

(No Model.)

F. RHIND.
ARGAND LAMP.

No. 483,167.

Patented Sept. 27, 1892.

Fig. 1.

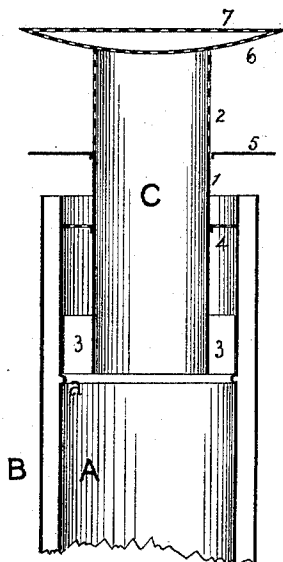


Fig. 2.

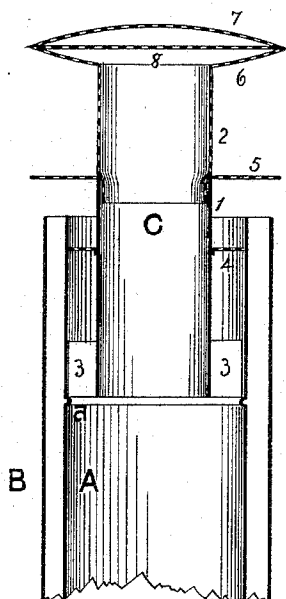
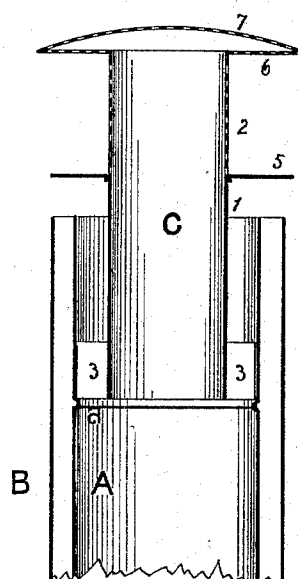


Fig. 3.



WITNESSES.

A. G. Sanborn
J. H. Kelbourne

Frank Rhind
INVENTOR.

BY *Geo. L. Cooper*
ATTORNEY.

UNITED STATES PATENT OFFICE.

FRANK RHIND, OF MERIDEN, CONNECTICUT, ASSIGNOR OF ONE-HALF TO
THE EDWARD MILLER & COMPANY, OF SAME PLACE.

ARGAND LAMP.

SPECIFICATION forming part of Letters Patent No. 483,167, dated September 27, 1892.

Application filed June 15, 1891. Serial No. 396,388. (No model.)

To all whom it may concern:

Be it known that I, FRANK RHIND, a citizen of the United States, residing at Meriden, New Haven county, Connecticut, have invented a new and useful Improvement in Argand Lamps, of which the following is a specification.

My invention relates to the inner air-distributors of Argand lamps, and is intended to improve the flame in size, color, and steadiness.

In the drawings, Figures 1, 2, and 3 represent in central vertical section various modifications of my device, together with so much of the lamp as is necessary to show its position and relation.

The same letters and figures refer to like parts in the several views.

A designates the central air-supply tube of an Argand lamp; *a*, a bead or stop in the tube A; B, an outer wick-tube; C, an inner air-distributor consisting of cylindric portions 1 and 2, wings 3, flanges 4 and 5, disks 6 and 7, and, in Fig. 2, diaphragm 8.

In the example of my invention illustrated in Fig. 1 of the drawings the central air-supply tube A, (here shown as having the additional function of inner wick-tube,) bead or stop *a*, and outer wick-tube B may be of any useful or convenient size and proportion. The air-distributor C consists of cylindric portions 1 and 2, (here shown as integral,) open at both ends, the lower portion 1 preferably imperforate, the upper portion 2 perforate. The distributor is of less diameter than the tube A and concentrically supported within the tube by means of vertical wings or metal plates 3, secured to the cylinder 1 at or near its lower end and with their outer edges preferably in frictional contact with the tube A. Secured to the cylinder 1 is the annular foraminous flange 4, the outer diameter of which is preferably equal to or slightly less than the inner diameter of the tube A. It is so placed on the cylinder 1 as to come somewhat below the top of the tube A when the distributor C is in its operative position. It serves to secure an even and regular distribution of the air which passes upward outside of the cylinder 1 and assists in maintaining the distributor in position. Above the flange 4 on the cylinder 1 2

and preferably at or near the upper end of the imperforate portion 1 is the flange 5. As here shown, it is an imperforate annulus of a diameter nearly corresponding to that of the outer wick-tube B. It is obvious that this size might not be the best adapted to all burners, but would necessarily vary under varying conditions. Surmounting the perforate portion 2 of the cylinder is a deflector or button consisting of the foraminous disks 6 and 7, with their edges secured together.

