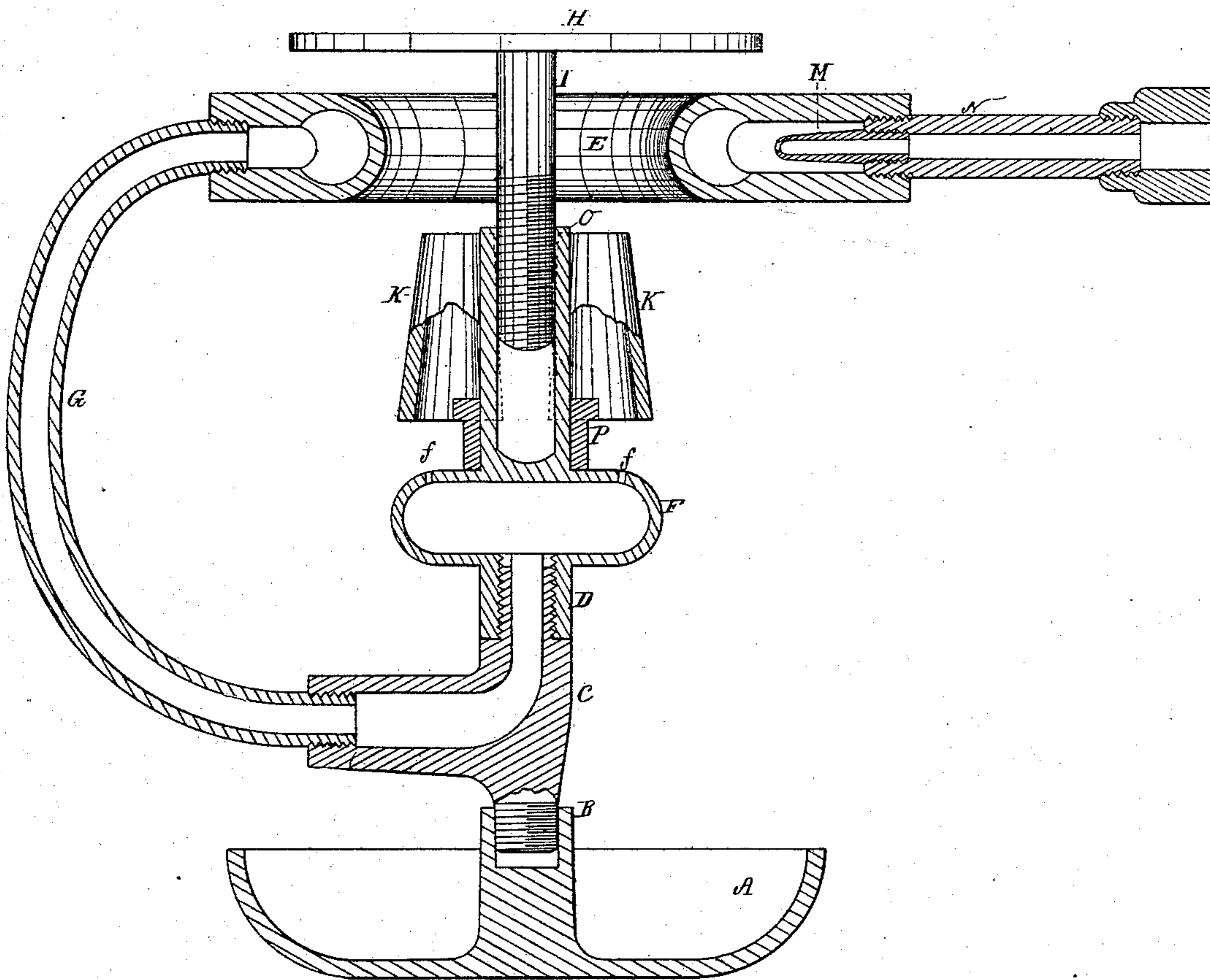


E. F. ROGERS.
Vapor-Burner.

No. 221,937.

Patented Nov. 25, 1879.



Witnesses.

Wm. Greene
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Inventor.

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by J. H. Adams
Att'y

UNITED STATES PATENT OFFICE.

EDWARD F. ROGERS, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN VAPOR-BURNERS.

Specification forming part of Letters Patent No. **221,937**, dated November 25, 1879; application filed July 14, 1879.

To all whom it may concern:

Be it known that I, EDWARD F. ROGERS, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Vapor-Burners, of which the following is a specification.

The nature of my invention consists in the employment, in connection with a perforated vaporizing-chamber, of a series of adjustable tubes or ducts arranged above the said chamber, by means of which the air is mixed with the generated vapor, as desired; and also in the combination, with the above, of an oil-chamber having a central opening, and arranged above the adjustable tubes or ducts, for the purpose of effecting a more perfect combustion and consequent increase of heat.

My invention is illustrated in the accompanying drawing, which represents a vertical section of my device.

A represents a saucer-shaped base-piece, which serves as a drip-cup and a support for the burner. From the center of the cup A rises the standard B, to which is secured the elbow-shaped tube-piece C.

F is an annular vaporizing-chamber, connected by the tube D with the tube C, and provided on its upper side with perforations *f f* for the escape of the vapor.

E is the oil-chamber, into which oil or other fluid is conducted from a reservoir arranged in the usual manner. The oil-chamber E is connected with the vaporizing-chamber F by means of the tube G, as shown.

K K represent conically-shaped tubes open at both ends, the larger openings being at the lower ends and attached to a band or ring, P, fitting loosely on the standard O, so as to enable them to be turned upon the standard as an axis when desirable. The said tubes K are placed above the chamber F, as shown, and when the burner is in operation it is designed that the lower openings shall be over the spaces between the perforations *f f*, in order that the air passing up through the tubes K shall mingle as much as possible with the flame of the generated vapor at the upper ends of the tubes K.

As it sometimes occurs that considerable

noise is caused by the combustion of the vapor, and in order to avoid the same, the tubes K may be turned so that the lower ends will be over the holes *f f* when the vapor and air are mixed together in the tubes K. The heat in this case will not be so great, but is sufficient for ordinary purposes.

H is a circular metal plate or button attached to a stem, I, that screws into the standard O, by means of which it may be adjusted more or less near to the chamber E, as required.

The pipe N, which conducts the oil from the reservoir to the chamber E, terminates in a reduced pipe, M, having at its end a small orifice, by which means the return of any gas or heated oil or fluid to the feed-pipe N is prevented, and by which I am enabled to dispense with the ordinary packing required for the purpose.

In operation, the oil or other fluid in the chamber F is first vaporized by applying heat to the same in the usual manner. The vapor passes out through the holes *f f*, and the flame from the same passes between the tubes K K, and, mingling with the air passing through the said tubes, causes a high degree of combustion and great heat. The flames pass around the sides of the chamber E.

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

1. The adjustable tubes or ducts K K, in combination with the perforated vaporizing-chamber F, as and for the purpose specified.

2. The combination of the oil-chamber E, having a central opening, the air-ducts K K, and the vaporizing-chamber F, substantially as set forth.

3. The combination of the oil-chamber E, the air-ducts K K, and the adjustable disk H, 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,

J. OPPENHEIMER.