

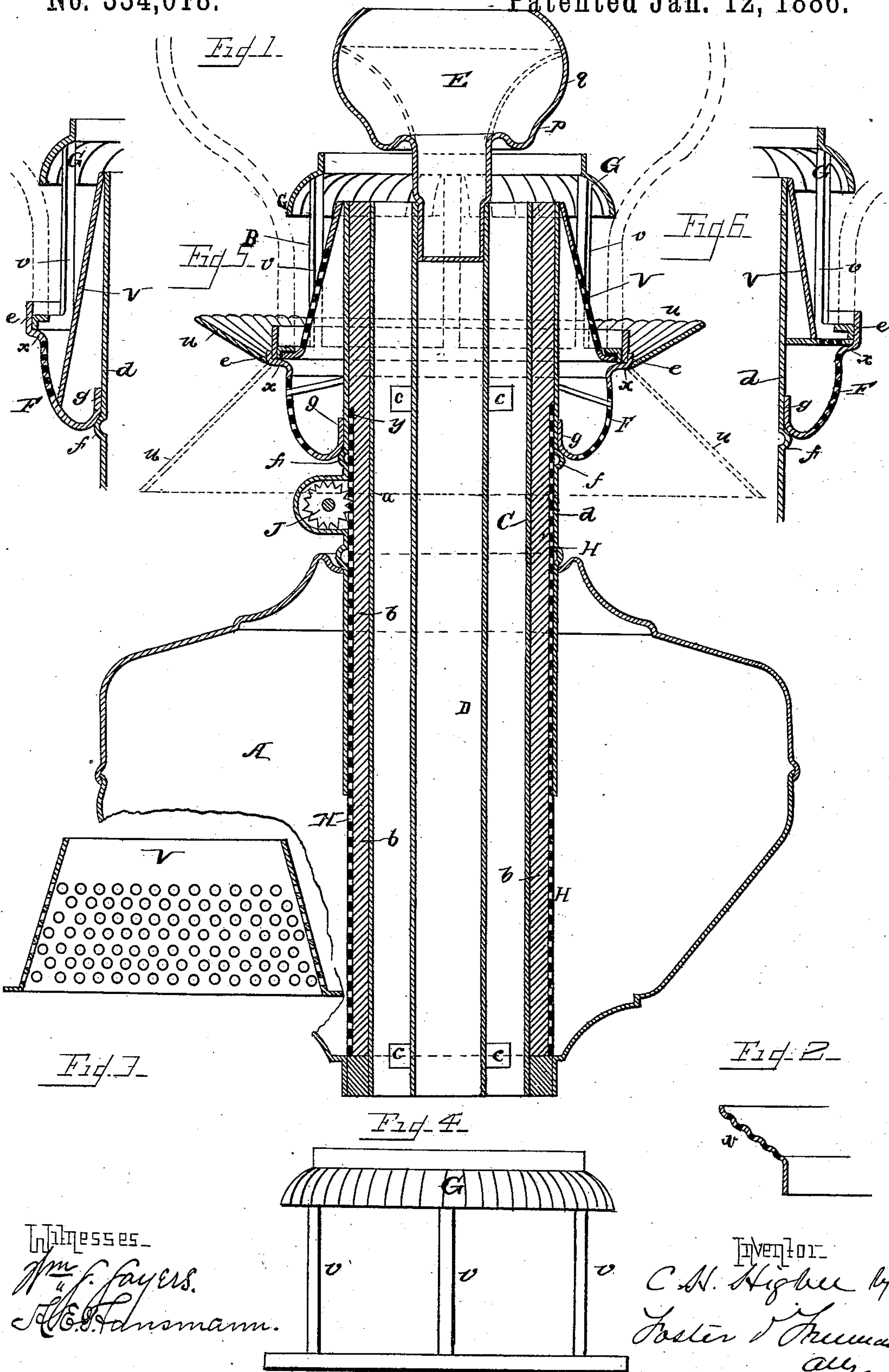
(No Model.)

