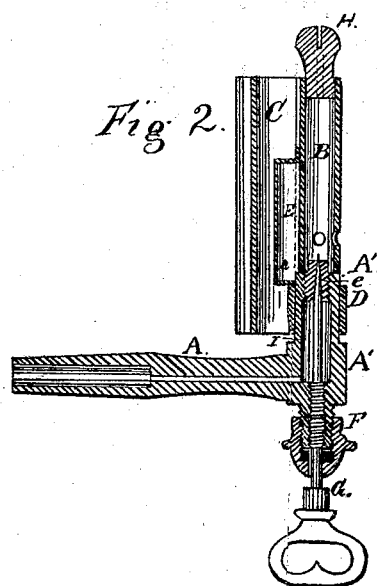
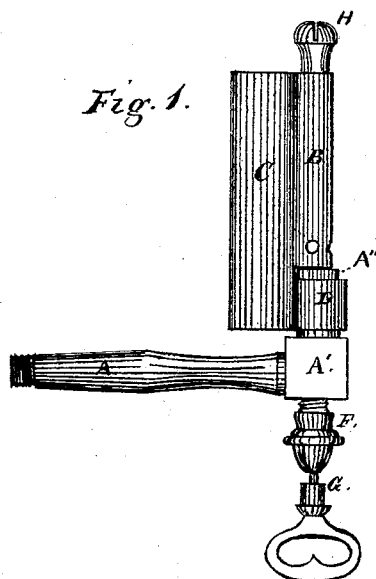


A. F. NOBLE.

Improvement in Vapor-Burners.

No. 115,089.

Patented May 23, 1871.



*Fig. 3.*



Witnesses

O. F. Mayhew

Car. W. Jones

Alanson D. Noble, Inventor,

# UNITED STATES PATENT OFFICE.

ALANSON F. NOBLE, OF INDIANAPOLIS, INDIANA.

## IMPROVEMENT IN VAPOR-BURNERS.

Specification forming part of Letters Patent No. 115,089, dated May 23, 1871.

I, ALANSON F. NOBLE, of Indianapolis, in the county of Marion and State of Indiana, have invented certain Improvements in Vapor Lamp-Burners, of which the following is a specification:

### *Nature and Objects of the Invention.*

My invention relates to improvements in that class of lamp-burners in which hydrocarbon fluids are employed and vaporized to produce gas; and it consists in a certain construction and arrangement of the several parts of which the burner is composed, by which it is rendered more convenient to use and more efficient in operation than those heretofore in use, as will hereinafter more fully appear.

### *Description of the Accompanying Drawing.*

Figure 1 is a side elevation of a burner embodying my invention. Fig. 2 is a vertical section through the center of the same. Fig. 3 is a horizontal section through the heater and auxiliary burner, by which the fluid is vaporized.

### *General Description.*

A A' A'' is the stock or principal part of the burner, and to which all the other parts are attached. A is the stem connecting the burner with the fountain or elevated reservoir; A' is the body of the burner, containing the vaporizing-chamber I; and A'' is the top or upper part of the stock, on which are arranged the mixing-chamber B having the burner H in the top, and the heating-chamber C with the auxiliary burner E, as shown, the parts B, H, and C E being similar to burners already in use. My first improvement consists in the construction of the stock A A' A'', which is clearly shown in the section drawing, Fig. 2. The end of the stem A, connecting with the tube leading from the elevated reservoir in which the fluid is placed, is chambered, as shown, for about half its length, to receive fibrous packing, and the remainder of the stem connecting with the body A' is drilled through, forming a small tube to connect this packing-chamber with the vaporizing-chamber I.

One object of this construction of the stem A is to provide a convenient means of renewing the packing when required, as the burner may be readily unscrewed by hand from the tube con-

necting with the reservoir. Generally the stem will be screwed into a stop-cock placed at the end of the tube leading from the reservoir, so that by means of the stop-cock the flow of the fluid into the packing-chamber may be fully controlled either with or without the packing.

The advantage of this construction of the stem will be better appreciated when it is understood that, on account of the varying quality of the fluid employed, the packing may become in such condition as to entirely obstruct the flow through it into the vaporizing-chamber I, in which case the burner may be readily unscrewed and the packing either renewed or entirely removed, as may be found most convenient or desirable, this construction of the stem being also designed to obviate the necessity of packing. Another object in constructing the stem in this manner is to avoid placing the packing in too close proximity to the heated vaporizing-chamber, as the great heat required to vaporize the fluid is liable to char and render the packing unfit for the purpose designed, which is to control and regulate the flow of the fluid into the vaporizing-chamber I.

e is a removable plug screwed into the upper part A'' of the stock, having a small tapering hole in its center, through which the vapor issues from chamber I into the mixing-chamber B, where it is mixed with air. This removable plug provides a ready and cheap means of repairing the burner in case the orifice therein becomes enlarged, so that the end of the valve-rod G does not fill it perfectly. All of the upper portion of the burner—consisting of the mixing-chamber B, heating-chamber C, auxiliary burner E, and vaporizing-chamber—is similar to burners already in use, except that the heating-chamber C is formed as shown in Fig. 3, so that the flame that issues from the small hole near the bottom of the auxiliary burner E will impinge upon the inward-curved surface of the heating-chamber and be deflected back against the upper part A'' of the stock containing the vaporizing-chamber I, by which the latter will be more effectively heated, and thereby more rapidly vaporize the fluid contained in it. The heating-chamber is attached to the upper part A'' of the stock by means of a collar, D, that encircles it, thus rendering the slit in the burner H susceptible of being turned, so as to present the broad side of the

flame in any desired direction without the necessity of moving the lamp.

In connection with the several parts of the burner constructed and arranged as above described I employ the well-known regulating and cut-off valve-rod G, which I have arranged to stand in a vertical position under the mixing-chamber B, so that the jet of vapor will ascend directly toward the center of the burner H and not impinge upon the sides of the chamber, as is the case with some burners, whereby the flame is rendered clearer and more brilliant, and the tendency to smoke is avoided.

*Claims.*

I claim as my invention—

1. The stock A A' A'', constructed substantially as and for the purpose set forth.

2. The heating-chamber C, formed as shown, and having the collar D fitting onto the upper part A'' of the stock, substantially as and for the purpose set forth.

3. The vapor-burner, composed of the stock A A' A'', mixing-chamber B, heating-chamber C, collar D, auxiliary burner E, regulating valve-rod G, burner H, and vaporizing-chamber I, all constructed and arranged substantially as set forth.

ALANSON F. NOBLE.

Witnesses:

O. F. MAYHEW,  
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