J. C. LOVE.

Vapor-Burners.

No. 151,605. Patented June 2, 1874.

FIG. 2.

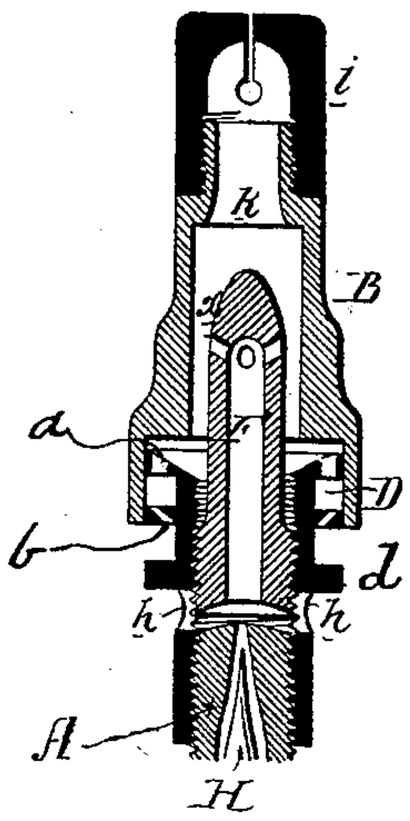


FIG. 1.

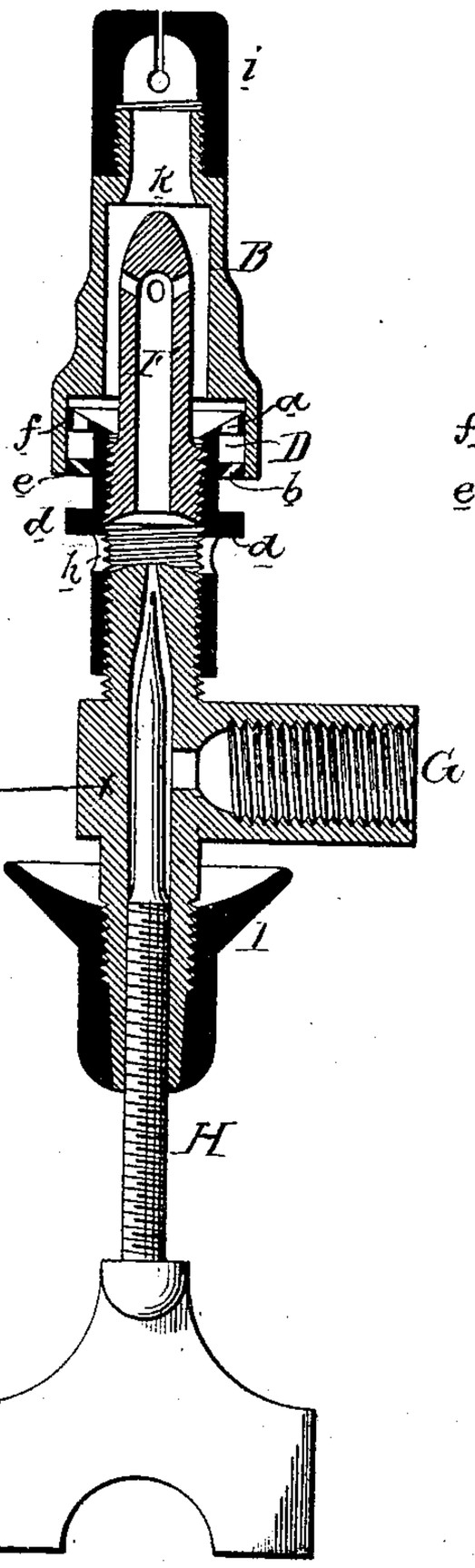
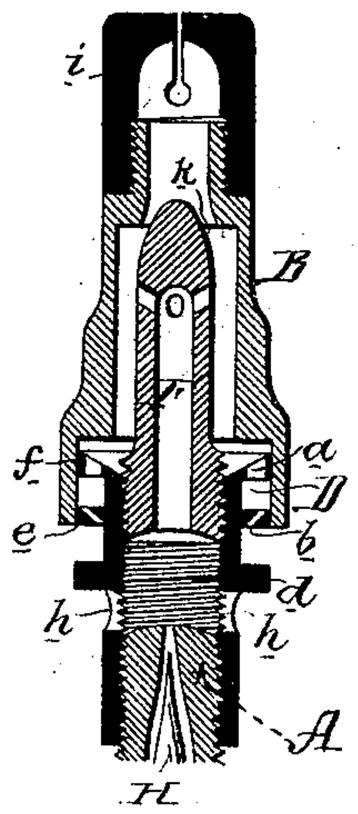


FIG. 3.