C. H. HIGBEE.

LAMP.

No. 334,018.

Patented Jan. 12, 1886.



Witnesses.  
Wm. J. Fayers.  
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attys



# UNITED STATES PATENT OFFICE.

CHARLES H. HIGBEE, OF NEW YORK, N. Y., ASSIGNOR TO ANDREW J. DAVIES, OF SAME PLACE.

## LAMP.

SPECIFICATION forming part of Letters Patent No. 334,018, dated January 12, 1886.

Application filed June 2, 1885. Serial No. 167,422. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES H. HIGBEE, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Lamps, of which the following is a specification.

My invention relates to that class of lamps in which annular wicks and flame-spreaders are employed; and my invention consists of means, fully set forth hereinafter, for preventing the reflected rays of heat from striking and heating the reservoir and wick-tube, for maintaining the dome or deflector in its proper position in respect to the tube, and for increasing the illuminating effect.

In the drawings, Figure 1 is a vertical section of a lamp illustrating my improvements. Fig. 2 is a detached sectional view showing a modification. Fig. 3 is an external view of a cone, and Fig. 4 is a section of the deflector. Figs. 5 and 6 show different arrangements of the cone.

The reservoir A of the lamp may be of any suitable construction, and supports a burner, B, through the medium of a cylindrical tube, C, which extends through the top of the reservoir, and forms, with an inner fixed tube, a, an annular recess for the reception of the annular wick b and wick-carrier tube H, the tube C, however, terminating at some distance from the bottom of the reservoir to permit the oil to flow readily to the wick. A tube or stem, D, is supported centrally within the tube a by means of radial arms c, consisting of plates set vertically, so as to obstruct to as slight degree as possible the air-passage between the stem and the tube a, and at the upper end of the stem is a detachable flame-spreader, E. The tube C is surrounded by a tube, d, supporting an expanded perforated basket or case, F, terminating at the upper edge in a flange, e, and constructed to form a shoulder, x. Upon the shoulder x rests a hollow cone, V, which has a plain imperforate surface at the upper end for about one-fourth to one-fifth its length, and is perforated throughout the remaining portion, and above this cone is supported an annular deflector, G, which acts in the same manner as the deflecting edge of an ordinary cone, but permits air to pass freely beneath

it, and has an exterior slotted flange to support the chimney. The deflector G is supported in any suitable manner by narrow standards v, which are connected at their lower ends to a ring resting upon the flange of the cone V, or on the shoulder x of the basket. I prevent the heat from being reflected from the spreader into the tube a by curving the side of the flame-spreader, so as to present a surface at such an angle or angles as will avoid to a great extent the reflection of any heat-rays downward into the tube. Thus the spreader may be curved outward and then downward, and then extended upward in the form of a curved flange, p, as shown in the drawings; but it will be obvious that other curves or angles may be imparted to the spreader to prevent the result referred to.

One of the main causes of the heating of the oil in the reservoir of a lamp results from the reflection of the heat-rays from the inner face of the dome to the wick-tube, and its conduction thereby to the reservoir, which in turn conducts the heat to the oil. A partition interposed between the wick-tube and the dome would prevent the reflected rays from reaching the tube, but it would also interfere with the necessary flow of the air to the flame at the end of the wick.

I have discovered that by the use of an annular deflector, G, and a perforated cone arranged in the manner in which the cone V is shown I am enabled to supply the flame abundantly with air, and at the same time prevent the passage of reflected rays to the sides of the wick-tube and reservoir. This results from the fact that the perforated cone is at such an angle to the inner face of the deflector that the heat-rays radiated from the latter cannot pass through any of the perforations in such manner as to strike upon any part of the tube or reservoir, except the extreme end of the wick-tube, while the air can pass freely through such perforations, so as not only to supply the flame, but, further, to keep the cone cool and prevent the convection of heat by the latter to the parts with which it is in contact. Inasmuch as the upper portion of the cone is approximately parallel to a part of the dome or deflector G, some of the heat-rays might, if this portion of the cone



were perforated, pass through the perforations to the wick-tube. I therefore make it imperforate, as before described, so as to prevent such a result. The annular reflector permits  
 5 a free flow of the air to the flame without being conducted downward to the parts upon which the deflector rests, as will be the case if a continuous dome were used, while the heat reflected from the inclined face of the cone can  
 10 pass freely outward without being arrested or obstructed to any material extent.

