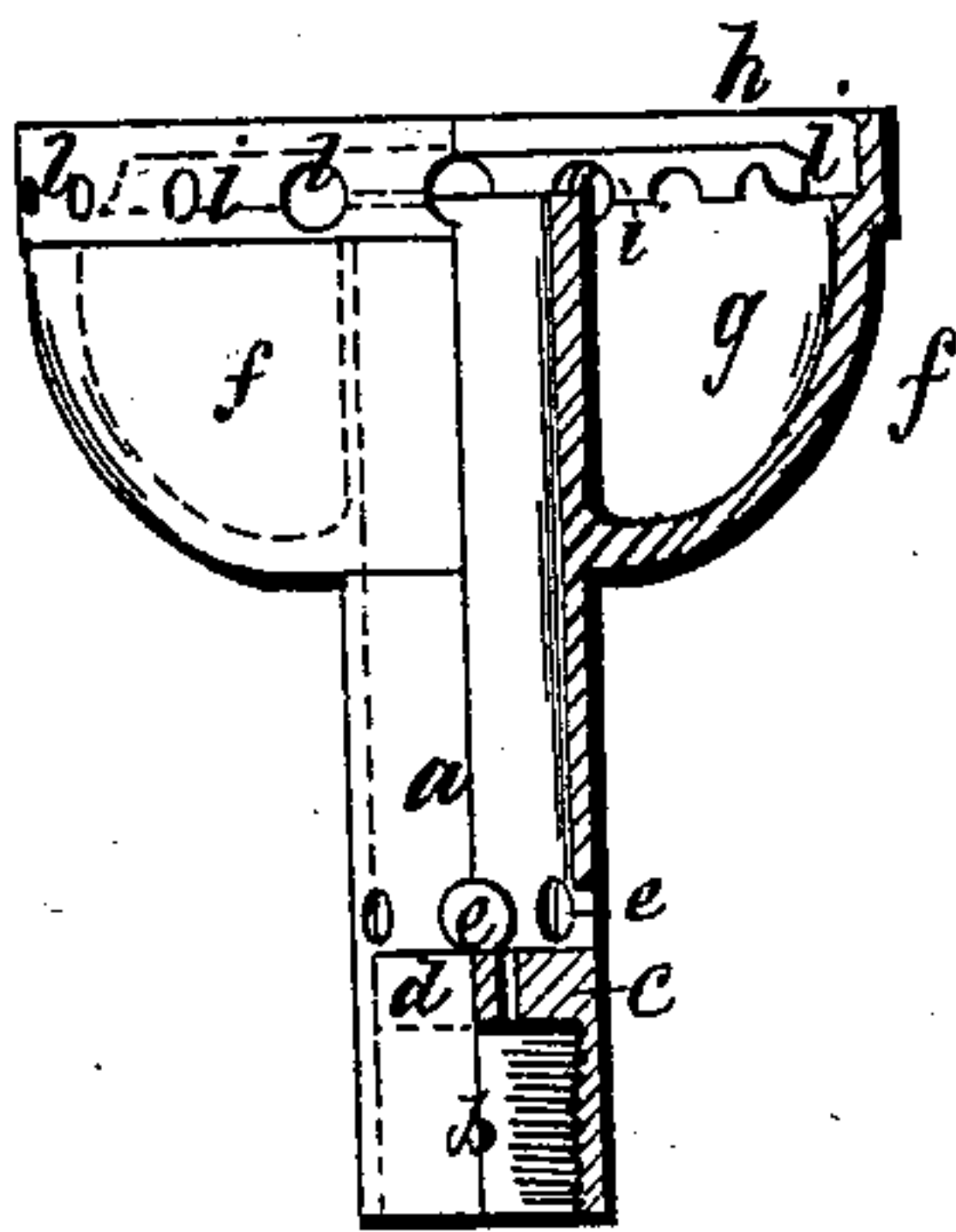


W. JONES.  
Gas Burner for Heater.

No. 85,671.

Patented Jan. 5, 1869.



Witnesses.  
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# United States Patent Office.

WILLIAM JONES, OF CHELSEA, MASSACHUSETTS.

Letters Patent No. 85,671, dated January 5, 1869.

## AERO-GAS BURNER.

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, WILLIAM JONES, of Chelsea, in the county of Suffolk, and State of Massachusetts, have invented an Improved Aero-Gas 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.

The invention relates to details of construction of that class of gas-burners in which provision is made for introduction into each burner, below the jet-orifice, of a current or currents of air, which, commingling with the gas, form, when ignited, a blue and intense heat-giving flame, in contradistinction to the yellow flame made by ignited gas alone, which latter flame has a greater illuminating but less heat-giving power.

The object of my present improvements is to simplify and cheapen the construction of such burners, and to increase their efficiency in consuming, to a maximum heat-giving advantage, commingled gas and air.

My improvement consists, first, in making the burner with a surmounting flat-roofed gas-chamber or dome, having eduction-orifices just under the roof, and having the air and gas-tube extending up nearly to the under side of the roof, the mouth of the tube delivering the gas directly against the heated plate forming the roof, said gas expanding and filling the chamber, and being driven out through the orifices, so that being then ignited, the burning jets are driven, as from a blow-pipe, directly against the bottom surface of any vessel placed over the burner.

The invention also consists in casting the burner-tube and the dome integral, or solid in one casting. Also, in making the dome flat-topped, (the eduction-orifices being on the sides,) so that the vessel to be heated may rest or be placed directly on top of the burner.

The drawing represents a view of my improved burner, half in elevation and half in central section.

*a* denotes the burner-tube, having at its lower end the screw-thread *b*, for attaching the burner to the gas-pipe.

Just above this screw-thread is a horizontal parti-

tion or diaphragm, *c*, through which are drilled minute orifices, *d*, for passage of the gas.

Above this diaphragm are the induction-holes *e*, which admit air to commingle with the gas.

*f* denotes an inverted dome, the interior of which constitutes a chamber, *g*, for expansion of the commingled air and gas flowing from the tube *a*, this chamber being covered by a flat roof or top plate, *h*.

Immediately below this plate, or at the top of the chamber, is the series of eduction or jet-holes, *i*, at the mouth or outer end of each of which the issuing jet of air and gas is burned.

The tube *a* extends up through the chamber *g*, terminating just below the plate *h*, as seen in the drawing, the gas issuing from the tube impinging against the heated surface of the plate *h*, and expanding and filling the chamber *g*, issuing through the jet-holes with pressure created by such expansion, so that the flame of the ignited jets impinges with force against the bottom of a vessel placed directly over the burner, and quickly heats the contents of the vessel.

To bring such a vessel into immediate proximity with such inflamed jets, I make the top of the plate *h* flat, as seen in the drawing, so that a vessel may rest and be supported directly upon the burner.

To cheapen the construction of the burners, I cast the tube *a* and dome *f* in one piece, so as to obviate the fitting or screwing of one part upon the other, and I also cast the partition or diaphragm *c* in the tube.

I claim, in combination with the burner-tube *a* and the expanded gas-chamber *g*, (having flame-orifices at its sides and near its top,) the extension of the tube *a* up through the chamber, the tube opening at its top directly beneath the flat roof of the chamber, all substantially as described.

I also claim the combination of the dome *f* and tube *a* in one casting, substantially as described.

I also claim forming or casting the diaphragm *c* integral with the tube, substantially as shown and described.

Witnesses:

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