

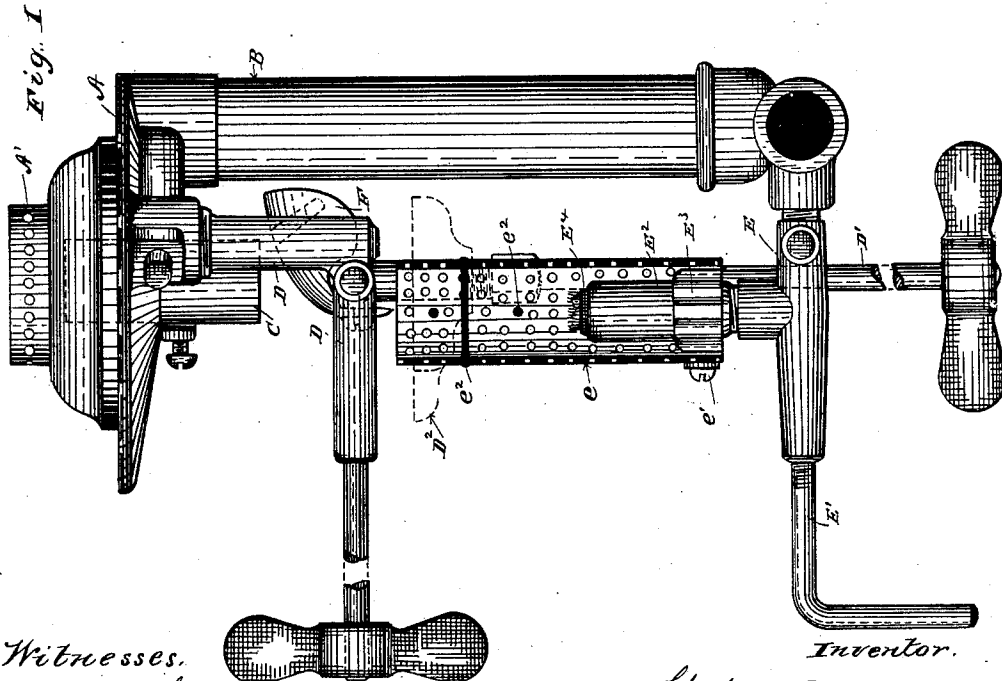
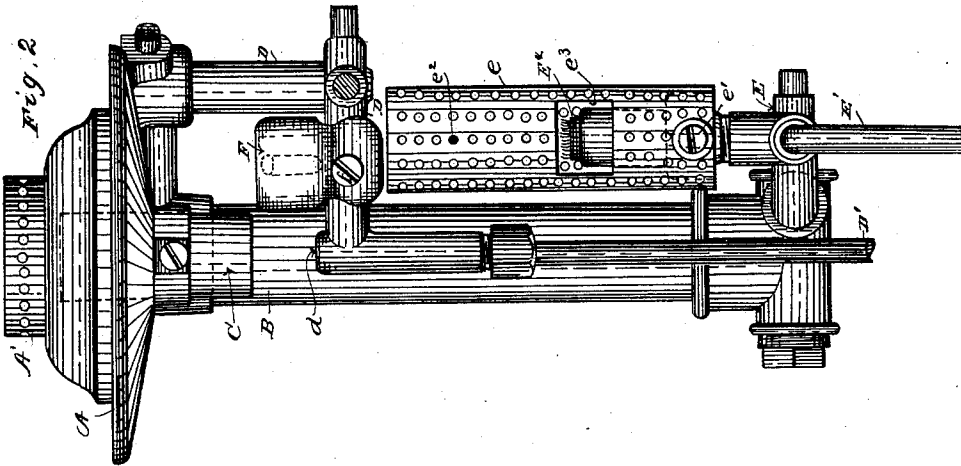
(No Model.)

2 Sheets—Sheet 1.

C. A. POPE.
VAPOR BURNER.

No. 472,394.

Patented Apr. 5, 1892.



Witnesses.

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UNITED STATES PATENT OFFICE.

CHARLES A. POPE, OF CLEVELAND, OHIO.

VAPOR-BURNER.

SPECIFICATION forming part of Letters Patent No. 472,394, dated April 5, 1892.

Application filed November 20, 1890. Serial No. 372,069. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. POPE, of Cleveland, in the county of Cuyahoga and State of Ohio, 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 pertains to make and use the same.

