

(No Model.)

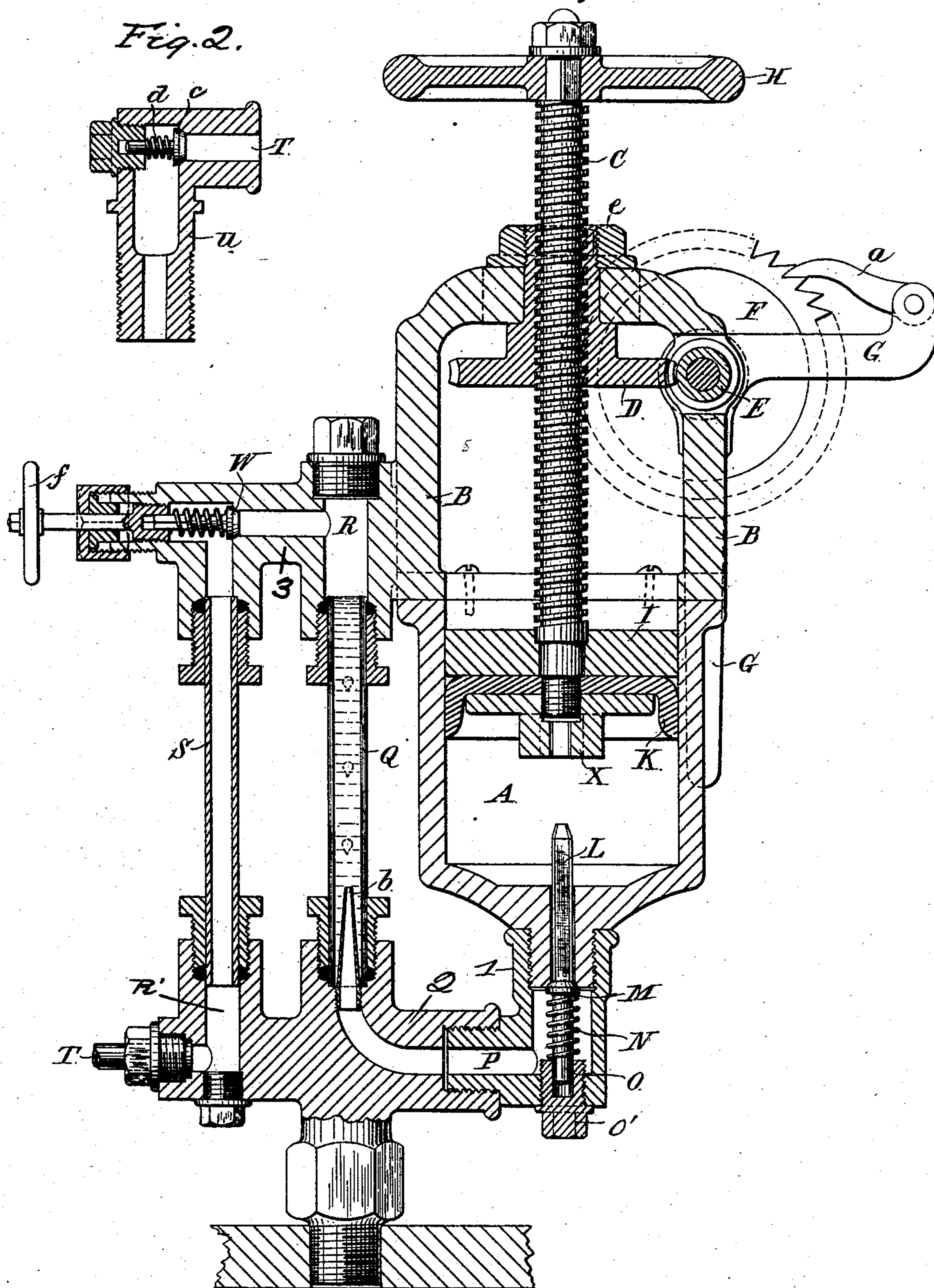
J. LUMB.
LUBRICATOR.

No. 372,159.

Patented Oct. 25, 1887.

Fig. 1.

Fig. 2.



Witnesses.
Samuel Lumb
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UNITED STATES PATENT OFFICE.

JAMES LUMB, OF ELLAND, COUNTY OF YORK, ENGLAND.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 372,159, dated October 25, 1887.

Application filed June 18, 1887. Serial No. 241,794. (No model.) Patented in England February 18, 1886, No. 2,353,

To all whom it may concern:

Be it known that I, JAMES LUMB, a subject of Her Majesty the Queen of Great Britain, residing at Elland, in the county of York, Eng-

land, have invented a new and useful Improvement in Sight-Feed and other Lubricators, (for which I have obtained Letters Patent in Great Britain under No. 2,353, dated February 18, 1886,) of which the following is a specification.

The invention relates to an improved construction of sight-feed lubricator operated by mechanical means, and specially designed for dealing with solidified or semi-solidified oils and lubricants.

The apparatus is adapted to be used for lubricating cylinders and the like, shafting-bearings, and other parts, though for the shafting the "sight-feed" arrangement is unnecessary and may be dispensed with.

