No. 773,181. PATENTED OCT. 25, 1904.

G. H. ANNAN.

LUBRICATOR.

APPLICATION FILED AUG. 20, 1904.

NO MODEL.

Fig. 2.

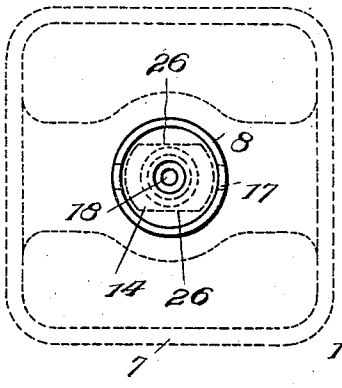


Fig. 3.

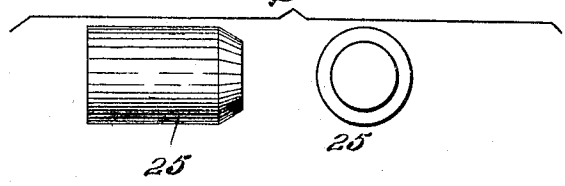


Fig. 4.

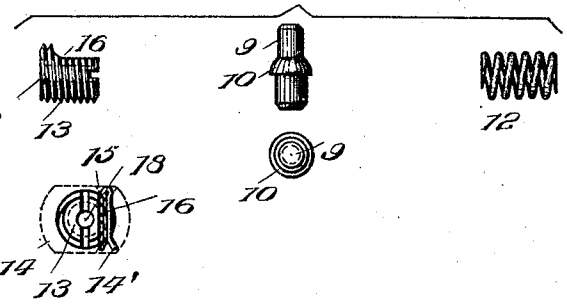


Fig. 1.

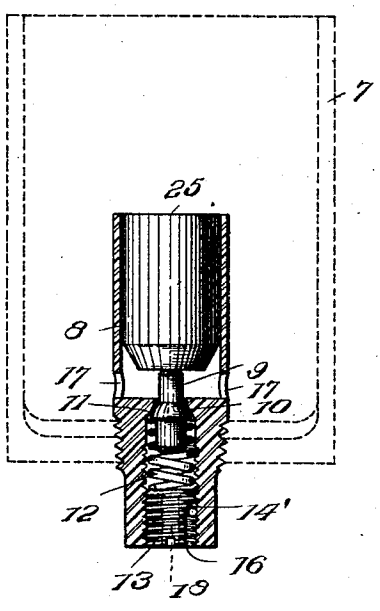
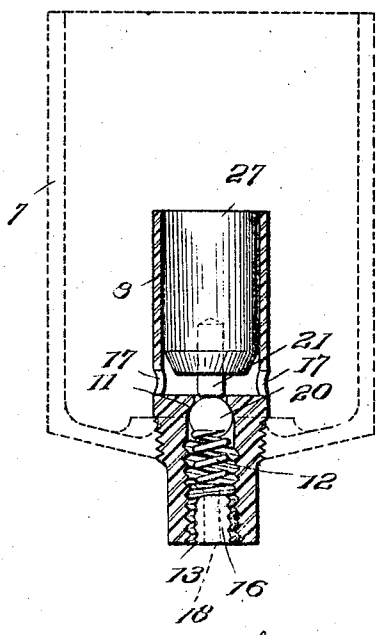


Fig. 5.



WITNESSES:

Benjamin B. Hollett

Wm. D. Wright

George H. Annan,

INVENTOR:

No. 773,181. Patented October 25, 1904.

UNITED STATES PATENT OFFICE.

GEORGE H. ANNAN, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR OF ONE-HALF TO WILLIAM D. WRIGHT, OF PROVIDENCE, RHODE ISLAND.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 773,181, dated October 25, 1904.

Application filed August 20, 1904. Serial No. 221,461. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. ANNAN, a resident of Providence, Rhode Island, have invented a new and useful Improvement in Lubricators, which invention is fully set forth in the following specification.

My invention relates to improvements in automatically-operating lubricators, particularly of the type for use on cars or other vehicles in which a normally closed valve for feeding lubricant to the bearing is adapted to be automatically and intermittently opened by the jarring or vibration of the car when in motion.

My object is to generally improve upon devices of this kind heretofore used.

The invention will be readily understood by reference to the accompanying drawings, showing several embodiments thereof.

