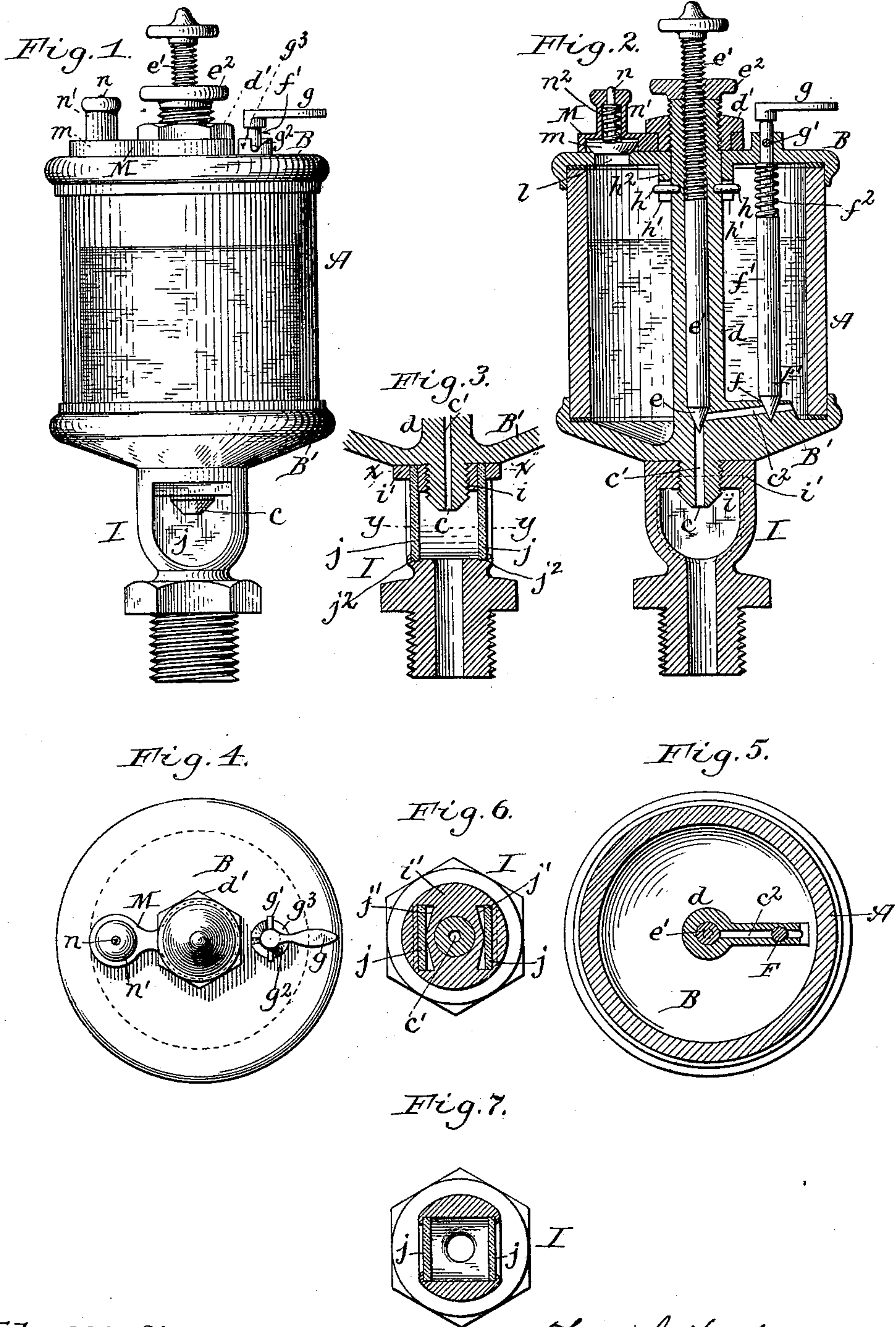


(No Model.)

T. J. HART.
LUBRICATOR.

No. 405,885.

Patented June 25, 1889.



Witnesses:
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UNITED STATES PATENT OFFICE.

THOMAS J. HART, OF BUFFALO, NEW YORK, ASSIGNOR TO FELTHOUSEN & SHERWOOD, OF SAME PLACE.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 405,885, dated June 25, 1889.

Application filed October 20, 1888. Serial No. 288,641. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. HART, of the city of Buffalo, in the county of Erie and State of New York, have invented new and
5 useful Improvements in Lubricators, of which the following is a specification.

This invention relates more especially to the class of lubricators or oil-cups which are provided with an internal regulating-valve
10 and with a transparent drip-chamber, through which the dripping of the oil or other lubricant is visible, and whereby the quantity of oil fed upon the journal or other part to be lubricated may be observed.

