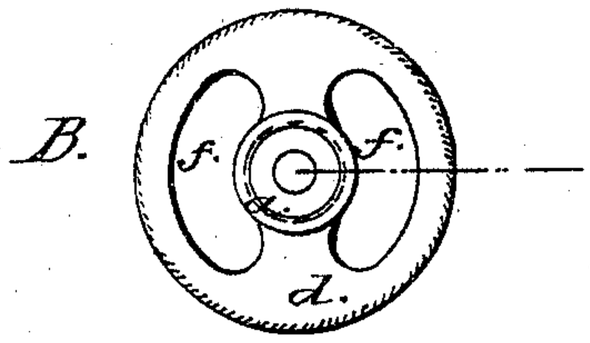
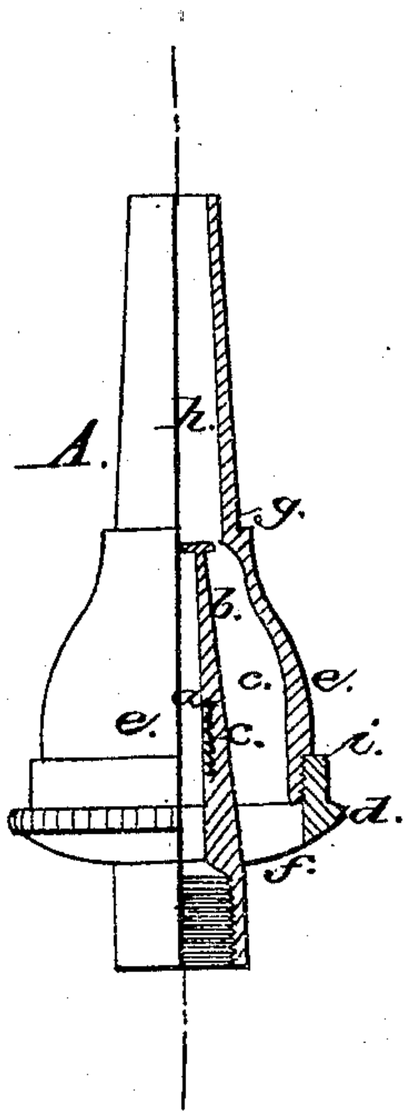
B. ALLEN.

Gas Burner.

No. 94,538. Patented Sept. 7, 1869.





Witnesses:

L. B. Kidder
M. W. Rottinghame

Inventor:
Boyd Allen
Crosby, Gaston & Gould
Attorney.

United States Patent Office.

BOYD ALLEN, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND S. C. PRATT, OF SAME PLACE.

Letters Patent No. 94,538, *dated September* 7, 1869.

IMPROVEMENT IN GAS-HEATERS.

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, BOYD ALLEN, of England, residing at Boston, in the county of Suffolk, and State of Massachusetts, have invented an Improved Gas-Heater Burner; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practise it.

My invention relates to the construction of that class of gas-burners used for burning a mixture of common gas with air, for producing heat, as in gas-stoves and other gas-heating devices.

My invention consists in combining with a common illuminator gas-burner, a tube or shield, which, surrounding such burner has, at its lower end, or below the burner-orifice, an enlarged air-receiving chamber, and at its upper end or above the burner-orifice, a contracted air and gas-tube or chimney, at the top of which the combined air and gas are burned for producing heat.

The drawing represents a gas-heater tube or burner, embodying my improvement.

A shows the burner, partly in section and partly in elevation.

B is a bottom view of it.

a denotes an ordinary gas-burner, having the tip or jet-tube *b* at its upper end, and a screw-thread, *c*, at its lower end, the latter being for attachment of the burner to a gas-pipe or cock.

Near the lower end of the tube *a* is a ring or flange, *d*, upon which is supported an air-chamber tube, *e*, as seen at A.

At bottom, this chamber is made much larger than the gas-tube, and opens through the ring *d*, as seen at *f*, so as to permit the freest entrance of air into the chamber from below.

As the chamber extends toward the top of the gas-tip, it contracts, leaving around the top of the tip a narrow air-passage, *g*, between the air-chamber *e*, and the air and gas-chamber *h* above it.

This vertical chamber or chimney *h* is but slightly, if at all, larger than the jet-tube, and is of considerable height, as seen at A.

Now, while the size of the air-chamber *e* insures the presence of a sufficient supply of air for commingling with the gas issuing from the jet-orifice, the vertical disposition of the chimney *h*, and the position of the induction air-openings *f* in the bottom, and not upon the sides of the burner, together with the length and contracted size of the chimney, insure a vertical draught, so that when the commingled air and gas are inflamed at the top of the chimney *h*, they burn with a blue intense heat-giving flame, which never drops below the mouth of the tube, but always burns with uniform flame above the mouth, so long as gas is supplied from the jet-tube.

The air-chamber tube *e* is shown as applied to the ring *d* by means of a screw-joint, *i*, but it may be hinged to the ring, or simply slipped upon it by a ground joint.

By making the air-tube thus removable, the jet-tube may be used as a common burner for burning the gas for illumination, being changed into a heat-generator burner at any time, by simple attachment of the air-chamber tube.

I claim a gas-heater tube or burner, having the air-chamber *e*, chimney *h*, and orifices *f*, all arranged relatively to the jet-tube, substantially as shown and described.

Signed this 7th day of July, A. D. 1869.

BOYD ALLEN.

Witnesses:

J. B. CROSBY,

FRANCIS GOULD.