

No. 73,495.

PATENTED JAN. 21, 1868.

O. BOYNTON.
LAMP.

Fig. 1.

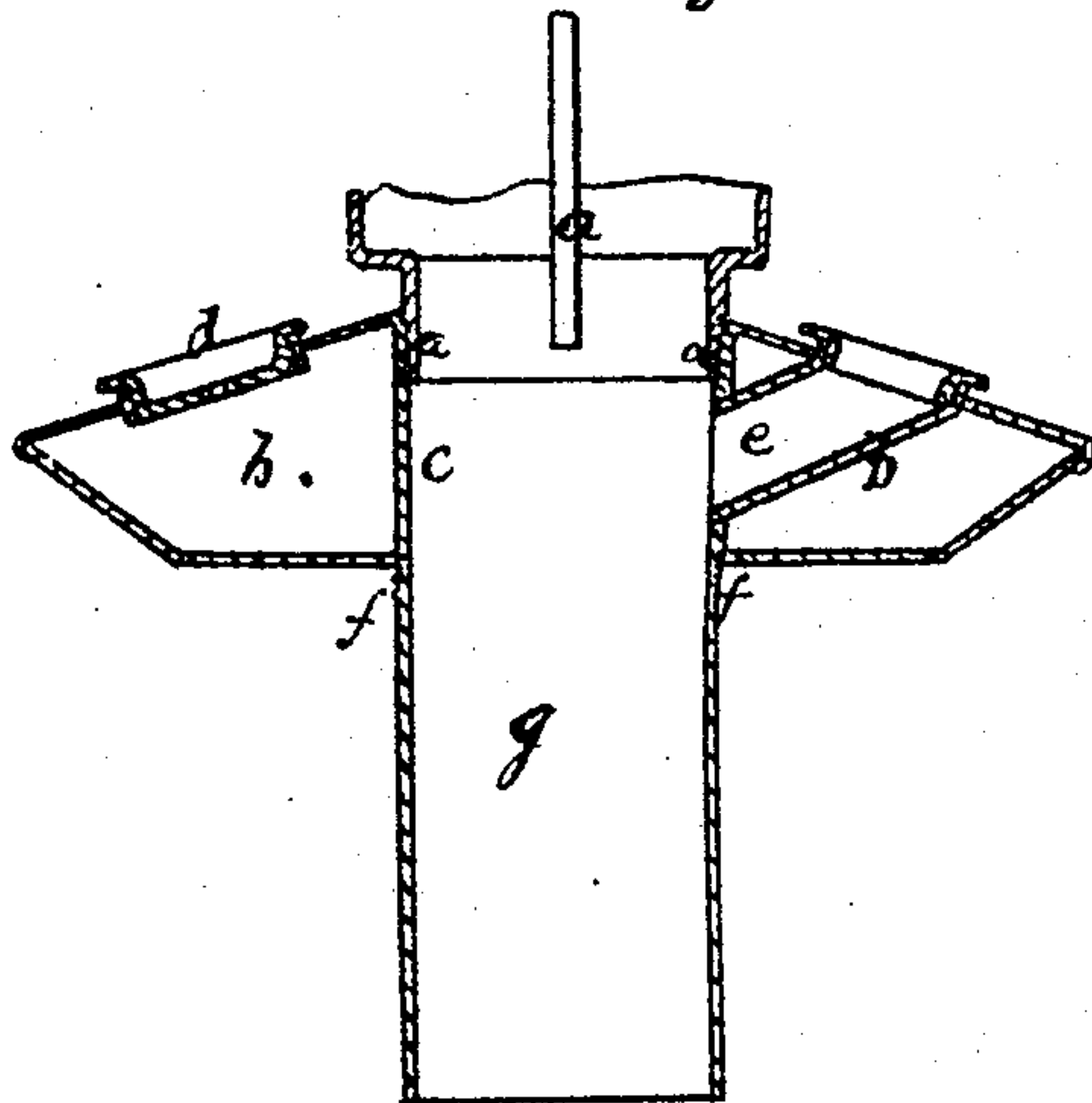
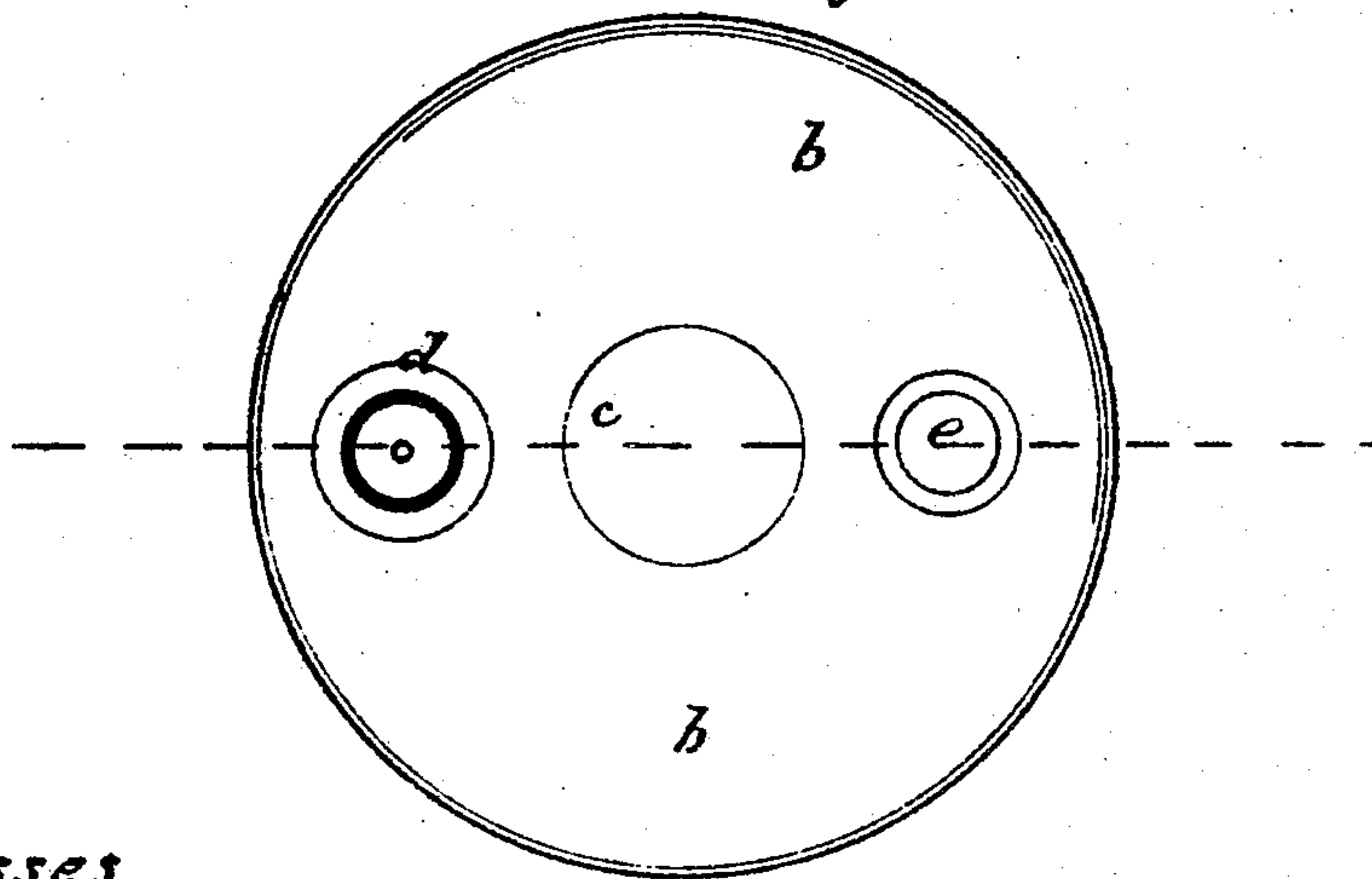


