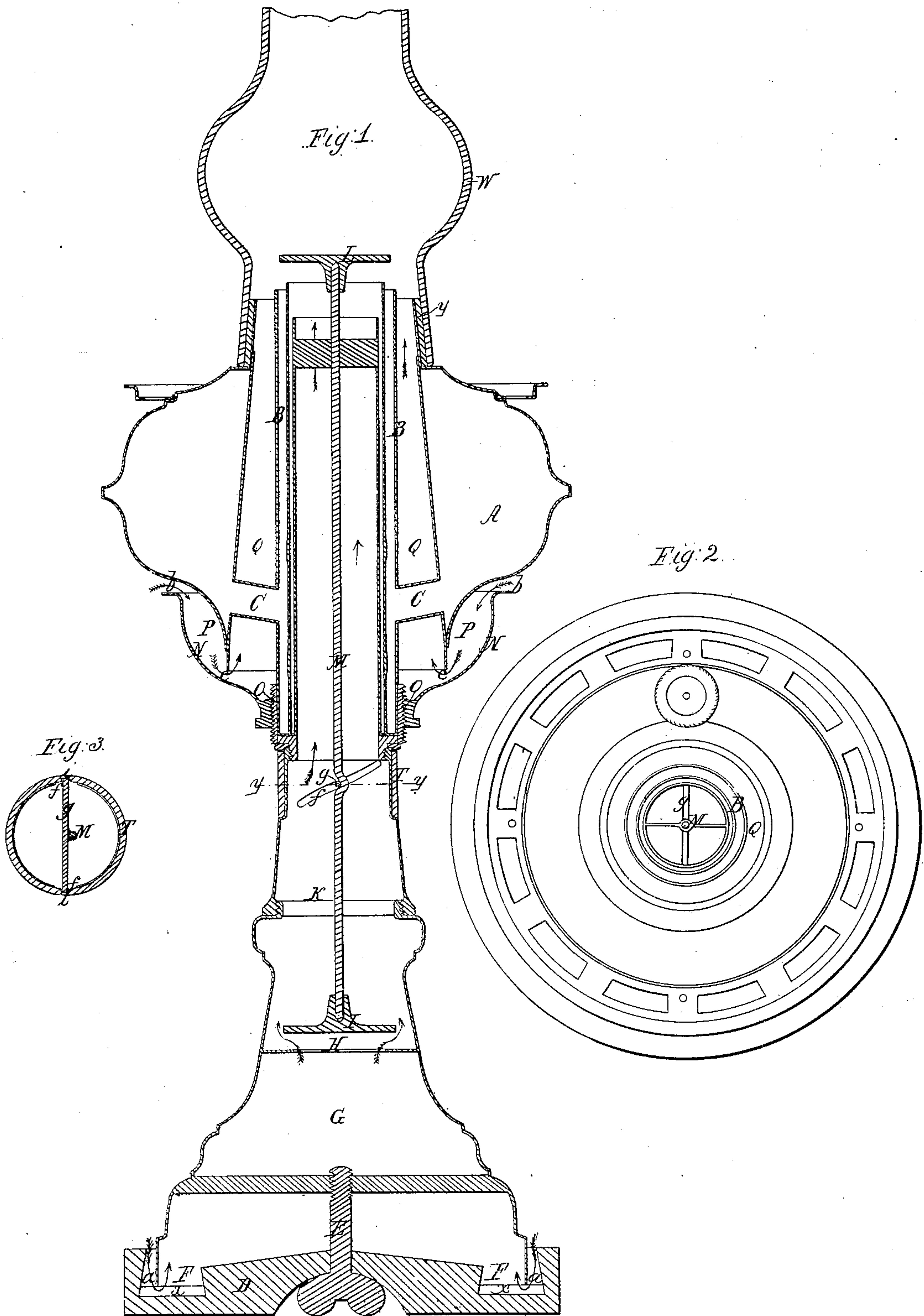


F. BLAKE.
LAMP.

No. 13,259.

Patented July 17, 1855.



UNITED STATES PATENT OFFICE.

FRANCIS BLAKE, OF NEEDHAM, MASSACHUSETTS.

ROSIN-OIL LAMP.

Specification of Letters Patent No. 13,259, dated July 17, 1855.

