

(No Model.)

J. POWELL.

LUBRICATOR.

No. 326,521.

Patented Sept. 15, 1885.

FIG. 1.

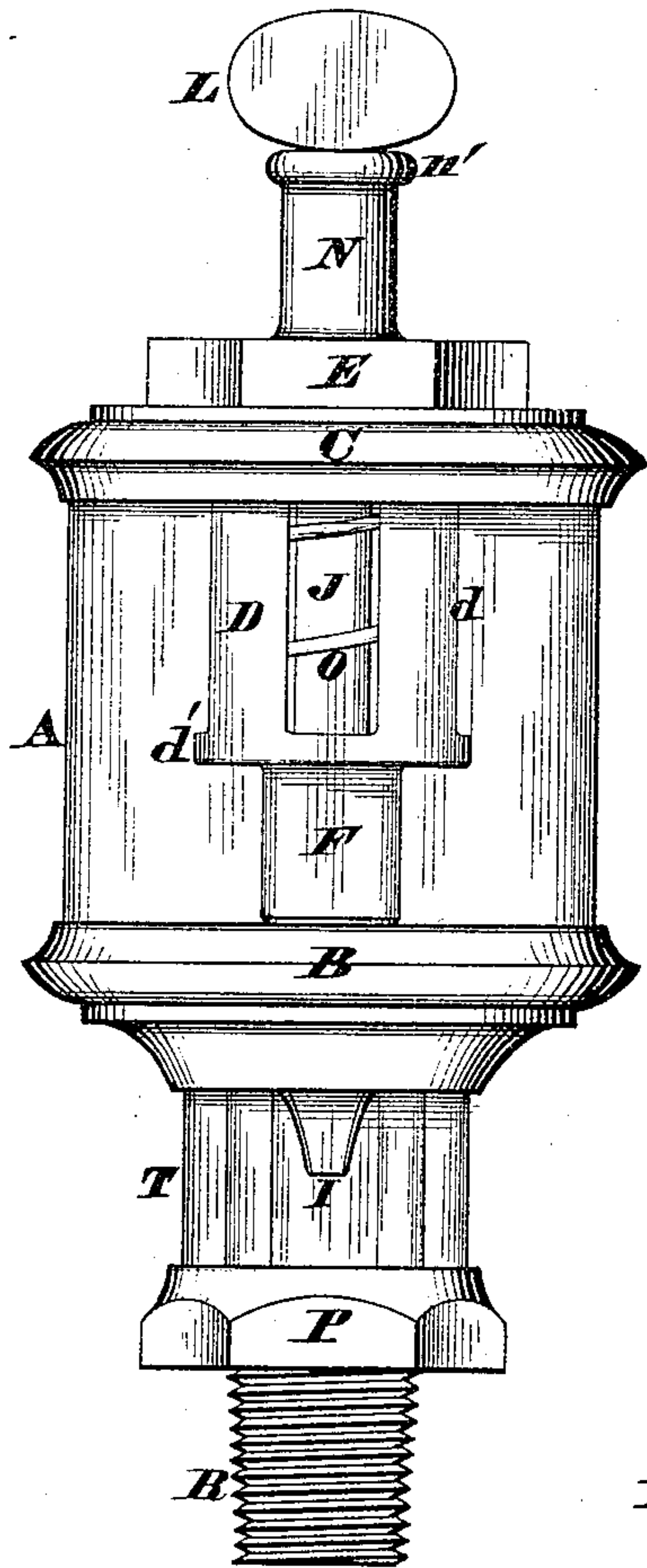


FIG. 2.

