

K. A. A. STAAHLGREN.
INVERTED INCANDESCENT GAS BURNER.
APPLICATION FILED FEB. 17, 1910.

970,275.

Patented Sept. 13, 1910.

Fig. 1.

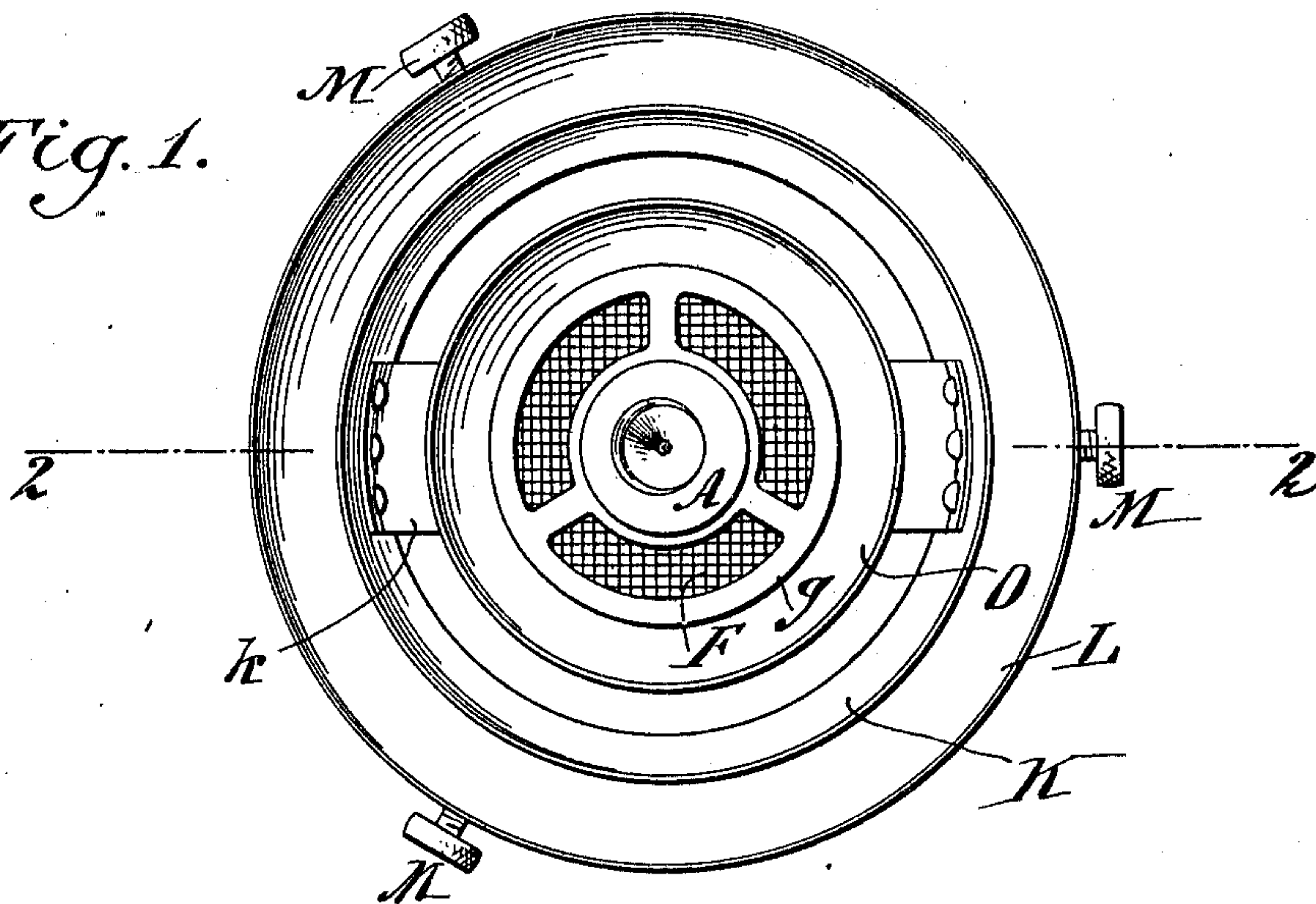
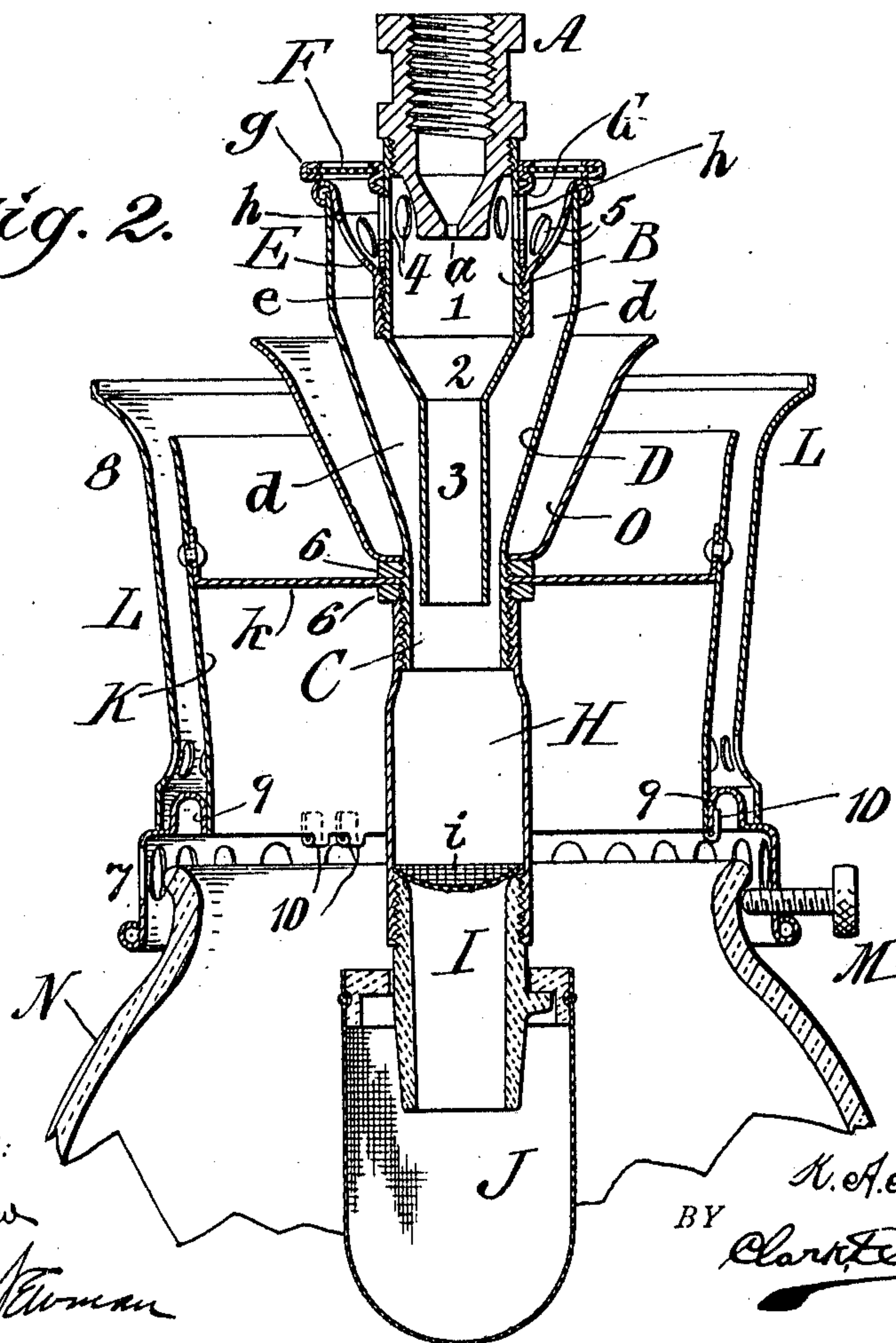