15 One of the objects of my invention is to provide the lubricator with a separate cut-off valve, which is independent of the regulating-valve, so that the discharge of oil from the lubricator may be stopped, if desired, without disturbing the adjustment of the regulat-
20 ing-valve, thereby avoiding the necessity of readjusting the regulating-valve each time upon opening the discharge-passage of the lubricator, which is the case when the regulat-
25 ing-valve is used for both purposes.

The invention has the further objects to simplify the construction of the lubricator, to construct the drip-chamber in such a manner that the glass thereof can be readily re-
30 placed when broken, and to provide the feed-opening of the lubricator with a valve which is conveniently manipulated.

My invention consists to these ends of the improvements which will be hereinafter fully
35 described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of my improved lubricator. Fig. 2 is a sectional elevation thereof. Fig. 3 is a vertical section of the lower portion of the same at right angles to Figs. 1 and 2. Fig. 4 is a top plan view of the lubricator. Fig. 5 is a cross-section of the lower portion of the oil-chamber. Fig. 6 is a similar view of the transparent drip-chamber in line $x x$, Fig. 3.
40 Fig. 7 is a cross-section of said chamber in line $y y$, Fig. 3.

Like letters of reference refer to like parts in the several figures.

A represents the cylinder forming the oil-
50 chamber, which is preferably constructed of glass.

B is the cap applied to the upper end of the cylinder, and B' the head closing the lower end of the cylinder. The cap and head B B' are provided with marginal flanges which
55 overlap the upper and lower ends of the cylinder, as shown. A suitable packing is arranged between the cylinder and the cap and head.

c is the discharge teat or nozzle formed on
60 the under side of the head B', and c' is the vertical discharge-passage arranged in said teat.

c^2 is a lateral passage formed in the head B' and communicating at its inner end with
65 the passage c' of the teat and opening with its opposite end into the oil-chamber.

d is the upright internal tube, formed on the inner side of the head B' in line with the discharge-passage c' and extending through
70 the cap B. The head B' and cap B are firmly held against the ends of the cylinder A by a clamping-nut d' applied to an external screw-thread formed at the upper portion of the tube d and bearing against the top of the
75 cap B.

e is the regulating-valve, arranged in the upper portion of the discharge-passage c' , and e' is the stem thereof, extending upwardly
80 through the tube d . The upper portion of the stem e' is provided with an external screw-thread, which engages with an internal thread formed on the upper portion of the tube d , so that by turning the stem in either direc-
85 tion the valve e will be moved toward or from the seat at the upper end of the discharge-passage c' . The stem e' is provided at its outer end with a knob or button for turning it, and is firmly held in position, after being adjusted, by a jam-nut e^2 applied to the
90 threaded portion of the stem and bearing against the upper end of the tube d .

f represents a valve-seat formed in the lateral passage c^2 , and F is a conical cut-off valve adapted to rest against said seat, so as to close
95 the passage c^2 and prevent the oil from flowing from the oil-chamber into the vertical discharge-passage c' . The stem f' of the cut-off valve extends upwardly through an opening in the cap B, and is provided with an arm or
100 lever g for turning it.

f^2 is a spiral spring surrounding the valve-

stem f' and interposed between the cap B and a shoulder on the valve-stem, as shown in Fig. 2. This spring tends to depress the valve-stem and hold the cut-off valve against its seat.

g' is a transverse pin secured to the valve-stem above the cap B and adapted to bear against an inclined face g^2 arranged on a circular rim g^3 , formed on the upper side of the cap B. Upon turning the valve-stem by means of the lever g the pin g' rides up the incline g^2 , thereby elevating the valve-stem, raising the cut-off valve from its seat, and opening the lateral passage c^2 . The valve-stem is held in this position by the pin g' resting upon the flat upper edge of the rim g^3 . Upon turning the stem in the opposite direction the pin is moved down the incline by the spring f^2 and the valve is closed. The cut-off valve may, however, be raised and lowered by any other suitable means, if desired.

The cap B is positively held against turning on the cylinder A, so as to keep the valve F in line with its seat, by transverse pins h , secured to the tube d within the cylinder A and engaging in notches h' , formed in a depending sleeve h^2 , arranged on the inner side of the cap B, as shown in Fig. 2.

When the lubricator is desired to feed, the cut-off valve F is opened, and the valve e is then regulated to allow the proper quantity of oil to escape through the passage c' . After the valve e is so regulated it is held in position by tightening the jam-nut e^2 . When it is desired to stop the feed, the cut-off valve is closed, whereby any further escape of the oil into the passage c' is prevented. In this manner the flow can be stopped without disturbing the adjustment of the regulating-valve, thus saving the time and trouble of readjusting the regulating-valve after each stoppage of the feed, which is necessary when said valve is used both for regulating and for shutting off the feed.

