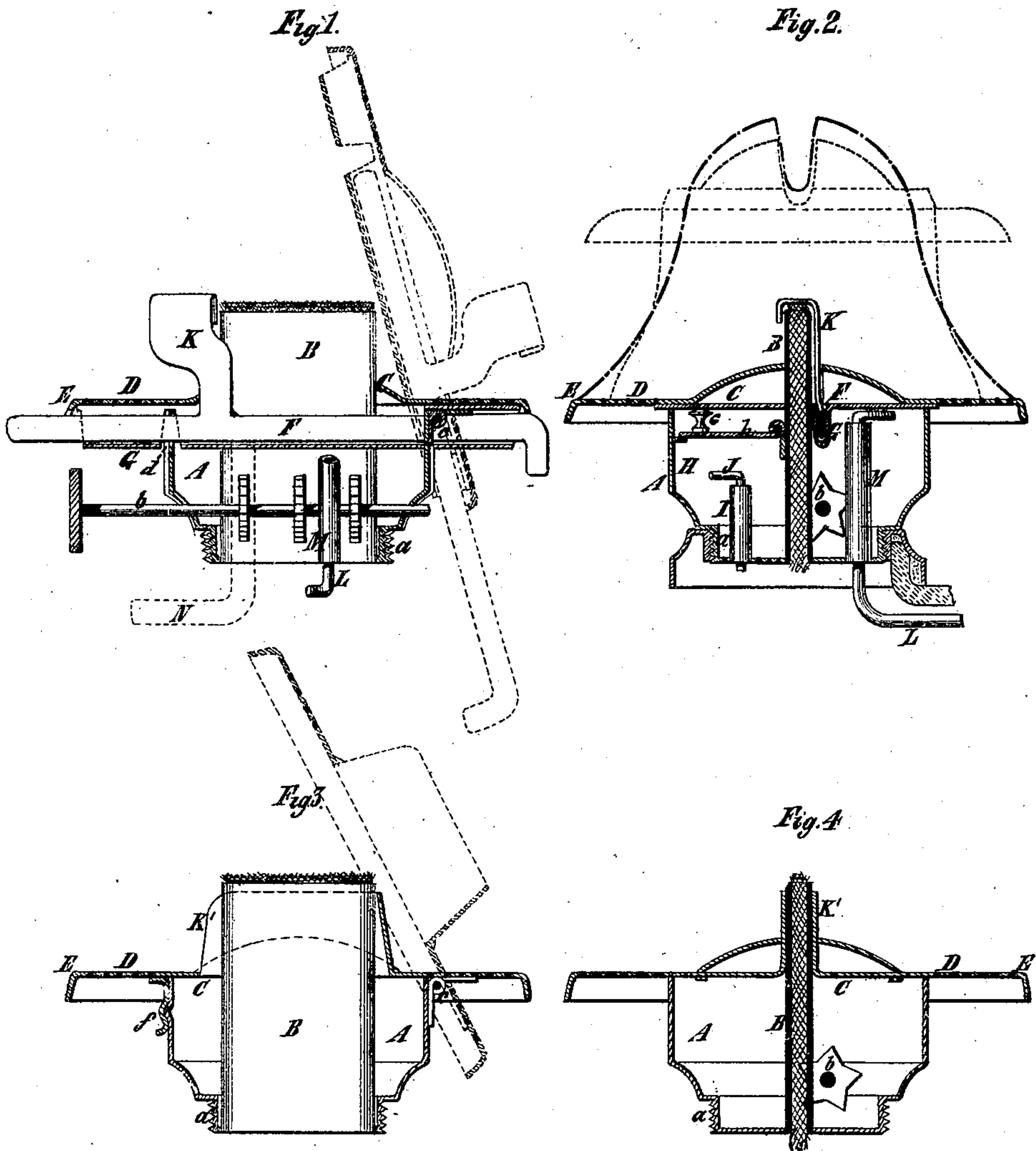


H. A. CHAPIN.  
LAMP-BURNER.

No. 178,836.

Patented June 20, 1876.



Witnesses:

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# UNITED STATES PATENT OFFICE

HENRY A. CHAPIN, OF NEW YORK, N. Y.

## IMPROVEMENT IN LAMP-BURNERS.

Specification forming part of Letters Patent No. **178,836**, dated June 20, 1876; application filed January 28, 1876.

*To all whom it may concern:*

Be it known that I, HENRY A. CHAPIN, of New York, in the county and State of New York, have invented certain new and useful Improvements in Lamp-Burners, of which the following is a description:

This invention relates to an earlier invention of mine, which is the subject of an application filed November 29, 1875. The primary object of such invention was to absolutely prevent persons using lamps from imprudently replenishing the reservoirs or founts with oil while the lamps were alight, this act being always attended with great danger. Such invention related to the ordinary burners having fixed tops.