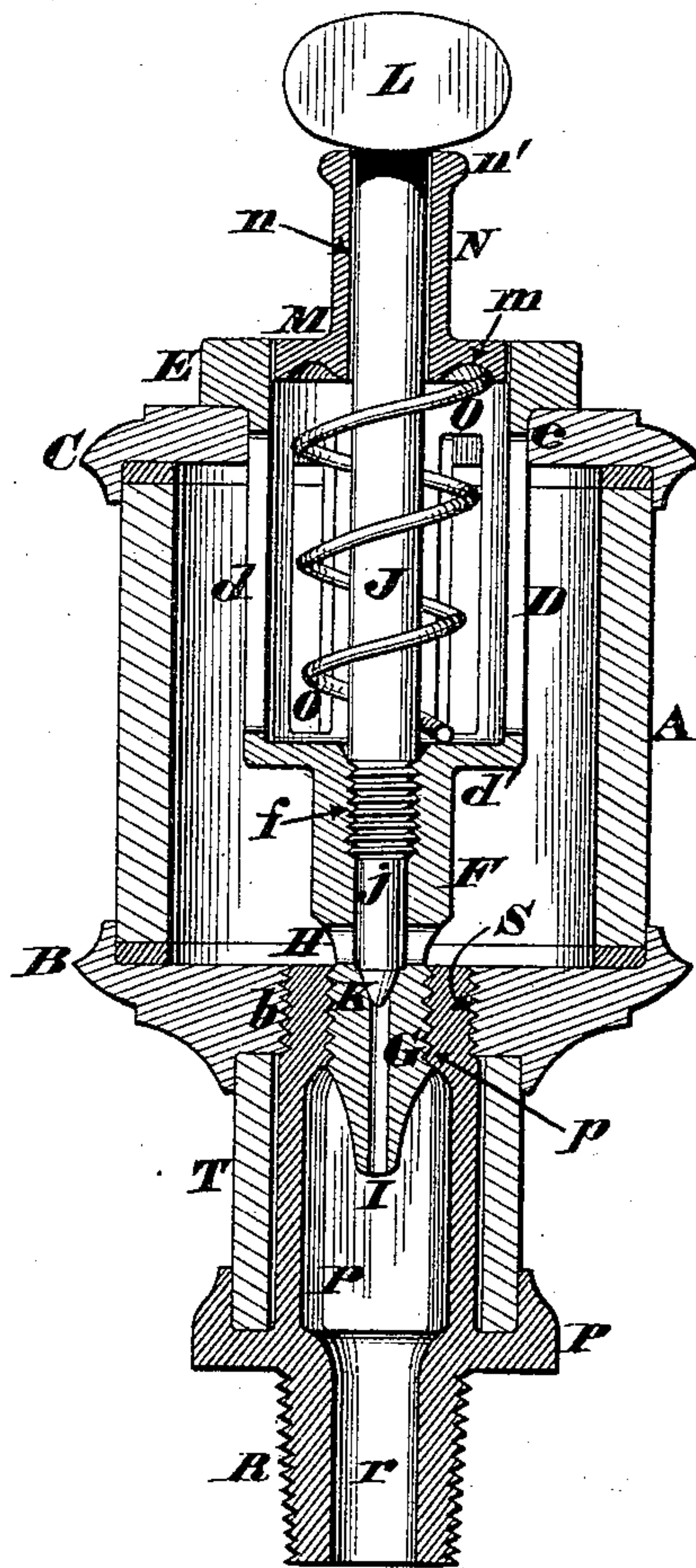


FIG. 3.

FIG. 4.