To clearly explain the nature of my invention, reference is made to the accompanying drawing, in which Figure 1 represents a sectional elevation of the apparatus.

The lubricant used is contained in the cup or vessel A, above which is a bridge-piece, B. The cup A is open at the top, and the bridge is connected with the rim by any suitable means—such as the screws shown—the bridge being provided with a circular base extending from leg to leg and adapted to the rim of the cup. The bridge extends upwardly and over the open end of the cup, and centrally through it passes a screwed spindle, C, operated by a worm-wheel, D, and worm E, the latter receiving its motion from a ratchet-wheel, F, and pawl a, which are operated by moving backward and forward the long arm of the lever G, which may either be done by hand or by connection with some of the moving parts of the machinery or engine. The hub of the worm-wheel D extends through and projects above the bridge. This projecting end is screw-threaded, and upon it is secured a cap-piece, e, which is adapted to revolve with the wheel, the bridge-piece affording a suitable bearing surface.

The upper end of the spindle C carries a hand-wheel, H, while at its lower end is a piston, I, and cup-shaped leather "bucket" K, which fit closely in the vessel A containing the main supply of the lubricant. Through

the bottom of this vessel is the discharge opening or outlet, in which is a square or angled spindle, L, the upper end of which extends into the vessel A, while its lower end terminates in a button-headed valve, M, which is held to its seating by a spiral spring, N, placed about the stem or rod O of the valve M. The lower end of said stem O plays in an opening in a screw foot-step, O', removable from the outside, as shown.

The foot-step O' and valve-stem are located in the elbow-joint 1, secured to the lower threaded end of the cup. This joint is also in connection with the piece 2, which, as shown, supports the lower ends of the sight-feed tube Q and the delivery-tube S. The upper ends of these tubes are held in a coupling, 3, by any suitable collars and washers, as shown. Passages P and R are formed in the parts 2 and 3, through which the lubricant passes.

As the worm-wheel D slowly moves, it turns the screwed spindle C, the piston I and bucket K being thus forced down upon the lubricant in the vessel, which is expelled by way of the outlet (the fit of the spindle L being sufficiently loose for this purpose) past the valve M, and thence by a passage-way, P, having a contracted nozzle, b, to the vertical glass sight-feed tube Q, of larger diameter than the passage-way, up which it passes in drops through the water with which the latter is filled, as shown.

In the operation of the device the lubricant passes drop by drop through the water in the sight-feed tube, as shown, and the passage R becomes filled. In the further movement of the piston downwardly, the lubricant is forced from the cup, and a corresponding amount leaves the passage R and passes into the delivery-tube S to the passage-way T, and thence to the parts to be lubricated, the passage-way being connected to such parts. If required, the elbow-piece U (shown detached in Fig. 2) may be connected with the passage-way T. This part is shown as having a valve, c, pressed to its seat by a spring, d, its purpose being the same as that of the spring-valve W in the passage-way R, the play of which is controlled by the hand-wheel f, and which closes the passage-way against the entrance of steam to the lubricator, which might occur

when the piston has been screwed out of the lubricator-vessel for the purpose of replenishing the latter. The valve M below the squared spindle also assists in this. It will be noticed
 5 that the distance from the lower end of the hand-wheel to the extreme lower end of the piston at X is equal to or slightly less than the distance from the upper edge of the cap-piece *e* to the bottom of the cup, so that when the piston is at its extreme lower limit the under surface of the hand-wheel H will be upon the cap *e*. By this construction, should the worm work the piston to the bottom of the vessel A, and the motion of the lever and ratchet-wheel
 15 be continued, no part will be broken, because the worm, worm-wheel, piston, and bucket will then all revolve, the hand-wheel H coming into contact with and bearing upon the head *e* of the worm-wheel, causing all the
 20 parts to turn together.

To replenish the lubricator the hand-wheel H is turned until the piston and bucket are raised out of and above the vessel A, leaving the top of the latter open. When the piston
 25 and bucket approach the bottom of the main supply-vessel A, a boss, X, on the same engages with the squared spindle L and turns the valve M on its seating, thereby clearing it from any dirt or deposit.

30 When using the apparatus for the lubrication of shafting, the sight-feed tubes may be dispensed with.

What I claim, and desire to secure by Letters Patent, is—

1. In combination, a reservoir, a sight-feed 35 tube connected therewith, a piston in said reservoir for forcing the oil therefrom, a second tube parallel with the sight-feed tube, a valve between the two tubes for controlling the flow of the oil, and pipe-connections from the second tube to the parts to be lubricated, substantially as described. 40

2. The combination, with the vessel A, bridge B, and screwed spindle C, having hand-wheel H, of the worm-wheel D, having the elongated 45 part or head *e*, operated by the ratchet mechanism and worm, and arranged to revolve the piston when the latter is at the bottom of the vessel A, substantially as described, and for the purposes set forth. 50

3. The combination, in a lubricator, with the piston having boss X, of the spindle L, adapted to engage therewith for the purpose of turning the valve M, substantially as and for the purposes set forth. 55

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JAMES LUMB.

Witnesses:

SAMUEL TWEEDALE,
WALTER BRIERLEY.