The present invention has the object in view, but relates only to burners having hinged tops, or, in other words, having an air-distributer and chimney-gallery, constituting an upper portion or top, hinged to the body of the burner, so that they may be swung back when desirable.

Two features of the present invention have been designed to attain this object. The first consists in the combination, with the body of a burner and the hinged top thereof, of an extinguisher and a catch for fastening the burner to the oil-reservoir, whereby the burner cannot be removed until after the extinguisher has been applied to the flame.

The second feature consists in the combination, with the body of the burner and its hinged top, of an extinguisher, whereby the extinguisher must be applied to the flame before the hinged top can be swung back to admit of replenishing the oil-reservoir through a filling-tube, mouth, or orifice, with which the burner may be provided.

Another feature consists in the combination, with suitable slots or loops in or on the body of the burner and others in or on the hinged top, of a rod, preferably the extinguisher-rod, adapted to interlock therewith, whereby the said hinged top may be positively fastened to the body of the burner.

Another feature consists in the combination, with the body of the burner and its hinged top, of a filling tube or chamber arranged within the said body, and a cover for such tube or chamber, whereby the same means

which serve to secure the hinged top will incidentally keep the filling-tube cover closed.

Another feature consists in an extinguisher of novel and very efficient form.

Another feature consists in the combination, with the aforesaid filling tube or chamber, of a ventilating-tube, providing for the escape of gases generated within the oil-reservoir, and for the escape of air while the reservoir is being replenished.

Another feature consists in the combination, with the aforesaid ventilating-tube, of a rod to be attached to a float to indicate the amount of oil in an opaque reservoir, and hence obviate the necessity for removing the burner to ascertain this, the said rod or the tube preferably having one or more plane or flattened surfaces, so that spaces will be left between them.

In the accompanying drawing, Figure 1 is a vertical section of a lamp-burner embodying my improvements; and Fig. 2 is a vertical section of the same, taken at right angles to Fig. 1, two different styles of dotted lines being employed to illustrate the two styles of deflector most commonly used, and manifest that my improvements are all susceptible of use with ordinary burners. Fig. 3 is a vertical section of another lamp-burner, illustrating some of my improvements in a slightly modified form; and Fig. 4 is a vertical section of the same, taken at right angles to Fig. 3.

Similar letters of reference designate corresponding parts in all the figures.

Referring first to Figs. 1 and 2, A designates the body of the burner, provided with the usual screw-threaded hub *a*, whereby it may be secured to the collar of an oil-reservoir. B designates the wick-tube, and *b* the wick-adjusting mechanism. C designates the top or cover of the body of the burner; D, the air-distributer, and E the chimney-gallery, all being represented as made in one piece, constituting what may aptly be termed a "top," and connected by a hinge, *c*, to the body A opposite one of the edges or narrow rounded sides of the wick-tube. F designates a rod adapted to slide back and forth in a channel or guideway, G, arranged under the hinged top C D E in such position that when the same is in its normal position (as represented in full



outline) the said rod shall be close to one side of the wick-tube. The part forming the channel G is notched, so that it will fit upon the wall of the body A of the burner opposite the hinge *c*, and the said wall is provided with a slot, *d*, corresponding in size with the channel, wherefore the rod F, by being slid through the said slot, positively secures the hinged top C D E in its normal position, and hence obviates the danger ensuing from the accidental opening of the same, when there is direct communication through the body of the burner with the oil-reservoir—as, for instance, through a filling-tube, mouth, or orifice.

H designates a filling-chamber, formed by partitioning off a part of the body of the burner, but may be a tube arranged in the said body. It has a perforated or reticulated bottom and a cover, *h*, which is hinged to one side of the wick-tube, and provided with a knob or hand-piece, *e*, by which it may be opened and closed, and upon which, when the cover is closed and the hinged top is in its normal position, the latter presses and keeps the said cover closed.

I designates a ventilating-tube, extending upward through the bottom of the filling-chamber, and into the latter it establishes communication between the reservoir and said filling-chamber, and provides for the passage into the latter of gases which might otherwise accumulate in the former. The passage of gases into the filling-chamber may, of course, take place through the perforations in the bottom of the latter. Such gases may be allowed to escape from the filling-chamber in any suitable manner, and, indeed, they will always find their way out through the spaces in the burner. The principal office of the tube I, however, is to permit the escape of air and gases from the reservoir while the latter is being replenished with oil. This office it effectually performs, because it is considerably raised above the bottom of the chamber, and hence does not become choked by the inflowing oil.

J designates a rod fitting loosely within the tube I. It is designed for use in connection with an opaque reservoir, and to be attached in any suitable manner to a float, so as to indicate the quantity of oil, and obviate the necessity of removing the burner, this, when unnecessary, being very objectionable, as the soiling of the hands is almost sure to result from it. In order to preserve spaces between them the tube I is preferably made cylindrical, and the rod J square, or is provided with one or more flattened sides, or vice versa.