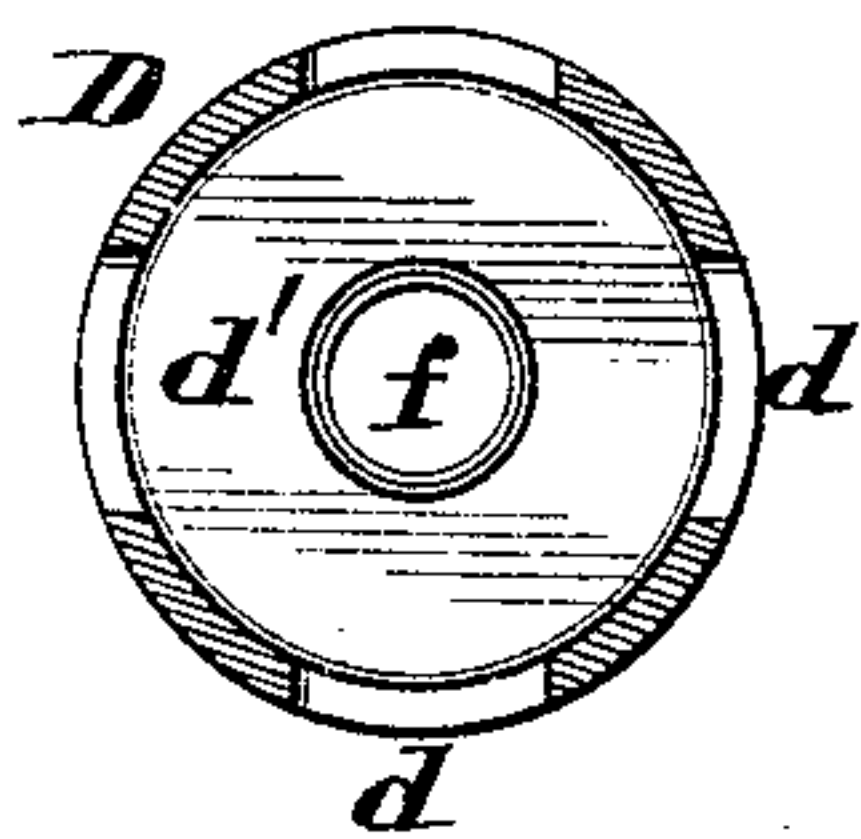
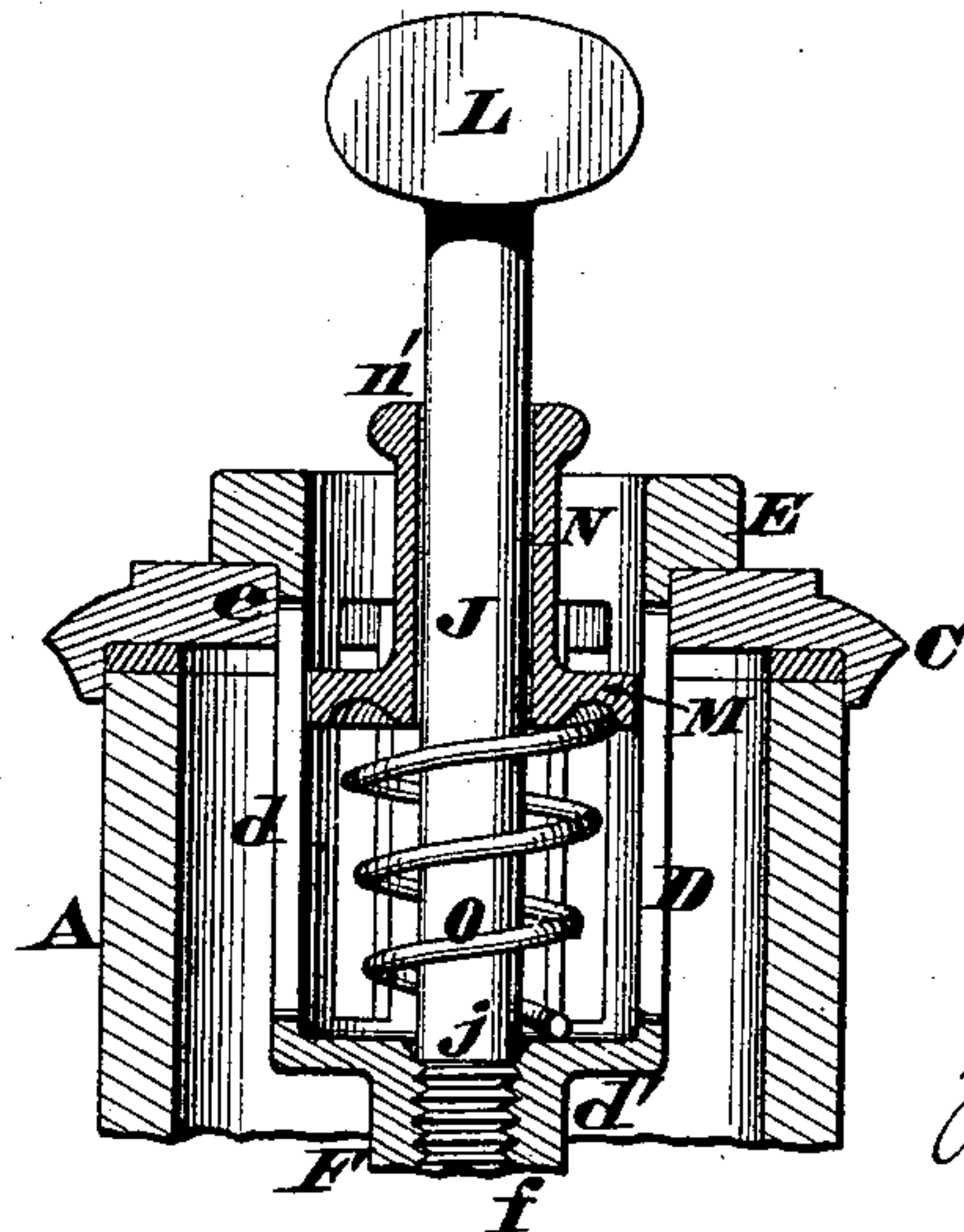
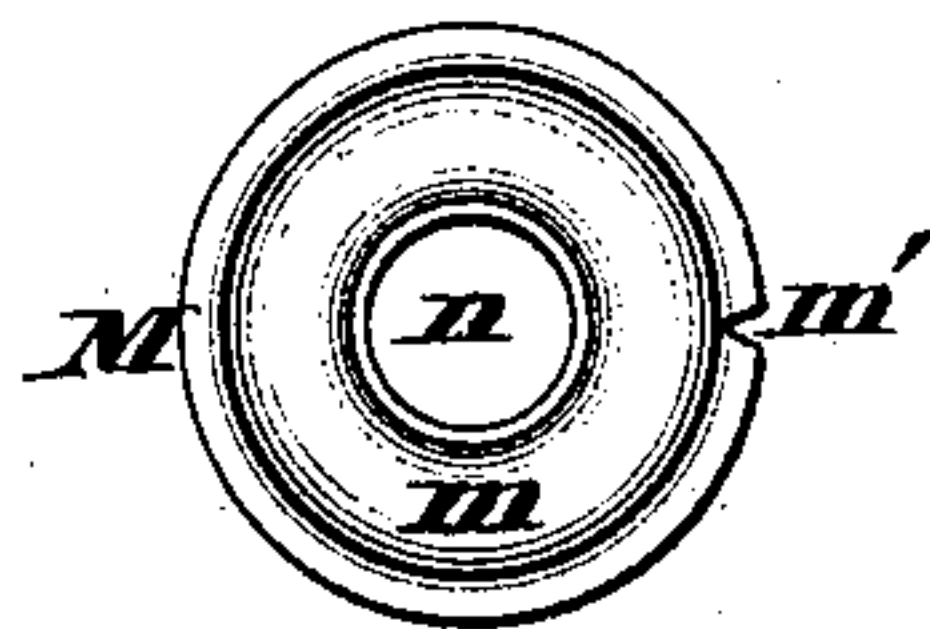


