

J. SHAY.
GASOLINE BURNER.

No. 112,291.

Patented Feb. 28, 1871.

Fig. 1.

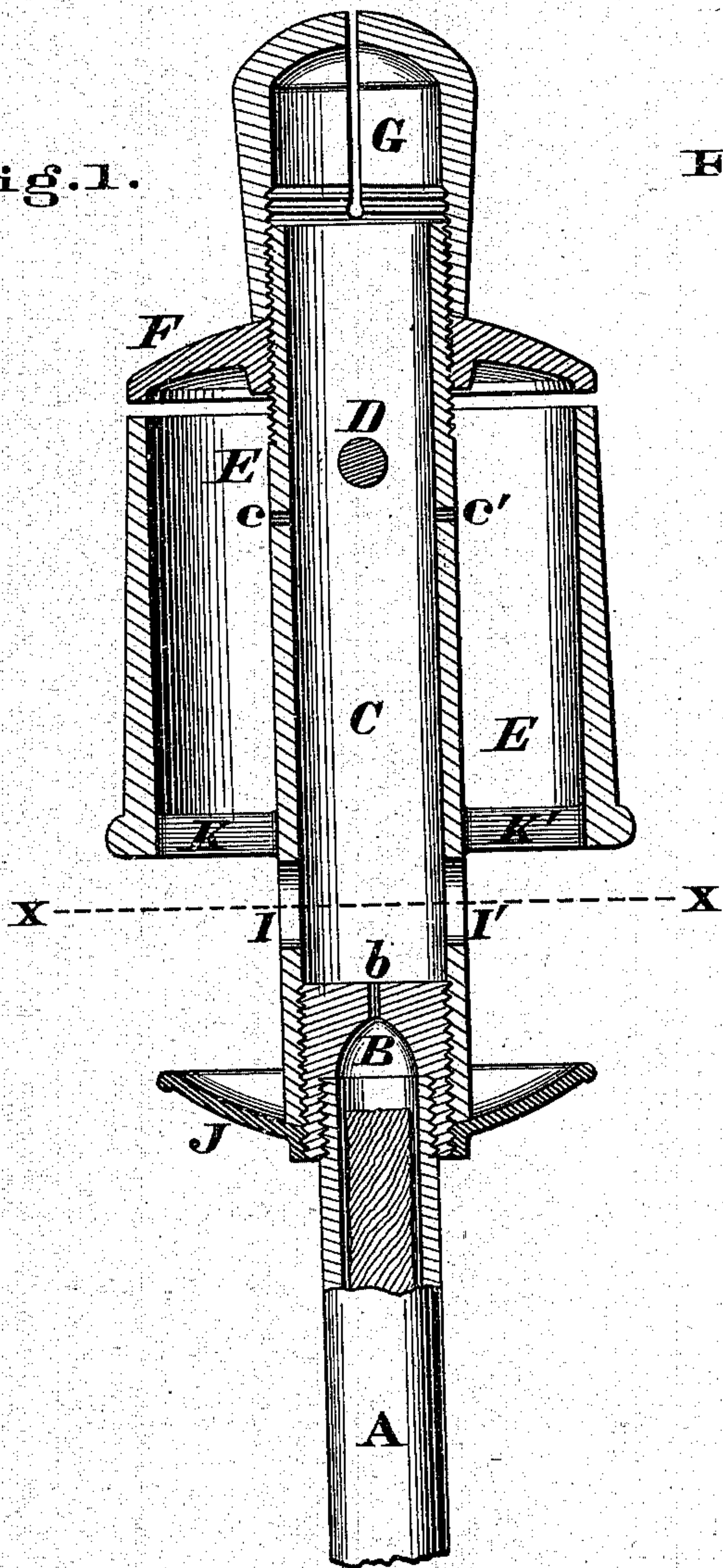


Fig. 3.

