

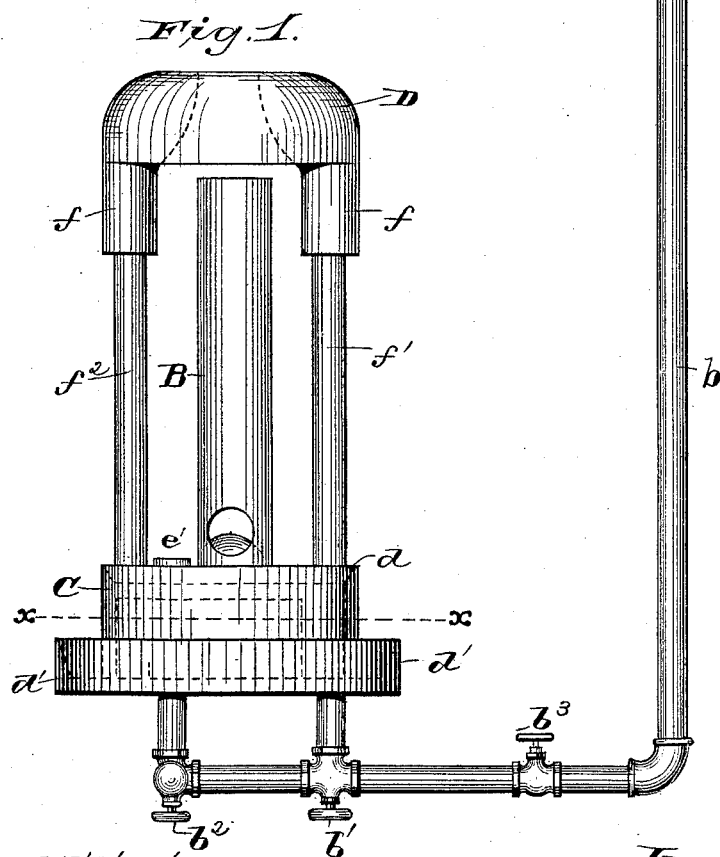
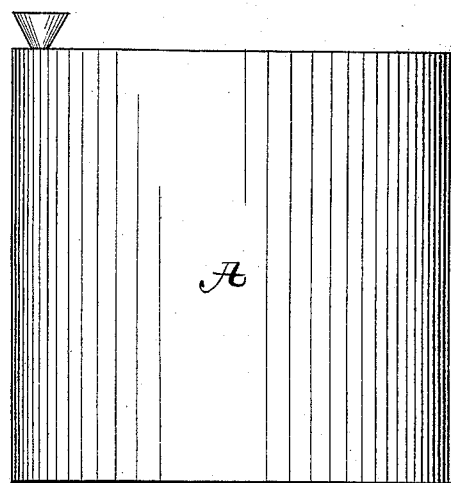
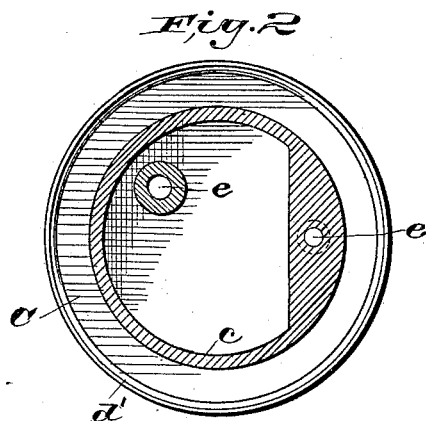
(No Model.)

2 Sheets—Sheet 1.

T. D. McCLARY.  
VAPOR BURNER.

No. 421,188.

Patented Feb. 11, 1890.



Witnesses:

*E. D. W. H. K.*

*L. B. Whitaker*

Inventor.

