

Hiram Whitney's

Gas-Flame Expander.

No. 120,139.

Patented Oct. 17, 1871.

Fig. 1.

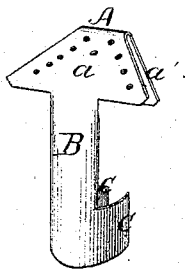


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

HIRAM WHITNEY, OF WATERTOWN, MASSACHUSETTS.

IMPROVEMENT IN GAS-FLAME EXPANDERS.

Specification forming part of Letters Patent No. 120,139, dated October 17, 1871; antedated October 5, 1871.

To all whom it may concern:

Be it known that I, HIRAM WHITNEY, of Watertown, in the county of Middlesex and State of Massachusetts, have invented certain Improvements in Gas-Flame Expanders, of which the following is a specification:

Figure 1 is a perspective view of my invention, and Fig. 2 a side elevation.

The object of this invention is to provide means for expanding the flame of an ordinary gas-burner, and increasing the brilliancy of the same; and it consists, mainly, of a double inclined plate projecting over the burner, the outer portion of said plate being perforated. The details of construction and method of operation will be more fully described hereinafter.

In the drawing, A represents a plate, having the form of two truncated triangles, connected at their narrowest edges and bent so that its two parts *a a'* are nearly parallel. The portion *a* of plate A is provided with numerous perforations, as shown in Fig. 1. B represents a shank which forms a part of plate A, and is provided with curved lugs or flanges C C, by means of which the instrument is attached to a burner. The plate A projects inward from shank B, as shown in Fig. 2.

The device is placed on an ordinary burner, the top of the latter coming in contact with the lower edge of the part *a'* of plate A, and is secured by means of the lugs or flanges C C, it being so placed that the lower edge of part *a'* of plate A is parallel with the widest portion of the flame, which strikes said portion *a'* and is slight-

ly deflected thereby, the flame passing by the diagonal edges of the plate and drawing the air from the space between the parts *a a'* creating a vacuum therein, which causes the air to rush through the perforations of part *a* and pass in outward currents through said space, which currents, acting on the flame, expand the same laterally, at the same time producing a clear and steady flame, with a brilliancy exceeding in a considerable degree the flame of an ordinary burner.

I am aware that an expander is in use in which a single perforated plate is used against which the flame impinges, the same being the invention of one Miller, patented September 10, 1861; but this device possesses no arrangement for forming laterally-expanding currents of air; it cannot produce so large a flame nor one of so great brilliancy as mine. My invention can be made very cheaply, as it can be struck out at one blow from a flat sheet of metal by suitable dies, and bent into the required form.

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

The double plate A, consisting of the perforated part *a* and solid part *a'*, constructed, arranged, and operating substantially as described.

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

HIRAM WHITNEY.

Witnesses:

CARROLL D. WRIGHT,
CHARLES F. BROWN.

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