L. ERVING.

Lamp Burner.

No. 76,426. Patented April 7, 1868.

Fig. 4

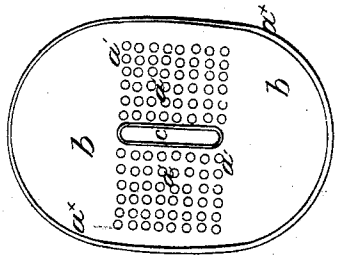


Fig. 2

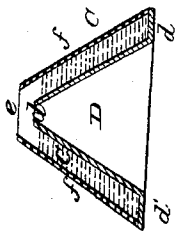


Fig. 3

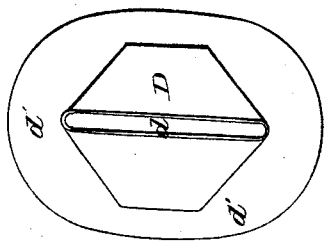
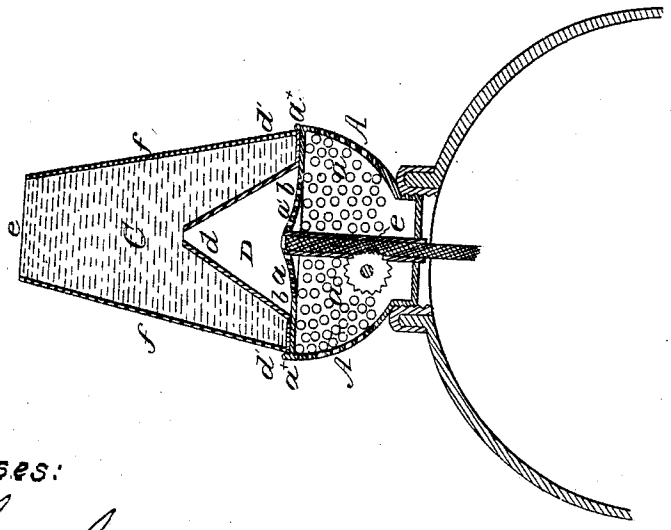


Fig. 1



Witnesses:

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LUTHER ERVING, OF BROOKLYN, NEW YORK.

Letters Patent No. 76,426, *dated April* 7, 1868.

LAMP-BURNER.

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, LUTHER ERVING, of Brooklyn, in the county of Kings, and State of New York, have invented certain new and useful Improvements in Lamp-Burners; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a portion of this specification, in which—

Figure 1 is a transverse section of a burner constructed according to my invention, as employed for heating purposes.

Figure 2 is a vertical transverse section of a portion of the same, when used for lighting purposes.

Figure 3 is a plan view of one portion of the invention.

Figure 4 is a plan view of another portion of the same.

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

This invention is designed either for heating or lighting purposes, and it consists in a perforated top-plate, formed upon the base of the burner, and situated at the upper end of the wick-tube thereof, in combination with a cap placed over the wick-tube, and an outer foraminated case, whereby the oil or fluid is first converted into vaper within the aforesaid cap, and then burned at the top of the case just mentioned, by which means a very perfect combustion of the oil or fluid is secured, and, as a consequence, not only a greater economy of oil or fluid, but also a more brilliant flame and intense heat are obtained, than in the burners of this class hitherto in use.

To enable others to understand the nature and construction of my invention, I will proceed to describe it with reference to the drawings.

The base, A, of the burner has its sides, *a*, perforated with numerous small holes, as represented in fig. 1, and may be of any desired shape or configuration, and is attached to a lamp or oil-reservoir, of any suitable construction, in the manner indicated in the red outline in the aforesaid fig. 1. The upper edges of the sides of this base, A, extend slightly above the edge of the top-plate *b*, as shown at $a^{\times}$. The centre of the said top-plate is somewhat elevated, or of convex form, and has the upper end of the flat-wick tube, *c*, fitted into a suitable opening formed therein for the reception of such end of the wick-tube. This central portion of the top-plate, *b*, on each side of the wick-tube, is perforated with numerous fine or small holes, as shown at a'.

D represents a cap, which is designed to be made of sheet metal, and the sides of which are inclined, as shown in the several figures, and in the top of which is formed a longitudinal opening, *d*, and which is provided at its lower edge with a horizontal flanch, d', of such shape that, when the cap D is placed upon the top-plate *b* of the base, A, the said flanch will be fitted within the rim formed by the upwardly-extending edge a^* of the sides *a* of the said base, and thus hold the cap in position with its opening *d* situated immediately over and coincident or in line with the wick-tube *c*.

C shows a case, which is placed over or around the cap D, as shown in figs. 1 and 2, and which is made of sheet metal, perforated with numerous small holes, or of any other suitable foraminated material, and which is open at the top, as shown at *e*. When the burner is used for heating purposes, this case C is made to extend considerably higher than the cap D, and has it sides, *f*, but moderately inclined toward each other, as is represented in fig. 1; but when the burner is to be used for lighting purposes, the top of this case is but little higher than the top of the aforesaid cap, and its sides are inclined toward each other in positions nearly or quite parallel with the sides of the cap D, when the case is placed over or around the same, as shown in fig. 2.

A suitable wick being placed in the wick-tube *c*, with its upper end flush with the surface of the top-plate *b* of the base, as shown in red outline in fig. 1, the case C and cap D are removed, and the wick is lighted, which being done, the cap D is replaced, and becoming heated, by the flame at the upper end of the wick-tube, radiates sufficient heat inward to volatilize the oil or fuel as fast as it rises in the wick, whereupon the case C is replaced over or around the cap, and the vapors being first mingled with air, that, first passing through the perforated sides *a* of the base, passes up through the holes or perforations in the top-plate *b*, enter the case C, and are lighted or ignited at the top or opening *e* of the said case, the flame being transferred, as it were, from the top of the wick-tube to the top of the cap D, and the continued volatilization of the oil from the wick being secured by the inward radiation from the heated cap.

When the case C is of the construction shown in fig. 1, sufficient air enters through the perforations of the foraminated material of which it is composed, to insure the perfect combustion of the vapors or gases within the said case, thus producing a very high degree of heat, but when the case is of the form shown in fig. 2, as when the burner is to be used for lighting purposes, the flame will be situated at and above the opening *e* of the said case, the light being in such instance unobstructed by the sides of the said case, at the same time that a sufficient quantity or supply of air passes through the perforated sides of the aforesaid case, to completely burn the vapors or gases, which are thus caused to produce a very brilliant flame, without waste of oil or fluid, so that, by these means, a burner capable of being employed with very great economy, for either lighting or heating, is obtained.

It should be mentioned that, by having the top of the wick-tube flush or even with the top-plate *b*, as hereinbefore set forth, the internal capacity of the cap D is increased, and a much more efficient action of the heat, radiated inward by the sides of the said cap in volatilizing the oil or fluid, is secured, than would otherwise be the case. Furthermore, by having the top-plate perforated only at the sides of the wick-tube, a space is left at the edges of the said tube, within the cap D, for the more perfect expansion and intermingling of the air and vapors within the said cap, whereby any tendency of the flame to smoke is effectually guarded against.

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

The arrangement of the foraminous case C, cap D, and perforated plate *b*, with relation to the wick-tube and base, all combined substantially as shown and described.

LUTHER ERVING.

Witnesses:

A. LE CLERC,

J. W. COOMBS.