*Thomas D. McClary*

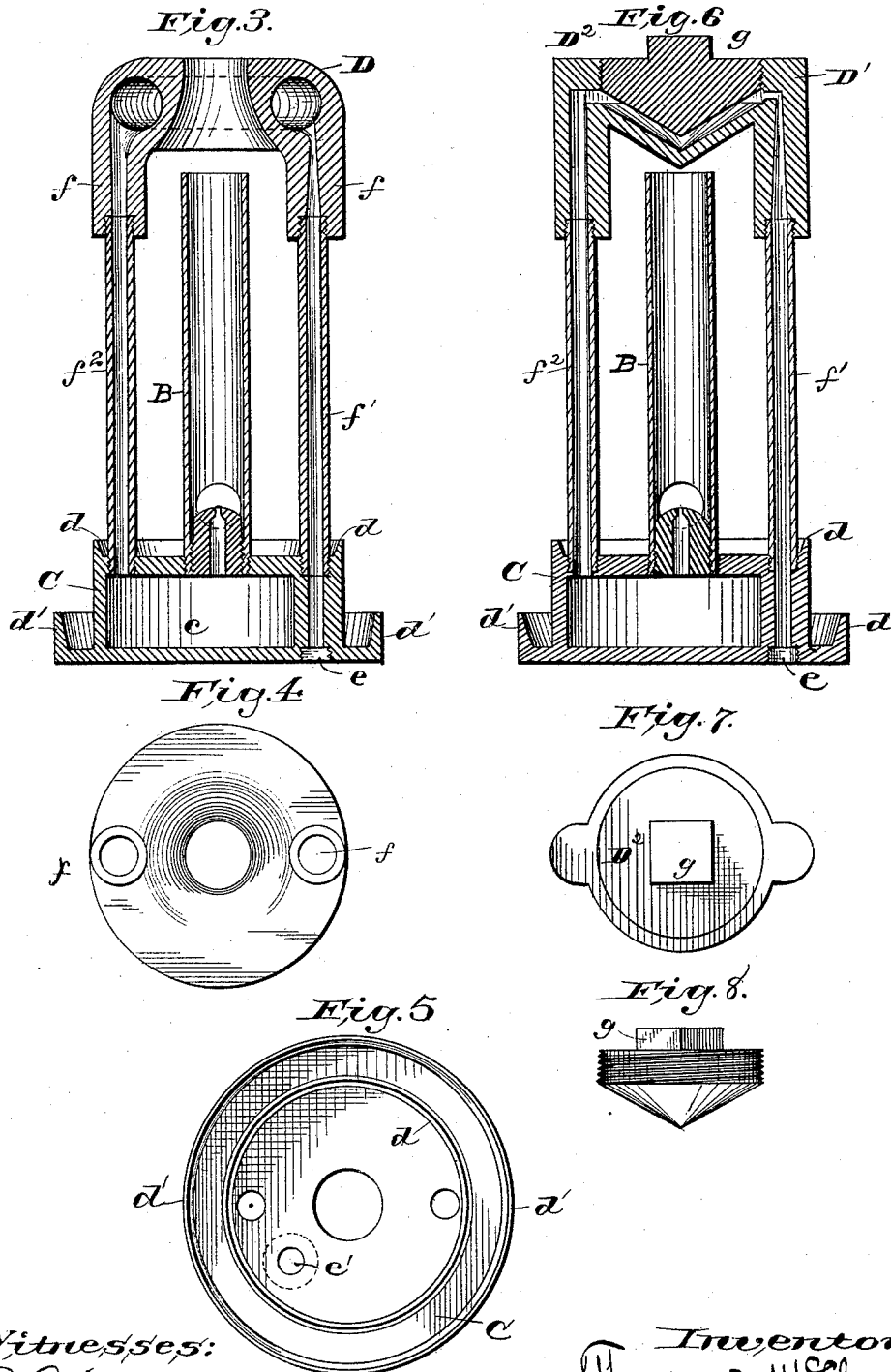
*By his attys*

*Whitaker & Pynch*

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Witnesses:

E. Walker

L. W. Whitaker

Inventor.

Thomas D. McClary  
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# UNITED STATES PATENT OFFICE.

THOMAS D. McCLARY, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR  
TO THE PERFECTION HEAT AND LIGHT COMPANY, OF SAME PLACE.

## VAPOR-BURNER.

SPECIFICATION forming part of Letters Patent No. 421,188, dated February 11, 1890.

Application filed December 3, 1887. Serial No. 256,913. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS D. McCLARY, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Vapor-Burners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention is an improved vapor-burner for heating purposes; and it consists in certain peculiarities of construction whereby a cheap, durable, and efficient construction is obtained.

In the accompanying drawings I have shown two forms in which I have contemplated embodying my invention, and have fully disclosed said invention in the following description and claims.

Figure 1 is a view in elevation of my improved burner and oil-tank. Fig. 2 is a sectional view on line *x x*, Fig. 1. Fig. 3 is a vertical sectional view of the burner. Fig. 4 is a view of the under side of the top of the burner. Fig. 5 is a top view of the base portion of the burner. Fig. 6 is a sectional view of a modified form of burner. Fig. 7 is a plan view of the top of said modified burner, and Fig. 8 is a side view of a part thereof.

In the form shown in Figs. 1 to 5, A is the oil-tank, and B the burner. *b* is the pipe leading from the oil-tank to the burner. The base of the burner is composed of a casting C, having the chamber or recess *c* within it. It is provided on the top with the upwardly-extending flange *d* and at its base with the outwardly and upwardly extending flange *d'*. At one side of the base the wall of the chamber is preferably thickened, as shown in Fig. 2, which has an aperture or passage *e* extending from the top through the thickened wall. The form of the interior face of the wall at this point is immaterial. It may be of any curved form instead of a straight line, as shown; or the opening may be through a boss extending from the bottom of the chamber to the top.

