J. C. LOVE.

Vapor Burner.

No. 99,689. Patented Feb. 8, 1870.

Fig. 1.

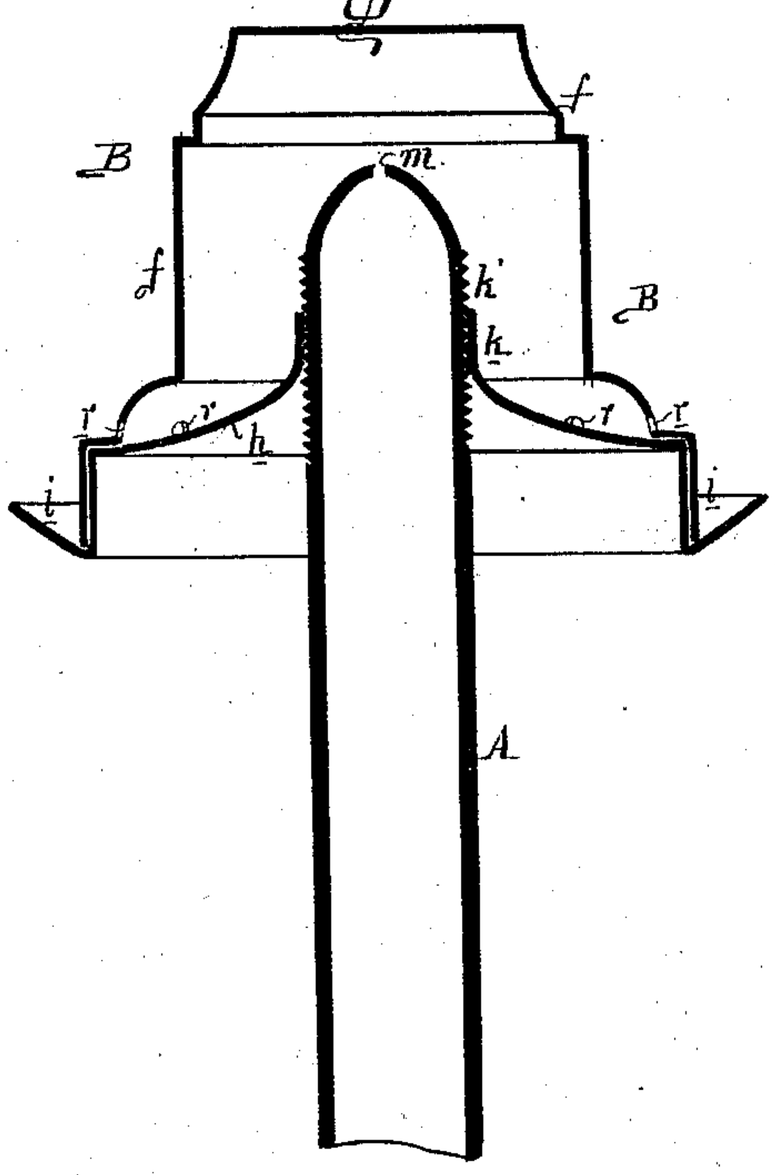


Fig. 2.