Figure 1 is a vertical sectional view. Fig. 2 is a plan of Fig. 1 with the weight and valve removed. Fig. 3 shows the plunger-weight in two views. Fig. 4 embraces detail views of several of the parts, and Fig. 5 is a vertical sectional view of a modified form of the invention.

7 (dotted lines) is an oil-cup or receptacle adapted to be filled with lubricant.

8 is a hollow valve-casing removably screwed into an opening through the bottom of the oil-cup.

25 is a cylindrical plunger-weight freely movable up and down in the hollow upper end of the plug. The lower end of the weight rests against the upper end of the stem 9 of a mushroom-shaped valve 10, normally pressed upwardly against its seat 11 by a coiled spring 12. The upper end of said spring surrounds the lower depending end of the valve-stem and bears against the under face of the valve 10. At its lower end the spring bears against the inner end of a hollow screw-threaded plug 13, engaging the screw-threaded interior of the lower projecting end of the casing. The pressure of spring 12 is varied by turning plug 13, and a key 14′, passing through a transverse opening 15, acts against a flattened side 16 of the screw to lock the same in its adjusted position. The lower end 14 of the casing is flattened at its opposite sides 26 (see dotted lines, Fig. 2) to facilitate engagement of a wrench to turn the casing in screwing it into or unscrewing it from engagement with the oil-cup.

In operation lubricant passes from the oil-cup through openings 17 of the casing by the valve 10 (when it is opened) and through opening 18 of plug 13 to the bearing. Jarring or vibration of the car (caused, for example, by the passing of the wheels over the joints between rails) causes the plunger-weight to bear down upon the valve-stem with sufficient force to overcome the pressure of spring 12 and lower the valve from contact with its seat. A small quantity of oil passes to the bearing and the spring immediately reacts to close the valve.

By this construction I am enabled to employ a small valve and a relatively strong spring. The valve and its associated parts take up but little space in the oil-cup. The device as a whole may be readily put in place and applied to oil-cups already in use. Its parts may be readily assembled and disassembled.

While I have shown the device in its preferred form in Fig. 1, the invention may be embodied in other forms.

In Fig. 5, for example, the valve 20 is in the form of a ball, and a valve stem or pin 21, separate from the valve and engaging a socket in the lower end of the plunger-weight 27, bears against the ball. The spring bears against the under side of the ball. Otherwise the construction is the same as that of Fig. 1.

What I claim is—

1. In an automatically-operating lubricator, a lubricant-feed valve, a spring on one side of said valve normally holding the same closed, and a freely-movable weight on the other side of the valve but independent thereof, said weight being adapted when actuated by jars or vibrations to open the valve against the pressure of the spring.

2. In an automatically-operating lubricator, a tubular valve-casing having a valve-seat

therein, a lubricant-feed valve movable in the casing, a spring in said casing normally holding the valve against the valve-seat, and a weight independent of the valve freely movable in the casing and adapted when actuated by jars or vibrations to open the valve against the pressure of the spring.

3. In an automatically-operating lubricator, a tubular valve-casing having a valve-seat therein, a lubricant-feed valve movable in the casing, a spring in the casing normally pressing the valve upward against the valve-seat, and a weight fitting loosely and movable vertically in the casing above the valve and adapted when actuated by jars or vibrations to open the valve against the pressure of the spring.

4. In an automatically-operating lubricator, a tubular valve-casing having a valve-seat therein, a lubricant-feed valve movable in the casing, a spring in the casing below the valve and normally pressing the same upward against the valve-seat, a hollow adjustable plug screw-threaded into the lower end of the casing and against which the spring bears, and a weight fitting loosely and movable vertically in the casing above the valve and adapted when actuated by jars or vibrations to open the valve against the pressure of the spring.

5. In an automatically-operating lubricator, a tubular valve-casing having a valve-seat therein, a lubricant-feed valve movable in the casing and having a valve-stem projecting above and below the same, a coiled spring in said casing about the lower end of the valve-stem and normally pressing the valve upward against its seat, and a weight resting on the upper end of the valve-stem and fitting loosely and movable vertically in the casing and adapted when actuated by jars or vibrations to open the valve against the pressure of the spring.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

GEORGE H. ANNAN.

Witnesses:

ELMER E. EARNSHAW,

EUG. J. SHUBURGER.