JENNEY & TAYLOR.

Lamp Burner.

No. 110,241. Patented Dec. 20, 1870.

Fig. 1

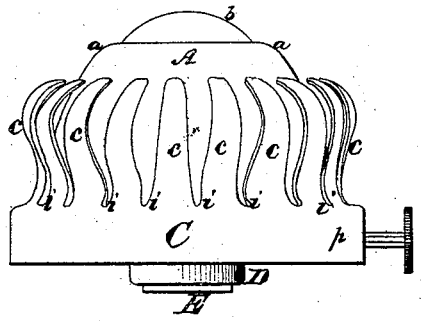


Fig. 3

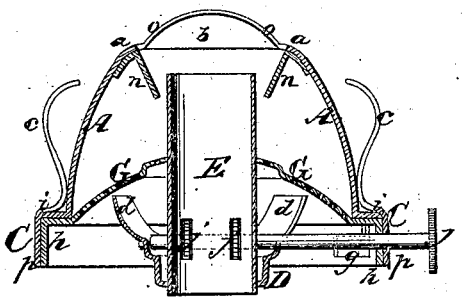


Fig. 2

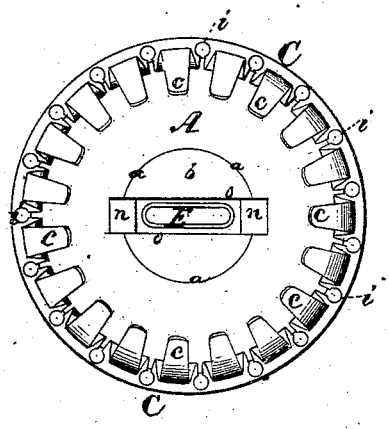
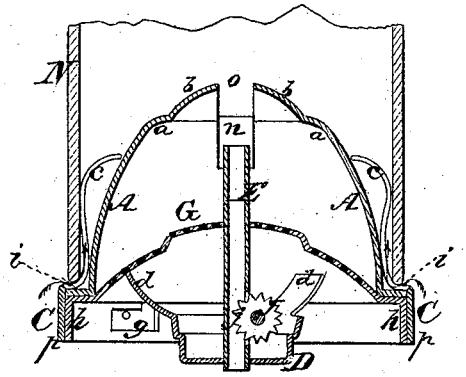


Fig. 4



Witnesses.
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WALTER PROCTOR JENNEY AND GEORGE WASHINGTON TAYLOR, OF FAIRHAVEN, MASSACHUSETTS.

Letters Patent No. 110,241, dated December 20, 1870; antedated December 15, 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 we, WALTER PROCTOR JENNEY and GEORGE WASHINGTON TAYLOR, of Fairhaven, in the county of Bristol and State of Massachusetts, have invented a new and improved Lamp-Burner; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a side view of the improved burner.

Figure 2 is a top view of the same.

Figure 3 is a diametrical section through the burner.

Figure 4 is a diametrical section through the burner, showing the lower portion of a chimney applied to it.

The nature of our invention consists—

First, in the combination of air-directors and a lamp-burner shell, which is very nearly in the form of two paraboloids united together by an annular horizontal contracted portion, whereby the currents of air which enter the burner from below in a direction parallel to its vertical axis, and which impinge against its sides, will not only be directed inwardly and the heat which is radiated from that part of the flame below the top of the burner be reflected downwardly in parallel rays through the air, but, by the action of the directors, the draught is also increased and a larger percentum of oxygen is supplied to the flame, and the flame is caused to assume a flattened fish-tail form, all as will be hereinafter explained.

In such a combination as above described, it consists—

Second, in arranging the directors in relief from the wick-tube, as will be hereinafter described.

Third, in the application to a burner of a gallery of spring fingers, which rise from the flanged base of the burner and are so curved and separated that while they afford, by their elasticity, a means for holding the chimney safely in place, they also serve as a means for retarding the ascent of air between the chimney and burner, and thus prevent sudden draughts of air impinging against the flame above the burner, as will be hereinafter explained.

Fourth, it consists in the arrangement of the flanged shell upon the flanged perforated diaphragm and under the springs, so that the shell and springs may be readily removed without disturbing the diaphragm, as will be hereinafter described.

To enable others skilled in the art to understand our invention, we will describe its construction and operation.