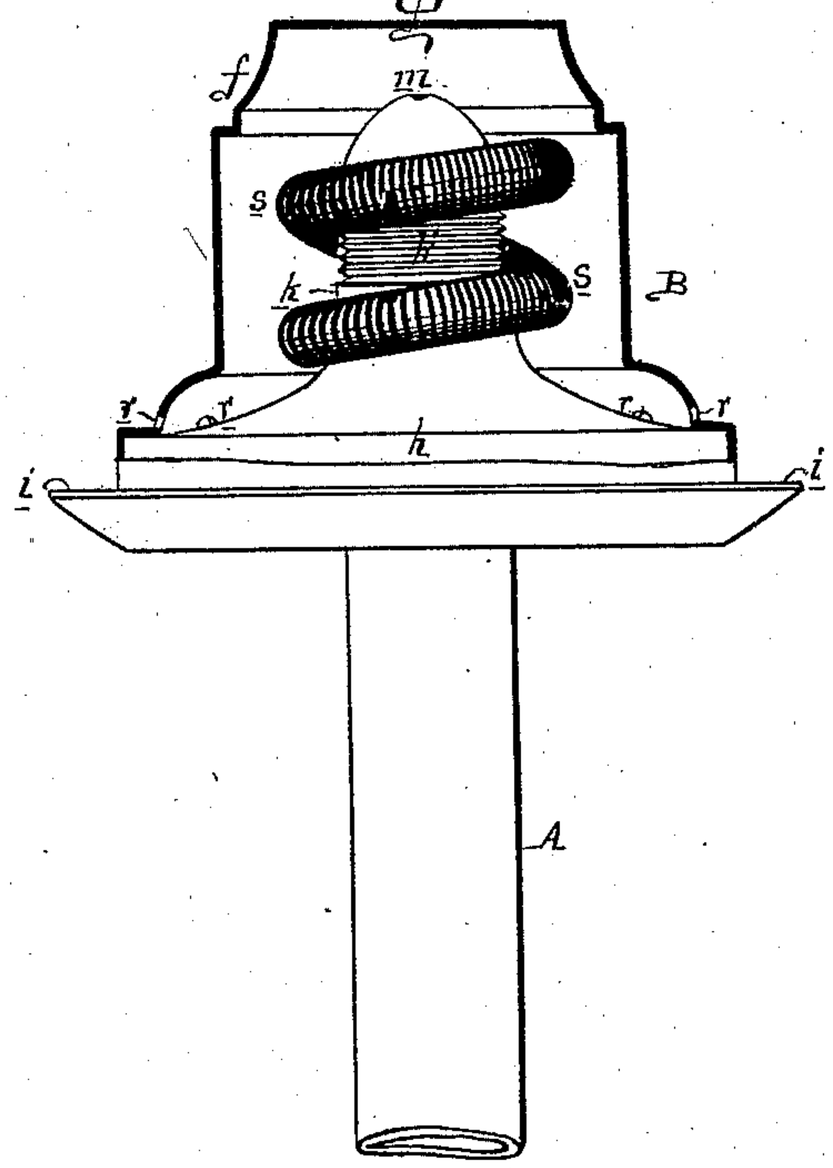
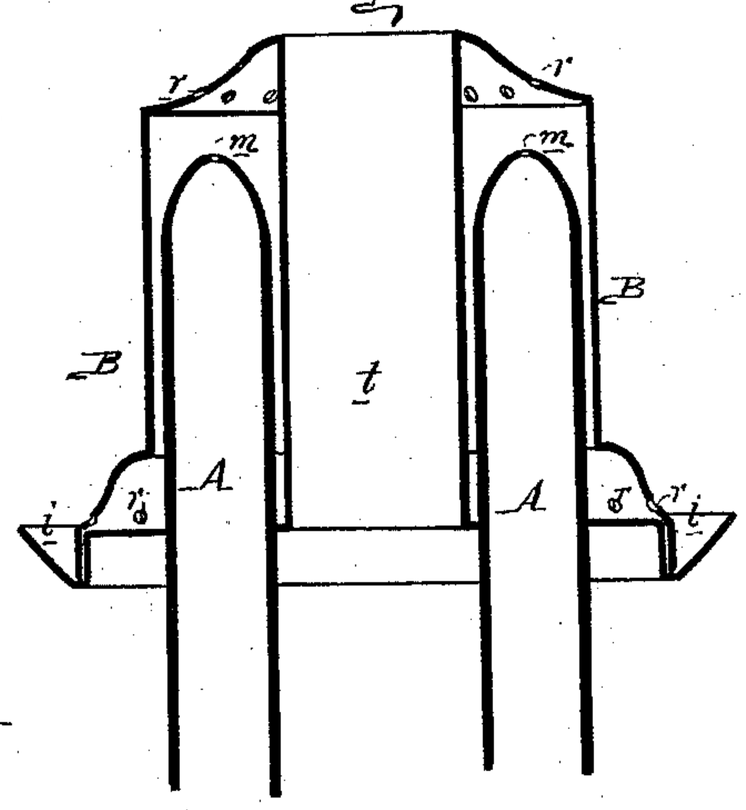


Fig. 3.



Witnesses,

Wm A. Stuart

Jno. B. Harding

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United States Patent Office.

JOHN C. LOVE, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 99,689, *dated February* 8, 1870.

IMPROVEMENT IN VAPOR-BURNERS.

The Schedule referred to in these Letters Patent and making part of the same

I, JOHN C. LOVE, of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented an improved Vapor-Burner, of which the following is a specification.