K designates an extinguisher, consisting of a piece of sheet metal bent so as to adapt it to fit snugly over the top of the wick-tube when properly manipulated. It is arranged on the rod F in such position that when the latter is shifted to unfasten the hinged top C D E, the extinguisher will be impelled over the tip of the wick, so as to extinguish the flame, and hence it is impossible for the said hinged top to be swung back so as to uncover

the body A (see dotted lines in Fig. 1) until after the flame has been put out, wherefore all danger is obviated, and the practice of indiscreet persons leaving the burner alight to aid them in replenishing the reservoir with oil is avoided. The hinged top is not, however, necessarily unfastened every time the extinguisher is manipulated to put out the flame. The latter result may be effected without shifting the rod F far enough to release the hinged top, or, indeed, the parts of the burner may be so constructed that a different movement of said rod will be necessary to release the hinged top.

L designates a catch for precluding the removal of the burner from its reservoir. It consists of a rod arranged within a case or tube, M, situated in the body A of the burner, and having its lower end bent horizontally outward, so as to adapt it to hook under the shoulder of the reservoir, (see Fig. 2,) and its upper end bent horizontally over the top of the case or tube M, and made of such length that while the hinged top C D E is in its normal position the said end cannot be turned around to effect the release of the lower end from the shoulder of the reservoir. The said lower end can be released only after the hinged top C D E has been thrown back; then the rod I may be lifted till its upper end clears the body A, whereupon it may be turned to shift the lower end under the screw-threaded hub *a* of the burner and release the latter. Thus persons using the lamp cannot remove the burner from its reservoir to replenish the latter until the hinged top is swung back, and as, before this act can be accomplished, the flame must be extinguished, all danger from the flame is effectually removed. It is obvious that the case or tube M serves the additional purpose of a ventilating-tube.

I have conceived the idea of using various other catches instead of that just described; but to avoid prolixity I will describe one other only. This consists of a hook-shaped piece arranged on the rod F, as represented by dotted lines N in Fig. 1, and adapted to slide under the shoulder of the reservoir when the rod is manipulated to fasten the hinged top C D E, and to slide from under the same when the said rod is manipulated to unfasten the hinged top.

Referring now to Figs. 3 and 4, A designates the body of the burner, as before; and *a*, the screw-threaded hub thereof; B, the wick-tube; *b*, the wick-adjusting mechanism, and C the cover of the body A; D, the air-distributor, and E the chimney-gallery, constituting the hinged top. The latter is fastened to the body A by a spring-catch, *a*. K' designates the extinguisher, consisting of a shell or sleeve adapted to fit snugly around the upper part of the wick-tube, and arranged on the hinged top. The said sleeve is shown as being open at the side farthest from the hinge *b*; but it is not necessarily made so. When the hinged top is swung back the extinguish-



er K' cuts off the supply of air to support combustion at the tip of the wick; hence the flame is put out. This is a remarkably simple and very efficient form of extinguisher for precluding the removal of the burner, or swinging back its hinged top to replenish the oil-reservoir.

The catch F, filling-tube H, ventilating-tube I, and indicator-rod J, catch L, and its case M may some or all be used in this burner with advantage.

The advantages of this invention are the safety afforded indiscreet persons, by preventing them from replenishing the reservoir of a lamp while its burner is alight; the safety afforded by the positive catch, also by the ventilating-tube; the convenience as well as safety afforded by the filling tube or chamber, and the convenience afforded by the indicator-rod.

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

1. The combination, with the body and hinged top of a lamp-burner, of an extinguisher and a catch for fastening or locking the burner to its oil-reservoir, whereby the extinguisher must be applied to the flame before the burner can be removed from the said reservoir.

2. The combination, with the body and hinged top of a lamp-burner, both provided with slots or loops, of a rod adapted to engage with said slots or loops and form a positive catch, substantially as herein set forth.

3. The combination, with the body and hinged top of a lamp-burner, of a filling chamber or tube and a cover, substantially as herein described, whereby the means employed to secure the hinged top will keep the cover of the filling-tube closed.

4. The combination of the body of the burner, its hinged top, and an extinguisher, consisting of a sleeve adapted to fit snugly around the upper part of the wick-tube, and attached to the said hinged top, substantially as shown and described, whereby the act of swinging back the hinged top effects the extinction of the flame.

5. The combination, with a filling-tube in the body of a lamp-burner, of a ventilating-tube, arranged therein substantially as herein set forth.

6. The combination, with a ventilating-tube in a lamp-burner, of an indicator-rod to be attached to a float to indicate the quantity of oil in an opaque reservoir, substantially as herein set forth.

7. The combination of the body A of a lamp-burner, wick-tube B, and wick-adjusting mechanism *b*, hinged top C D E, positive catch F, extinguisher E, ventilating-tubes I M, indicator-rod J, and catch L, substantially as and for the purpose herein set forth.

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Witnesses:

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