To all whom it may concern:

Be it known that I, FRANCIS BLAKE, of Needham, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Lamps for Burning Rosin-Oil, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a vertical section through a lamp with my improvements attached; Fig. 2, a plan of the same; Fig. 3, a section on the line *y, y*, of Fig. 1.

The lamps heretofore contrived for the purpose of burning rosin oil have all been more or less liable to objection, on account of the smoke which they at times produce and all the efforts made to remove this objection have thus far proved unsuccessful.

To remedy this inconvenience is the object of my present invention, the nature of which together with the method which I have adopted of carrying it out will now be described.

The chief cause of the above mentioned evil in lamps for burning rosin oil and other inflammable liquids rich in carbon may be traced to the partial and unequal currents to which the flame is subjected, and which produce an imperfect combustion of the carbon of the material. These currents I have found to arise partly from leakages between the glass shade and lamp, and partly from the currents of air within the room and I have succeeded in producing a lamp for the above purpose which will burn regularly and steadily and without the production of smoke, which has heretofore rendered rosin oil and other similar burning fluids unavailable for illuminating purposes.

In the accompanying drawings A is the body of the lamp or receptacle for the oil which communicates by means of the passages C with the space B occupied by the wick.

The first part of my invention has reference to the manner in which the center draft is admitted to the lamp and regulated, and consists in providing an air chamber within the lamp itself to which the air is admitted by a circuitous passage and from which it passes to the flame through an adjustable opening, whereby a uniform and unvarying current of air is produced which

is entirely uninfluenced by the currents of air to which the lamp is exposed.

D is the base to which the lamp is secured by the screw E or otherwise. The bottom of the lamp descends into a circular groove F made in the base and rests upon 4 blocks *x*. A circuitous passage is thus formed through which the air enters as indicated by the arrows *a*, into the air chamber G. From this chamber it passes by the opening H to the central passage K, through which it rises to the flame. The opening H is commanded by a button I similar to the button L above the flame. These two buttons are secured to the same rod M and rise and fall together. The opening H is thus enlarged as the button L rises and the current of air through the central passage is at all times adjusted to the distance of the button L from the wick. These buttons are raised and lowered as required in the following manner: *g* is a pin fixed transversely upon the rod M, the ends of which pass through inclined slots *f* in the bottom of the lamp, and into the vertical grooves *i* in a ring or sleeve T which revolves freely upon the bottom portion of the lamp. As this ring is revolved in one direction or the other the pin *g* is carried up or down in the slot *f*, and thus the buttons are raised or lowered.

The second part of my invention consists in a peculiar method of regulating the draft to the outside of the wick, which at the same time furnishes a circuitous passage for the air and a chamber for its reception that the outer draft may also be removed from the influence of external currents of air.

N is a bowl shaped regulator which works up and down to and from the body of the lamp upon the screw O. Between this regulator and the lamp is inclosed an air chamber P which communicates with the external air by the opening *b*, and with the passage Q which conducts the draft to the outside of the wick by the opening *c*.

The openings *b* and *c* are enlarged or diminished for the purpose of regulating the amount of air supplied to the outside of the wick by raising or depressing the regulator N. This latter thus serves the double purpose of determining the quantity of air admitted to the exterior of the flame, and of furnishing an interior air chamber, and a circuitous way for the passage of the air, which means the external draft is preserved from being influenced by the currents of air

within the apartment and is rendered uniform and unvarying.

The third part of my invention consists in preventing the admission of the small
5 currents of air which ordinarily enter between the glass shade and the lamp and which I have discovered to be the cause of imperfect combustion and smoke.

W is the glass shade, between which and
10 the lamp I introduce a ring of india rubber Y, whereby the shade is held securely to the lamp and the currents of air effectually prevented from entering between them.

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

1. The air chamber G within the lamp in connection with the circuitous passage F for the purpose set forth.

2. The button I in combination with the button L and opening H whereby the quantity of air that is admitted to the interior
20 of the flame is adjusted to the height of the button above the wick as described.

3. I claim the draft regulator N constructed and operating in the manner substantially as herein set forth.
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FRANCIS BLAKE.

Witnesses:

SAM. COOPER,
JOHN S. CLOW.