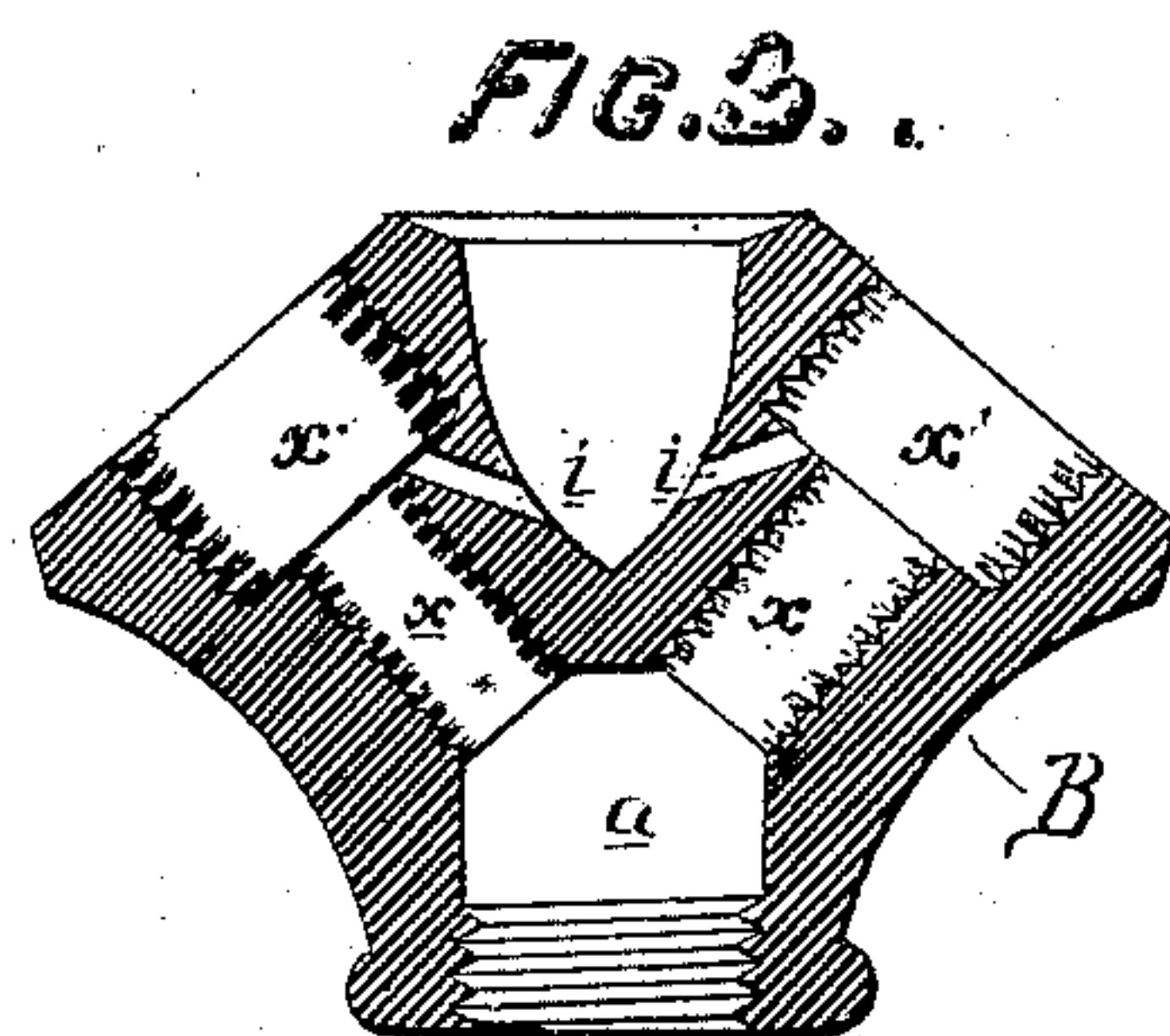
