

J. C. LOVE.  
Vapor Burner.

No. 105,819.

Patented July 26, 1870.

Fig. 1.

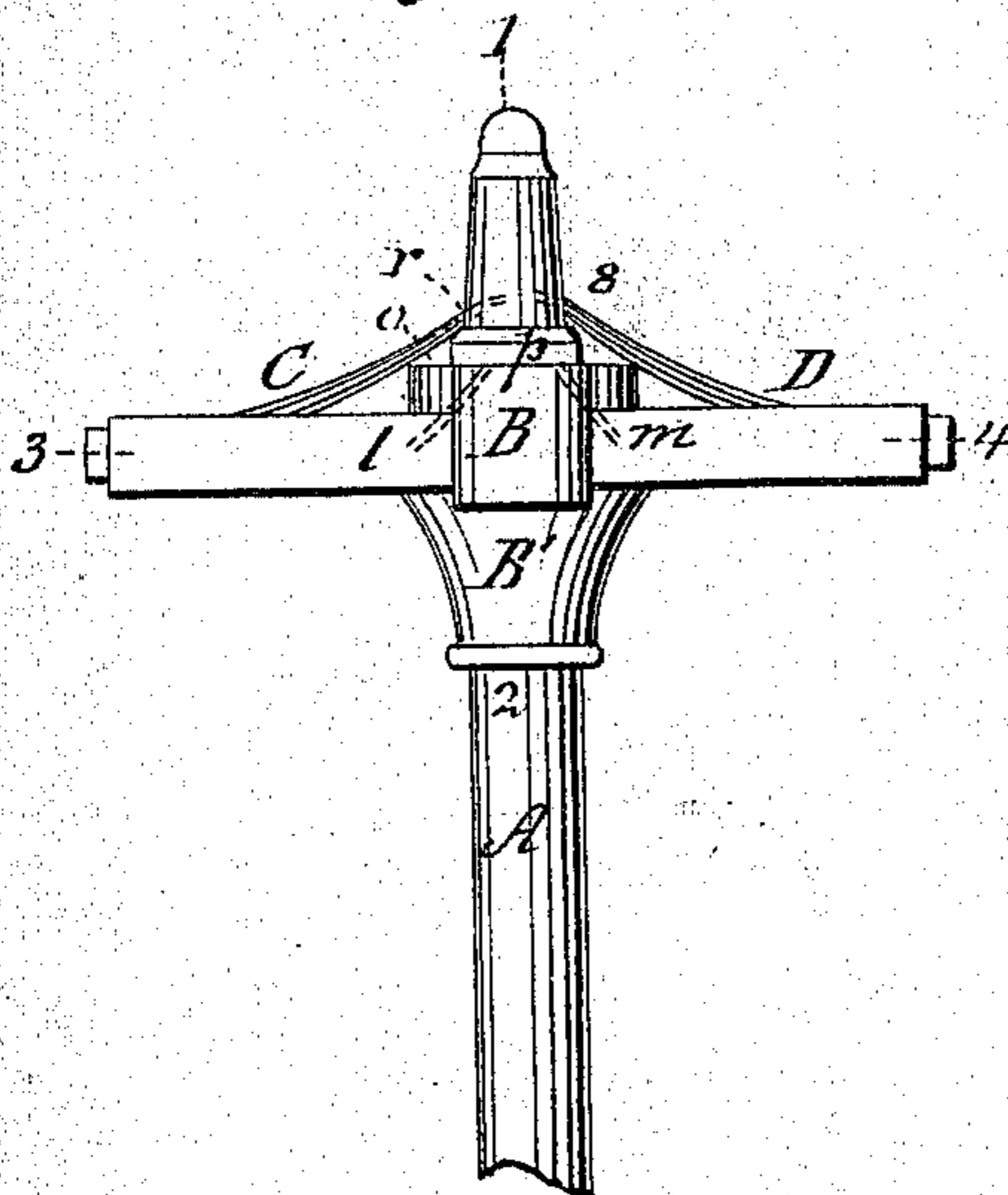


Fig. 2.

