(No Model.)

W. A. HULL.

LAMP BURNER.

No. 345,233. Patented July 6, 1886.

Fig. 1

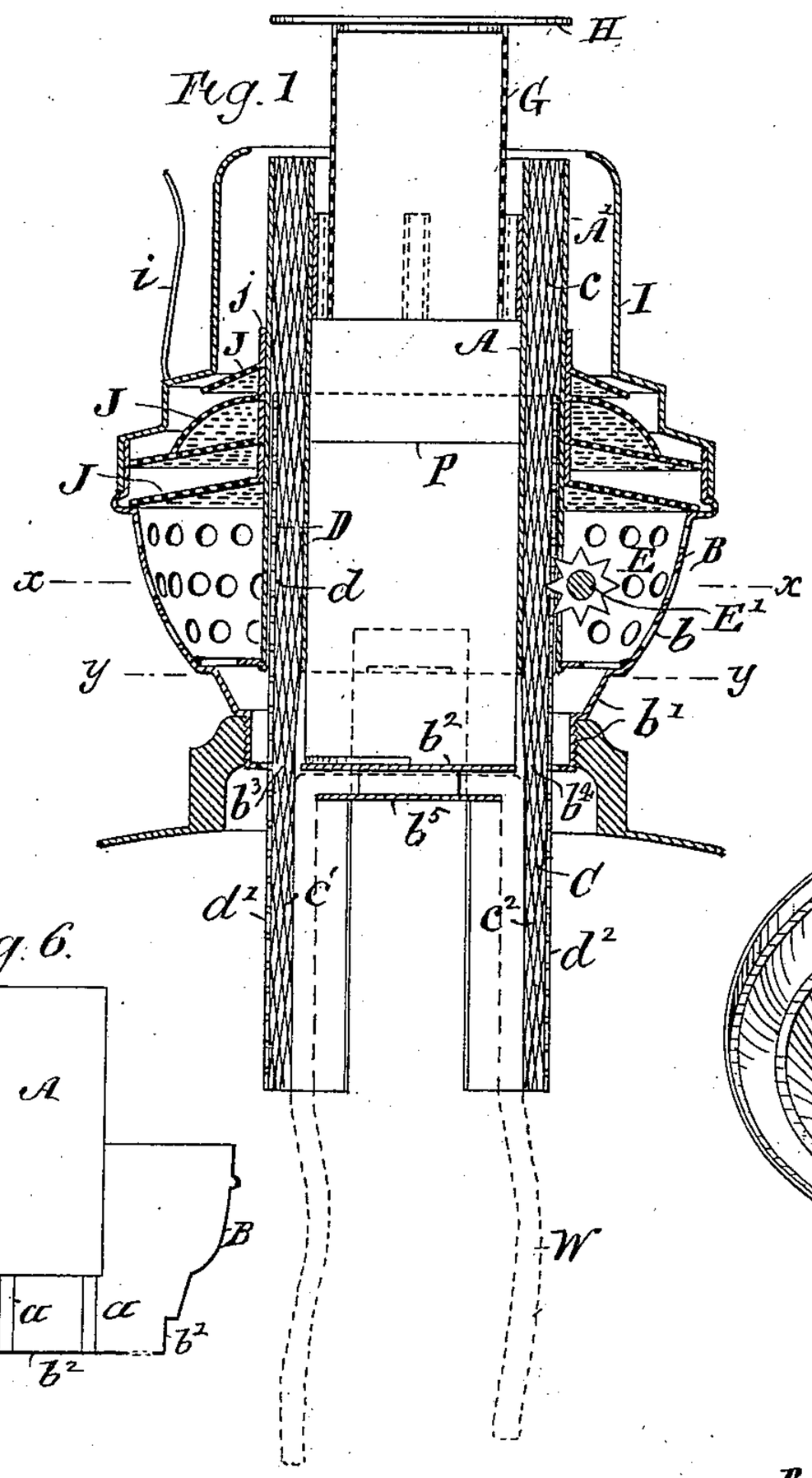


Fig. 4.

