W. C. NORTH.

VAPOR-BURNER.

No. 186,213. Patented Jan. 16, 1877.

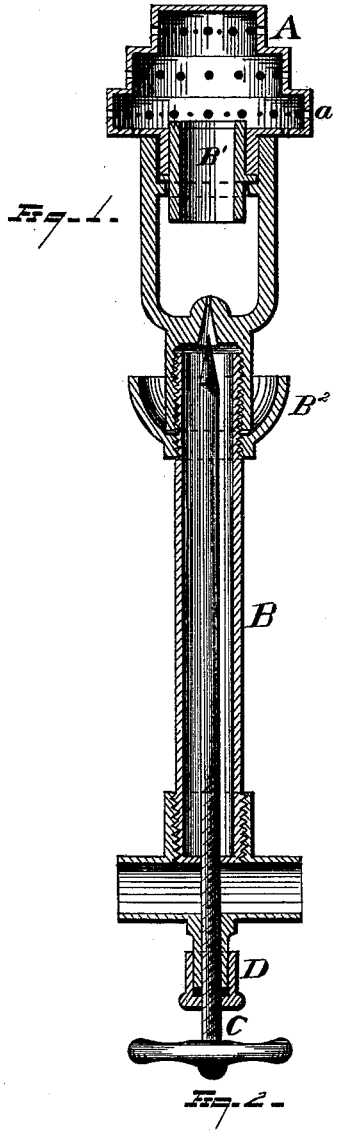
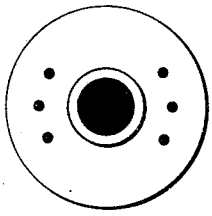


Fig. 1.

Fig. 2.



WITNESSES

Edw. S. Nottingham.

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UNITED STATES PATENT OFFICE.

WILLIAM C. NORTH, OF CLEVELAND, OHIO, ASSIGNOR TO JOSHUA E. HALL AND ANNA M. NORTH, OF SAME PLACE.

IMPROVEMENT IN VAPOR-BURNERS.

Specification forming part of Letters Patent No. **186,213**, dated January 16, 1877; application filed November 20, 1876.

To all whom it may concern:

Be it known that I, WILLIAM C. NORTH, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Vapor-Burner; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in vapor-burners.

In the drawing, Figure 1 shows a view, in longitudinal section, of a burner according to my invention; Fig. 2, a bottom view of the burner proper.

My invention consists in the following parts and combinations, as hereinafter specified and claimed, wherein—

A is the crown-piece or burner proper, constructed, as shown in the drawing, of a series of steps, *a*, provided with lateral perforations for the exit of the vapor to be consumed, and from which the flames are emitted.

It will be observed that the inner contour of the burner A is also formed in steps corresponding to those upon the outside; and herein consists an important feature of this invention, for, by this provision, the current of vapor is distributed and broken up in such a manner as that a uniform and equal exit force is given to the escaping vapor. By this means not only a steady and uniform flame is attained, but one which burns silently and without the "blow" common in a large class of vapor-burners.

The thimble B^1 of the stem B is made to project a short distance above the base-plate of the burner A. This construction also assists in accomplishing a uniform and quiet combustion.

In the base-plate *a* of the burner A is provided a circle of perforations surrounding the thimble B^1. These I term superheaters, their office being to heat the parts adjacent beneath, and thus accomplish the vaporization of the liquid to be consumed.

The thimble B^1, the primary heating-cup B^2, the stem B, with its pin-valve C and its attachments, are not materially different in my device from those parts as heretofore ordinarily constructed.

Heretofore trouble has been experienced in the escape of the burning-fluid at the bottom of the rod of the pin-valve C, and one of the principal features of my invention resides in my method of obviating this difficulty, which consists in the packing-cup D, preferably placed at the base of the stem B. This packing-cup I fill with soap, glue, or some equivalent plastic material which will not be acted upon by the burning-fluid. This packing affords a complete stop to the escape of the burning-fluid.

I do not confine myself to any particular construction of the packing-cup D, nor do I confine myself to the employment of soap or glue, as any equivalent of those substances may be employed.

What I claim is—

1. The combination with the T-coupling, having a screw-threaded valve-stem guide attached thereto, of the screw-threaded valve-stem, and packing-cup or gland D, the latter filled with soap or glue, substantially as and for the purpose set forth.

2. The combination, with the burner A constructed with a depending collar, of the thimble B^1, formed with an annular flange, whereby it is adapted to be supported and firmly secured beneath the burner, substantially as and for the purpose specified.

3. In a vapor-burner, provided with means for injecting a current of gas into a receptacle wherein the gas is commingled with oxygen, the burner A, formed of two or more perforated cylinders, decreasing in size toward the end of the burner, the lower cylinder provided with perforations in its base portion, to allow air to be drawn in and mixed with the gas as it is broken up by the angular ledges formed by the inner surface of the burner, substantially as and for the purpose specified.

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

WILLIAM C. NORTH.

Witnesses:

FRANCIS TOUMEY,

EDWARD WALSH.