Fig. 2.



WITNESSES:

Wm. S. Dow
Israel C. Florman

INVENTOR.

K. A. A. Staahlgren

BY

Clark & Deemer
ATTORNEYS.

UNITED STATES PATENT OFFICE.

KARL A. A. STAAHLGREN, OF NEW YORK, N. Y.

INVERTED INCANDESCENT GAS-BURNER.

970,275.

Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed February 17, 1910. Serial No. 544,380.

To all whom it may concern:

Be it known that I, KARL A. A. STAAHLGREN, a citizen of the United States, and resident of New York city, county of New York, and State of New York, have invented certain new and useful Improvements in Inverted Incandescent Gas-Burners, of which the following is a specification, reference being had to the accompanying drawing, forming a part thereof, in which similar letters of reference indicate corresponding parts.

This invention relates to inverted incandescent gas burners, and has for its object the production of a burner of the "Bunsen" variety embodying a novel, durable and inexpensive structure which is effective in general operation and capable of producing and maintaining an excessively hot, extended and powerful flame adapted for maintaining a mantle of large area in highly incandescent condition, whereby a light of very high candle-power is produced by the expenditure of a minimum quantity of illuminating gas; further objects of the invention being to provide a device of the character named which is susceptible of being maintained, during operation, in cool condition at points adjacent to its gas and air-inlet ports, whereby back flashing is prevented, and which is noiseless, requires no chimney, induces perfect combustion and obviates carbonization of the illuminating agent.

