

L. J. ATWOOD.

Lamp Burner.

No. 98,836.

Patented Jan. 18, 1870.

Fig. 1.

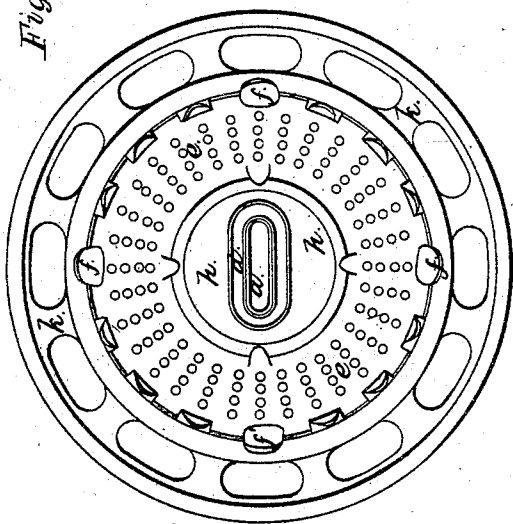


Fig. 2.

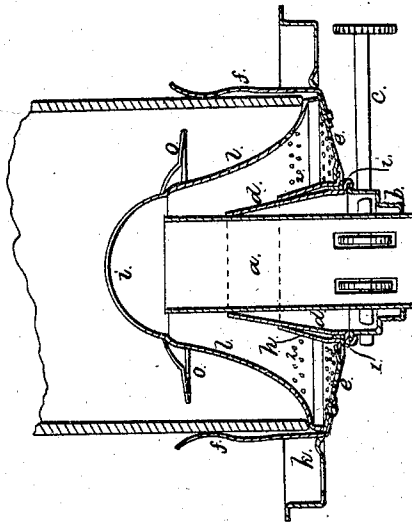
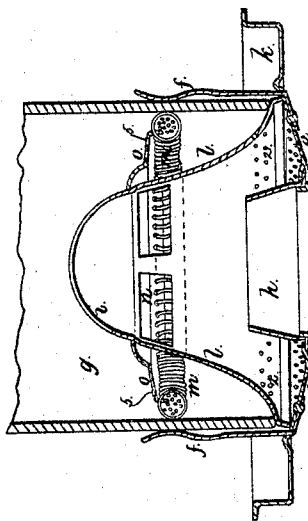


Fig. 3.



Witnesses.
Geo. S. Walker
Chas. H. Smith

Inventor.
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United States Patent Office.

LEWIS J. ATWOOD, OF WATERBURY, CONNECTICUT, ASSIGNOR TO HIMSELF AND HOLMES, BOOTH & HAYDENS, OF SAME PLACE.

Letters Patent No. 98,836, dated January 18, 1870.

IMPROVEMENT IN LAMP-BURNERS.

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, LEWIS J. ATWOOD, of Waterbury, in the county of New Haven, and State of Connecticut, have invented and made a new and useful Improvement in Lamps; and I do hereby declare the following to be a full, clear, and exact description of the said invention, reference being had to the annexed drawing, making part of this specification, wherein—

Figure 1 is a plan of said lamp-burner, with the deflector removed;

Figure 2 is a vertical section of the burner complete, ready for use; and

Figure 3 shows the chimney, the draught-plate or deflector, and the air-distributor separately, in section.

Similar parts are referred to by like letters.

Lamp-burners for liquid hydrocarbon have heretofore been constructed, in which the chimney rested upon a perforated air-distributor, and a draught-plate is employed within the chimney, to direct the air to the flame, as seen in Letters Patent granted to me, January 21, 1868. In this class of burners, the glass chimney has been cylindrical, or nearly so, and tapered at the upper end.

A difficulty has arisen in regulating, with exactness, the amount of air passing to the flame, because the variations in the sizes of the glass chimney (generally existing) allow more air to pass outside the draught-plate in some instances than in others.

I have found that the perfection of the combustion is of more importance than the amount of light that is allowed to shine out below the draught-plate, and through the chimney.

The nature of my present invention consists in a spring chimney-holder, adapted to a cylindrical chimney, and a removable air-distributor, in combination with a conical deflector, that is supported by the air-distributor, and ascends within such cylindrical chimney, to direct the air to the flame, so that the supply of air to support combustion may be regulated, regardless of any imperfections in the size of the cylindrical glass chimney.

I also employ a peculiar means for connecting the movable portion of the burner to the stationary cap around the wick-tube, so that the chimney-holder and deflector will come correctly to place when applied upon said cap.

In the drawing—

a is the wick-tube;

b, the screw, to take the opening in the reservoir;

c, the wick-raiser; and

d, a tapering cap over the wick-raiser, and around the wick-tube.

e is the foraminous air-distributor, around the edges of which the springs *f* are applied, for holding the

chimney *g*, that is cylindrical, or nearly so, at its lower, and tapers at the top end, to the proper-sized opening.

h is a tapering thimble, attached to the central opening of the air-distributor *e*, and tapering to an elliptical shape at the upper end, corresponding with that of the middle portion of the tapering cap *d*.

These parts being elliptical, cause the draught-plate and its parts to come to the proper place, relatively to the wick-tube, when the parts are set together.

The weight of the burner rests principally upon the circular flange *l*, around the base of the cap *d*.

The air-distributor *e* may be extended in the form of a globe-holder or ring, *k*.

The conical deflector *l* rises from the edge of the air-distributor *e*, and is provided with the flame-slot at *i*, and openings at *2*, to allow air to pass against the lower part of the chimney, to aid in keeping it cool, and also to furnish an external draught for the flame.

This construction will insure a perfect combustion of the hydrocarbon, and the glass chimney and draught-plate will remain sufficiently cool to allow the parts to be handled, in lifting them off the wick-tube, for lighting or trimming the wick.

If it is desired to direct the air passing through the holes *2*, more fully upon the base of the chimney, the rim or flange *o* may be applied, as seen in red lines, fig. 2. This ring-flange may be made of metal, or it may be of transparent material, such as glass or mica, to lessen the shadow cast from the flame.

If desired, this flange *o* may be extended, and receive a spring or helix of wire, *m*, (see fig. 3.) at its edge, setting within the chimney, to aid in steadying it, (as shown upon the draught-plate in my aforesaid patent,) and within this helix, cords or other suitable filling is introduced, to check the draught, but allow air to pass between the glass and the filling, and through the coils of the helix, thus supplying a regular amount of air, regardless of variations in the size of the chimney.

Holes may be introduced around the flange *o*, as at *5*, in order that the proper amount of external draught may pass to the flame, to produce a perfect combustion.

In the last-mentioned modification, the conical part of the deflector *l* may have openings, as seen at *n*, to lessen the amount of heat conducted down said deflector. The rush of air to the flame, however, will still be directed by this conical base of the deflector.

The helix *m* is attached to the sheet-metal of the draught-plate, by being passed through holes in the metal by revolving the helix.

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

1. The removable air-distributor and thimble *h*, in combination with the flattened tapering cap *d*, surrounding the wick-tube *a*, substantially as and for the purposes set forth.

2. The helix *m*, applied around the flange of the draught-plate *o*, in combination with the cone *l* and removable air-distributor, substantially as set forth.

3. A helix of wire, *m*, in combination with the de-

flector or draught-plate, and a filling of cord or other material, for the purposes and as specified.

In witness whereof, I have hereunto set my signature, this 3d day of March, 1868.

L. J. ATWOOD.

Witnesses:

GEO. D. WALKER,
CHAS. H. SMITH.