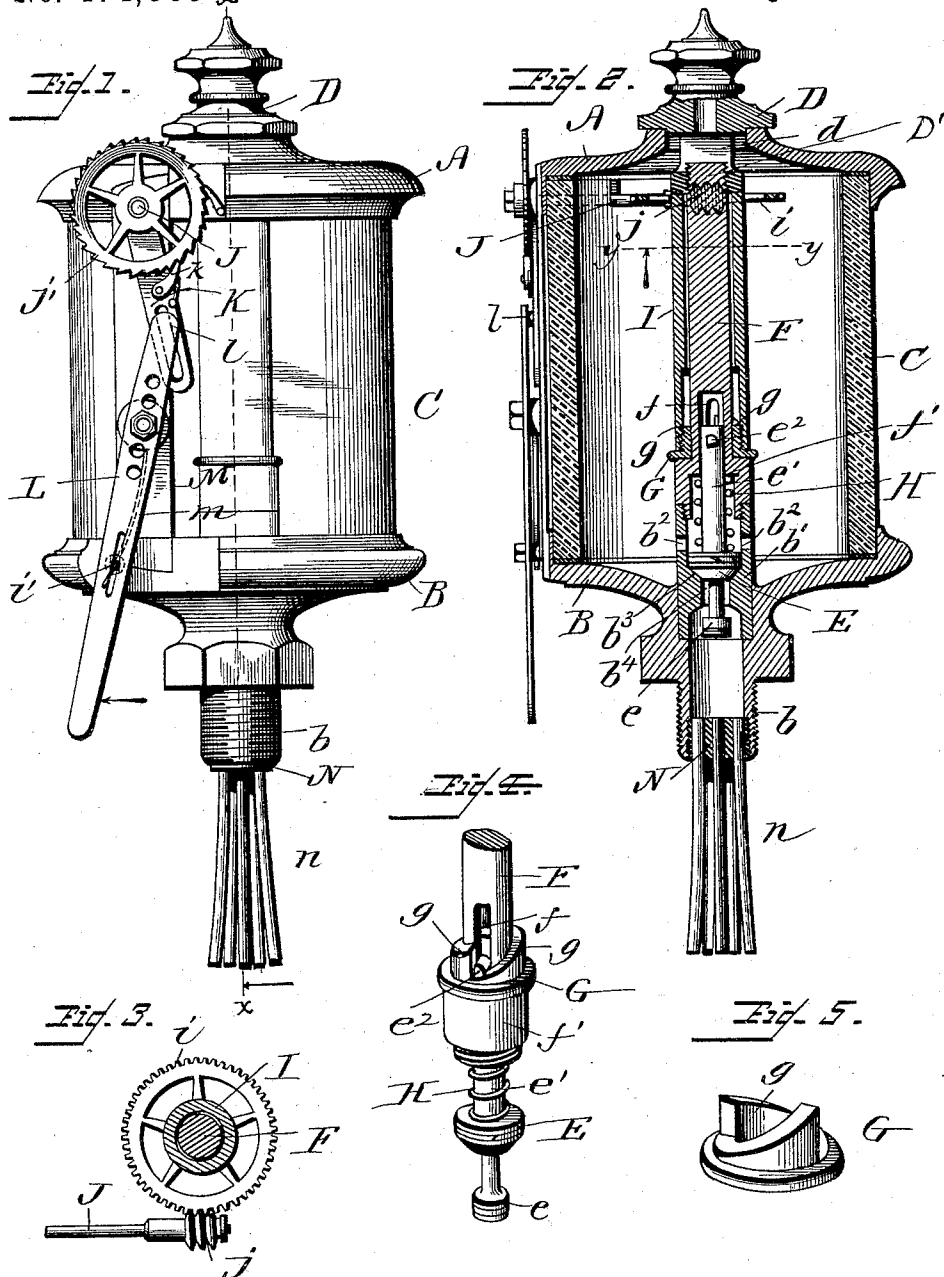


(No Model.)

F. KELLER.
LUBRICATOR.

No. 474,089.

Patented May 3, 1892.



Witnesses
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UNITED STATES PATENT OFFICE.

FRANK KELLER, OF CULBERTSON, NEBRASKA.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 474,089, dated May 3, 1892.

Application filed July 22, 1891. Serial No. 400,319. (No model.)

To all whom it may concern:

Be it known that I, FRANK KELLER, a citizen of the United States, residing at Culbertson, in the county of Hitchcock and State of Nebraska, have invented certain new and useful Improvements in Lubricators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to lubricators which are designed to supply a lubricant to the working parts of an engine under pressure of the steam or like medium without permitting the escape of the said steam or other motive medium to the lubricant-containing vessel.

The object of the invention is to supply the lubricant in a positive manner and prevent the vessel containing the lubricant from being subjected to the pressure of the steam.

The improvement consists of the novel devices by means of which the lubricant is positively and intermittently fed to the parts to be lubricated, which will be hereinafter more fully described, and which are shown in the annexed drawings, in which—

Figure 1 is a side view of a lubricator embodying my invention. Fig. 2 is a vertical section on the line *xx* of Fig. 1, looking to the left. Fig. 3 is a horizontal section on the line *yy* of Fig. 2. Fig. 4 is a detail view of the lower portion of the valve-rod, showing the double valve and the loose collar having the double incline. Fig. 5 is a detail view of the loose collar.

