

(No Model.)

2 Sheets—Sheet 1.

E. R. WESTON.
OIL BURNER.

No. 576,641.

Patented Feb. 9, 1897.

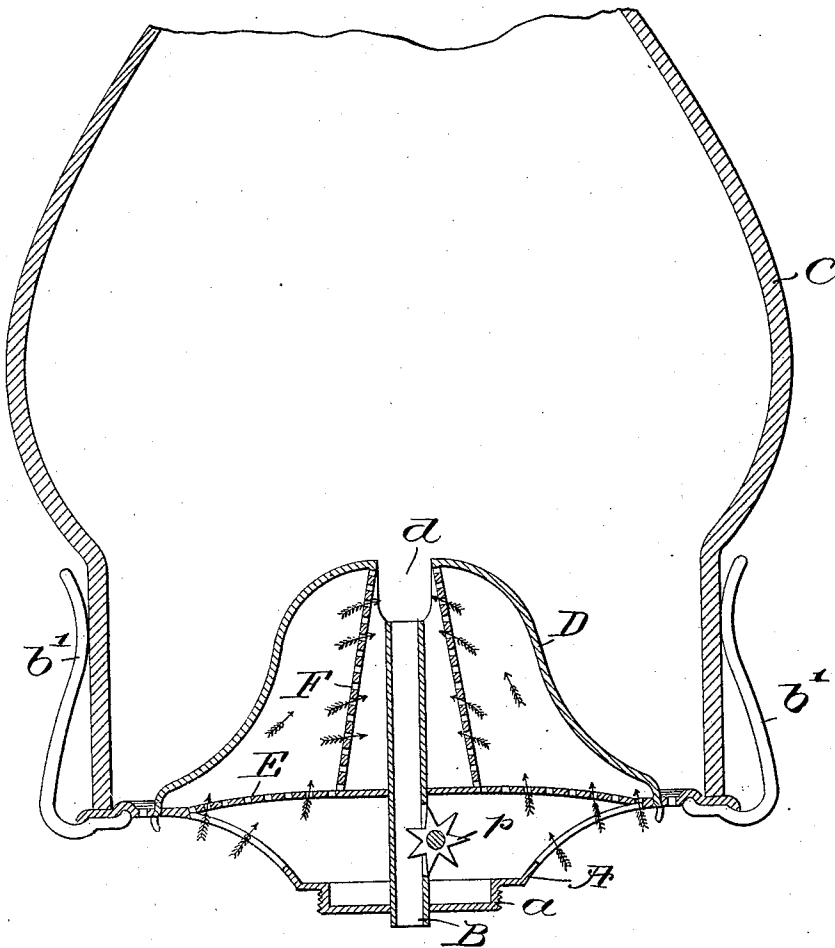


Fig. 1.

Witnesses.

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Inventor:

Emile R. Weston,
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attys.

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Fig. 2.

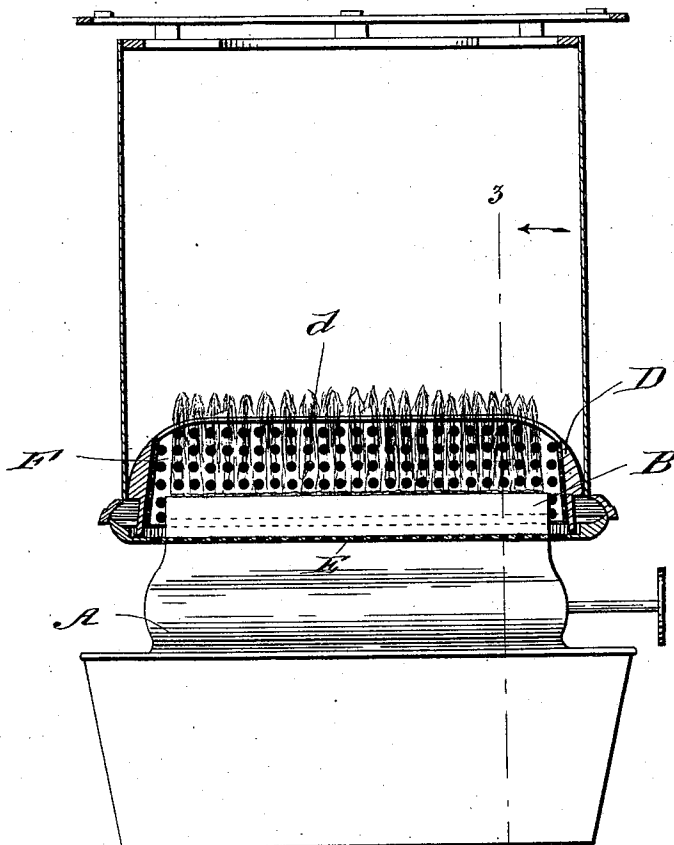
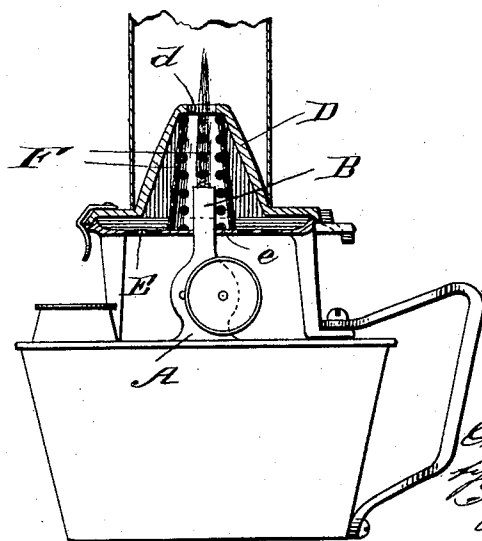


Fig. 3.