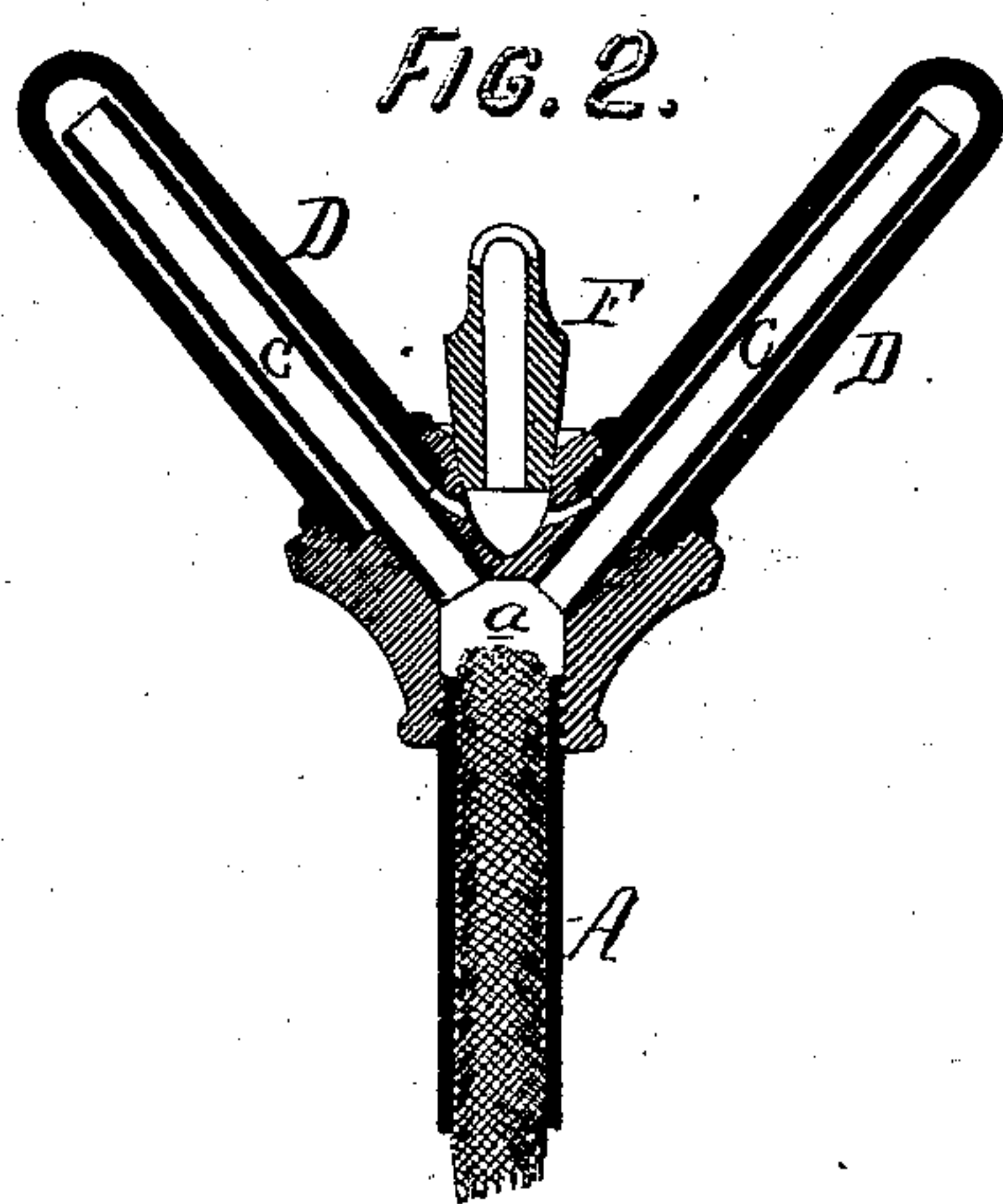