Witnesses, Hubert Howson
Harry Smith

John C. Love
by his attys.
Howson and Son.

UNITED STATES PATENT OFFICE.

JOHN C. LOVE, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN VAPOR-BURNERS.

Specification forming part of Letters Patent No. **151,605**, dated June 2, 1874; application filed March 5, 1874.

To all whom it may concern:

Be it known that I, JOHN C. LOVE, of Philadelphia, Pennsylvania, have invented certain Improvements in Vapor-Burners, of which the following is a specification:

The objects of my invention are, first, to thoroughly heat and vaporize gasoline or other hydrocarbon in the lower portion of a burner; and, second, to regulate the admission of air into, and the escape of gas from, the said burner. I attain these objects by constructing the burner in the manner which I will now proceed to describe, reference being had to the accompanying drawing, in which—

Figure 1 represents a vertical section of the burner drawn to an enlarged scale; and Figs. 2 and 3, views of portions of the same with the internal regulating-valve in different positions.

A is the stem of the burner; G, the supply-pipe, through which the liquid hydrocarbon is conveyed from an elevated reservoir, as usual; H, the ordinary tapering screw-valve, for regulating the supply of hydrocarbon to the burner; and I, the usual shallow receptacle for containing a small quantity of hydrocarbon to be ignited for the purpose of heating the burner before lighting the same. On the upper portion of the stem of the burner are three circular flanges, *d*, *e*, and *f*, over the two uppermost of which is fitted a cap, B, a space or chamber, D, being thus formed between the said cap and flanged portion of the body of the burner, for a purpose explained hereafter. The interior of the cap B and of the upper portion of the body of the burner, taken together, constitute the mixing-chamber, into which air is admitted, as usual, through lateral openings *h h*, to be mixed with the hydrocarbon vapor, which enters the said chamber below the openings *h h*, and the combined air and vapor escape through the transverse slit in the burner-tip *i*, at which point they are ignited. In ordinary burners of this class the gas is apt to blow or to pass off with too great velocity, and thus produce a flickering flame. I have ascertained that this can be prevented by deflecting the gas toward the sides of the mixing-chamber instead of permitting it to pass directly upward; and I attain this object by arranging within the burner a nipple, F, perforated at or near its upper end at *x*, as shown, and through which the gas is caused to pass before it can reach the tip. The nipple F is screwed into the upper portion of the body of the burner, so as to be readily adjusted therein, and its upper rounded end extends upward into the cap B to within a short distance of an internal shoulder, *k*, so that by lowering the said nipple, as shown in Fig. 2, it can be caused to partially close the openings *h*, and thus serve as a valve to regulate the admission of air into the burner, while, by raising the said nipple, as shown in Fig. 3, it can be caused to partially close the passage to the tip *i*, and to thus serve, also, as a means of regulating the escape of gas from the burner. The gas for the heating-jets is prevented from blowing and flaring outward from the burner by causing it to pass into the chamber D, before referred to, through openings *a* in the flange *f*, and, after circulating in the said chamber, to be discharged from the same through a number of much smaller openings, *b*, in the lower flange *e*, which are inclined inward toward the body of the burner, so that their ignited jets shall impinge directly against the latter, the said jets being deflected, however, from the air-inlets *h* by the flange *d*.

I claim as my invention—

1. The combination, in a burner, of the chamber D, inlet-openings *a*, and jet-openings *b*, arranged to direct the flame against the burner below the said chamber, as set forth.

2. The combination, in a vapor-burner, of the opening *k* leading to the tip, the air-inlet openings *h*, and adjustable nipple F, arranged to close the opening *k* when raised, and the openings *h* when lowered, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN C. LOVE.

Witnesses:

WM. A. STEEL,

HARRY SMITH.