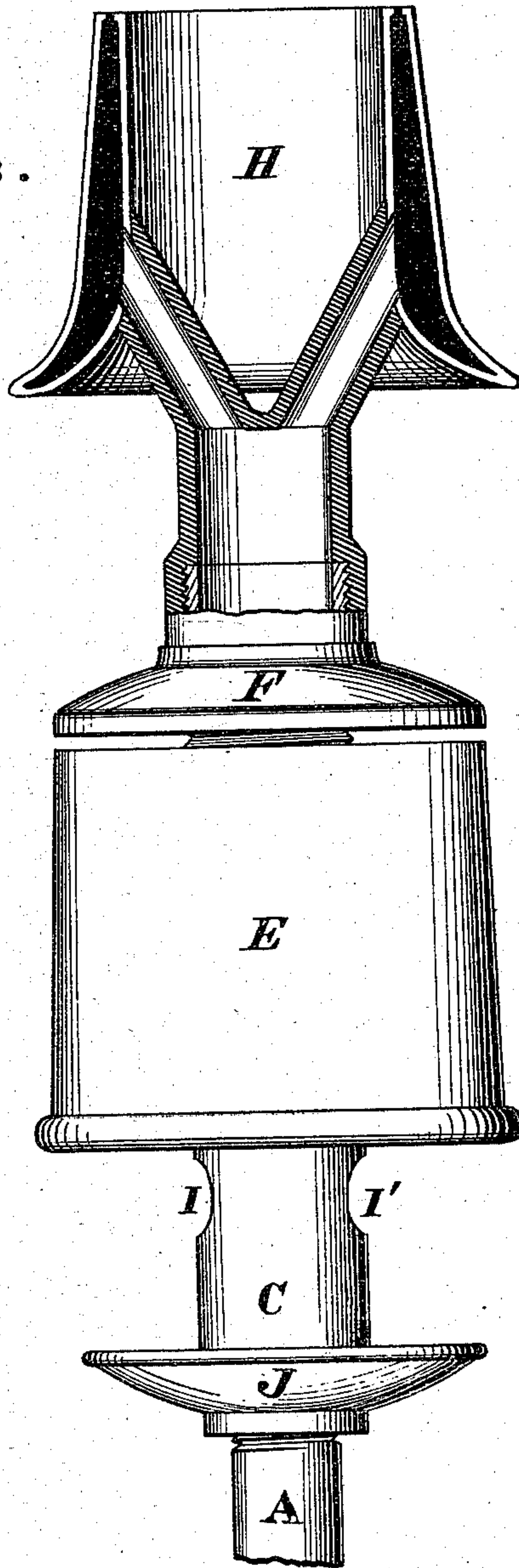
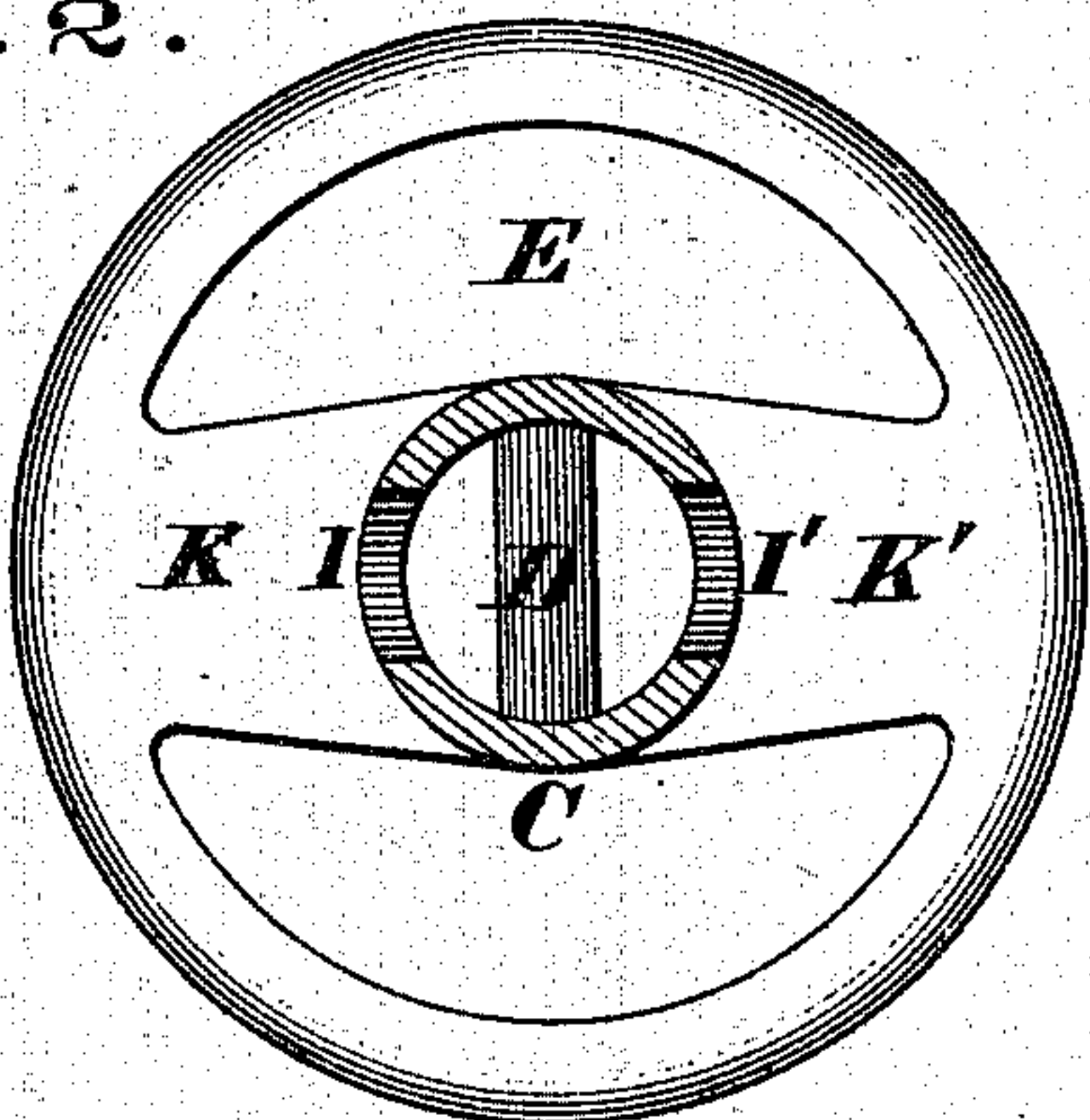