The receptacle for containing the lubricant is composed of the cap A, base B, and body C, the latter being preferably glass, to show the level of the lubricant. Suitable packing is placed between the ends of the body C and the cap and the base to obtain a close joint. The cap is centrally apertured. The stopper D, closing the said aperture, is provided with a threaded opening, which is closed by the screw-plug D' and with a depending projection *d*, reduced on its sides and perforated to permit the lubricant to be supplied to the receptacle on the removal of the plug

D'. The base B is provided with the threaded nipple *b* and the tubular extension *b'*, which is internally threaded. A series of openings *b²*, near the base of the tubular extension *b'*, permits the lubricant to pass from the receptacle to the nipple *b*, and thence to the parts to be lubricated. The valve-seat *b²* is at the base of the tubular extension *b'*, and the reduced bore *b⁴* below the valve-seat receives the valve or plunger *e*, which works therein and prevents the entrance of steam into the receptacle. The valve E, provided for the seat *b²*, is carried by the stem *e'*, to which the plunger *e* is connected. The stem *e'* works in the lower portion of the valve guide-rod F, and the transverse pin *e²* at the upper end of the stem projects through the slot *f* and is adapted to travel on the double inclines *g* at the upper end of the collar G, which is loosely mounted on the valve-rod F. The spring H, mounted on the valve-stem and located between the valve E and the head *f'* at the lower end of the valve-rod F, holds the valve at the lowest limit of its movement and when compressed enters a chamber formed in the lower end of the said head. The valve-rod screws into the tubular extension *b'* at its lower end, and the depending portion *d* of the stopper D screws on the upper end thereof, thereby holding the cap and the base on the ends of the body C. The sleeve I on the valve-rod screws on the upper end of the loose collar G, and the gear-wheel *i* at its upper end is in mesh with the worm-pinion *j* on the horizontal shaft J, which is journaled in bearings on the cap A. The lever K, slotted at its lower end, is mounted on the shaft J and is provided with the dog *k*, which engages with the ratchet-wheel *j'* on the said shaft J. The operating-lever L, mounted on the strip M, which is secured at its ends to the cap and the base, is held in a normal position by the spring *m*, which is secured to the said strip M. The stud *l*, projecting from the side of the lever L, enters the slot in the lever K to connect the two levers in operative relation. The lever L is adjustably connected with the strip M to vary the throw of the said lever, thereby regulating the intervals between the feed of the lubricant. The adjustable stop *l'* regulates the tension of the spring *m*. The plug N, secured

in the nipple *b*, is provided with a series of delivery-tubes *n*, which convey the lubricant to different parts of the machinery to be lubricated.

5 The lubricator is attached to the steam chest, cylinder, or other part of the engine by means of the nipple *b*, and the operating-lever *L* is projected within the path of a moving part of the engine to be actuated, thereby
10 to rotate the sleeve *I* and the loose collar *G*, connected therewith, through the instrumentalities hereinbefore specified. As the loose collar *G* rotates the double inclined or cam end will unseat the valve *E* and permit the
15 lubricant to pass beneath the said valve. After the pin *e*² leaves the cam end of the collar *G* the valve is again seated by the spring *H*. The valve *E* fits the tubular extension *b'* snugly, being packed to preserve a steam-tight joint. The lubricant does not enter the
20 tubular extension *b'* until the valve *E* passes above the opening *b*². When the valve *E* is seated, the plunger *e* is slightly below the reduced bore *b*⁴, and when the valve is unseated
25 the plunger *e* closes the bore and prevents the entrance of steam into the receptacle.

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

30 1. In a lubricator having a discharge-opening in its base, the combination of a valve-rod, a valve-stem having a valve and constructed to move on the said valve-rod and having a projecting portion, a collar loosely mounted
35 on the valve-rod and having a cam end to op-

erate on the said projecting portion of the valve-stem, and means for rotating the said collar, substantially as shown and described.

2. In a lubricator, the combination, with the receptacle having a discharge-opening in
40 its base, of the valve-stem held against rotation and provided with a valve and having a lateral projection, the collar having a cam end to engage with the said lateral projection and loosely mounted on the valve-rod, the
45 sleeve connected with the said collar, and means for rotating the said sleeve, substantially as shown and described.

3. In a lubricator, the combination of the base having a tubular extension and having
50 openings *b*² in the said tubular extension, the cap, the rod *F*, screwed to the said tubular extension, the stopper *D*, screwed on the rod *F*, the valve-stem having a plunger and a valve and working in the rod *F*, the pin *e*²,
55 passing transversely through the valve-stem and a slot in the rod *F*, a spring to return the valve-stem to a normal position, the loose collar *G*, having a cam end arranged to operate on the projecting portion of the valve-
60 stem, the sleeve *I*, and means for rotating the said sleeve, substantially as shown, and for the purposes specified.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK KELLER.

Witnesses:

S. E. SOLOMON,
H. D. MCKELVEY.