The deflector and cone V might of course be used in connection with the ordinary button or central deflector or spreader, E. I prefer, however, to use it in connection with a  
 15 spreader of the form described, which co-operates with the deflector G and cone B to prevent the heating of the reservoir.

To prevent the heat-rays from the flame  
 20 from striking the reservoir, I extend a flange, *u*, from the side of the burner or at any suitable point between the flame and reservoir, so as to intercept the rays between the flame or reflector, should one be used, and the top  
 25 of the reservoir.

As shown, the flange *u* constitutes an ornamental appendage to the burner, being fluted or waved or ribbed, and inclined upward from its point of attachment. It may,  
 30 however, be extended directly outward or downward, and may be of any desired shape, and may further be perforated and ribbed transversely, as shown in Fig. 2, so that it will prevent the downward passage of heat-rays,  
 35 but permit the passage of air currents, whereby it is maintained cool.

It is evident that a partially-equivalent construction of the cone would be to make the same imperforate throughout and supported  
 40 away from the chimney, and with air-passages between the chimney and cone, through the basket or other part of the burner. Such a construction is shown in Figs. 5 and 6.

It will be evident that some of the above-described features may be used in lamps independently of others without therefore limiting myself to the precise construction and arrangement of parts shown.

I claim—

50 1. The combination, with an Argand burner, of a central deflector extending downward and outward from the center and then upward and outward, forming an annular projection on the under side of said deflector, approximating in size the interior of the air-tube, substantially as set forth.

2. The combination, with an Argand burner,

of a central flame-spreader, perforated basket surrounding the wick-tube and provided with a chimney-support, a perforated cone extending from the basket to the top of the wick-tube, a deflector of greater diameter than the wick-tube extended to a point between the plane of the top of the wick-tube and that of the spreader, and supports for the deflector, substantially as described. 6c 65

3. The combination, with an Argand burner, of a central flame-spreader, a perforated cone surrounding the wick-tube and extending to the top of the same, and an annular deflector extending above the top of the wick-tube and provided with a slotted flange, constituting a bearing for the chimney, and a bottom rest for the chimney below said flange, substantially as set forth. 70 75

4. The combination, with the wick-tube, perforated basket provided with a support for the chimney, central flame-spreader and annular deflector extending above and supported adjacent to the top of the wick-tube, and provided with a slotted flange, forming a bearing for the chimney, of a cone surrounding the wick-tube and extending downward from the top thereof to the basket, substantially as set forth. 80 85

5. The combination of the Argand burner, spreader, open-base deflector, and cone provided with an imperforate portion near the top, and supports for the deflector and cone, substantially as described. 90

6. The combination, with an Argand burner, of a central spreader, a perforated basket surrounding the wick-tube, a perforated cone extending from the base to the top of the wick-tube, an open-base deflector having its upper edge at a point between the plane of the top of the wick-tube and that of the spreader, a slotted flange upon said deflector, and a support for the chimney below the flange, substantially as described. 95 100

7. The combination of the Argand burner, spreader, cone extending to the upper end of the wick-tube, perforated at the lower part, and having an imperforate portion at the upper edge, and a deflector, G, having its upper edge on a plane between that of the spreader and that of the upper end of the wick-tube. 105

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES H. HIGBEE.

Witnesses:

W. C. DUVALL,  
 WM. S. SAYERS.