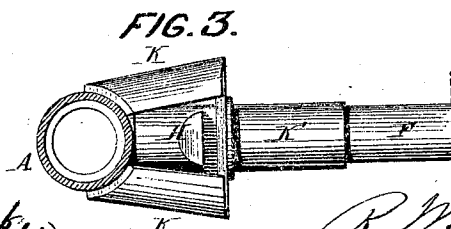
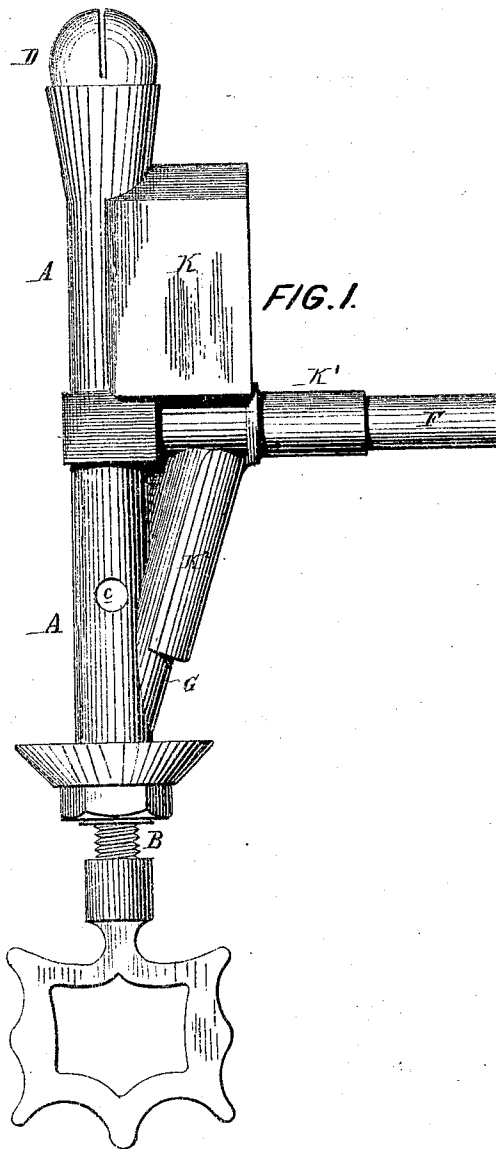
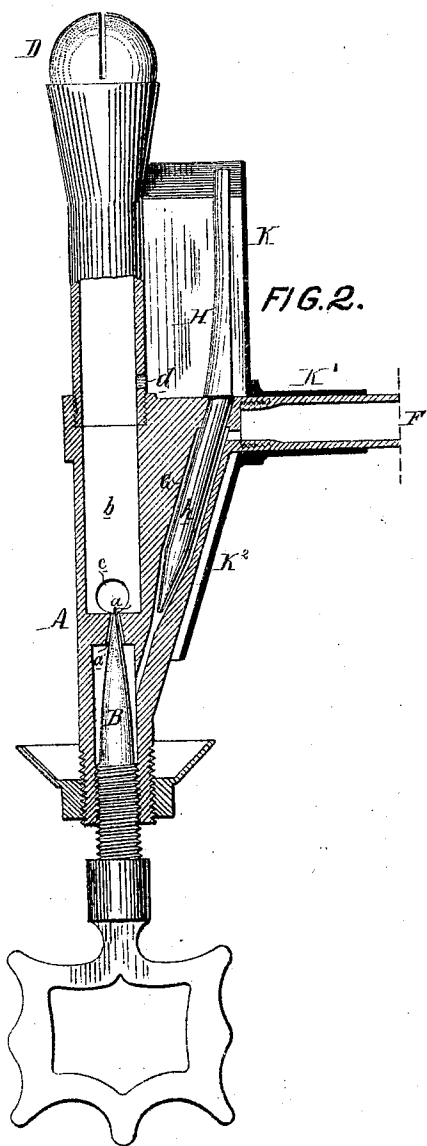


ROBERT W. PARK.

Vapor Burner.

No. 124,151.

Patented Feb. 27, 1872.



