

H. A. WHITNEY.

GAS-BURNER.

No. 191,498.

Patented May 29, 1877.

Fig. 1.

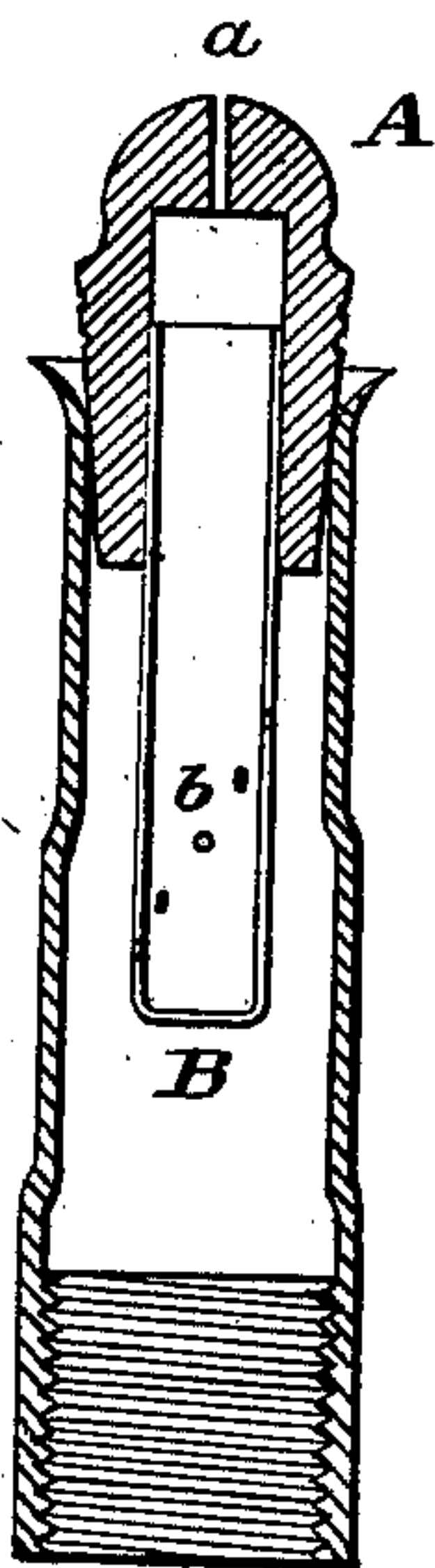


Fig. 2.

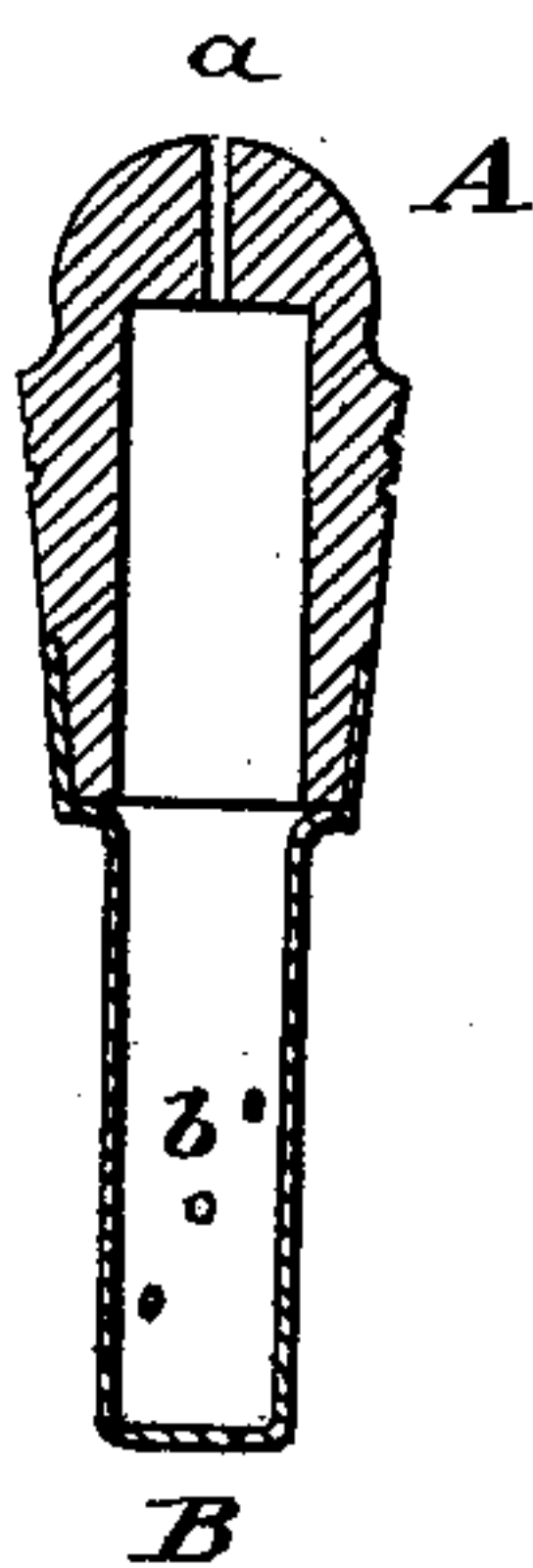
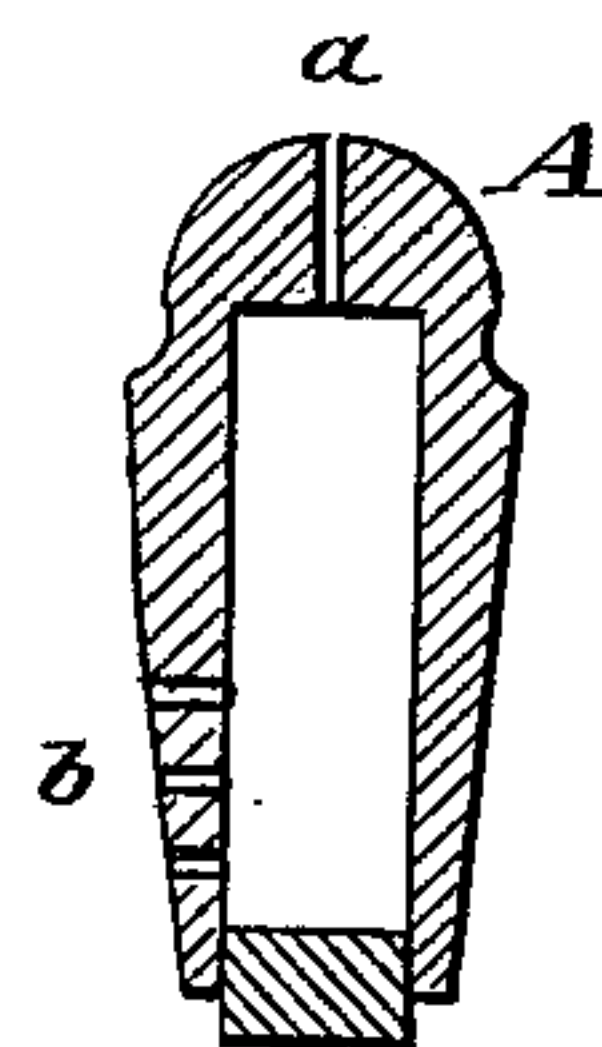