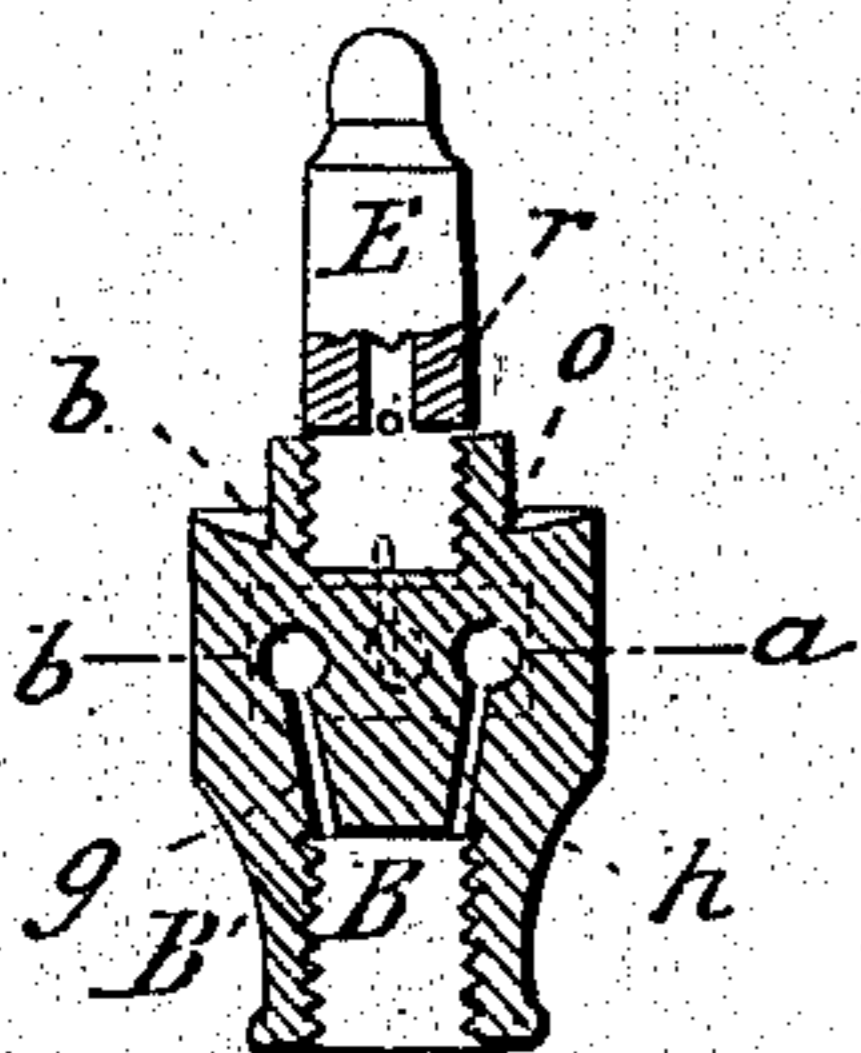


Fig. 3.