The top of the burner consists of a casting D, of annular form, having two depending tubular projections *f f*. The annular portion

of the top has an annular passage within the same, forming the vaporizing or generating chamber, which is connected with the passages in the tubular projections *f f*. One of these projections is connected with the passage *e* by pipe *f'*, and the other with the chamber *c* in the base C by a pipe *f''*. A Bunsen or analogous burner is secured centrally to the top of the base C, the flame from such burner passing up through the opening in the annular top D. The pipe *b* connects with the passage *e*. I prefer to form the base or casting C with another passage *e'* through the same. This passage may be through the thickened wall adjacent to the passage *e*; or it may be formed by a pipe passing through chamber *c*, or be formed in a boss extending from the bottom to the top of chamber *c*. It is, however, like passage *e*, preferably made through a thickened part of the wall of chamber *c*, as in that instance a connection can be made readily with it above the bottom of the base C. The upper part of the passage may extend above the upper surface of the top of the base or casting C or flush therewith. The lower part of this passage is connected with a pipe *b*, and suitable cocks or valves *b'* control the flow of oil into the passages *e e'*. The pipe *b* is also provided with the usual stop-cock *b''*.

It will be noticed that the outlet of the vaporizing or generating chamber is of much greater area than the inlet. This is to give a slow feed and speedy discharge to the vaporizing-chamber, and it is found that this construction used in connection with a chambered base tends to prevent pulsation in the flame.

The burner shown in Figs. 6, 7, and 8 differs from that already described only in the construction of the top D'. In this instance such top is of circular form, provided on its under side with the centrally-depending conical projection, the point of which is directly over the jet-orifice of the burner. The space within the top which constitutes the generating or vaporizing chamber is of a shallow dish form, following the form of the conical projection, with its lowest point in line with the jet-orifice of the burner. The upper wall of this recess is preferably made as a plug D<sup>2</sup>, which is shown

separately in Fig. 8, and is provided with a polygonal projection *g*, by which it is turned to screw it tightly in place. The peculiar feature of this construction is, that the lowest point of the vaporizing or generating chamber is directly over the flame, and in the event of there being any oil in the same it will by gravity descend to its lowest point and to such a position that it will be immediately affected by the flame of the burner.

The flange *d* forms an oil cup or receptacle to receive the oil for the initial heating, and when the passage *c'* is not employed the oil is admitted from pipe *b*, which passes up through the passage and pipe *f'* into the vaporizing-chamber, then down the pipe *f*<sup>2</sup> to chamber *c*, and out through the jet-orifice of the burner. The flange *d'* serves as an overflow-cup to catch any oil passing over flange *d*, and, when desired, may be filled with oil and made to assist in the preliminary heating.

When the passage *e'* is employed, the oil for the initial heating is admitted through that before filling the generating-chamber and its supply-pipe with oil, the oil being admitted to the generator when it has become sufficiently heated.

I have shown the connection of passages *e e'* with pipe *b* as extending below the base of the burner; but this is not essential, as such connections may be through the side walls of the casting or base *C*, so that the burner may have a firm base upon which it will rest when desired.

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

1. In a vapor-burner, the combination, with the chambered base provided with a burner-orifice opening from the chamber of the base, the said base having the wall at one side of said chamber thickened, as described, of an oil-

passage through the thickened wall of the base, a vaporizing-chamber, a pipe connecting the passage through the said base with the vaporizing-chamber, and a connection between the vaporizing-chamber and the chamber in the base, substantially as described.

2. A vapor-burner the base of which is provided at the top with an upwardly-extending flange, forming a cup for initial heating, and the bottom of which is provided with a flange forming an overflow-cup, substantially as described.

3. A vapor-burner having a chambered base, a burner-orifice opening from the chamber in the same, a flange upon the top of the base, forming a heating-cup, an oil-passage through the base for supplying oil to the generating-chamber, a connection between the generating-chamber and the chamber in the base, and an oil-passage through the base communicating with the heating-cup, substantially as described.

4. A vapor-burner having its vaporizing-chamber of a shallow inverted hollow conical form, with its lowest point in a vertical line above the burner-orifice, substantially as described.

5. A vaporizing-chamber for a vapor-burner, consisting of the casting *D'*, provided with an inverted conical recess within the same, and the plug *D*<sup>2</sup>, provided with a conical projection adapted to fit the recess within the casting and leave a space between the inclined walls of the casting and plug, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS D. McCLARY.

Witnesses:

L. P. WHITAKER,  
M. P. CALLAN.