A. H. WATKINS.

VAPOR-BURNER.

No. 188,322. Patented March 13, 1877.

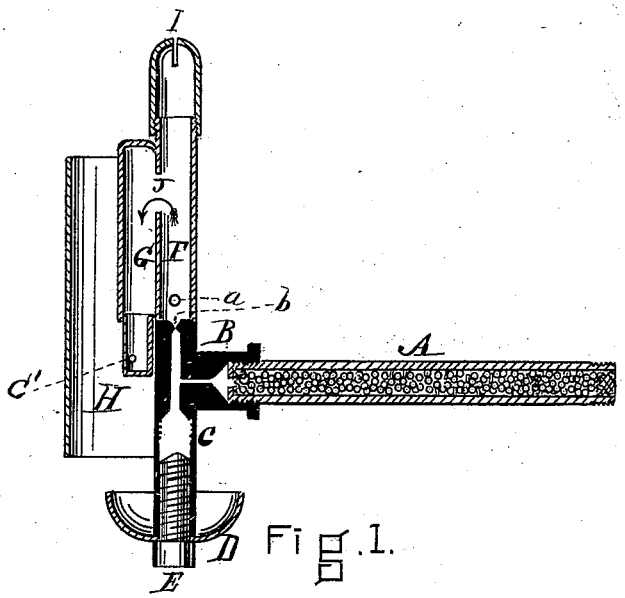



Fig. 1.


Fig. 4.

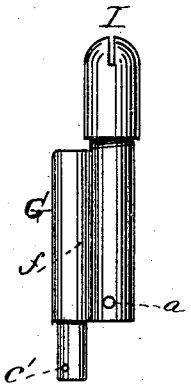
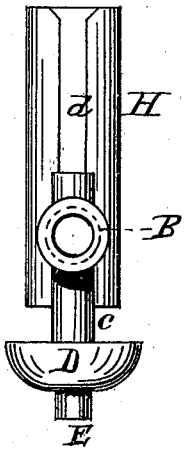



Fig. 2.

Fig. 3.




WITNESSES B. W. Williams, John C. Fleming.

Albert H. Watkins INVENTOR

By his Attys.

Henry W. Williams & Co.

# UNITED STATES PATENT OFFICE.

ALBERT H. WATKINS, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN VAPOR-BURNERS.

Specification forming part of Letters Patent No. **188,322**, dated March 13, 1877; application filed February 12, 1877.

*To all whom it may concern:*

Be it known that I, ALBERT H. WATKINS, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Vapor-Burners, which improvement is fully set forth in the following specification and accompanying drawing, in which—

Figure 1 is a sectional view of a vapor-burner embodying my improvement. Fig. 2 is a side elevation of the tube forming the gas chamber and the tube attached thereto. Fig. 3 is an elevation with the tubes shown in Fig. 2 and the feed-tube removed. Fig. 4 is a sectional view of the feed-tube and the packing therein.

Similar letters of reference indicate corresponding parts.

This invention relates to burners in which hydrocarbon fluids are employed and vaporized to produce gas, and more particularly to burners provided with a shield in which jets are used from a tube or conductor to heat the burner.

It consists in the arrangement and combination of the several parts of which the burner is composed, and by means of which it is rendered more convenient and more efficient in operation, and also in a new and indestructible packing for use in vapor-burners, as below in detail set forth.

In the drawings, A is the naphtha-feed tube, packed as hereinafter described. B is a tube leading from the feed-tube A to the burner-tube C, and forming, with said tube C, the generating or vaporizing chamber. E is the plug or regulating-screw. F is the gas-chamber, to which is attached the tube G, with which it communicates by means of the aperture J. I is the burner-tip, and H the shield. *a* represents the oxygen-holes, *b* the needle-hole, and *c'* the jet-holes.

Of course the shield H and the tubes G and F are not new in vapor-burners; but the shield H, when brazed to the generator C, and having the liquid enter the burner horizontally through the tube B, on a line, or nearly so, with the heating-jets *c'*, is a very important feature in the operation of the burner, and a marked improvement in its construction.

The gas-chamber F and tube G, being separate from the burner-tube C, and having a groove, *f*, may be easily attached and detached by sliding it in and out of the opening *d* in the shield H.

The metallic packing used in the feed-tube A consists of brass piercings, which are punched from sheet-brass. Each particle in this packing is round, or nearly so, has no sharp corners or projections, and is practically as indestructible by the action of the heat and the liquid as the burner itself.

Of course I am aware that metallic packings in other forms have been used.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The herein-described vapor-burner, consisting of the gas-chamber F, provided with the tube G, in combination with the shield H, brazed to the generator C, and having the tube B enter at right angles thereto without passing through the said shield, all constructed and arranged substantially as and for the purpose specified.

2. In a vapor-burner, a packing of brass piercings, as above described, and for the purpose herein set forth.

ALBERT H. WATKINS.

Witnesses:
HENRY W. WILLIAMS,
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