening 24. A valve member 45 of disc shaped formation, is provided, adapted for sliding intermediate the lower face 26 of the bushing 20 and the upper surface of the supporting disc 39. This valve member 45 is provided with a stem 47, which is axially fixed thereto, so that said stem 47 depends through the central aperture 41 of the supporting disc 39 in snug sliding manner. The outer marginal edges of the valve member 45 are in sliding engagement with the post 47, so that said valve 45 cannot move laterally out of position with respect to said posts. Due to the pin 47, said valve 45 is guided intermediate the bushing 20 and the supporting disc 39, whereby the plane of the same is at all times parallel to the plane of the lower face 26 of the bushing 20. A substantial spring 50 is provided, circumferentially about the stem 47, engaging the lower surface of the valve member 45 at one end, and at its other end resting upon the top surface of the supporting disc 39. In this position, the spring 50 is under a relatively great compression, whereby the valve member 45 is forced into engagement with the lower end 26 of the bushing 20 in order to seal the passageway 24, in so far as the lower end of the shank 22 is concerned.

As is illustrated in Figure 1, the remov-

able seat or bushing 20 is inserted in the screw threaded filler opening 16, by first inserting the check valve arrangement C. In this position, it can be seen that the filler opening is closed by the valve member 45, so that it is necessary to depress the valve member 45, in order to fill the oil chamber 15. Should an operator attempt to fill the lubricator A at such a time when the oil therein is overheated, or under considerable pressure, it can be seen that by slightly depressing the valve 45 off of the bushing 20, a test of the condition of the oil in the lubricator A may be observed. Should the oil in the chamber 15 be in a dangerous condition under pressure, the operator may immediately release the valve 45, and the same will automatically assume a position to close the filler opening.

From the foregoing, it can be seen that a novel attachment for lubricators has been provided, whereby the lubricant therein may be effectively controlled in automatic manner. The improved device, will not only prevent injury to an operator by effective regulation of the lubricant, but possesses economic advantages in that oil need never be wasted by flowing out of the filler opening 16, either by reason of undue pressure within the casing 10, or by the overfilling of the chamber 15. The passageway 24 may be kept free of sediment and other foreign materials by attachment of the filler plug 21 thereon.

Various changes in the shape, size and arrangement of parts may be made to the form of the invention herein shown and described, without departing from the spirit of the invention or the scope of the claims.

I claim:

1. A control device comprising a bushing member of hollow cylindrical formation having one end thereof externally screw threaded, and having the other end thereof internally screw threaded, a plurality of posts depending from the solid portion of said bushing and extending outwardly in parallel relation with respect to each other and with respect to the axis of the passageway through said bushing, said posts extending outwardly from the internally screw threaded end of said bushing, a supporting disc having a central aperture therein fixedly mounted upon the free ends of said post as to be in a plane substantially at right angles to the axis of the passageway through said bushing, a valve including a disc and a stem arranged axially of said disc, said valve disc being arranged as to have the marginal edge thereof slidably engaging the supporting posts, so that the valve stem slidably engages within the aperture of said disc fixed upon the free ends of said posts, and a spring member under compression to normally force the valve disc over the end of

said bushing whereby the passageway there-through is sealed.

2. In a device of the class described, the combination of a lubricator having a filler opening therein, a bushing for said filler opening, a detachable plug for said bushing, and a check valve disposed upon said bushing inwardly of the lubricator to normally maintain the passageway through said bushing sealed against pressure from within the lubricator.

3. In a device of the class described, the combination with a pressure fed lubricator having a filler opening therein, of a bushing having an externally screw threaded shank for insertion in said filler opening, said

bushing having a passageway therethrough internally screw threaded from an end of said bushing opposite said externally screw threaded portion thereof, a supporting device carried by the extreme forward end of said bushing adapted for insertion in the filler opening of said lubricator, a check valve arrangement carried by said supporting device upon said bushing and normally in position to maintain the passageway of said bushing closed, and a plug having a shank adapted for insertion in the internally screw threaded passageway of said bushing for sealing said passageway at the end of said bushing opposite to said check valve.

JESSE E. JOHNSON.