FIG. 5.



Attest.
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UNITED STATES PATENT OFFICE.

JAMES POWELL, OF CINCINNATI, OHIO.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 326,521, dated September 15, 1885.

Application filed April 23, 1885. (No model.)

To all whom it may concern:

Be it known that I, JAMES POWELL, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Lubricators, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to those lubricators which employ an axial rod, stem, or plug for operating the valve or cut-off that regulates the discharge of oil; and my improvement consists in utilizing the upper or outer end of the valve-stem as a guide for a reciprocating stopper, which latter, when depressed, permits the cup or reservoir to be filled. Said stopper plays within a slotted or perforated cage or cylinder, and is maintained in its elevated or closed position by a spring that is preferably located within said cage and coiled around the valve-stem, the ascent of the stopper being arrested by the thumb-piece or other lateral projection of said stem. Furthermore, this cage and a spindle thereof act as a tie or binder that unites the two heads of the cup, and said spindle or prolongation is usually provided with a valve-seat, discharge-channel, and one or more ports that allow the oil to flow into said channel when the valve is opened. The above-described devices are so arranged as to enable the ready depression of the stopper by pressure applied externally of the same, after which act the oil can be conveniently poured into the open end of the cage and flow through the slots or openings of the same into the cup or reservoir, as hereinafter more fully described.

In the annexed drawings, Figure 1 is a side elevation of my improved lubricator. Fig. 2 is an axial section thereof, the discharge-valve being closed, and the reciprocating stopper being shown in its normal or elevated position. Fig. 3 is an axial section of the upper part of the lubricator, said stopper being depressed. Fig. 4 is a transverse section of the cage, the valve-stem, stopper, and spring being removed therefrom. Fig. 5 is a plan of the under side of said stopper.

The oil cup or reservoir A, which is usually of glass, has a lower head, B, and an upper head, C, which latter is provided with an orifice, *e*, to receive a cage, D, that is generally

of a cylindrical form, and is furnished with one or more slots, perforations, or other openings or passages, *d*, communicating with the interior of said reservoir. The upper end of the cage is open and has an enlargement or collar, E, that rests upon the head C, said enlargement being preferably made in the shape of a nut to facilitate the clamping of the heads B C to the cup; but the lower end of the cage is closed by a head, *d'*, from which projects a spindle, F, having an internal thread, *f*, an external thread, G, one or more lateral ports, H, and a discharge-channel, I.

Engaging with the thread *f* is the screw *j* of a stem or rod, J, the latter having at its lower end a valve, K, and at top a thumb-piece, L, or other suitable device, wherewith said stem can be conveniently manipulated.

Adapted to reciprocate within the cage D is a stopper, M, provided at its outer end with an elongation or neck, N, the latter having an axial bore, *n*, to admit the valve-stem J. The top of this neck terminates with a bead or collar, *n'*, that affords a convenient bearing for the finger when the stopper is to be depressed.

