H. WELLINGTON.

VAPOR BURNER.

No. 107,741. Patented Sept. 27, 1870.

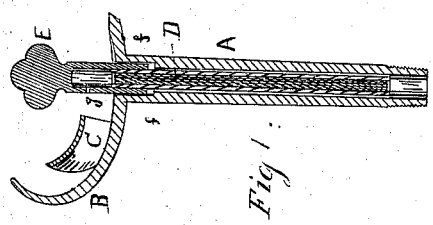

Fig 1.

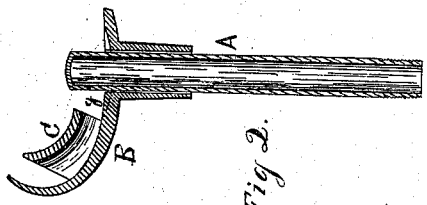

Fig 2.

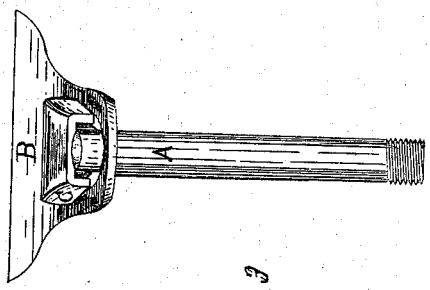

Fig 3

Witnesses

C. N. Frost.

W. L. Faxon

Inventor

Henry Wellington

United States Patent Office.

HENRY WELLINGTON, OF CHICAGO, ILLINOIS,

Assignor to self and Truman P. Doane, of same place.

Letters Patent No. 107,741, dated September 27, 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, HENRY WELLINGTON, of the city of Chicago, in the county of Cook and State of Illinois, have made certain new and useful Improvements in Vapor-Burners; 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 forming part of this specification, and in which—

Figure 1 is a vertical section of a vapor-burner constructed in accordance with my invention, and

Figures 2 and 3 are respectively a vertical section and a front elevation of modification of my invention.

Similar letters of reference in the drawing indicate corresponding parts.

My invention has for its object to construct vapor-burners, so that the tube carrying the wick can be removed at any time for the renewal or examination of the wick without disturbing the other parts of the burner; and to this end

It consists in the combination, with the supplemental wick-tube, of an adjustable nipple, by which the wick-tube is applied to or removed from the main tube of the burner.

It also consists in the combination of a lateral mixing-chamber with the deflector and nipple, or the main tube of the burner, as will be hereinafter more fully described.

In the accompanying drawing, referring to fig. 1—

A is the main tube of the burner, having the lateral deflector or heater B cast upon it, which deflector is curved upward, as shown, to form a wide surface, against which the vapor impinges to produce a wide flame.

C is the mixing-chamber, open at both ends, and attached to the upper surface of the deflector, as shown.

D is the supplemental wick-tube carrying the wick, and inserted at its upper end within the nipple E, which is made hollow to receive it.

The nipple is adapted to fit within the upper end of the tube A, resting upon shoulders, *f*, within the same, and is provided with a small lateral opening or hole, *g*, in line with the inner open end of the mixing-chamber.

The wick-tube, after having been filled with the wick and attacked to the nipple, is placed within the tube A, the nipple fitting tightly within the upper end of the latter, as previously mentioned.

The wick-tube being of less diameter than the interior of the tube A, a space, *h*, is left between them, so that the wick-tube cannot become heated by contact with the tube A.

The burner having been started by heating the deflector, or in the usual manner, the oil to be vaporized ascends the wick by capillary attraction, and is vaporized as it issues from the opening *g* in the nipple. From this opening the vapor passes to the deflector to produce the flame, after first entering and passing through the mixing-chamber C, where it is mixed with the requisite quantity of air to produce a brilliant light.

The vaporization is continued by the heat of the deflector communicating itself to the nipple, and thence to the oil drawn up by the wick.

Owing to the form of the deflector and mixing-chamber, the flame is spread out into a broad sheet, producing a brilliant and steady light.

As the wick-tube nowhere touches the tube A, it does not become heated sufficiently to char the wick, and, for this reason, the wick does not require trimming, as in ordinary burners of this class, but will last until completely saturated with the tarry matter contained in the oil, a result not attained for many months.

In figs. 2 and 3 are shown modifications of my invention.

In the first instance the wick-tube is not employed, but the main tube A is made separate from the deflector, so that the latter can be removed from time to time, as occasion requires.

In fig. 3, however, the deflector and tube A are formed in one piece.

I am aware that lateral mixing-chambers have been formed by two lateral deflectors, one placed upon the side and the other immediately above it upon the end of the main tube. But this construction is objectionable, from the fact that the sides of the mixing-chamber thus formed are open to the external air, and permit the escape of the vapor issuing from the main tube before it reaches the edge of the deflectors or base of the flame. A slight disturbance of the air also forces the vapor laterally from the mixing-chamber, and permits it to escape.

By my construction of the mixing-chamber the sides are closed, and the gas or vapor is, therefore, directed to the base of the flame, without the possibility of escaping laterally.

Having thus described my invention,

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

1. The supplemental wick-tube, adapted to be applied to and removed from the main tube A, by means of the nipple E, substantially as described, for the purpose specified.

2. In combination with the supplemental wick-tube, the nipple E, substantially as described, for the purpose specified.

3. In combination with the main tube of a vapor-burner, the supplemental wick-tube and the nipple, substantially as described, for the purpose specified.

4. The combination of the lateral mixing-chamber with the deflector and nipple, or deflector and main tube, when the deflector is constructed substantially as described, for the purpose specified.

HENRY WELLINGTON.

Witnesses:

G. H. FROST,

E. A. ELLSWORTH.