

J. F. MARSH.
Vapor-Burners.

No. 151,040.

Patented May 19, 1874.

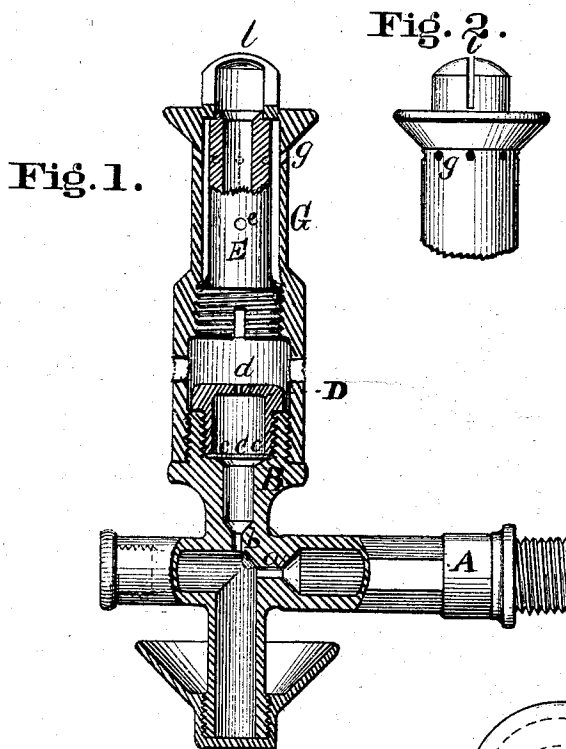


Fig. 3.

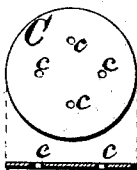
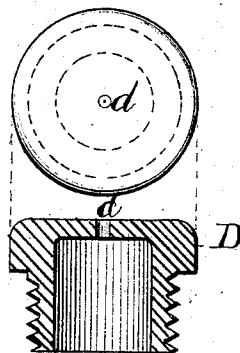


Fig. 4.



Attest:

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JOSIAH F. MARSH, OF DUBUQUE, IOWA.

IMPROVEMENT IN VAPOR-BURNERS.

Specification forming part of Letters Patent No. **151,040**, dated May 19, 1874; application filed January 14, 1874.

To all whom it may concern:

Be it known that I, JOSIAH F. MARSH, of Dubuque, county of Dubuque and State of Iowa, have invented certain Improvements in Vapor-Burners, of which the following is a specification:

My invention relates to vapor-burners supplied by the volatilization of a liquid contained in a reservoir, and connected directly with the burner; and consists in the use of a double tube for supplying the vapor directly to the burning-vents, thus supplying the vapor under different pressures to the lateral vents and jets, thereby insuring the perfect combination of the two flames, giving one compact and steady flame.

Figure 1 is a longitudinal section of the burner. Fig. 2 is an elevation of the upper part, showing the lateral vents and jet. Fig. 3 is a plan and section of the perforated disk. Fig. 4 is a plan and longitudinal section of the cap.

Like letters represent like parts.

A and B represent the supply-tubes, which have usually been made of a uniform bore. *a* and *b* represent contractions in the bore of these tubes, designed to arrest any undulatory motion in the liquid, and thus secure a uniform flow to the burner. These contractions may be made to any degree requisite for the accomplishment of this purpose. C is a disk under the cap D, perforated with a number of small holes, *c c*, each being smaller than the hole *d* in the cap, and whose combined area is greater than that of *d*. Their effect is to stop

any solid particles which would not pass through *d*. If one or more of these holes *c c* should become clogged there would still pass a sufficiency of vapor to supply the burner.

The number of holes in the perforated disk C may be increased or diminished at pleasure.

Heretofore the lateral burning-vents and jets have been supplied directly from the same tube, the result being that, under high pressure, the flame from the lateral vent *g* burned radially and did not unite with the jet.

To obviate this, I insert a tube, E, in the burner, leaving a space around it within the burner. This tube supplies vapor directly from the supply-tubes to the jet, and through the orifices *e* to the chamber G, with which the lateral vents directly communicate. The orifices *e* being small compared with the combined area of the vents *g*, it follows that however high the pressure in the tube E the pressure at the vents *g* will be low, thus securing the rising of the flame, and its combination with the jet flame to form an even and steady light.

What I claim is—

In a vapor-burner, the chamber G, having in its upper part the lateral burning-vents *g*, and having within it the burning-tube E, with the interior of which it communicates by means of orifices in said tube, as and for the purposes described.

J. F. MARSH.

Witnesses:

E. W. ROSS,

GEO. A. HAYWARD.