WITNESSES { John Jukes  
Harry Smith

R. W. Park  
By his Atty  
Houston & Co

# UNITED STATES PATENT OFFICE.

ROBERT W. PARK, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN VAPOR-BURNERS.

Specification forming part of Letters Patent No. 124,151, dated February 27, 1872.

Specification describing an Improved Vapor-Burner, invented by ROBERT W. PARK, of Philadelphia, county of Philadelphia, and State of Pennsylvania.

My invention consists of certain improvements in vapor-burners, too fully explained hereafter to need preliminary description, the said improvement being directed to the effective vaporizing of the hydrocarbon from which the ignitable gas is generated.

In the accompanying drawing, Figure 1 is an external view of my improved vapor-burner; Fig. 2, a vertical section of the same; and Fig. 3, a transverse section on the line 1 2, Fig. 1.

The tubular body A of the burner has at its lower end the usual pointed screw-valve B and seat *a'*, which terminates at its upper end in a small aperture for the escape of the oil or vapor into the mixing-chamber *b*, the latter occupying the greater portion of the interior of the body of the burner, which is supplied with air at the bottom through openings *c c*, and has at its upper end a tip, D, similar to that of an ordinary gas-burner. The supply-pipe F communicates, as usual, with an elevated reservoir containing a supply of light hydrocarbon, and is, in the present instance, at right angles to the body of the burner, and is secured to the same at a point considerably above the lower end of the mixing-chamber *b*. An inclined tube or passage, G, forms a communication between the supply-pipe and body of the burner beneath the valve-seat, and I prefer, in order that this passage be continually heated, that it should be as close as possible to, and be cast in one piece with, the body of the burner and with the supply-branch, as shown in the drawing. It will be evident, however, that the supply-pipe could be brought close up to the body of the burner and be then bent downward to form the passage G, in which case the latter would be screwed into or brazed to the body of the burner below the seat of the valve. There is an aperture, *d*, in the side of the mixing-chamber *b*, an independent jet of ignited gas from which is caused to play upon a wing, H. In the present instance, however, this wing is a continuation of a tongue, *h*, which extends down into the passage G almost to the bottom of the same, and is maintained at a temperature almost as high as that of the wing, the consequence of which is the rapid vaporizing of the hydrocarbon, which, in a thin film, is caused to pass around and in contact

with the said tongue in its downward passage through the tube G. The wing, with its tongue *h*, may be simply driven tightly into the opening formed for it in the top of the supply-pipe, or it may be brazed or otherwise permanently secured to the latter. Another important feature of my invention is the hood or shield K, which extends around the wing H, and overlaps the body of the burner to a slight extent. This hood prevents draughts of cold air from striking the wing, retains a volume of heated air around the latter, and consequently causes the said wing and its tongue *h* to be maintained at a higher temperature than if the said wing were exposed as usual. The hood is in the present instance secured to the burner by a sleeve, K<sup>1</sup>, which extends around the supply-pipe. This sleeve, however, is not essential as a means of supporting the hood, but it serves the more important purpose of conducting heat from the hood to the supply-pipe which it embraces, and of thus partially vaporizing the oil before it enters the tube or passage G. The sleeve K<sup>1</sup> embracing the supply-pipe may be used in connection with any metal object heated by the flame from the orifice *d*. There is also a tail-piece, K<sup>2</sup>, projecting downward from the sleeve K<sup>1</sup>, and partly embracing the tube G, for the purpose of still further heating the latter and of thus insuring a thorough vaporization of the oil.

I claim as my invention—

1. The combination, in a burner, of the tip D, the opening *d*, through which issues a supplemental jet of gas, and a plate heated by the said jet, and having a tongue extending into the supply-pipe, as set forth.

2. The combination, substantially as described, of a hood or shield, K, with the heating plate or wing H.

3. The combination, as set forth, of the ring and tongue H *h*, heated by a supplemental flame, the shield K, and the sleeve K<sup>1</sup> encircling the supply-pipe.

4. The combination of the hood K, heating-plate H, sleeve K<sup>1</sup>, tube or passage G, and tail-piece K<sup>2</sup> projecting from the said sleeve, all substantially as specified.

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

Witnesses:

ROBERT W. PARK.

LOUIS BOSWELL,

JOHN K. RUPERTUS.