Nature and Object of my Invention.

My invention relates to improvements in that class of burners in which the vapors of light volatile oils are generated and burned; and

My invention consists of a perforated gas-generating chamber, in combination with a conducting-tube or tubes, and constructed, as fully described hereafter, so as to insure a rapid and uniform generation of gas, and the production of a steady and brilliant light.

Description of the Accompanying Drawing.

Figure 1 is a sectional view of my improved vapor-burner;

Figure 2, a view of the same, partly in section; and

Figure 3, a sectional view of a modification.

All of the views are drawn to an enlarged scale.

General Description.

The burner, as represented in fig. 1, consists of a central tube, A, and of a casing or vaporizing-chamber, B, secured to and containing the upper end of the said tube.

The sheet-metal cap *f*, which forms the top and sides of the chamber B, is fitted over, and brazed, or otherwise permanently secured to a disk, *h*, which constitutes the bottom of the said chamber, the outer edge of this disk being bent upward, as best observed in fig. 1, so as to form an annular gutter or channel, *i*, which extends entirely around the burner.

In the centre of the disk *h*, is a short tubular projection, *k*, having internal screw-threads adapted to the threads *k'* of the tube A; this method of connecting the two portions of the burner together enabling the upper end of the tube to be extended into the chamber B, to any height desired.

The upper end of the tube may be curved or rounded, and has a small central aperture, *m*, for the passage of the oil or vapor from the tube into the chamber B, and, extending around the cap *f*, close to the bottom of the said chamber, is a number of minute perforations, arranged at equal distances apart from each other.

The tube A, which should be furnished with a suitable cock, communicates with a reservoir arranged above the burner, and containing a supply of benzine, or of any of the light volatile oils used for burners of this class.

On opening the cock, the oil will fill the tube A, and will be projected through the aperture *m*, in a fine jet, into the interior of the chamber B, it falling upon the disk *h*, and escaping, through the perforations *r*, into the annular gutter *i*, which extends around the burner.

The film of oil, which thus escapes into the gutter *i*, is ignited, and continues to burn until the burner is sufficiently heated to vaporize the oil, which passes into the chamber B, the gas or vapor thus generated then issuing from the perforations *r* in a number of fine jets, which become immediately ignited, and burn with a clear flame.

The gas-jets still further heat the interior of the vaporizing-chamber and the metal of the tube A, so that the oil within the latter also becomes heated, or partially vaporized, before escaping into the chamber B, and, in the latter, the vaporizing is completed, and the vapor heated and rarefied so as to increase its volume and quality, it escaping through the perforations *r* with considerable force, and in the best condition for burning.

The tube A, being screwed into the disk *h*, can be extended into or withdrawn from the chamber B, as described, this adjustability enabling a greater or lesser portion of the tube to be heated, and, consequently, regulating the rapidity with which the vapor can be generated, and the quantity consumed.

Where it is desirable to rapidly generate and highly heat the vapor, I introduce into the chamber B a wire spring, *s*, or any equivalent to the same, which will afford an extended metallic heating-surface, without interfering with the circulation within or passage of the vapor from the chamber.

In the modification of my invention, shown in fig. 3, the casing or chamber B is of an annular form, with a central air-passage, *t*, and two feeding-tubes A A are employed, there being also, in addition to the perforations *r*, another row of holes at the top of the burner.

Although my invention is to be used principally for chandeliers, with a supply of oil above the burner, as before mentioned, yet I do not desire to confine myself to this use, as the burner may be employed for a portable lamp, with the supply of oil beneath, in which case the tube A must contain a wick, and be open at the top.

Claims.

I claim—

1. The generating-chamber B, its openings *r*, and plate or bottom *h*, curved, or inclined downward from the centre of the chamber to the openings *r*, substantially as and for the purpose described.

2. The combination of the vaporizing-chamber, tube or tubes extending into the same, and a series of openings, *r*, arranged directly above or on a line with the bottom of the chamber, as specified.

3. A coil of wire, *s*, or its equivalent, arranged within the vaporizing-chamber, as specified.

4. The combination of the two conducting-tubes A A, chamber B, its central tube *t*, upper and lower openings *r r*, and channel *i*, all arranged as described.

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

JOHN C. LOVE.

Witnesses:

JOHN WHITE,

HARRY SMITH.