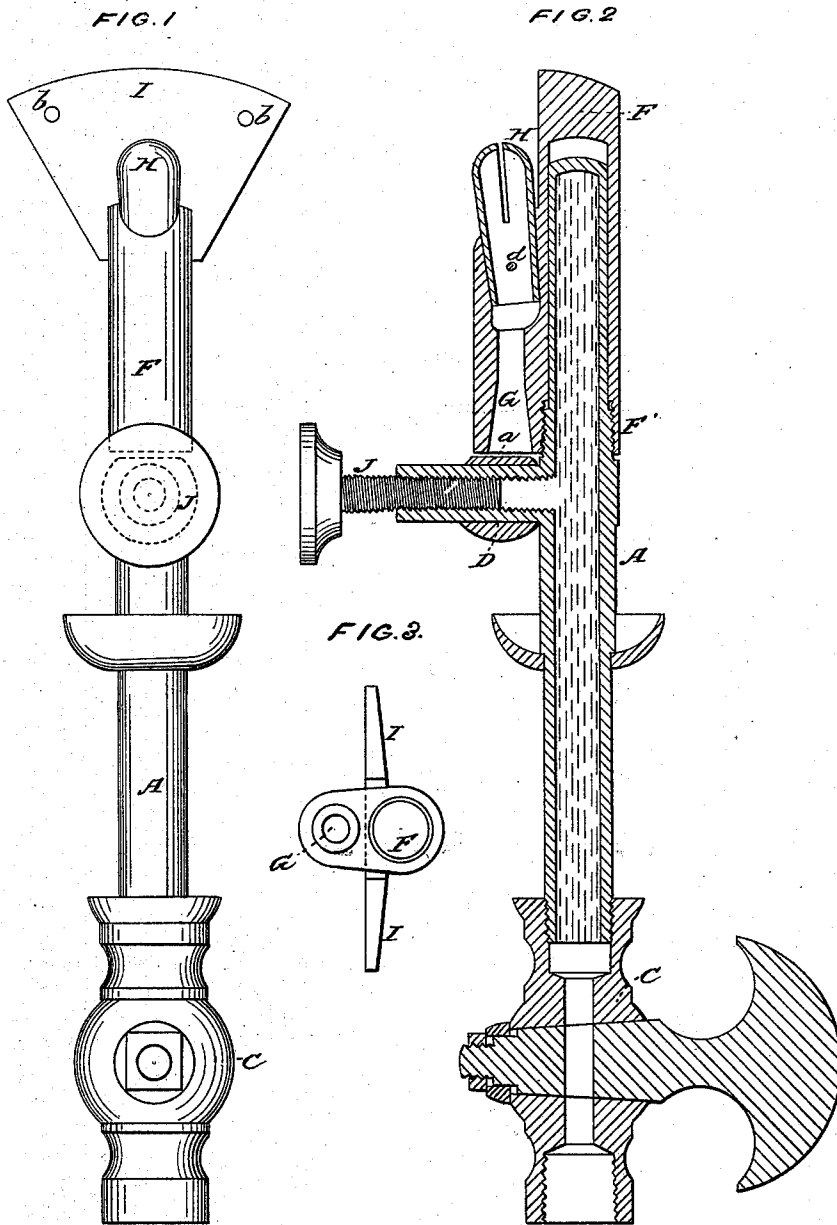


H. WELLINGTON.

Vapor Burner.

No. 100,572.

Patented March 8, 1870.



WITNESSES:

Wm. B. Glan  
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INVENTOR:

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# United States Patent Office.

HENRY WELLINGTON, OF CHICAGO, ILLINOIS, ASSIGNOR TO HIMSELF  
AND TRUMAN P. DOANE, OF SAME PLACE.

Letters Patent No. 100,572, dated March 8, 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 Chicago, in the county of Cook, and State of Illinois, have invented a new and improved Single-Light Vapor-Burner and Heater; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawings forming part of this specification, in which—

Figure 1 is a front elevation of my improved vapor-burner and heater;

Figure 2 is a vertical longitudinal section of the same; and

Figure 3, an inverted plan view of the mixing-chamber detached from the heater.

