ROSENCRANTZ & SMITH.

Vapor Lamp.

No. 22,536. Patented Jan'y 4, 1859.

Fig. 1.

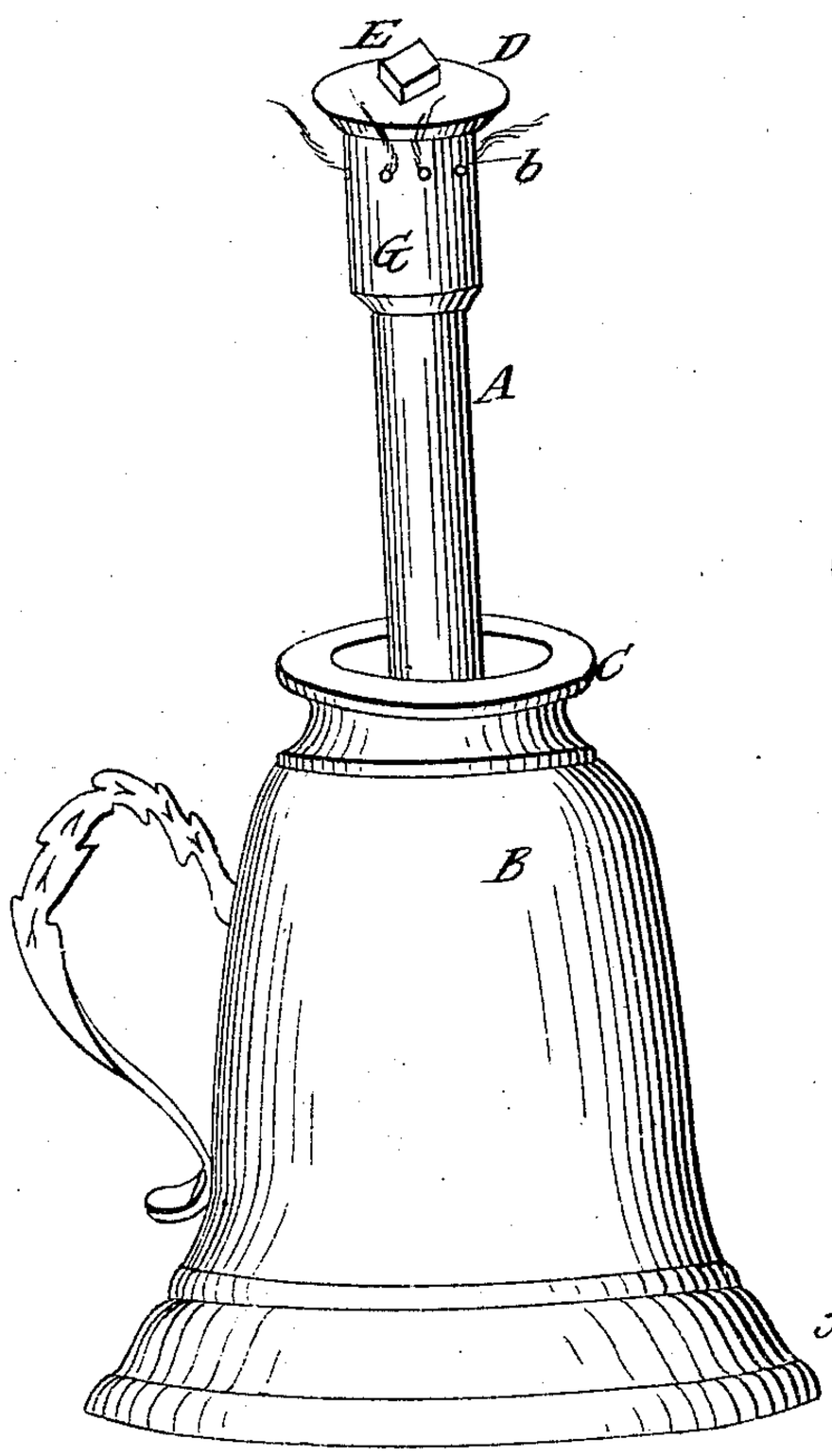


Fig. 2.

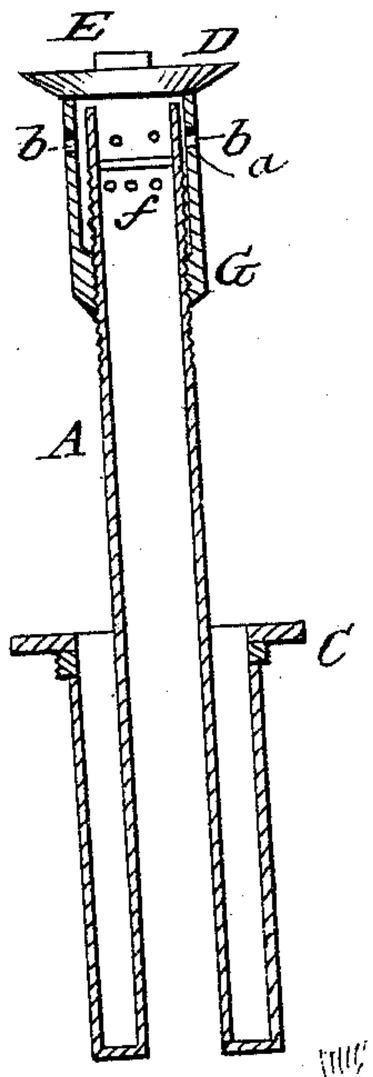
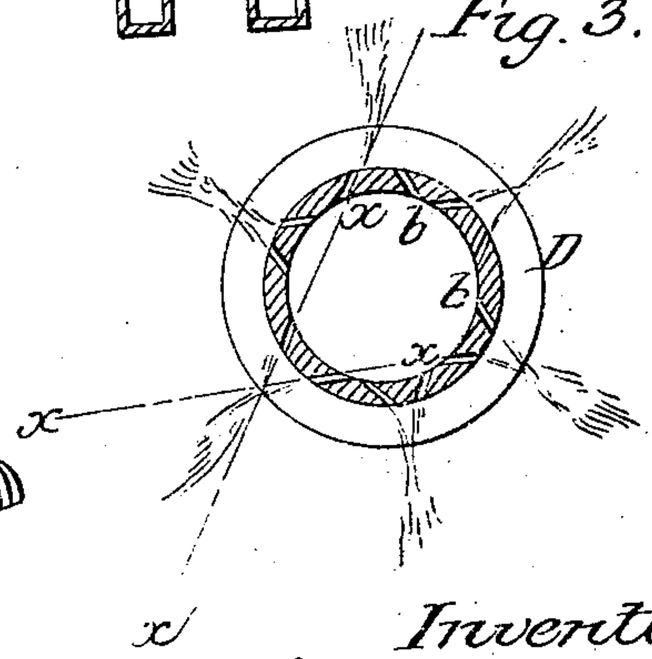