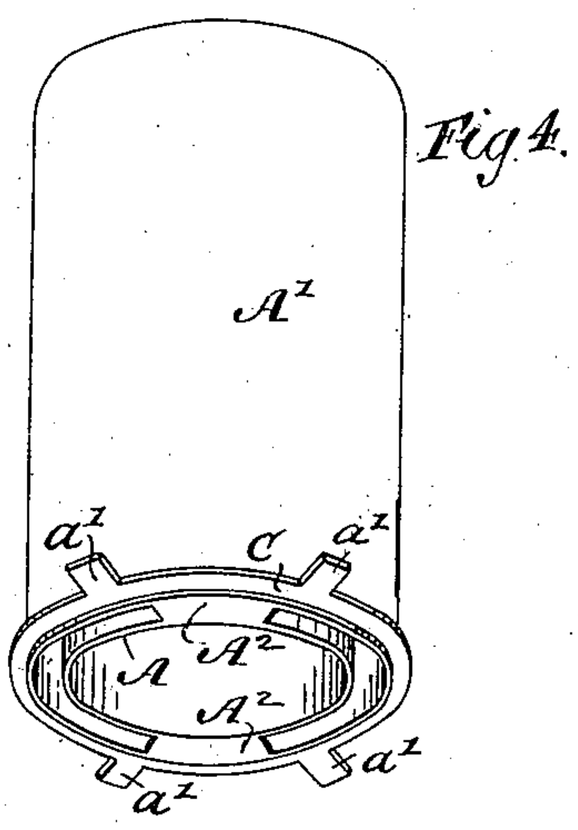


Fig. 5.

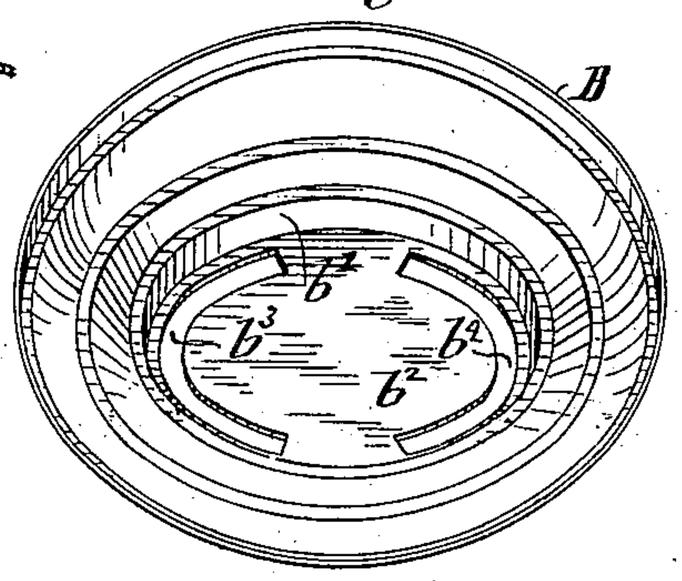


Fig. 6.

Fig. 2.

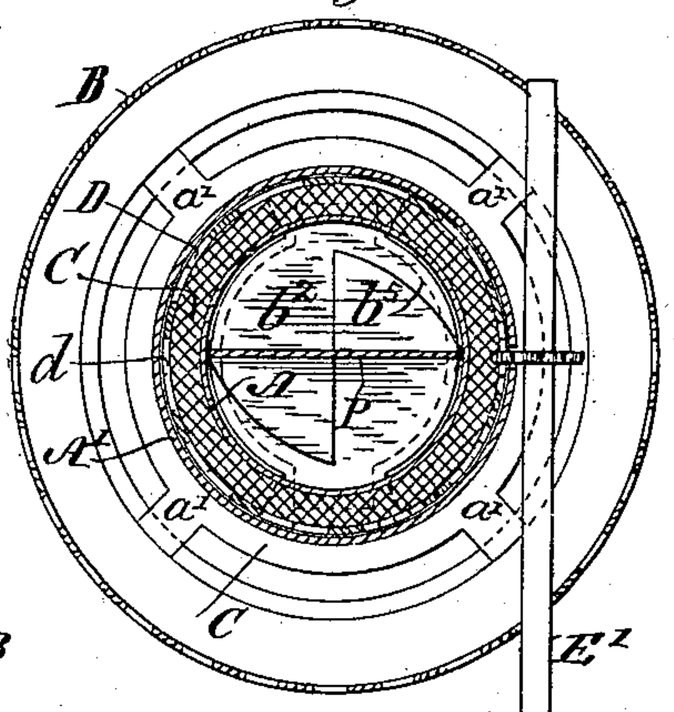
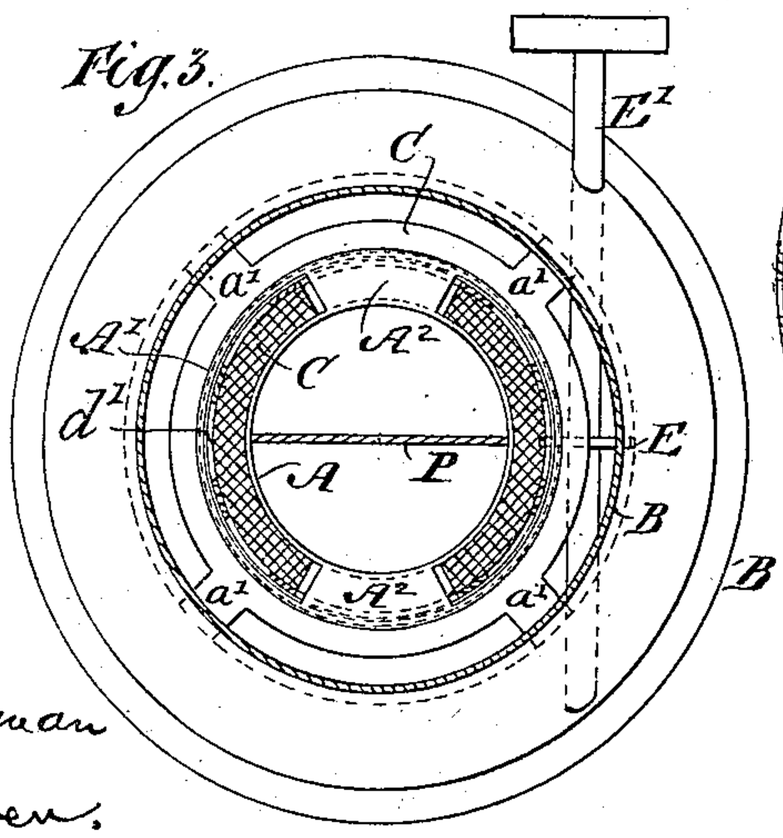