Similar letters of reference indicate corresponding parts in the several figures of the drawings.

My invention has for its object to improve the construction of vapor-burners and heaters, and to this end it consists—

First, in the combination of the adjustable heater with the generator and lateral tube forming the gas-chamber for the purpose of regulating the supply of air to the mixing-chamber.

Second, in the construction of the heater and the combination of parts as will be hereinafter more fully described.

In the accompanying drawings—

A is the gas-generator composed of a vertical tube having its upper end closed, and fitted at its lower end to a pipe-coupling, C, provided with a way-cock, as shown.

D is a lateral tube formed upon the generator, through the upper side of which the gas generated in the tube A escapes to the burner, as will be hereinafter explained.

F is the heater, adapted to fit over the upper end of the generating-tube to which it is attached by a screw connection, as shown at F'.

Upon the front side of this heater is formed an offset containing the mixing-chamber G, and carrying the burner-tip H, whose upper end is somewhat below the top of the heater F, as shown.

I is a perforated shield formed upon the heater, extending above the burner and upon two opposite sides of the same, as clearly shown in fig. 1.

The generator is packed with asbestos, through which the gasoline percolates, and which serves to prevent the latter from flowing too rapidly into the horizontal gas-chamber formed by the lateral tube D, which chamber is unpacked.

The operation is as follows:

The cock in the coupling C being opened, the

gasoline from the reservoir flows into the generator and percolates through the asbestos therein contained.

In order to start the burner, it is necessary to heat the lateral tube by applying thereto for a short time, in any suitable manner, the flame of a lamp or other heater, in order to vaporize the gasoline.

The gas thus formed in the lateral chamber escapes therefrom through the small orifice *a*, and thence to the mixing-chamber G, where it is mixed with atmospheric air admitted at the base of said chamber between the same and the upper side of the lateral tube.

This side of the tube is flattened, or provided with a flat plate corresponding in size with the diameter of the mixing-chamber at its base, so that by screwing the heater up or down upon the generator, the distance between the mixing-chamber and lateral tube is adjusted to admit a greater or lesser quantity of air at the base of the mixing-chamber, according to the richness of the gas.

After passing through the mixing-chamber, the gas escapes from the burner in the usual manner, and, owing to the proximity of the flame to the shield I, the latter becomes heated and communicates its heat through the heater F to the generator, for the purpose of vaporizing the gasoline within the latter.

It will be observed that the upper end of the generator extends upward within the heater above the base of the flame issuing from the burner, and that, therefore, all the heat necessary for vaporization is readily communicated to the generator.

*b b* are perforations made in the shield upon each side of the burner for the purpose of supplying an additional quantity of oxygen to the burner at the point of combustion, and to counteract the attraction of the flame to the shield.

J is an adjusting-screw placed in the end of the tube D to regulate the flow of gas from the horizontal gas-chamber. This, however, is not absolutely required.

In order to retard the flow of gas through the burner, to prevent its blowing the flame away from the tip, I place a horizontal wire or bar, *d*, through the center of the burner, as shown, or through the mixing-chamber, by which the current of gas is broken, and deflected to each side of the burner before escaping.

The same effect is produced by making the base of the mixing-chamber conical, and turning the same slightly to one side above the horizontal tube D, when the jet of gas issuing from the latter will impinge against the inner surface of the mixing-chamber and its force become broken before entering the burner;

or the orifice *a* in the lateral tube may be drilled in an inclined direction to direct the jet of gas against the side of the mixing-chamber.

Having thus described my invention,

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

1. The adjustable heater F, carrying the mixing-chamber G and the burner, in combination with the generator A and lateral tube D, substantially as described for the purpose specified.
2. In combination with the generator A, the lateral

tube D having the flattened upper surface around the orifice *a*, substantially as described for the purpose specified.

3. The heater F, constructed as described with the perforated shield I, and the offset containing the mixing-chamber, substantially as described for the purpose specified.

HENRY WELLINGTON.

Witnesses:

D. I. POWERS,  
GEO. SPAULDING.