The operation of the device will be as follows: A portion of the air which is drawn up through the air-supply tube A will pass outside of the cylinder 1 between the wings 3, through the foraminous flange 4, and, being deflected by the flange 5, will feed the inner mantle of the flame at its root. Another portion of the air will pass up through the cylinder 1 and outward to the middle or body of the flame through the perforations in the cylindric portions 1 2. Still another portion of the rising column of air passes upward through the perforations in the disks 6 and 7, and being expanded by heat is partly fed to the tip of the flame and partly passes upward in an uncombined state. The free air, which passes through the perforations in the disk 7, serves to prevent the tip of the flame from licking in over the button, as well as to prevent eddies of air above the button, by which the smoothness of the tip of the flame would be destroyed.

The form of my device shown in Fig. 2 of the drawings differs from that above described in several details. The perforate cylinder 2 and the deflectors 6 7, supported thereby, are removable from the cylinder 1. The flange 5 is here shown as perforate, so that a portion of the air which passes upward outside of the cylinder 1 is fed to the flame above the flange 5. This also serves to keep the flange 5 cool and reduce the convection of heat to the cylinder 1 and thence to the lamp. Again the center of the disk 6 is removed, leaving only an annular portion extending from the cylinder 2 to the edge of the disk 7. It may sometimes be preferable, as in this case, to provide a diaphragm 8 between the disks 6 and 7, as shown, to prevent a too-free egress of air through the perforate disk 7.

The operation of the device will of course be substantially like that of the one already described.

In Fig. 3 of the drawings the foraminous flange 4 is omitted, as is also the diaphragm 8. The cylindric portions 1 2 are integral and the flange 5 imperforate, as shown in Fig. 1. In this construction a relatively-large volume of air would pass upward through the tube A around the cylinder 1, of which a considerable quantity would be freely fed to the root of the flame.

It is evident that the method of supporting the distributor is non-essential and that other mechanical changes may be made in my device without departing from my invention.

I am aware of the existence of a prior patent covering a distributor consisting of a cylindric portion, a deflecting-head, and a flange below the head. The deflector-head in this case was perforated on its lower side only, no means being provided for the prevention of eddies above the head or button. The distributor referred to was not provided with a foraminous cylindric portion between the head and the flange. This is of the first importance in my device.

I am also aware of a former construction in which an air-distributor was provided with an enlarged cylindric head with perforated sides. In this case there was no flange by which air could be deflected to the root of the flame. Neither was the cylindric portion of the distributor below the head or deflecting-button perforate, which is of great advantage in supplying the body of the flame with a liberal quantity of air.

In a pending application, Serial No. 373,061, I have shown and claimed a deflecting-button consisting of two foraminous disks united at their outer edges. Hence I do not here claim such a button, except in combination with other elements above described.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is as follows:

1. In an inner air-distributor of an Argand lamp, the combination of a substantially-cylindrical foraminous portion, an annular flange on said cylindrical portion in a plane above that of the central air-tube of the lamp, and a perforate deflecting-button of larger diameter than and surmounting said cylindrical portion, the perforations in said deflecting-button being so arranged as to per-

mit the upward passage through said button of a current of air, substantially as described.

2. In an inner air-distributor of an Argand lamp, the combination of a substantially-cylindrical portion, the lower part of which is imperforate and the upper part perforate, an annular flange on said cylinder in a plane above that of the central air-tube of the lamp, and a perforate deflecting-button of larger diameter than and surmounting said cylindrical portion, the perforations in said deflecting-button being so arranged as to permit the upward passage through said button of a current of air, substantially as described.

3. In an inner air-distributor of an Argand lamp, the combination of a substantially-cylindrical portion, the lower part of which is imperforate and the upper part perforate, an annular flange on said cylinder in a plane above that of the top of the central air-tube of the lamp, and a deflecting-button consisting of two foraminous disks, substantially as described.

4. In an inner air-distributor of an Argand lamp, the combination of a substantially-cylindrical portion, the lower part of which is imperforate and the upper part perforate, a perforate annular flange on said cylinder in a plane above that of the top of the central air-tube of the lamp, and a deflecting-button consisting of two foraminous disks, substantially as described.

5. In an inner air-distributor of an Argand lamp, the combination of a substantially-cylindrical portion, the lower part of which is imperforate and the upper part perforate, an annular flange on said cylinder in a plane above that of the top of the central air-tube of the lamp, an annular perforate flange in a plane below that of the top of the central air-tube of the lamp, and a deflecting-button consisting of two foraminous disks, substantially as described.

6. In the inner air-distributor of an Argand lamp, the combination of a substantially-cylindrical perforate portion, an annular flange on said cylinder in a plane above that of the top of the central air-tube of the lamp, a deflecting-button consisting of two foraminous disks, and a foraminous diaphragm between said disks, substantially as described.

FRANK RHIND.

Witnesses:

GEO. L. COOPER,
F. W. KILBOURNE.