J. G. HUNT.

Lamp Burner.

No. 53,623. Patented April 3, 1866.

Fig. 2

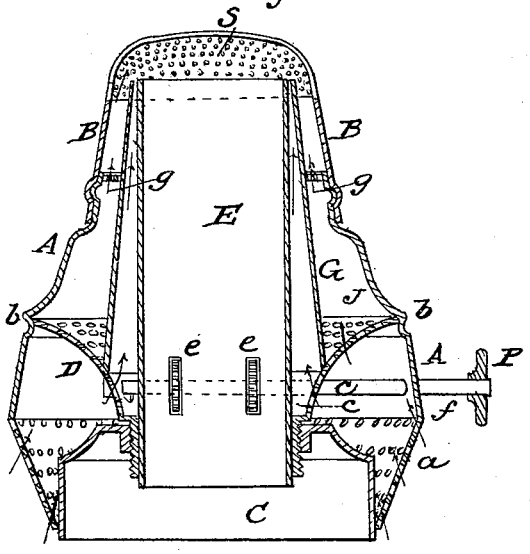


Fig. 1

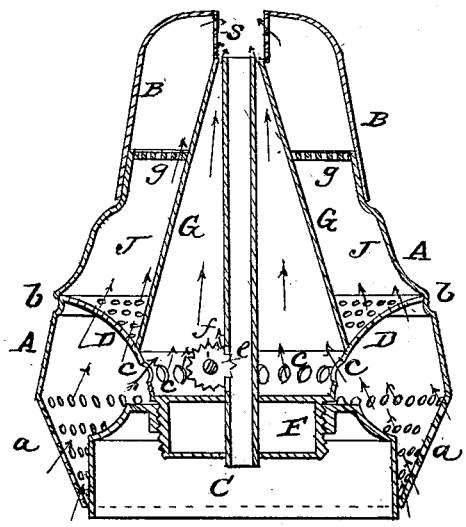


Fig. 3

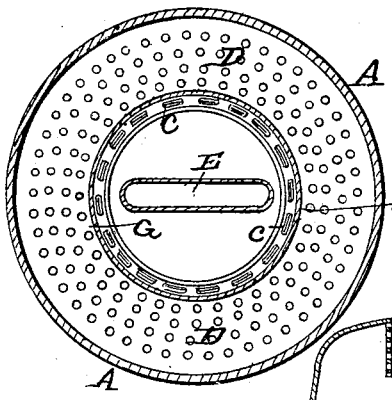


Fig. 4

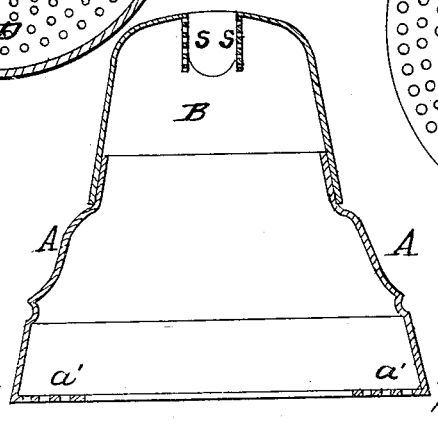
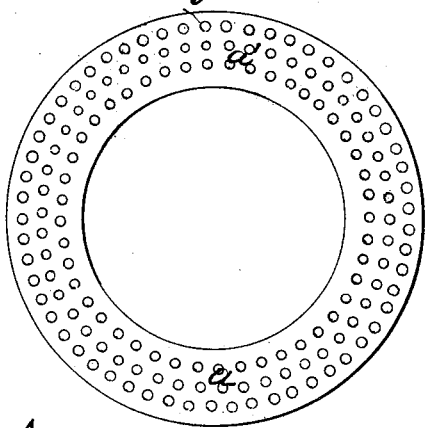


Fig. 5



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JAMES G. HUNT, OF CINCINNATI, OHIO.

IMPROVEMENT IN LAMP-BURNERS.

Specification forming part of Letters Patent No. **53,623**, dated April 3, 1866.

To all whom it may concern:

Be it known that I, JAMES G. HUNT, of Cincinnati, Hamilton county, State of Ohio, have invented a new and Improved Lamp-Burner for Volatile Oils; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is an enlarged diametrical section of my burner. Fig. 2 is a diametrical section through the burner, taken at right angles to that of Fig. 1. Fig. 3 is a horizontal section taken at the point indicated by red line *x x*, Fig. 2. Fig. 4 is a sectional view of the outer shell of a burner having a horizontal perforated bottom. Fig. 5 is a bottom view of Fig. 4.

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

This invention relates to a new and improved burner which is especially adapted for lamps wherein the hydrocarbon or coal oils are used, and in which it is desirable to dispense with the use of a chimney.