I represents the drip-chamber, arranged at the lower end of the lubricator and surrounding the discharge or drip teat c . The drip-chamber I is preferably made flat-sided, and is secured to the teat c by means of a screw-threaded opening i , formed in the top plate i' of the chamber and engaging with an external thread formed on the teat c , as clearly shown in Figs. 2 and 3. The drip-chamber is provided on opposite sides with openings, which are closed by transparent plates j of glass or other material. The transparent plates j are arranged with their upper ends in slots j' , formed in the top plate i' on opposite sides of the opening i , and their lower ends are seated in grooves j^2 , formed in the bottom of the drip-chamber, as shown in Fig. 3. The upper end of the drip-chamber bears against the adjacent side of the head B', whereby the transparent plates are confined in the slots j' . This forms a simple construction, which permits a broken plate to be

readily replaced or a soiled plate to be easily cleaned by unscrewing the drip-chamber from the teat c .

l represents the feed-opening formed in the cap B, through which the oil is introduced into the oil-cup. This opening is closed by a spring-valve m , which is carried by a laterally-swinging arm M. The latter is pivoted at its inner end to the cylindrical contracted neck of the screw-nut d' , and is held in place by the head of the nut. The valve m is arranged in a recess at the outer end of the arm M, and is provided with an upwardly-projecting stem n . The valve-stem n is arranged in a cap n' , formed on the outer end of the arm M above the valve m . The latter is held in a depressed position against its seat by a spiral spring n^2 , interposed between the valve and the under side of the cap and surrounding the valve-stem. The cap n' incloses the valve-stem and the spring and forms a convenient handle for manipulating the arm M. Upon shifting the arm M laterally in either direction the valve is removed from the feed-opening l and the latter is exposed. By this construction the valve is seated and raised from its seat by simply shifting the arm M. The valve is made somewhat larger than the feed-opening, so as not to enter the same, and its edges are beveled to facilitate the lifting of the valve upon shifting the arm. The valve is entirely inclosed by this construction, and dirt, &c., excluded therefrom.

I claim as my invention—

1. In a lubricator, the combination, with the oil-chamber provided with a central discharge-passage c' in its bottom, and a lateral discharge-passage c^2 , forming a communication between the oil-chamber and the central discharge-passage, of a regulating-valve arranged in the central discharge-passage and provided with a valve-stem extending through the top of the oil-chamber, whereby the flow of oil from the lateral discharge-passage into the central discharge-passage is regulated, and a cut-off valve arranged in the lateral discharge-passage and provided with a valve-stem extending through the top of the oil-chamber on one side of the stem of the regulating-valve, whereby the communication between the central discharge-passage and the oil-chamber can be closed without disturbing the position of the regulating-valve, substantially as set forth.

2. The combination, in a lubricator provided with a discharge-passage c' , and a lateral passage c^2 , communicating with said discharge-passage, of an upright tube d , arranged within the lubricator above the passage c' , and provided with an internal screw-thread, a regulating-valve e' , arranged within said tube and provided with an external screw-thread, and a cut-off valve arranged within the lubricator controlling the lateral passage c^2 , and having a stem extending through the cap of the lubricator, substantially as set forth.

3. The combination, with the oil-chamber of the lubricator provided with a discharge-passage c' , and a lateral passage c^2 , communicating with the same, of a regulating-valve 5 arranged in said discharge-passage, a cut-off valve arranged in the lateral passage c^2 , and provided with a stem extending through the top of the oil-chamber, a spring whereby said valve is depressed, an incline arranged at the 10 top of the lubricator, and a pin or projection arranged on said valve-stem and adapted to bear against said incline, substantially as set forth.

4. The combination, in a lubricator provided in its top with a feed-opening l , of a 15 laterally-swinging arm M , pivoted to the top of the lubricator and provided on its under side with a recess arranged above the opening l , and a cap n' , arranged above said recess,

a valve m , arranged in said recess and inclosed by the arm M , and a spiral spring n^2 , inclosed by said cap and bearing upon the valve, whereby the latter is depressed in its seat, substantially as set forth. 20

5. The combination, with the cylinder A 25 and the cap B , provided with a depending sleeve h^2 , having notches h' , of the head B' , and the tube d , provided with pins h , engaging in said notches, whereby the cap is held against turning on the cylinder A , substantially as set forth. 30

Witness my hand this 16th day of October, 1888.

THOMAS J. HART.

Witnesses:

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JNO. J. BONNER.