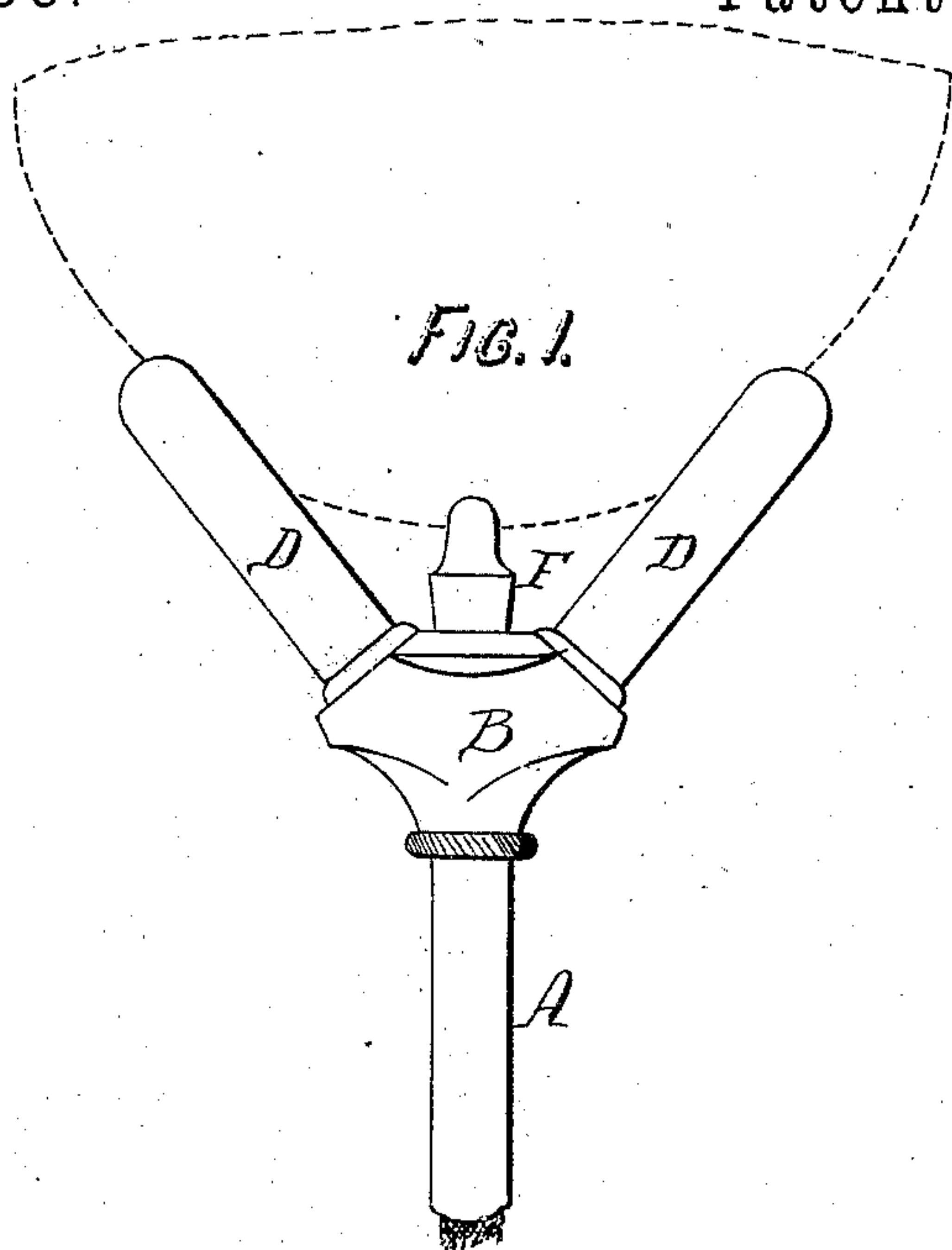


