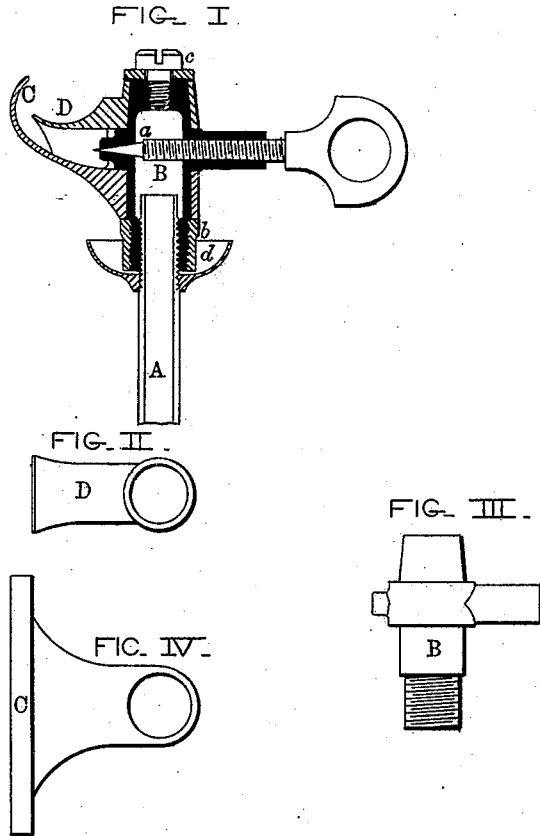


J. BOWERS.  
Vapor-Burners.

No. 210,488.

Patented Dec. 3, 1878.



—WITNESSES—

J. Fred. Acker  
Geo. T. Howard

—INVENTOR—

John Powers.  
by G. H. W. Howard  
Atty-

# UNITED STATES PATENT OFFICE.

JOHN BOWERS, OF BALTIMORE, MARYLAND.

## IMPROVEMENT IN VAPOR-BURNERS.

Specification forming part of Letters Patent No. **210,488**, dated December 3, 1878; application filed August 13, 1878.

### *To all whom it may concern:*

Be it known that I, JOHN BOWERS, of the city of Baltimore and State of Maryland, have invented certain Improvements in Vapor-Burners, of which the following is a specification; and I do hereby declare that in the same is contained a full, clear, and exact description of my said invention, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

This invention relates to a novel method of constructing and attaching together certain parts or sections of the burner, whereby the said parts may be independently adjusted to suit the requirements of the flame, as will hereinafter fully appear.

In the description of the invention which follows, reference is made to the accompanying drawing, forming a part of this specification, and in which—

Figure 1 is a vertical section of the improved burner; and Figs. 2, 3, and 4, exterior views of parts of the same.

Similar letters of reference indicate similar parts in all the views.

A is the supply-pipe of the burner, packed with cotton wick, in the usual manner, and screwed into the vapor-holding chamber B. The chamber B is provided with the ordinary needle-point valve *a*, for regulating the flow of vapor therefrom. C is the deflector, against which the flame impinges, and which transmits heat to the chamber B and other parts of the burner to vaporize the fluid.

The hub of the deflector has a circular opening therein, and fits over the lower portion of the chamber, which is cylindrical in shape. This method of uniting the parts admits of the deflector being circumferentially adjusted as may be required to suit the flame. The deflector is secured, when in place, by means of a nut, *b*.

D is a shield, which serves to protect the current of ignited vapor from wind, and conduct air to the said vapor in such manner as to effect thorough combustion of the same.

The shield D fits over the upper end of the chamber B, which is also cylindrical, and it may be adjusted in like manner to the deflector, and secured through the medium of a screw, *c*. This burner is supplied with the usual cup *d*, to be used in the preliminary heating of the fluid.

Having thus described my invention, what I claim as new, and wish to secure by Letters Patent of the United States, is—

1. In combination with the chamber B, the shield D, resting upon a cylindrical portion of the said chamber, and adapted for circumferential adjustment, substantially as herein specified.

2. The deflector C, placed loosely upon a cylindrical portion of the chamber B, to admit of its adjustment circumferentially of the said chamber, as described, in combination with the locking-nut *b*, substantially as herein specified.

3. A vapor-burner consisting of the following essential elements in combination, viz: a fixed chamber having a suitable valve for controlling the exit of vapor therefrom, a circumferentially and independently adjustable deflector and shield situated on the said chamber, and locking devices for the said deflector and shield, substantially as and for the purpose herein set forth.

In testimony whereof I have hereunto subscribed my name this 10th day of July, in the year of our Lord 1878.

JOHN BOWERS.

Witnesses:

WM. T. HOWARD,  
THOS. MURDOCH.