Fig. 2.



Witnesses.

Charles Sears.
John Allen

Inventor.

Oretta Boynton

United States Patent Office

OVETTE BOYNTON, OF HINESBURG, VERMONT.

Letters Patent No. 73,495, dated January 21, 1868.

IMPROVEMENT IN LAMPS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, OVETTE BOYNTON, of Hinesburg, in the county of Chittenden, and State of Vermont, have invented new and useful Improvements in Lamps and Burners; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in interposing between the flame of the burner and the lamp or oil-reservoir, a chamber containing water or other non-conductor of heat, which will prevent the passage of heat from the flame of the burner to the lamp or oil-reservoir; and also in inserting a feed-tube through one side of the chamber, and connecting with the oil-reservoir, by means of which the lamp or oil-reservoir can be filled from the outside without unscrewing the burner or removing the chimney; and also in inserting a well-tube, open at both ends, connected at its upper end with the collar of the lamp, and extending downward nearly to the bottom of the lamp or oil-reservoir, so as to exclude the oil from contact with the air or wick, except within the well-tube.

To enable others skilled in the art to make and use my invention, I will proceed to describe the construction and operation thereof.

I make the chamber of tin, copper, brass, or other suitable metal, or of glass. The form may be varied to suit the uses for which it is required, but for ordinary lamp use I make it a circular disk, surrounding the wick-tube, and extending outward far enough to cover in good part the top of the lamp or oil-reservoir, to protect the oil from the heat of the flame. The upper and under surfaces are joined at the circumference and made tight, and are tightly secured to a tube, *c*, passing vertically through the centre of the chamber. This central tube *c* is made of sufficient diameter to allow the wick to turn freely in it, and has a screw, *f*, upon the outside of the lower end, by means of which it is secured to the collar of the lamp or oil-reservoir, and projects below the chamber sufficiently for that purpose. The upper end of the tube has a screw upon the inside to receive the burner. The chamber may also be made with and part of the collar, having the burner screwed into the upper end of the central tube, as above described, or it may be permanently attached to the burner, and screwed into the collar, as before mentioned. Other modes of attachment may be used, but I deem the screw preferable. The inside vertical depth of the chamber, next the central tube *c*, should be three-fourths part of an inch, more or less, for an ordinary lamp, and of like proportion for other uses. The upper and under surfaces of the chamber may be made convex, concave, or of other desired form, and they should be highly finished, so as to reflect heat and light. Upon one side of the upper surface of the chamber is an aperture, *d*, closed with a screw-cap for filling the chamber with water or other non-conductor of heat. Through the chamber, upon the opposite side, is inserted a feed-tube, *e*, for supplying the lamp or reservoir with oil. The upper end of this feed-tube *e* opens through the upper surface of the chamber, and is there closed by a screw-cap. The lower end opens into the oil-reservoir, through the central tube of the chamber. The chamber thus made can be successfully adapted to any lamp. The well-tube, made cylindrical in preference, is connected with the collar of the lamp or other burner, and extends downward nearly to the bottom of the oil-reservoir, or it may extend to the bottom, and have perforations in or near its lower end for the passage of the oil to the inside of it.

Illustration.

In the drawings annexed—

Figure 1 represents a vertical section of the chamber and attachments. Letter *a* indicates the burner screwed into the central tube *c*. The chamber-space is represented by *b b*. The aperture for filling the chamber is indicated by *d*, the feed-tube, for filling the lamp, by *e*, and the screw at the lower end of the central tube by *f f*, and the well-tube by *g*.

Figure 2 is a plane horizontal section of the chamber, in which the letters indicate the same parts respectively as in fig. 1.

Operation.

The non-conducting chamber is designed to prevent the passage of heat from the flame to the oil in the reservoir, and being interposed, as it is, between the flame and the oil-reservoir, having bright surfaces, and

surrounding the wick with a body of non-conducting matter, it both absorbs and reflects heat, which is in turn given off from the relatively large radiating-surface to the air surrounding it; hence, by means of the chamber, the oil is kept cool, no vapor is generated in the reservoir to escape unconsumed, no odors are diffuse through the room, and no explosion of the lamp or reservoir can occur, for the reason that the cause of explosions—the inflammable vapor of volatile oils—is not present.

By means of the chamber, kerosene and the more volatile products of petroleum can be burned with safety and economy, and more light, and of better quality, can be obtained from a given quantity of oil than can be obtained without its use, because the vapors are consumed in the wick, together with the denser portions of the oil.

The feed-tube through the chamber is designed to fill the lamp or oil-reservoir from the outside, without unscrewing the burner or even removing the chimney. By means of this device a kerosene-lamp can be filled as conveniently as was the old-fashioned oil-lamp. The well-tube serves to exclude the air from contact with the oil, except within the tube, so that if by accident or careless handling fire should be communicated to the oil, it cannot spread, but will be confined within the tube, and will burn feebly for want of air, as in a well, and can be extinguished as readily as can a burning candle.

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

The burner, constructed and arranged substantially as set forth and described, that is to say, with its water-chamber interposed between the flame and lamp, provided with oil and water-feeding ducts, and a well-tube, through which the wick descends to the oil.

OVETTE BOYNTON.

Witnesses.

CHAS. SEARS,
JOHN ALLEN.