Fig. 2.



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JAMES SHAY, OF CINCINNATI, OHIO.

Letters Patent No. 112,291, dated February 28, 1871.

IMPROVEMENT IN VAPOR-BURNERS.

The Schedule referred to in these Letters Patent and making part of the same.

I, JAMES SHAY, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Gasoline-Burner, of which the following is a specification.

Nature and Objects of the Invention.

This is an improved form for the class of gasoline-burners whose liquid contents are heated and volatilized by an auxiliary flame on their way to the principal vent, in order to produce a clear, brilliant flame similar to that from street-gas.

The principal or distinguishing characteristics of my invention are, a preheating chamber which surrounds the neck of the lamp a little above the jet of gasoline, into which chamber a sufficient portion of the gasoline escapes to create a low flame within the said chamber, and thus to convert the remainder of the ascending gasoline into gas, which escapes in that form at the proper vent.

My invention also includes a deflecting-bar placed across the conducting-tube or neck to convert into spray and direct to the two lower vents that portion of the gasoline designed for the auxiliary flame.

My invention further includes an adjustable cap or cover to the preheating-chamber, whereby the auxiliary flame is regulated.

My invention consists in the combination of the above-named parts, arranged and operating substantially as hereinafter described.

General Description with Reference to the Drawing.

Figure 1 is an axial section of a burner embodying my improvements.

Figure 2 is a horizontal section of the same at the line X X; and

Figure 3 shows the method of applying my improvements to an Argand burner.

A represents the service-pipe from a gasoline reservoir, and when in use is filled with a suitable wick to conduct the gasoline by capillary attraction up to the point of discharge or minute vent *b* in the nipple B.

The nipple B is screwed into the lower end of neck C, into which it discharges its fine jet of gasoline.

A bar, D, placed athwart the neck a suitable distance above the vent *b*, deflects a portion of the gasoline to the two orifices, *c c'*, in said neck, and into a chamber, E, which is made fast to and surrounds the neck.

The chamber E, which I call the preheating-chamber, is open at bottom and at top, but at top is capable of being partially closed by a cap or cover, F, which screws down upon the said chamber.

To the upper end of the neck is screwed a bat-wing

burner, G, an Argand burner, H, or any other approved tip or burner.

Two opposite openings, I I', in the neck C, a little above the vent *b*, permit atmospheric air to enter and mingle with the gas or spray evolved within the said neck.

A pan or cup, J, around the neck, serves to catch any drippings of gasoline.

The neck C is connected to the chamber E by arms K K'.

Operation.

The emission of gasoline from the vent *b* having been started by heat or by pressure in the usual manner, it escapes in a more or less gaseous or volatilized condition through the orifices *c c'* into the preheating-chamber E, where the gasoline takes fire and heats up the portion which remained within the neck, causing it to issue from the tip G or H in a gaseous condition.

Should flame issue from the chamber E, it is an indication that too much air has access thereto, and the cap F must be screwed down.

Should the said flame burn intermittently or by puffs, it is a sign that too little air obtains access to the said chamber, and that the cap F should be elevated. Thus, by simple manipulation of the cap the preheating device is regulated so as to discharge its functions with regularity and without smoke, and invisibly.

While describing the preferred form of my improvement, I reserve the right to vary the construction so long as I attain the same results by means substantially equivalent; for example, the nipple B may be cast solidly in the neck, but I prefer to have said nipple separate, as described, because it is the part most liable to be clogged or burned out, and, when separable, can be cleaned or replaced with a new one at a slight expense and very little trouble.

Although the represented cylindrical shape is deemed preferable for the chamber E, yet said chamber may have an octagonal, oval, or other shape.

Claim.

I claim herein as new and of my invention—

The described arrangement of neck C, having the orifices I I' and *c c'*, the nipple B, bar D, chamber E, and adjustable cap or cover F, for the purpose explained.

In testimony of which invention I hereunto set my hand.

Witnesses:

GEO. H. KNIGHT,
JAMES H. LAYMAN.

JAMES SHAY.