Interposed between the stopper M and the head *d'* of the cage is a coiled spring, O, whose stress elevates said stopper and keeps its collar *n'* in contact either with the thumb-piece L or other stop of the valve-stem. The upper coil of this spring fits within an annular groove, *m*, on the under side of the stopper, which latter is notched on its edge at *m'* to permit a free escape of air while the reservoir is being filled.

If desired, the above-described devices may be used in connection with a lubricator having a "sight-chamber," in which event the external thread, G, of the spindle F would be engaged with the internal thread, *p*, of the lower section, P, and the latter would be furnished with a channeled shank, R *r*, for attachment to the journal-bearing. Furthermore, this lower section should have an external screw, S, to engage with an internal thread, *b*, of the lower head, B, in order that the sight-chamber T may be securely clamped between said section and head.

It is evident that when the lubricator is properly fitted together the stress of spring O will force the stopper M up so far as the stop

L will permit, as seen in Fig. 2, thereby closing the mouth of cage D and preventing dust or other obstructions entering the oil-cup A. As soon, however, as it is desired to charge said cup with oil or other lubricant, the stopper M is shifted by simply pressing the end of the finger against the collar n' , and when the stopper has been forced down as far as may be necessary it reaches a position somewhat below the upper ends of the slots or perforations d , as seen in Fig. 3. The oil can now be freely poured into the upper open end of cage D, and being unable to descend directly, on account of the obstruction afforded by the stopper, it is deflected laterally and runs through the slots or openings d into the reservoir A, the air in the latter escaping at the groove m' . As soon as the reservoir is filled, the finger is removed from the collar n' , and the spring O immediately restores the stopper to its normal or closed position, the extended bearing of the neck N on the valve-stem J causing said stopper to travel in a correct path and preventing it binding within the cage D d . After charging the reservoir the stem J can be turned so as to raise the valve K a greater or less distance from its seat at the upper end of the channel I, thereby regulating the discharge of oil.

From this description it will be apparent that the stem J serves the twofold purpose of operating the discharge-valve and acting as a guide for confining the reciprocating stopper to a proper path.

I claim as my invention—

1. The combination, in an oil-cup, of a continuous or uninterrupted rod or stem for controlling the discharge of lubricant with a spring-actuated stopper adapted to reciprocate along the upper portion of said stem and uncover one or more inlets, the lower portion of said rod-stem being screwed into a suitable bearing, and its upper end being passed completely through said stopper, thereby serving as a rigid guide for the latter, and permitting

the stem to be removed without detaching the stopper, substantially as described.

2. The combination, in an oil-cup, of a continuous or uninterrupted rod or stem for controlling the discharge of lubricant with a spring-actuated stopper adapted to reciprocate along the upper portion of said stem and uncover one or more inlets, and an inclosing cage or cylinder, the lower portion of said stem being screwed into a suitable bearing, and its upper end being passed completely through said stopper, thereby serving as a rigid guide for the latter, and permitting the stem to be removed without detaching the stopper, substantially as described.

3. The combination, with an oil-cup having a rod or stem controlling the discharge of lubricant, of a spring-actuated stopper adapted to reciprocate along said rod and within a cage or cylinder and uncovers one or more inlets of said cage when properly shifted, said cage being provided with the valve-seat and outlet and serving as a tie that clamps the heads to said cup, substantially as herein described.

4. An improved lubricator consisting of the oil-cup A, having a head, B, screw-threaded at b , and a head, C, having an orifice, c , the cage D, having one or more passages, d , head d' , and spindle F, which latter is provided with interior thread, f , inlet H, discharge-channel I, and a seat for the valve K of stem J, said stem being furnished with a screw, j , that is adapted to engage with the thread f of the spindle, and having a suitable stop, as L, for the reciprocating stopper M, which stopper is bored at n to admit the stem J, a spring, O, being interposed between said stopper and the head d' of the cage, for the purpose specified.

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

JAMES POWELL.

Witnesses:

JAMES H. LAYMAN,
RANKIN D. JONES.

It is hereby certified that in Letters Patent No. 326,521, granted September 15, 1885, upon the application of James Powell, of Cincinnati, Ohio, for an improvement in "Lubricators," errors appear in the printed specification requiring the following correction: In lines 38 and 50, page 2, commas should be inserted after the word "lubricant"; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 29th day of September, A. D. 1885.

[SEAL.]

H. L. MULDROW,
Acting Secretary of the Interior.

Countersigned:

M. V. MONTGOMERY,
Commissioner of Patents.