E. F. ROGERS.

VAPOR-BURNER.

No. 185,135. Patented Dec. 5, 1876.

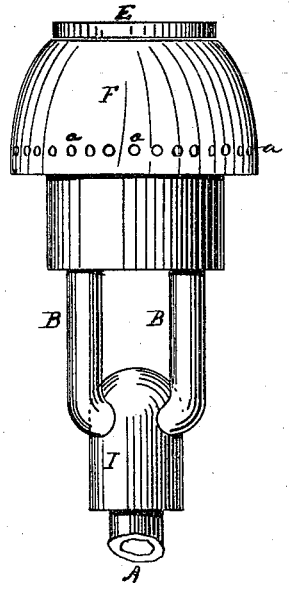

Fig. 1

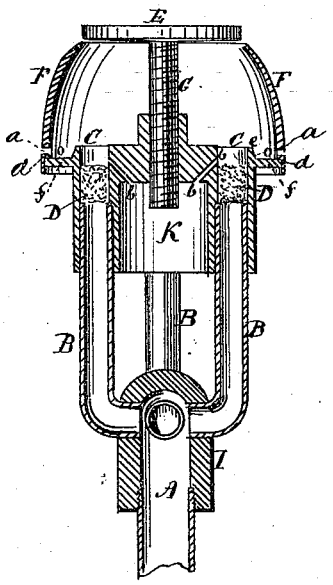

Fig. 2.

WITNESSES

Frank G. Parker

C. A. Stock

INVENTOR

E. F. Rogers.

by J. H. Adams

Atty.

UNITED STATES PATENT OFFICE.

EDWARD F. ROGERS, OF CHELSEA, MASSACHUSETTS.

IMPROVEMENT IN VAPOR-BURNERS.

Specification forming part of Letters Patent No. **185,135**, dated December 5, 1876; application filed October 23, 1876.

To all whom it may concern:

Be it known that I, EDWARD F. ROGERS, of Chelsea, in the county of Suffolk and State of Massachusetts, have invented an Improved Vapor-Burner, of which the following is a specification:

My invention relates to an improvement in vapor-burners, whereby I am enabled to obtain a much greater heating and illuminating power with a less expenditure of oil than in the burners now in use with which I am acquainted.

Referring to the drawings, Figure 1 represents an elevation of a burner embodying my invention, and Fig. 2 is a vertical section of the same.

A represents the pipe by which the oil is conducted to the burner, and is connected with any suitable supply-pipe. Connected with the pipe A are tubes B B, which extend upward and open into a circular channel or chamber, C, into which the oil ascends, and where the vapor is generated.

In the circular channel C is placed a layer of asbestus, D, for the purpose of taking up the residuum of the oil. It also serves to prevent any noise, which is liable to be occasioned by the rapid flow of the fluid and disturbance of the vapor. Extending from the open chamber K to the channel C are openings *b*, which conduct the air into and across the chamber C. This air becomes heated in its passage through the heated metal. *f* is a projection or rim extending around outside the channel C, and serves as a support for the cone or cover F. The rim *f* is a little below the outer edge *e* of the channel C, as shown in Fig. 2. F represents the cone or cover to the burner. It is formed with a shoulder or rabbet on its lower inner edge, which fits on and is supported by the rim *f*.

In the lower part of the cone F, near its edge, is a series of holes, *a a*, extending around the same. The holes are arranged to be opposite the raised edge *e* of the channel C, so that as the air enters the holes it is deflected by the edge *e*, and thus acquires an edging motion, and, mixing with the heated air passing through the passages *b* and the vapor, promotes the combination of the carbon evolved from the fluid. E represents a button, which may be raised and lowered by the screw G, so as to increase or lessen the opening between its edges and the upper edge of the cone F, for the purpose of adapting it to the various qualities of oils and to the heavier and lighter fluids.

Although designed more particularly for a vapor-burner, my invention may be attached directly to a gas-pipe containing or supplied with the ordinary coal-gas, and thus constitute an effective burner for illuminating and heating purposes. The separate pipes B B, for conducting the fluid from the pipe A to the burner, serve to keep the fluid cooler than if only one passage were employed for the purpose.

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

1. The combination of the channel or chamber C, the branch pipes B B, and the air passages *b b*, as and for the purpose set forth.

2. The cone F, provided with the perforations *a a* in its lower edge, in combination with the deflector *e*, as set forth.

3. The cone F, having a shoulder at its lower edge, and provided with perforations *a*, in combination with the burner, having a deflector, *e*, and flange *f*, as set forth.

4. The combination of the air heating and conveying passages *b*, the channel C, and the perforated cone F, substantially as and for the purpose set forth.

5. The combination, with the perforated cone F, of the adjustable button-top E, as and for the purpose described.

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

E. F. ROGERS.

Witnesses:

J. H. ADAMS,

EDGAR E. MANN.