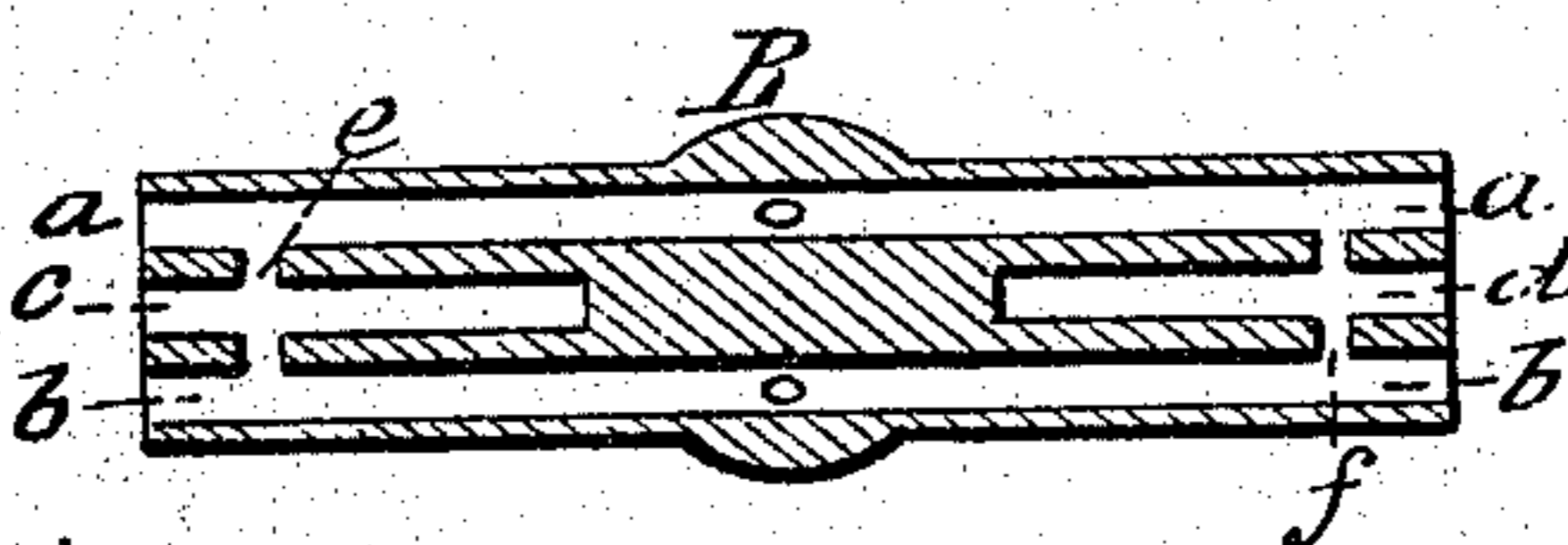
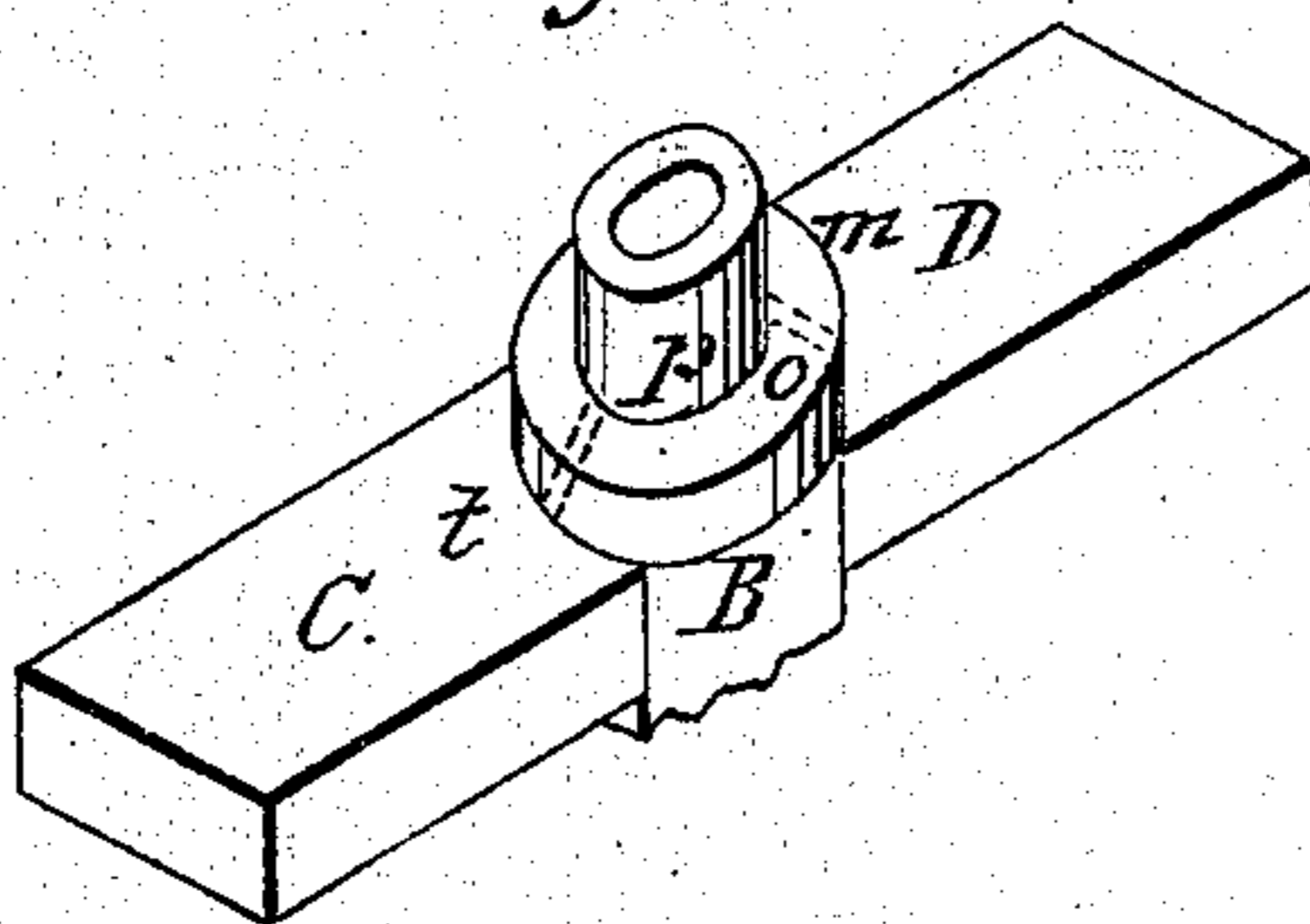


