

J. F. MARSH.
VAPOR BURNER.

No. 107,072.

Patented Sept. 6, 1870.

Fig. 1.

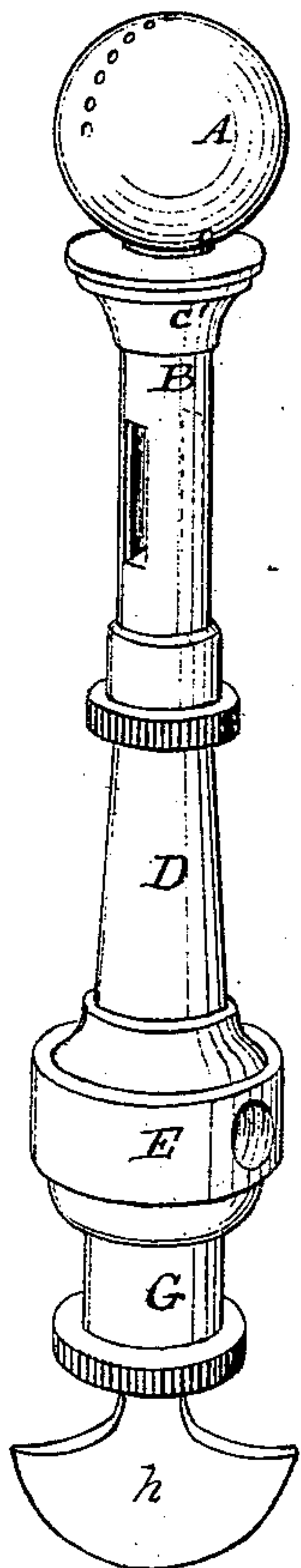
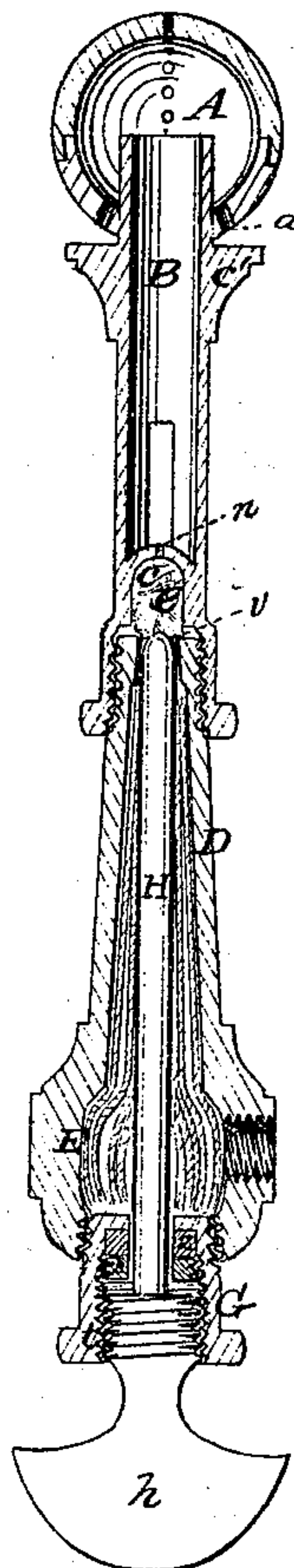


Fig. 2.



Witnesses.

Villette Anderson.

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UNITED STATES PATENT OFFICE.

JOSIAH F. MARSH, OF DUBUQUE, IOWA.

IMPROVEMENT IN VAPOR-BURNERS.

Specification forming part of Letters Patent No. **107,072**, dated September 6, 1870.

To all whom it may concern:

Be it known that I, JOSIAH F. MARSH, of Dubuque, in the county of Dubuque and State of Iowa, have invented a new and valuable Improvement in Vapor-Burners; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a view of my invention in perspective. Fig. 2 is a central vertical section of the same.

My invention consists in certain improvements in the construction and arrangement of the several parts of a vapor-burner, hereinafter more fully set forth.

The letter A of the drawing designates the globular expanding chamber or burner proper. The perforations therein are arranged in the form of a vertical semicircle or arch, so that, in addition to the expansive force of the mingled vapor and atmospheric air within the chamber A, the upward draft through the tube B, which conducts these gases, will have a direct effect in forcing them through these openings to form the jet.

Small perforations *a* are also made through the base of the globe, the flames from which serve to heat the conducting-tube B through the medium of a collar or heating-disk, *c'*, attached thereto at its upper end, immediately below the globe A, in such a manner that these flames will be in contact with it.

The tube B is arranged to project upward to the globular expanding chamber, thus increasing the draft, the effect of which is to introduce a large proportion of atmospheric air with the vapor into the chamber and to increase the volume therein of the combined gases. The tube B is made easily removable, for cleaning or other purposes, from the lower section, next to be described. It is usually made of copper.

D represents the lower sectional tube or wick-chamber, rising vertically from the base chamber or elbow E, which receives the end of the conduit-pipe from the oil-fountain.

A tapering perforation, *v*, is made through the upper wall of this chamber to receive the tapering end of the valve-rod H, which projects upward through the fibers of the packing, and is designed to regulate or shut off the flow of oil into the heating or generating chamber *e*, above the wick-chamber, and arranged in the base of the tube B. This generating-chamber is provided with the usual wire packing *c* and exit-perforation *n*.

Screwed into the base of the receiving-chamber E is the packing-box G, made in the form of a screw, with a milled head. A central perforation is made in its upper wall to permit the passage of the valve-rod. Below this wall the box is chambered centrally, and a female screw, *t*, is turned in the wall thereof, whereby a metal disk, *s*, is screwed in to secure the packing-disk *z* of rubber, adapted to fit closely around the valve-rod.

H is the valve-rod, provided with a thumb-screw, *h*, at its base, which operates in the female screw *t* of the packing-box G, and thereby regulates the size of the opening through the top of the wick-chamber or cuts off the flow entirely, as circumstances may require.

When the lamp is not in use there is no evaporation, and the wick, being entirely within the oil-tube, is preserved soft and clean.

Sometimes, instead of rubber, I may prefer to use cork or other suitable material for the packing-disk *z*.

What I claim as my invention, and desire to secure by Letters Patent, is—

The vapor-burner consisting of the chamber A, provided with perforations arranged in vertical semicircle, tube B, perforations *a*, heating-collar *c'*, chamber *e*, tube D, cut-off valve *v*, packing-box G, screw *s*, packing-disk *z*, and valve-rod H, all constructed, arranged, and operated as set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

J. F. MARSH.

Witnesses:

M. BURNS,
JOHN L. WILCOX.