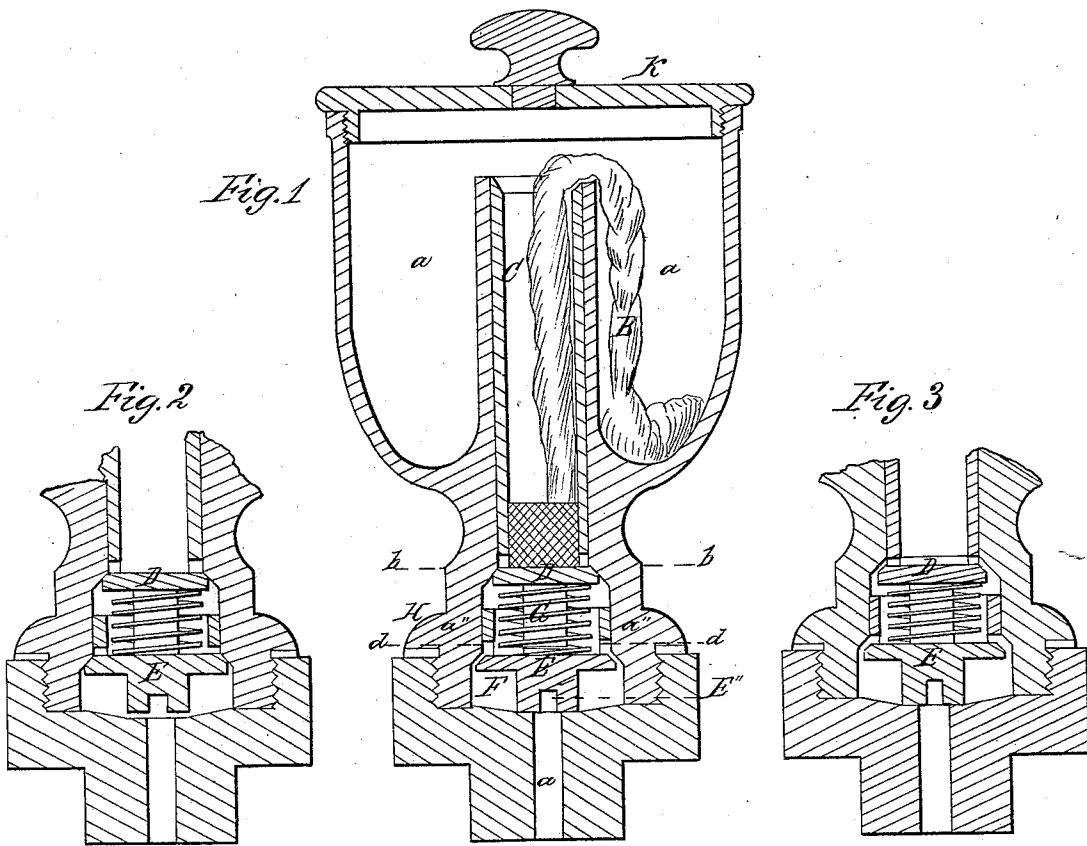


H. Kessler,
Lubricator.

N^o 63,257.

Patented Mar. 26, 1867.



Inventor:
Henry Kessler
per L. L. Arnold
his atty.

United States Patent Office.

HEINRICH KESSLER, OF CAUB CITY, DUCHY OF NASSAU.

Letters Patent No. 63,257, dated March 26, 1867.

IMPROVEMENT IN STEAM-ENGINE LUBRICATORS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, HEINRICH KESSLER, of Oberlahnstein, Duchy of Nassau, Germany, have invented a new and improved Self-Acting Lubricator for Cylinders and Slide-Boxes of Locomotives, Ship-and-Whip Engines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figures 1, 2, and 3 show the vertical sections of the apparatus, which is screwed on the top of the cylinder and the sliding-box—

Figure 1 being the position of the valves when the locomotive, engine, etc., stands still.

Figure 2 being the position of the valves when the locomotive, engine, etc., runs with steam up; and

Figure 3 showing the position of the valves when the engine runs without steam, and the apparatus works.

Similar letters of reference indicate corresponding parts in the several figures.

The apparatus is self-acting, that is to say, it begins to oil when the steam is not allowed to enter the cylinders and the engine runs without steam, and it ceases to oil when the engine is stopped, or when it runs with the steam up. The apparatus also regulates the quantity of oil or tallow, etc., used in proportion to the number of miles run by the engine. If the locomotive, etc., runs a short distance the apparatus oils less than if it were running a longer way or time. The apparatus also cleans the oil, tallow, etc., used, from sand or other injurious substances, and causes the cylinders, pistons, sliding-boxes, and slides to wear much longer than when oiled in the ordinary manner.

To enable others skilled in the art to understand and use my invention, I shall now proceed to describe the construction and operation of the apparatus.

In the drawing, *a* is the channel through which the oil, etc., is introduced into the cylinders or sliding-boxes. The oil, tallow, or other lubricating matter, is contained in the vessel *A*. From this vessel it is sucked by the wicks *B* into the tube *C*. This tube slides smoothly in the cylindrical part *a'* of *A*. At the lower end of *C* is the valve *D*. In the tube *C*, which is the conducting part of the valve *D*, are small holes, through which the oil passes. These holes are protected by a small net-work of wire. This net-work prevents any impurities from entering the valves. The valve *D* is in communication with a second valve, *E*, by the spring *G*. The valve *E* slides smoothly, with its conducting part *E'*, in the part *A*² of the vessel *A*. The oil passes through the holes *b b* into the space *H* between the two valves; then through the holes *d* into the space *F*; and from the space *F* through the holes *d* into the channel *a*. The vessel *A* has a cover or lid, *K*, which is screwed on.

The manner in which the apparatus acts is shown in the following description: The object of the apparatus is to oil when the engine runs without steam, and to prevent it oiling when the engine is stopped, or when it has the steam up. In case the engine stands still the valve *E* is opened by the action of the spring *G*, and the valve *D* is shut by the action of the same spring, and no oil, tallow, etc., can enter from the apparatus into the cylinder or sliding-box. In case the engine has the steam up (fig. 2) the valve *E* is shut by the pressure of steam. The valve *D*, too, is shut by the action of the spring. If the lower valve should be opened and shut with every stroke of the piston, the valve *D* is all the time shut as long as the engine has steam up, and no oil, tallow, etc., is permitted to enter the cylinder or slide-box. Also the steam cannot enter the apparatus to produce condensing water. In fig. 3 the apparatus is shown working, that is to say it is shown at the time at which the engine runs without steam. If no steam is in the cylinder there is also no pressure in the slide-box. The two valves are, therefore, submitted to the suction action of the piston, and opened and shut at every stroke; and in this way the oil is conducted by capillary attraction into the cylinder and slide-box. The valves *D* and *E* work as long as the engine runs without steam. The moment, however, when steam is entering into the cylinder and slide-box, or when the engine is at rest, the apparatus ceases to work. The quantity of lubricating matter which is consumed is regulated by the number of wicks. If three wicks are put in there is more oil conducted over from the vessel *A* in the tube *C* than if there were two wicks only.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination and arrangement of the tube *C*, vessel *A*, net-work in the tube *C*, valves *D* and *E*, and the spring *G*, substantially in the manner and upon the principle as herein set forth.

HEINRICH KESSLER.

Witnesses:

F. WIRTH,
O. GRETZ.