J. C. LOVE.
Vapor Burner.

No. 99,688.

Patented Feb. 8, 1870.



John C. Love
by his Attys
Howson and Son.

WITNESSES { *Wm. A. Steel*
Jno. B. Harding

United States Patent Office.

JOHN C. LOVE, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 99,688, dated February 8, 1870.

IMPROVEMENT IN VAPOR-BURNERS.

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

I, JOHN C. LOVE, of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented an Improved Gas or Vapor-Burner, of which the following is a specification.

Nature and Object of the Invention.

My invention consists of a gas or vapor-burner, composed principally of a metal base, of a central tip or burner, and of inclined arms or tubes arranged on each side of the said tip or burner, the inclined arms serving as passages for the vapor, and conducting the same to points above or adjacent to the flame, so that it may be heated and rarified, and its volume and pressure consequently increased before it is ignited.

My invention also consists in forming the said inclined arms of two tubes, arranged one within the other, with an annular space between them, so as to insure a more thorough circulation of the vapor.

My invention consists further of an economical method, fully described hereafter, of constructing the base of the burner.

Description of the Accompanying Drawing.

Figure 1 is an external view of my improved gas or vapor-burner;

Figure 2, a sectional view of the same; and

Figure 3, a detached view, drawn to an enlarged scale.

General Description.

A represents a wick or feed-tube, and B; a metal cap, which is screwed on to the upper end of the same, and which forms the base or body of the burner, there being within the base and above the wick-tube a space, *a*, with which communicate the lower ends of two narrow tubes C C, which project outward and upward from the base, at about the angle represented in the drawing.

Each of these tubes is open at its outer end, and is contained within a larger tube, D, closed at the top, and also screwed into or otherwise secured to the base B.

The narrow annular space which intervenes between each of the tubes C and the outer tube D, communicates through a passage, *i*, in the base B, with the space beneath a gas-burner, F, which is secured to and projects vertically upward from the centre of the said base. This tip or burner F is of ordinary construction, and may be made of any suitable material.

The wick-tube A is secured to any suitable stand or reservoir, or may communicate with a reservoir so arranged above the burner, that the benzine, naphtha, or other light oil which is to be used, may be fed to the burner under a slight pressure.

Before igniting the burner, it will be first necessary to hold an ignited match or taper beneath the same, in order to heat the metal sufficiently to partially vaporize the oil, and cause a small volume of the gas or

vapor to issue from the tip F. This may be immediately ignited, and will continue to heat the burner.

The vapor, as it is generated, passes upward from the space *a*, above the wick-tube, through the inner tubes C C, and thence downward through the annular space which surrounds these tubes, to the passages *i*, whence it escapes to the point of ignition.

When the vapor is lighted, the flame spreads laterally to about the extent shown in fig. 1, and is brought in contact with each of the tubes D D, so as to highly heat the same, and consequently rarify and improve the quality, for burning purposes, of the vapor which is passing through the annular space between the said tubes and the internal tubes C.

This heating and rarifying of the vapor has also the effect of rapidly increasing its volume, so as to cause it to pass from the tip F with a considerable degree of pressure, an extended flame of great brilliancy being consequently produced.

The outward inclination of the tubes or arms through which the vapor is conducted to the point of ignition, is an important feature of my invention, as by this means the vapor is conducted to the most advantageous points to be heated by the flame, without contracting or reducing the brilliancy of the latter.

Another important point is the economical construction and arrangement of the base B, the latter, as will be best observed in fig. 3, having, on each side, inclined openings *x* and *x'*, of different diameters, which communicate with each other, with the space *a*, and with the space beneath the gas-tip, so that, by merely screwing the tubes and gas-tip into the base, the burner will be completed and ready for use. The base also, instead of being made solid, as in the present instance, can be constructed of sheet-metal.

My invention, although designed especially as a vapor-burner, will be found equally advantageous for burning ordinary coal-gas, as the heating of the latter before ignition greatly improves its burning qualities.

Claims.

1. A burner, composed of a base, B, of a central tip, F, and of inclined arms or tubes which communicate with the feed or wick-tube, and with the interior of the said tip F, substantially in the manner described.
2. The arrangement of the two inclined hollow arms D, internal tubes C, and tip F, as described.
3. The base B, having openings and passages communicating with and arranged in respect to each other, substantially in the manner described.

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

JOHN C. LOVE.

Witnesses:

JOHN WHITE,
HARRY SMITH.