Fig. 3.



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UNITED STATES PATENT OFFICE.

E. D. ROSENCRANTZ AND W. H. SMITH, OF NEW YORK, N. Y., ASSIGNORS TO E. D. ROSENCRANTZ AND BARTON E. CLARK, OF SAME PLACE.

BURNER FOR VAPOR-LAMPS.

Specification of Letters Patent No. 22,536, dated January 4, 1859.

To all whom it may concern:

Be it known that we, EPHRAIM D. ROSENCRANTZ and WILLARD H. SMITH, of the city, county, and State of New York, have invented certain new and useful Improvements in Lamps for Burning Vaporized Fluids; and we 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 lamps heretofore constructed for burning hydrocarbon or vapor fluids there has been no provision made for controlling its volatilization.

The nature of our improvement consists therefore in providing a simple and efficacious means of thus controlling the consumption of the fluid and in such disposition of the apertures through which the vapor passes in the cap of the burner that a brilliant light is produced with great economy. To accomplish this, instead of retaining the cap or heater at a fixed point upon the hollow tube constituting the wick holder, we cut the screw sufficiently long on the outside of the tube and also provide the cap with a projection to which a wrench may be applied, so that on the turning and unscrewing of the cap, the contact of the cap and tube will be withdrawn, and a disconnection of the heat thus effecting the insulation in part of the wick by such separation, the tube holding the wick being closed with a plate, near its upper end, which arrests the rising of the fluid and gummy matter and prevent its flowing upon the under surface of the cap and down its sides thus preventing the closing of the apertures in the cap by said gum. Below the plate are perforations through which the vapor passes, while any gummy matter also passing will fall to the bottom of the chamber formed in the cap, by its being enlarged sufficiently beyond the size of the wick tube, and leave the apertures of the cap always clear.

In consuming burning fluids as they are commonly termed we have discovered that by changing the directions of the perforations through the cap and instead of making them axial, we made them tangential to the periphery of the cap and slightly upward in direction, and also arranging the perforations in pairs so that the vapor from said pairs coalesced, we found that a fluid highly charged with hydrocarbon could be burned without production of smoke and by combining the currents of atmospheric air drawn into the flame with that of the vapor, a brilliant light is obtained by the more perfect combustion of the fluid.

To enable others to construct similar lamps they may be thus described:

The body or reservoir B may be of any pattern.

C is an insulated tube closing the reservoir. To the bottom of this tube is united the wick-tube A, having a screw cut on the outside of said tube, commencing a short distance below the top thereof and extending downward sufficiently to allow the cap D to be brought in contact with the top of the wick tube when it is desired to rapidly convert the fluid into vapor.

a is a plate closing the tube A. Immediately below it are perforations *f f*. In charging the tube with wick it should extend to the holes, but not so high as to close them.

The cap D is made rather thicker than usual having a female screw cut in its neck which fits on the screw of the wick tube. Above the neck it is enlarged beyond the size of the tube and forms a chamber for the vapor of the fluid to be more perfectly converted into gas.

The perforations or apertures *b b* in the cap D are tangential to the periphery as shown in Fig. 3, by the lines *x x*. These apertures are arranged in pairs and the direction given them is such that the vapor from one of the holes of the cap, shall impinge upon that issuing from the one next it (as shown in the drawings).

We do not wish it to be considered that the exact angle or tangent shown is the only one to which the invention is applicable, as the angle may be varied, if the direction of the perforations preserve the coalescing of the vapor.

The light from the combustion equals that of good carbureted hydrogen.

On the top of the cap D is formed a square projection E to which a wrench may be applied for turning the cap on or off, from its contact with the top of the wick tube. When it is desired to lessen or increase the consumption of the fluid and reduce or increase the light it is only necessary to back the cap on the screw of the wick tube and raise it

therefrom to prevent the transmission of the heat of the cap to the tube and the wick filling it.

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

1. The employment of a tube (A) for holding the wick, when provided with a plate (*a*) and perforations (*f f*) for the purposes set forth.

2. We claim the employment of a cap (D) or heater having perforations (*b b*) tangential to its periphery, substantially as set forth, when used with a wick tube A in the manner and for the purposes set forth.

In testimony whereof we have signed our names before two subscribing witnesses.

E. D. ROSENCRANTZ.
WILLARD H. SMITH.

Witnesses:
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S. T. SMITH.