Fig. 3.



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UNITED STATES PATENT OFFICE.

WOLCOTT A. HULL, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO THE ANSONIA BRASS AND COPPER COMPANY, OF SAME PLACE.

LAMP-BURNER.

SPECIFICATION forming part of Letters Patent No. 345,233, dated July 6, 1886.

Application filed December 24, 1885. Serial No. 186,612. (No model.)

To all whom it may concern:

Be it known that I, WOLCOTT A. HULL, of New York, in the county and State of New York, have invented a certain new and useful Improvement in Lamp-Burners, of which the following is a specification.

The object of my improvement is to provide a simple, cheap, and effective lamp-burner having an annular wick-tube and a central draft, and adapted withal for attachment to an ordinary lamp reservoir or fount.

I will describe in detail a lamp-burner embodying my improvement, and then point out the novel features in claims.

In the accompanying drawings, Figure 1 is a vertical section of a lamp-burner embodying my improvement. Fig. 2 is a horizontal section taken at the plane of the dotted line *x x*, Fig. 1, looking downwardly. Fig. 3 is a horizontal section taken at the plane of the dotted line *y y*, Fig. 1. Fig. 4 is a perspective view of the wick-tube detached. Fig. 5 is a perspective view of an outer air-distributer shell detached. Fig. 6 is a sectional view of certain parts.

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

A A′ designate the wick-tube. It consists of two cylindric parts or shells, A and A′, made of sheet-metal tubing and arranged concentrically one within the other.

B designates an outer petticoat-like shell, studded with perforations *b*, and forming a draft-plate or air-distributer. As shown, it is in the main cup-shaped. The lower portion, *b′*, is cylindrical and externally screw-threaded to engage with an internally-screw-threaded collar in an oil reservoir or fount. The bottom b^2 has openings b^3 b^4, which are arc-shaped.

The outer shell, A′, of the wick-tube A A′ is elevated above the bottom b^2 of the shell B, and the portion of the shell B, into which the lower end of this shell A′ extends, is considerably larger in diameter than the shell A′. Air may circulate freely below this shell A′ and between it and the bottom of the shell B. Preferably the inner shell, A, is similarly elevated all around. It is necessarily elevated at places, if not all around, in order that air may pass below it and above the bottom of the shell B. The inner shell, A, of the wick-tube forms also a central draft-tube. Air enters the perforations *b* of the shell B, and passes thence below the wick-tube and into the space encircled by the inner shell, A. The lowest perforations *b* of the shell B are most advantageously arranged above the bottom of the inner shell, A, of the wick-tube, or above the lower edge of its elevated portions. Then air entering the shell B will have to descend before it can reach the space encircled by the inner shell, A, of the wick-tube.