My invention relates to improvements in vapor-burners, or rather to an improved lighting device for a vapor-burner; and it consists in certain features of construction and in combination of parts hereinafter described, and pointed out in the claim.

In the accompanying drawings, Figure 1 is a side elevation showing a burner with a perforated chimney at the lighting device in section. Fig. 2 is a front elevation. Fig. 3 is an elevation in central section of the lighting device detached. Fig. 4 is a plan in section on line *x x*, Fig. 3. Fig. 5 is a detail of the wick mechanism, portions thereof being broken away to show the construction. The last three figures are enlarged.

The vapor-burner in the main may be of ordinary construction—such, for instance, as shown in the drawings, wherein—

A represents the generator or head of the burner; A', the cone; B, the stand-pipe; C, the commingling-tube, and D the hollow angular arm connected with the generator and having a jet-orifice at *d*, presenting toward and into the commingling-tube, the discharge of such jet-orifice being controlled by valve D'.

In dotted lines, Fig. 1, is shown at D² an ordinary lighting-cup that is supposed to be superseded by my improved lighting device, hereinafter described. The use of the lighting-cup is objectionable by reason of the odor and smoke therefrom, the smoke blacking cooking utensils and about everything connected with or in proximity to the burner and depositing a coating of soot on the generator and other parts to be heated, so that such members are rendered less effective. However, as about every vapor-burner is provided with a lighting-cup, this may be left in place to be used in case a little smoke or odor is desirable.

My improved lighting mechanism is as follows: E is a hollow arm attached, for instance,

to the stand-pipe for receiving its supply of oil, in which case arm E should be of the angular variety shown, having a valve E'. The upper end of the arm is screw-threaded for attaching sleeve E², the sleeve being open at the upper end, except as is more or less closed by the wick E⁴. The wick is preferably a small bundle of asbestos fiber lightly wound with wire to hold it together, or, still better, wrapped around with a strip of thin perforated metal—for instance, as shown. This form of wick, although preferable on account of its cheapness and durability, is not essential, as even ordinary candle-wicking would answer the purpose, but would of course have to be renewed frequently. Sleeve E² has an enlarged section E³, adapted to fit inside the metal perforated chimney *e*, the chimney being held in place usually by a set-screw *e'*, and the enlarged section E³ has a fluted periphery to admit air from below inside the chimney. The chimney has one or more, and preferably a series of, cross-bars arranged internally, as at *e*², and has a side opening *e*³ of considerable size for lighting purposes. The chamber in sleeve E² at the bottom and around the wick constitutes a secondary or supplemental well or reservoir for the lighter and is capable of holding a small quantity of oil, and this reservoir is quickly filled by opening valve E', and hence a match is usually lighted before or at the time of opening this valve, the match being applied at the opening *e*³, and when the oil has risen in the reservoir so as to be lighted valve E' is at once closed. The flame as it extends up through the perforated chimney is broken by contact with the cross-bars, so that air admitted from below and throughout the perforations of the chimney, or through opening B³, is mingled with and burned in the flame, whereby a blue smokeless and inodorous flame issues from the top of the chimney. The lighting device is located, as shown, so that the flame issuing from the chimney impinges arm D in the first instance, as it is important that this member be heated, so that the gas when discharged at jet-orifice *d* be superheated, the hotter the better; but the blue flame issuing from the chimney, as aforesaid, furnishes so much and such intense heat that arm D can absorb only a part of this heat. Hence I provide a deflector

F, that is conveniently attached by means of screw *f* to arm D in position more or less over the chimney so as to deflect more or less of the heat and direct it toward the stand-pipe
5 B and generator-head A, so that these members may be quickly heated.

I find in practice that with my improved lighting mechanism, as hereinbefore described, much less oil is required as compared
10 with what is ordinarily used in the lighting-cup, and that the initial heat is furnished much quicker and without smoke or odor.

What I claim, is—

The combination, with a vapor-burner, of a
15 secondary or supplemental oil-reservoir con-

sisting of an enlarged section, a sleeve projecting upwardly from the latter, this sleeve having a well formed therein for the reception of oil and a suitable wick, a perforated chimney, an annular air-space formed around
20 the sleeve, and openings communicating therewith formed in the periphery of the enlarged section, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this
25 23d day of October, 1890.

CHARLES A. POPE.

Witnesses:

C. H. DORER,
WARD HOOVER.