In the accompanying drawing—

A represents the improved burner-shell, which is produced by the well-known operation of drawing a sheet of metal on a die.

The lower section of this burner-shell is of the form of the frustum of a parabola, having a flanged base and an annular contracted portion, *a*, which is rounded, as shown in figs. 1, 3, and 4, and which terminates in the concavo-convex slotted end *b*.

This portion *a* is also of a parabolic form, and its slot, *o*, through which the frame passes, has parallel sides, as shown in fig. 2.

From the ends of the slot *a* two narrow strips, *n n*, incline inwardly or toward the narrow edges of the wick-tube E, but do not touch this tube. These pieces *n n* are, preferably, soldered to the inside of the burner-shell, although they may be made by bending down portions of the shell which are cut in forming the slot *o*.

Surrounding the burner-shell A is a chimney-holder, C, which consists of a circular collar, *p*, and spring fingers *c c*.

This chimney-holder is contracted just above the collar *p*, so as to afford a base-support for the chimney N, as shown in fig. 4, and also to allow a free inlet of air through the passages *i i*, as indicated by the arrows in fig. 4.

The fingers are curved somewhat like the letter *f*, so that their upper convex sides will bear outwardly against the chimney N and hold it in place. These spring fingers *c* also operate to retard the ascent of air flowing in at *i* sufficiently to prevent flickering from sudden draughts, but they do not prevent the proper supply of air to the flame above the burner. These spring fingers *c* extend up nearly to the annular contraction *a* of the burner-shell A and curve inwardly, thus forming an ornamental gallery around this shell. This chimney-holder C is secured permanently to the base-flange of the burner-shell.

Within the burner-shell A is a perforated concavo-convex diaphragm, G, attached to a circular flange, *h*, which is held in place within the collar *p* by means of bayonet-fastenings *g*.

To this diaphragm the wick-tube E and screw-connection D are permanently fixed, as shown in the drawing.

The adjusting-spurs *j* are applied to the spindle J, and adapted for adjusting the wick in the usual well-known manner.

The bayonet-fastenings, which are used for connecting together the two sections constituting the burner, consist of L-shaped slots formed in the flange *h* of the diaphragm, which receive studs or raised portions on the inner side of the collar *p* of the section C.

The advantages attending the peculiar form of the burner-shell are, that the currents of air rising to the flame and impinging on the sides of the lower portion of this shell will be directed toward the vertical center thereof, and, these mixing, will impinge upon the broad sides of the flame and spread it in a direction with the widest part of the wick-tube. The flame being in the foci of the paraboloids, any heat radiated from that part of it which is below the top of the burner will be reflected from the interior surface thereof in a vertical direction through the ascending currents of air, thus heating the air uniformly and supplying hot air to the flame.

Without the inclined air-directors *n n* the flame would present the shape known as the "swallow-tail," but by applying these directors, as above described, the flame will present the "fish-tail" form.

The effect of the directors *n n* is to prevent cold currents of air from impinging against the narrowest side of the flame; also to cause a contraction of the air currents passing through the burner above the level of the wick-tube and below the upper end of this burner; also, to cause a large percentum of air to pass up on opposite sides of the broadest sides of the flame, and thus compress and spread the flame.

We do not claim a lamp-burner cone; nor do we claim a cap with straight sides and a reduced rounded tip; nor do we claim deflectors having closed sides; nor do we claim retaining a lamp-chimney in position by means of springs; but

What we do claim as our invention, and desire to secure by Letters Patent, is—

1. The deflectors *n n*, applied on the inside of the shell at the base of the slot *o*, and arranged in relief from the wick-tube, in combination with the air-space between the ring *h* and the collar D, substantially in the manner shown and described.

2. The combination of the specified deflectors *n n* with the shell A *a b o*, such shell being of the form herein described.

3. The device C, constructed with a collar, *p*, curved spring fingers *c c*, and air-passages *i*, in combination with the ring *h*, shell A *a b o* and the chimney N, all in the manner and for the purpose described.

4. The chimney-holding and retaining device C, with the spring fingers *c* formed on it in such manner that the base of the slots between the fingers forms air-passages, both inside and outside of the lamp-chimney, when such chimney is placed around the burner, substantially as described.

5. The arrangement of the flanged shell upon the flanged diaphragm G and under the springs *c*, substantially in the manner described, so that the shell may be readily detached when necessary.

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Witnesses:
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