The wick, C, which I use in the wick-tube consists of a cylindric upper portion, *c*, and two strips, c' c^2, extending downwardly therefrom. It is fastened to a holder, D, of the same shape. This holder is made of sheet metal, and has rows of perforations extending lengthwise of it. Its cylindric portion *d* surrounds the cylindric portion of the wick, and from this portion extend strips d' d^2, corresponding to the strips c' c^2 of the wick. The wick is secured to the holder throughout the length of the latter by sewing or otherwise. The wick at the upper end extends considerably above the holder. A ratchet-wheel, E, mounted on a shaft, E′, journaled in the shell B, and provided at one end with a hand-piece, engages with perforations of the holder. By rotating this wheel the holder, and consequently the wick, may be raised and lowered.

The shells A A′ of the wick-tube are fastened together at opposite points by lateral spurs or extensions A^2, projecting from one of these shells to the other. These spurs or lateral extensions may be made integral with one shell and riveted to the other, or they may be riveted to both shells.

When the inner shell, A, is connected to the outer shell, A′, as described, it is supported by the outer shell, A′, and is wholly isolated from the shell B. This is desirable, because then heat will not be transmitted by it to parts below, as otherwise would be the case. The inner shell, A, may, of course, be unconnected to the outer shell, A′, and supported by legs *a*, (see Fig. 6,) extending from it.

The outer shell, A′, of the wick-tube is supported by means of spurs *a′*, extending from it to the shell B. These spurs may be made

integral with it. They will preferably, however, be made part of a ring, C, and this ring will be slipped over the lower end of this shell A′ into a recess formed in the exterior of said shell for its reception. The extreme edge portion of the said shell is bent over the ring so as to secure it.

It will be seen that I support the outer shell of the wick-tube very effectively and securely by the means above described.

The spurs or extensions A^2 close the bottom of the wick-tube at opposite points, leaving it open at the intervening portions. The bottom of the wick-tube is therefore open at two arc-shaped portions. Opposite these open arc-shaped portions, and corresponding to them, are the arc-shaped openings b^3 b^4 in the bottom of the shell B.

The strips c' c^2 of the wick C, with the corresponding parts of the holder D, are intended to pass down through the arc-shaped openings in the bottom of the wick-tube and through the openings b^3 b^4 in the bottom of the shell B.

On the bottom of the shell B is a hanger, b^5, from which a feeding-wick, W, (shown in dotted outline,) may depend into the reservoir or fount. The strips c' c^2 of the wick C are to touch this feeding-wick.

Air is intended to pass below the spurs or extensions A^2 to the space encircled by the inner shell of the wick-tube. Between these entrances there is arranged a plate or diaphragm, P, which directs the air upwardly, or, in other words, prevents it from blowing across the wick-tube. This plate or diaphragm is shown as mounted on the bottom b^2 of the shell B.

A perforated tube, G, will preferably be employed above the wick-tube. It is shown as smaller in diameter than the inner shell of the wick-tube, and as fitted within the latter by means of ribs, with which it is externally provided. The tube G is closed at the top, preferably by a button or deflector, H, extending laterally beyond it.

Outside the wick-tube is a conoidal deflector, I, which may be made of sheet metal. It rests on the shell B, and is shaped so as to form a chimney-gallery, spring-fingers *i* being employed on the latter to keep the chimney in place.

A number of perforated sheet-metal plates, J, are arranged outside the wick-tube. They extend close to the shell B and deflector I. At their inner edges they have rims *j*, which snugly fit the outer shell of the wick-tube. These rims are important features of these plates. They take heat from the wick-tube and carry it away, transmitting it to the air which passes through their numerous perforations, and not only thus preventing it from passing to the lower part of the burner, but utilizing it to prepare the air for effective combustion.

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

1. The combination, with a perforated outer shell provided at its base with openings for the passage of a wick, of a wick-tube composed of an inner and an outer shell, the inner shell being provided with a central air-space, both said inner and outer wick-tube shells being supported at a distance from the perforated shell aforesaid by spurs or legs, whereby a space will be provided between the lower end of the wick-tube and the said perforated shell, substantially as described.

2. The combination, with a perforated outer shell provided at its base with openings for the passage of the wick, of a wick-tube composed of an inner and an outer shell, said inner shell being provided with a central air-space, and being supported by the outer shell thereof, the outer shell being supported by spurs or legs, whereby a space will be provided between the lower end of the wick-tube and the base of the perforated shell, substantially as specified.

3. The combination, with a perforated shell provided at its base with openings for the passage of a wick, of a wick-tube composed of an inner and an outer shell supported above the base of said perforated outer shell, the lowest perforations in said perforated outer shell being above the lower end of the wick-tube, substantially as specified.

WOLCOTT A. HULL.

Witnesses:
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