The invention will be hereinafter fully described and specifically set forth in the annexed claims.

In the accompanying drawings forming part of this specification, Figure 1, is a plan view of my improved burner; and Fig. 2, is a vertical sectional elevation taken on the line 2—2 of Fig. 1.

In the practice of my invention, I employ an ordinary nozzle or gas-injector A, having the contracted outlet *a*; said injector also having a screw-threaded interior part for attachment to a gas-supply pipe. Depending from and threaded to the lower end of the nozzle A, is a mixing tube B, which embodies the cylindrical upper part 1, the inwardly tapered part 2 and the contracted cylindrical nozzle 3, which discharges into a tube C, forming an integral part of a funnel D, which surrounds the tube B, and is secured to the annular beaded edge of a cup E, having a cylindrical extension *e*, which is threaded to the part 1, of the tube B, thus

an annular air-space *d*, entirely surrounds the tube B, for the purpose of cooling said tube and for admitting an auxiliary supply of air to the burner tube, as will be hereinafter described. Air-inlet ports 4, lead through the part 1, of the tube B, and similar ports 5, lead through the cup E; these are respectively for supplying air currents to the tube B and the air-space *d*, surrounding the same. To exclude particles of dust the cup E, has a gauze cover F, which is secured to the perforated flange *g*, of a sleeve G, which surrounds the part 1 of the tube B; this sleeve is provided with openings *h*, which register with the air-inlet ports 4.

Threaded to the lower cylindrical part C, of the funnel D, is the burner-tube H, and to the lower inner end of said burner-tube is threaded the burner-tip I, which has its inlet covered by the gauze disk *i*, and is composed of lava or analogous material. The said burner carries an ordinary mantle J, secured in any suitable manner. Surrounding the burner-tube H, is an upwardly flared tube K, which is supported by means of a horizontal hanger *k*, secured between the two nuts 6, threaded to the lower cylindrical part C of the funnel D. The said tube K, is for discharging burned gases from the burner. Surrounding the tube K, is a casing L, which comprises the lower annular perforated part 7, and the upper annular perforated part 8. As a means for supporting the said casing L, the lower section 7, thereof is provided with an annular depending flange 9, which snugly fits around the lower part of the tube K, and engages tongues 10, formed integral with said tube K. The lower part of the casing L carries a series of screws M, for supporting a depending globe N.

As a means for deflecting the heated burned gases whereby the air surrounding the mixing tube B, may be maintained in cool condition, I provide an outwardly flared cup O; this said cup surrounds the funnel D, and rests upon one of the nuts 6, employed for securing the hanger *k*.

In the operation and use of the invention gas under ordinary obtainable pressure is injected through the nozzle A, into the mixing tube B, and thoroughly mixed with the air drawn through the ports 4, into said tube; and because of the elongated and contracted nozzle of the said tube the mixture of gas and air enters the burner-tube at highly in-

creased velocity which is further increased and maintained by reason of the superheated air and burned gases coming in direct contact with said burner tube. Thus the flame
5 is increased in velocity, length and volume and the mantle is maintained perfectly incandescent, and at the same time the upper part of the device owing to the air-space *d* and deflector *O*, is maintained in cool condition, thus entirely obviating back-flashing.
10 The auxiliary supply of air entering the burner-tube at a point adjacent to the outlet of the nozzle 3, of the mixing tube, together with the air supplied through the perforations of the lower part 7 of the casing *L*,
15 tends to induce perfect combustion and prevent oxidization.

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

20 1. An inverted incandescent gas lamp comprising a mixing-tube having gas and air inlets and a downwardly extended outlet part, and a burner-tube having a contracted
25 part surrounding but not contacting with said outlet part, thus providing an annular space around the said outlet part, said burner-tube having its upper end open to the atmosphere, and means connecting the

mixing tube to the burner-tube comprising 30 a perforated partition, the lower end of the burner-tube adapted for engagement with a burner tip, substantially as shown and described.

2. In an inverted gas burner, the combination 35 with a mixing tube having gas and air inlets and a downwardly extended outlet part, of a burner-tube comprising a contracted part surrounding but not contacting with said outlet part of the mixing-tube and 40 providing a contracted annular space around the same, said burner-tube having an expanded upper end part open to the atmosphere and an expanded lower end part, and means comprising a perforated cup-shaped 45 partition securing the burner-tube to the mixing-tube, the lower end of the burner-tube adapted for engagement with a burner tip, substantially as shown and described.

In testimony that, I claim the foregoing as 50 my invention, I have signed my name in presence of two witnesses, this 16th day of February 1910.

KARL A. A. STAAHLGREN.

Witnesses:

THE. S. DOW,
ISRAEL C. NEWMAN.