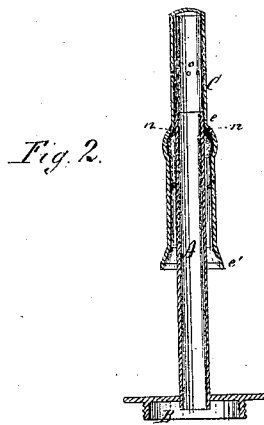
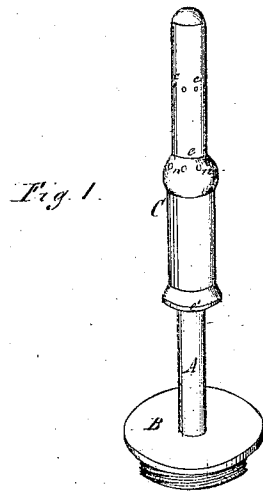


D. LEONARD.
Vapor Burner.

No. 108,711.

Patented Oct. 25, 1870.



Witnesses,
H. J. [Signature]
C. A. [Signature]

Daniel Leonard, Inventor.
[Signature]
his Attorneys.

United States Patent Office.

DANIEL LEONARD, OF CHICAGO, ILLINOIS.

Letters Patent No. 108,711, dated October 25, 1870.

IMPROVEMENT IN VAPOR-BURNERS.

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

To all whom it may concern:

Be it known that I, DANIEL LEONARD, of Chicago, in the county of Cook and State of Illinois, have invented a new and improved Vapor-Burner; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a view in perspective.

Figure 2, a vertical section.

The object of this invention is to provide an attachment to vapor-burners, which will prevent their becoming excessively heated by the flame.

This object is accomplished by causing a current of air to circulate, in contact with the wall of the burner, as hereinafter described.

In the drawing—

A is the stem of the burner, attached to the screw-cap B of the lamp.

C is a metallic cap, placed over the end of the stem A, and provided with jet-holes *c c*, for the escape of the burner.

From *e* to *e'* the cap C swells out from the stem A, so as to leave a space, *s*, between them, up through

which the air freely circulates, being discharged from the escape-holes *n n*, near the top of the space *s*.

The jets of heated air, thus escaping through the holes *n n*, may be directed toward the flame, if desired, so as to cause more perfect combustion, and thereby increase its illuminating power.

The cap C may be made to screw upon the stem A, or may be made to closely fit it, so as to remain in position when simply slipped on and pressed down or it might be soldered to the stem, or made a part of it.

The method of construction is not material, but the preferable form is that shown in the drawing.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

The burner, above described, consisting essentially of the stem A and the cap C, having the holes *c c n n*, and so constructed as to leave a space, *s*, between it and the stem, substantially as and for the purposes specified.

Witnesses: DANIEL LEONARD.

CHAS. A. PETTIT,

THOS. D. D. OURAND.