Witnesses
C. M. Sweeney
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Inventor
Emile F. Weston
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Attorney

UNITED STATES PATENT OFFICE.

EMILE R. WESTON, OF BANGOR, MAINE.

OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 576,641, dated February 9, 1897.

Application filed September 20, 1893. Serial No. 485,973. (No model.) Patented in Canada May 30, 1893, No. 43,069.

To all whom it may concern:

Be it known that I, EMILE R. WESTON, of Bangor, county of Penobscot, State of Maine, have invented an Improvement in Oil-Burners, (for which I have obtained a patent in Canada, No. 43,069, dated May 30, 1893,) of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention relates to lamp-burners; and my object is to produce a burner which by reason of its novel construction is particularly adapted for use in lamp-stoves, although it is equally serviceable in lamps for lighting purposes. In a lamp-stove, however, it is desirable that a cheaper quality of oil be used, since the consumption of oil in these stoves is so great as to render their use expensive if the high-grade refined oils are used. An objection to the use of the heavy low-grade oils in this class of burners is that it is difficult to completely consume the carbon or similar substances, a larger percentage of which is found in these oils, and the result is that a great deal of this carbon passes off in the form of smoke. It is obvious that such imperfect combustion will render the amount of heat generated, in proportion to the oil consumed, very small, and an objectionable smoking and fouling of the utensils and a disagreeable odor will also result from the liberation of such volumes of unconsumed carbon.

It is with a view of obviating the objections above noted that I have invented the burner which I shall now describe in detail, reference being made to the accompanying drawings, in which—

Figure 1 is a sectional view of an ordinary lamp-burner embodying my invention. Fig. 2 is a side view, partly in section, of a lamp-stove having my invention applied thereto. Fig. 3 is a transverse section on line 3 3, Fig. 2.

Referring to the drawings by letter, A denotes the base of the burner, which is threaded or provided with other suitable means to secure it to the usual fount or reservoir.

B indicates the wick-tube, which is preferably made quite long, said burner being provided with the ordinary wick-raising device

p. A top plate or dome D rises from the base A and is provided with a flame-aperture *d* just above the wick-tube B. Intermediate said base A and dome D is a perforated plate E, which steadies the volume of air which rushes into the dome. It will be noticed that this top plate or dome D extends above the top of the wick-tube B, and that from the base A to the edges of the opening *d* extend two foraminous walls F, which are slightly inclined from the vertical and are placed in close proximity to the wick-tube B. The openings in said walls F are quite large and are so positioned with respect to one another that the air which enters the dome D through the base A and the openings in the intermediate plate E will be projected through the apertures in the said walls F in distinct jets, which, owing to the proximity of the walls F to the flame from the wick-tube B, will penetrate said flame in the same manner as a blow-pipe jet and will not coalesce and strike the flame in a volume. The effect of thus forcing the air in jets into the flame is to produce perfect combustion, and sufficient oxygen is supplied to the interior of the flame to render combustion complete, thus insuring the burning of the carbon and similar elements which would otherwise pass off in smoke and increasing the heat and light producing qualities of the lamp.

It will be noticed that the dome D is an imperforate cap, and that the only escape for the air which is drawn through the intermediate plate E is through the apertures in the walls F, and the air will therefore be forced into the flame with considerable strength. Furthermore, the central portion *e* of the intermediate plate E which lies between the foraminous walls F is not perforated, so that air can only reach the flame in the form of jets through the said foraminous walls.

The effect of the construction set forth above upon a flame is peculiar, and I have represented in Fig. 2 the appearance of the flame when under the action of the jets of air from the foraminous walls F. In side elevation this flame has the appearance of being notched and made up of luminous cones and non-luminous spaces, such spaces being filled with a blue flame, while the cones burn

with a white steady light. This structure of flame shows that by the use of the construction shown and described an intimate commingling of oxygen with the flame results, and a corresponding increase in light and heat is secured.

I claim—

1. In a lamp-burner, the combination with a suitable base, of a dome rising from said base and provided with a flame-aperture; a wick-tube mounted on said base and entering said dome, a perforated plate placed intermediate said base and dome, said intermediate plate having an imperforate central portion, and foraminous walls rising from said imperforate central portion of the said intermediate plate in close proximity to the wick-tube, said walls joining the dome at the edges of the flame-aperture at a point above the top of the wick-tube, substantially as described.

2. In a lamp-burner, the combination with a base having draft-openings, of a dome ris-

ing from said base and having a central flame-aperture; a wick-tube mounted in said base, entering said dome, and terminating at a point considerably below the top of the dome; a perforated plate intermediate said base and dome having an imperforate central portion surrounding said wick-tube, and inclined foraminous walls rising from the imperforate central portion of said intermediate plate in close proximity to the wick-tube, said walls extending above the top of said wick-tube and joining the dome on either side of the flame-aperture, whereby air is fed to the flame through the said foraminous walls only, being projected through the latter into the flame in separate jets, substantially as described.

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

EMILE R. WESTON.

Witnesses:

B. J. CLERGUE,
ALBRA A. MILLIKEN.