The object of my invention is to so construct a lamp-burner for burning coal-oil that, while it will supply oxygen to the flame in sufficient quantities to support combustion and to give a clear and steady light, it will also collect and cause to be consumed all the gas which might escape from the reservoir of the lamp, and thus prevent a disagreeable odor from escaping into the room, as will be hereinafter described. Another object of my invention is to prevent burning of the fingers in adjusting the wick while the lamp is burning by the employment of a button on the stem of the adjusting-spurs, which is made of some poor conductor of heat, as will be hereinafter described.

To enable others skilled in the art to make and use my invention, I will describe its construction and operation.

In the accompanying drawings, A represents a conical shell extending upward from the diaphragm D, and terminating at its upper end in a cone, B, which is so applied to the shell A that it can be detached at pleasure. This cone B is constructed of the well-known form, with an elongated opening through its crown, as represented in Figs. 1 and 2. The enlarged shell A extends downward from the diaphragm D a suitable distance, and terminates in an inverted conical base, *a*, which is finely perforated, and which is sufficiently contracted at its lower end to fit snugly around the lamp cap or collar C, as shown in Figs. 1 and 2; or, if desirable, the base of the shell A may have a flat perforated flange, *a'*, formed on or soldered to it, as represented in Figs. 4 and 5. The former construction is, however, preferable on account of the cheapness and facility with which it can be made. Within this conical shell A, and suitably secured to it at *b b*, is an inverted conical diaphragm, D, which is thickly perforated for the purpose of allowing the air which enters through the base portion *a* to ascend toward the upper portion of the burner, as indicated by the arrows in Figs. 1 and 2. Said perforations extend down to the base of the diaphragm, as indicated at *c c*, and thus admit of the escape of air through the diaphragm directly above the top of the lamp-collar C and below or in a line with the openings which are made through the wick-tube E for receiving the adjusting-spurs *e e*, as shown in Fig. 2. The base-bottom of the perforated diaphragm D terminates in a screw-cap, F, which secures the burner to the lamp-collar and receives and holds the wick-tube E, as I have clearly shown in the drawings.

Directly above the perforations *c c* through the diaphragm D, and secured to this diaphragm, is a jacket or air-tube, G, which is large at its base and tapers upward, so as to leave a narrow space between it and the wick-tube at or near the upper end of this tube. This air-jacket is intended to serve as a means for conducting the gas escaping from the wick-tube through the spur-openings therein upward and bringing it in contact with the flame; and this jacket also serves as a means for warming and rarefying the air in the space J, and thus creating an upward draft through this space, while at the same time the wick-tube will become heated, heat the air within the jacket G, and thus create an upward draft of air through this jacket which will be caused to impinge upon the flame at the lowest point by the contracted lips of this jacket, and thus we have two currents of air impinging upon and supplying oxygen to the flame at two points.

To prevent the currents of air ascending through the space J from rushing too rapidly upon the flame, I interpose a perforated ring,

g, which retards the currents of air and distributes the air uniformly to the flame.

The spurs *e e*, which are used for adjusting the wick, are secured to a turning stem, *f*, which projects through the outer shell, A, and receives on its extreme end a button, P, which should be made of wood, ivory, glass, or some other substance which is a poor conductor of heat.

The burner which I have above described is intended for use without a chimney, and for this reason a sufficient heat must be communicated to the entire burner to insure the necessary supply of oxygen to the flame to support combustion. It is found that in my burner the heat is so great as to render it desirable to use a button of some non-conducting substance, and thus enable a person to adjust the wick without danger of burning the fingers. A button made of either of the substances above named would be found useful in the ordinary chimney-burners, but more particularly so in a no-chimney burner.

By my invention all the gas which escapes from the reservoir of the lamp, and which in the burners hitherto made allows it to escape into the room and render the air very disagreeable, is conducted through the inner air-jacket and consumed by the flame.

In Figs. 1, 2, and 4 I have represented two vertical perforated plates, *s s*, applied to the cone on each side of the slotted opening therein. The object of these perforated plates *s s* is to prevent the flame from being easily separated from the wick, thus preventing the light from being readily blown out—a matter of great importance in hydrocarbon-burners, as the flame is so slightly attached to the wick. When the lamp is moved up and down the tendency of the flame is to descend within on one side of the cone and be separated from the wick. This the perforated guards or flame-shields *s s*, which wall the sides of the flame-slit in the cap B, prevent.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The construction, arrangement, and combination of the shell A *a g*, diaphragm D *c*, tube G, wick-tube E, and lamp-collar C, substantially in the manner described.

2. The construction, arrangement, and combination of the diaphragm D *c*, lower perforated portion, *a*, of case A, and tubes G E, all applied to the collar C of the lamp, substantially in the manner described.

3. The wood button P, in combination with a wick-adjuster of a lamp-burner, substantially as described.

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