Fig. 3.



Attest

Walter Knight  
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Inventor.

Henry A. Whitney  
By Knight Bros. Atty.

# UNITED STATES PATENT OFFICE.

HENRY A. WHITNEY, OF CINCINNATI, OHIO.

## IMPROVEMENT IN GAS-BURNERS.

Specification forming part of Letters Patent No. 191,498, dated May 29, 1877; application filed April 4, 1877.

*To all whom it may concern:*

Be it known that I, HENRY A. WHITNEY, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Improvement in Tips for Gas-Burners, of which the following is a specification:

My invention relates chiefly to a means of controlling and preheating the gas on its passage to the ventage, for the purpose of securing a perfect, uniform, and economical combustion.

In the accompanying drawing, Figure 1 is an axial section of a gas-burner provided with my improvements. Figs. 2 and 3 are axial sections of tips representing modifications of my invention.

The tip A may be of lava, steatite, or other approved material, and has a downward prolongation within the pillar, which may be simply an extension of the tip's substance, as in Fig. 3, or may be a tubular attachment to the tip, as in Figs. 1 and 2. This prolongation is closed at its lower end, and pierced on its vertical portion by a number of orifices, *b*, whose aggregate area is less than that of the slit or ventage *a*, and of which the lowest is some distance above the said closed bottom.

Instead, however, of entering the tip, the upper end of the check-tube may be enlarged to embrace it, as in Fig. 2; or the tip itself may be extended downward, suitably pierced, as in Fig. 3, and closed at bottom by a plug of the same material.

The appendage or prolongation B becomes heated by reason of its close incorporation with the tip proper, and acts to warm the gas before it reaches the ventage, so as to secure perfect combustion. It also, in consequence of the relative smallness of its passage in the aggregate, operates to check and modulate the flow of gas, and to thus effectually prevent wastage and blowing.

This arrangement is practically much superior to such as have the regulating-orifice in the extreme bottom of the tube, which latter soon becomes clogged and useless from the settling of the deposits from the gas, thereby

interfering with the uniform supply of gas, and finally rendering the burner wholly inoperative.

On the contrary, my regulating-orifices, being in the tube's perpendicular wall, and a considerable distance above the tube-bottom, remain out of danger of such interference during the ordinary life-time of a burner. Moreover, by the use of a number of very minute orifices, the gas is separated into a number of finely-divided currents, in which condition it is more readily and uniformly rarefied by the heat of the tube, which secures a much more perfect combustion.

The above arrangement is also much more effective than those whose check-diaphragms, not being either an integral part of or in direct contact with the tip, fail to receive therefrom the amount of heat necessary to effect the purpose, and are further objectionable because requiring a modification of the pillar, while my tip is complete in itself and applicable to any common pillar.

I do not broadly claim a gas-tip having a tubular downward projection, partially closed at bottom, to constitute a check; nor do I claim a gas-check which is not a direct prolongation from or of the tip proper.

I claim as new and of my invention—

1. A gas regulating or controlling check or strainer, B, attached to or prolonged from the lower end of the tip A, closed at bottom, and having, some distance above the bottom, a series of minute perforations, *b*, whose combined area is less than that of the outlet, substantially as and for the purposes set forth.

2. The gas-tip A, Fig. 3, whose lower portion, within the pillar, is closed at bottom, and communicates with the gas-supply through minute orifices, *b*, in its vertical wall, substantially as set forth.

In testimony of which invention I hereunto set my hand.

HENRY A. WHITNEY.

Witnesses:

GEO. H. KNIGHT,  
HARRY E. KNIGHT.