R. W. PARK.

Vapor Burner.

No. 112,373. Patented Mar. 7, 1871.

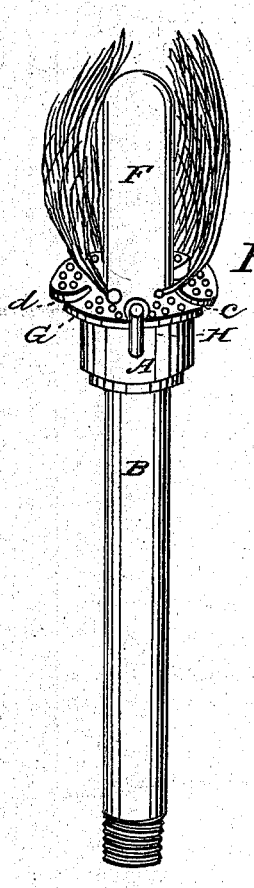


Fig.

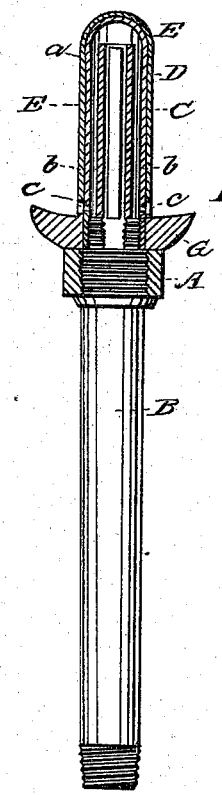
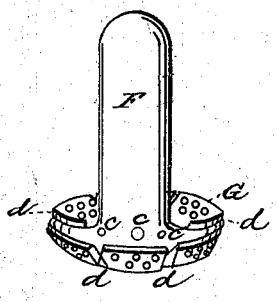


Fig. 2

Fig. 3



Witnesses:

Geo. H. Doherty

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By

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UNITED STATES PATENT OFFICE.

ROBERT W. PARK, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN VAPOR-BURNERS.

Specification forming part of Letters Patent No. **112,373**, dated March 7, 1871.

I, ROBERT W. PARK, of the city and county of Philadelphia, and State of Pennsylvania, have invented an Improved Vapor-Burner, of which the following is a description:

Nature and Object of the Invention.

My burner is designed for lighting purposes, which is accomplished by vaporizing benzine or other suitable fluid and burning the same by such mechanism as is hereinafter shown and described.

Description of the Accompanying Drawing.

Figure 1 is a surface view. Fig. 2 is a longitudinal section. Fig. 3 is a view of the outer dome and perforated base.

A is the base of the burner, to which is secured the wick or supply tube B and the distributing vaporizing-tube C, which has a rod or distributer, D.

The tube C is required to have as much vaporizing-surface as possible and to be constructed of very thin metal, which leaves a very large internal diameter, and, of consequence, too great a body of fluid for the heat to act upon, to correct which the rod or distributer D is placed centrally in it, thereby distributing a very small quantity of the fluid over the entire interior surface of the tube C, which is readily vaporized.

E is a dome or cap, which is screwed or otherwise fixed to the base A. It incloses the tube C, leaving an annular space or passage, *a*, for the passage of the oil or vapor to the openings *b* formed in the bottom of the same.

F is a dome, which fits snugly over the dome E, so that the oil or vapor from it cannot get between them. It has openings *c* in its base, corresponding in position to the holes in the dome E, thereby forming a direct passage from the space *a* to the outside of the dome F.

G is a perforated saucer-shaped flange or deflector at the base of the dome F. It is sectioned or divided by radial openings *d* between and commensurate in number with the openings *c*.

H is a guide and fastening, which takes into one of the openings *d*, to preserve the relative positions of the openings and keep the dome in place.

The benzine, light oil, or other suitable fluid passes up the wick-tube B from a reservoir into the base A, thence into the vaporizing-tube C, where it is distributed against the surface of the same by the rod D, after which it passes or flows over the top into the space *a* and passes out the passage formed by the openings *b* and *c*, where it is lighted by applying a match. The flame produced impinges on the cup or flange G and spreads, completely surrounding the outer dome, F, which is raised to a very high degree of temperature, and imparts the same to the interior dome, E, and also to the tube C. The contained fluid becomes vaporized and passes out the openings in the bases of the domes, producing a brilliant smokeless flame.

The vapor-openings in the base of the outer dome, F, are cone-shaped and larger than those of the inner dome, E, to facilitate the passage of the oil and vapor and spread the flame.

The perforations and radial openings in the base G of the dome F supply the necessary air for combustion.

I do not confine myself to two domes, believing that the perforated flange or base G can be applied to the base of the interior dome and produce a vapor which will burn freely, but not be smokeless.

I claim as my invention—

1. The dome F and its perforated flange G, substantially as shown.

2. The tube C and the distributing-rod D, as shown.

3. The tube C, rod D, and the inner dome, E, as shown.

4. The dome F, perforated flange G, and the clutch H, as shown.

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

ROBERT W. PARK.

Witnesses:

FRANCIS D. PASTORIUS,

JOHN YILLE.