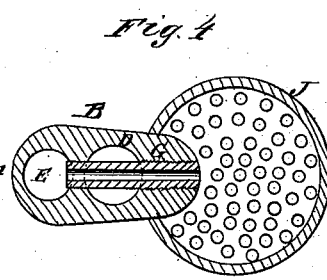
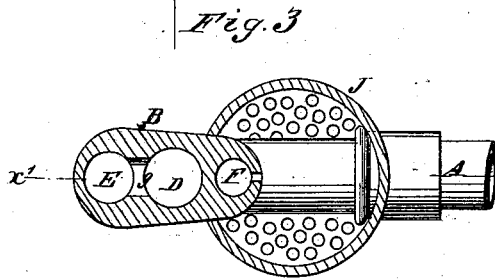
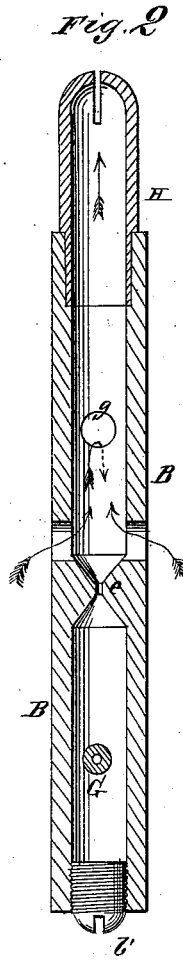
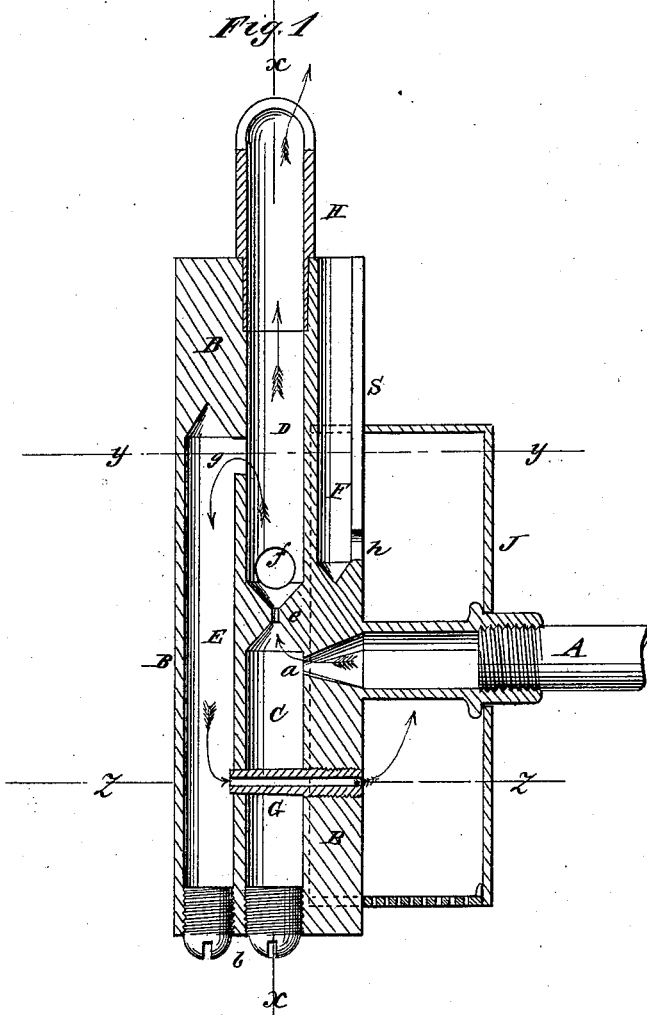


F. H. SHEPHERD.
Vapor-Burner.

No. 200,484.

Patented Feb. 19, 1878.



WITNESSES:
A. W. Almqvist
J. H. Scarborough

INVENTOR:
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BY *Munn & Co*

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UNITED STATES PATENT OFFICE.

FRANCIS H. SHEPHERD, OF DAVENPORT, IOWA.

IMPROVEMENT IN VAPOR-BURNERS.

Specification forming part of Letters Patent No. **200,484**, dated February 19, 1878; application filed August 3, 1877.

To all whom it may concern:

Be it known that I, FRANCIS H. SHEPHERD, of Davenport, in the county of Scott and State of Iowa, have invented a new and Improved Vapor-Burner, of which the following is a specification:

This invention has relation to burners in which an illuminating-gas is generated from naphtha combined with oxygen of the air; and the nature of my invention consists in a case or frame having chambers formed in it by drilling, in combination with an inlet-tube for the naphtha, an outlet tube or burner, a heating-tube, a self-lighter therefor, and a case or shield, all arranged and combined in the manner hereinafter explained.

In the annexed drawing, Figure 1 is a vertical section through the burner, taken in the plane indicated by dotted line *x' x'*, Fig. 3. Fig. 2 is a section through the burner, taken vertically and transversely. Fig. 3 is a horizontal section taken in the plane *y y*, Fig. 1. Fig. 4 is a horizontal section taken in the plane *z z*, Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

The letter B designates the body or frame of the burner, which I prefer to form from a solid piece of metal, bored out to form chambers C D E, that communicate with each other. A designates an inlet-pipe, which supplies naphtha to the chamber C through a conical orifice, *a*, and which is arranged between a vertical tube, F, and a horizontal tube or burner, G. The chamber C is closed at its lower end by a plug, *b*, and its upper end communicates with the chamber D by means of a double conical passage, *c*. The chamber D has the burner H applied at its upper end, and near the orifice *e* a hole, *f*, for admitting air is made through the frame B. This chamber D prepares the gas for consumption, and any naphtha or gasoline which may be condensed

in it will flow back into the vaporing-chamber C.

Chamber E communicates with chamber D by means of an orifice, *g*, and it is supplied with gas through this orifice, which gas escapes through tube G, and is burned beneath the pipe A inside of a shield or case, J, having a perforated bottom. The heat made below pipe G generates gas from the naphtha therein, which gas passes steadily through chambers C D, and is consumed at the slit of the burner.

The upper end of the vertical tube F terminates near the slit of the burner, and the lower end of this tube communicates with the interior of the shield or case J by means of a perforation, *h*, arranged in such close relation to the tube G that, should the flame from it be extinguished, it will be instantly relighted by flame from the burner, which will pass down tube F. To insure this relighting of the gas from tube G, the tube F has a slit, S, through it, extending from its upper end down to the hole *h*.

By constructing a burner as I have above described, the flame will be very steady and the supply of gas regular.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The frame or case A, constructed with chambers C D E, communicating with each other, as described, in combination with the tubes A, F, and G, arranged substantially as and for the purposes specified.

2. The shield or case J, combined with the slitted tube F, and the tubes A G, arranged substantially as described.

FRANCIS H. SHEPHERD.

Witnesses:

H. H. BENSON,
F. H. SHELLEY.