Fig. 4.



Witnesses.  
David J. Francis  
John M. Gour.

Inventor.  
John C. Love  
by his Attorney  
Francis S. Rastman.

# UNITED STATES PATENT OFFICE.

JOHN C. LOVE, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN VAPOR OR GAS BURNERS.

Specification forming part of Letters Patent No. 105,819, dated July 26, 1870.

*To all whom it may concern:*

Be it known that I, JOHN C. LOVE, of Philadelphia, Pennsylvania, have invented an Improvement in Gas and Vapor Burners, of which the following is a specification:

### *Nature and Object of my Invention.*

My invention consists of a burner provided with a tip, an arm or arms for the passage of oil or gas, and certain orifices arranged so as to throw a gas-flame against the said arm or arms and heat the fluid which passes through the same.

### *Description of the Accompanying Drawing.*

Figure 1 is an exterior view, showing one form in which my improved burner may be made; Fig. 2, a transverse section on the line 1 2, Fig. 1; Fig. 3, a sectional plan on the line 3 4, Fig. 1; and Fig. 4, a perspective view.

### *General Description.*

The casing of the burner consists, in the present instance, of a cast-metal block, B, from which project arms C D, a gas-tip, E, being screwed to a hollow projection, b, on the top of the case, and a hollow projection, B', at the bottom of the case, having internal screw-threads, so that it can be connected to a pipe, A, leading to a reservoir containing benzine or other volatile hydrocarbon.

In the burner are two horizontal passages, a b, which communicate, through orifices g h, with the hollow projection B', and through openings e e with central passages c, channels l m leading from the said passages c to the chamber in the projection p.

In the hollow projection p are two openings, r s, which communicate with the interior of the said projection, and are inclined downward in the direction of the arms C D. Although these passages may be formed in any suitable manner, I have found it best to drill the openings a b entirely through the block and the openings c d partly through the same, and to close the outer ends of the openings by plugs, the orifices g h, l m, r s, and e being also drilled.

In the face of the block surrounding the projection p is annular groove or depression o, for the purpose described hereafter.

When a light is required, a cock in the tube A is turned so as to permit the passage of the oil, which flows through the hollow projection B', passages a b e, openings e, l, and m, into the hollow projection p, and from the latter through the openings r s into the annular groove o, where it is ignited.

The flame from the burning oil will soon heat the burners, so that the oil as it passes into the passages a b will become vaporized, and will issue in the form of a gas through the tip E and orifices r s, where it is ignited, the flame from the tip affording a steady, brilliant, and uniform light, while the flames from the orifices r s, impinging against the arms C D, (into the passages in which the oil must flow,) maintain the said arms at such a high temperature that the oil which enters the said passages is instantly converted into gas.

Although I have referred to my improved burner as used for burning oil, it may be employed with advantage as a gas-burner, the brilliancy of the flame being greatly increased by its use.

One arm, C or D, and a single orifice, r or s, only may be used, or the form of the burner may be otherwise altered, it being necessary, however, that an orifice or orifices shall be so arranged below the tip that a supplementary gas-flame shall impinge against the arm through which the gas or oil flows.

### *Claim.*

The tip E, in combination with the arm or arms C D, containing passages for oil or gas, and with orifices r s, arranged to throw a gas-flame against said arm, as described.

In testimony whereof I hereunto sign my name to this specification in presence of two subscribing witnesses.

JOHN C. LOVE.

Witnesses:

FRANCIS D. PASTORIUS,  
JOHN YILLA.