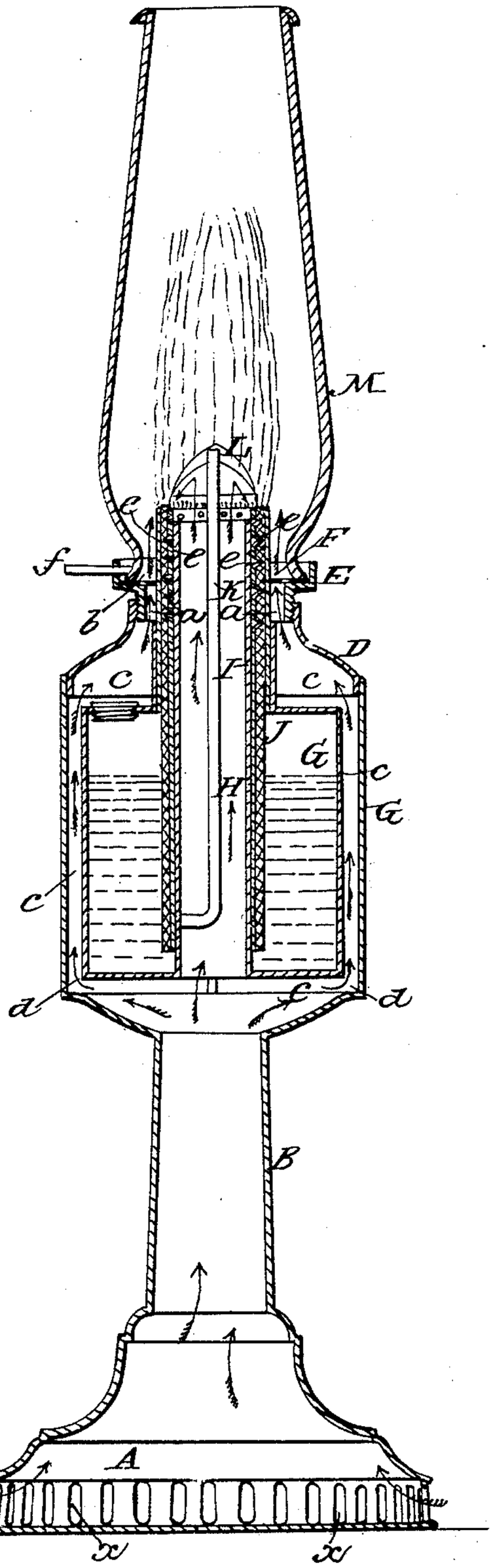
BAILEY & THAYER.

Lamp.

No. 20,134. Patented May 4, 1858.



# UNITED STATES PATENT OFFICE.

L. BAILEY, OF CHARLESTOWN, AND R. THAYER, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN LAMPS.

Specification forming part of Letters Patent No. **20,134**, dated May 4, 1858.

*To all whom it may concern:*

Be it known that we, L. BAILEY, of Charlestown, in the county of Middlesex and State of Massachusetts, and R. THAYER, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and improved lamp for burning those hydrocarbons which require a large amount of oxygen to support a proper combustion; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing, making a part of this specification, said drawing being a vertical section of our improvement.

This invention consists in a peculiar construction of the lamp, as hereinafter shown, whereby the reservoir containing the burning material, and consequently the material itself, is kept in a cool state, the flame supplied with a large amount of oxygen commensurate with its requirement to produce a perfect combustion, the light readily graduated, as desired, and wholly extinguished when necessary without emitting any smoke or disagreeable odor, and the wick retained in proper position, so that it may be trimmed accurately and with the greatest facility.

To enable those skilled in the art to fully understand and construct our invention, we will proceed to describe it.

A represents the base of the lamp, and B is the pedestal, which supports a cylindrical or other shaped case C. These parts may be constructed of any of the materials now used for such purposes, and the whole, so far as form is concerned, resemble the lamps of ordinary construction.

The base A and pedestal B are hollow, and the side of the base at its lower part is perforated, as shown at *x*, so that its interior may communicate with the external air. The interior of the pedestal B communicates with the base A and case *c*, and the upper end of the case is provided with a cover D, in the center of which a cap E is screwed. The cap E has a vertical tube F, secured in it at its center, said tube projecting a certain distance above and below the cap, a space *a* being allowed between the tube and cap, which space is covered with an annular piece of wire-gauze or a perforated plate *b*.

G is a reservoir, which is fitted within the case C. This reservoir is sufficiently smaller than the interior of the case, so as to allow an air-passage *c* all around its exterior, flanges *d* being attached to the exterior of the reservoir to keep it in proper position within the case C. The reservoir G is of annular form, so as to allow a central passage H entirely through it, and the inner side of the reservoir extends upward some distance above the top of the reservoir forming a tube, around which the wick-tube I is fitted. The wick-tube I passes down within the reservoir G, an annular opening being made in the upper part of the reservoir to allow it to pass through, and the usual tubular wick J is used. The upper end of the wick-tube I is pinched from its inner side outward, so as to form corrugations *e* to retain the wick in proper position on the tube I. Any proper means may be employed for corrugating the tube.

Within the passage H a vertical rod K is secured. This rod projects a short distance above the top of the wick-tube, and a button L is fitted thereon. This button is of concavo-convex form, and is about equal in diameter to the wick-tube I.

M is a chimney, which rests on the cap E, and is retained in proper position by a spring-catch *f*, arranged in any proper way.

When the wick J is lighted, the air passes up through the base A, pedestal B, space *c* at the outer side of the reservoir, and also through the central passage H. The reservoir G therefore being surrounded at all sides by a current of cold air, the burning material will be kept in a cool state and prevented from volatilizing faster than it is consumed, and the flame (shown in red) will be exposed both externally and internally to a current of air, the button L throwing the central current of air directly down on the flame. (See arrows 1.) The flame may be regulated, as desired, by raising and lowering the tube F, the wick J being confined by the corrugations of the tube I. The tube F is raised and lowered by screwing up and down the cap E, the screw that is fitted into the cover D being sufficiently deep to permit the necessary length of movement of the tube F.

By this improvement the flame is supplied with a large amount of oxygen, the burning material kept perfectly cool, all flickering of the flame prevented on account of the air which feeds it passing into the base A at a point

where it is not subject to be arrested nor accelerated by the movement of objects, and consequently a steady light will be emitted. The button L, on account of its form, does not spread the flame like the usual buttons, but throws the air downward upon it, so that the flame is permitted to rise vertically and a comparatively large amount of light will be obtained.

The flame or light may be readily graduated, as desired, without disturbing the wick, and the wick may be readily trimmed without being moved on its tube.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The arrangement of the annular reservoir G within the case C, as shown, so that both the inside and the outside drafts of the flame may be supplied up through the base and pedestal, and in their passage cool all sides of the reservoir, substantially as set forth.

2. The button L when made of concavo-convex form and of the proper dimensions, so as to throw the air that passes up through the central passage H down on the flame and at the same time permit the flame to rise vertically instead of spreading it laterally, as usual.

3. The combination of the revolving cap E, wick-tube I, with or without the button L, and the annular reservoir G, arranged relatively with each other and used in connection with the case C, the hollow pedestal B, and base A, substantially as described, and for the purpose set forth.

L. BAILEY.
R. THAYER.

Witnesses:
SUMNER SARGENT,
ELISHA K. COLLINS.