

Incandescent, Upright.

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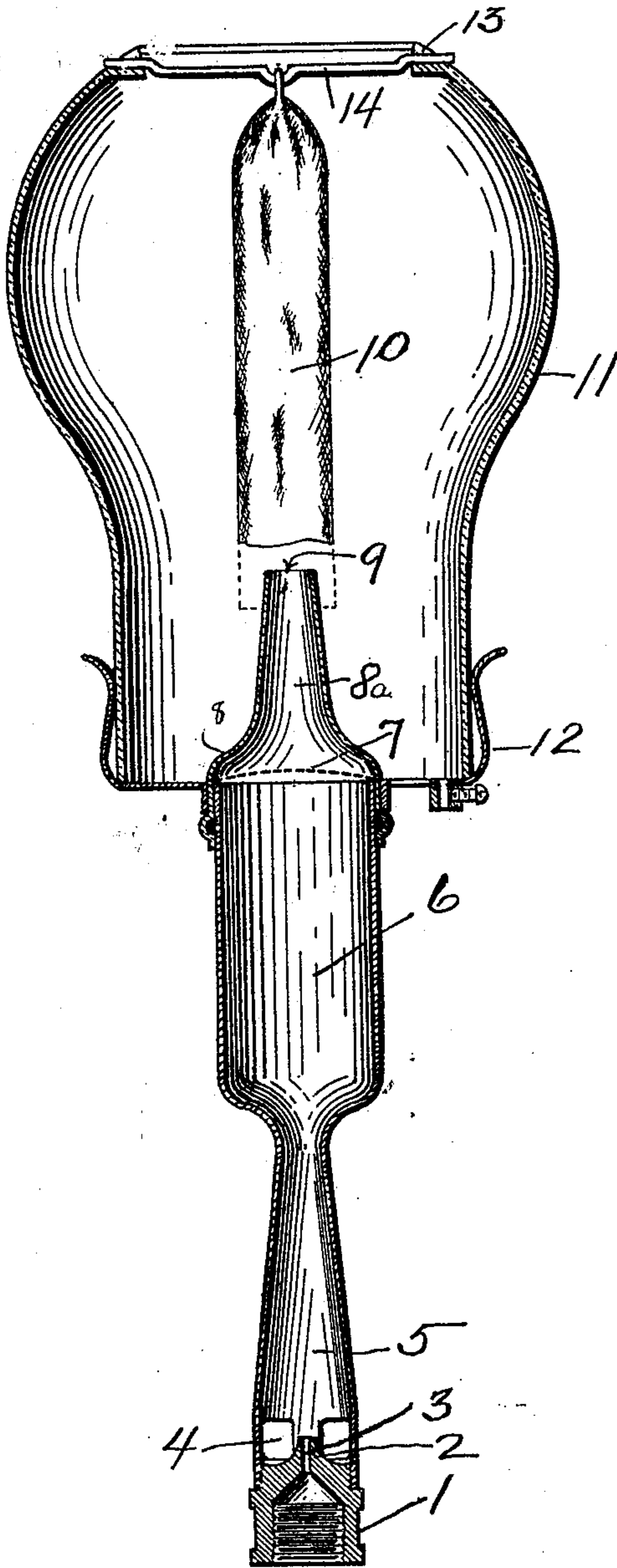
No. 697,461.

Patented Apr. 15, 1902.

H. ELDRIDGE.
GAS BURNER.

(Application filed Aug. 31, 1901.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

HILLIARY ELDRIDGE, OF MEMPHIS, TENNESSEE.

GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 697,461, dated April 15, 1902.

Application filed August 31, 1901. Serial No. 74,018. (No model.)

To all whom it may concern:

Be it known that I, HILLIARY ELDRIDGE, a citizen of the United States, residing at Memphis, Shelby county, State of Tennessee, have
 5 invented certain new and useful Improvements in Gas-Burners, of which the following is a specification.

My invention relates to certain new and useful improvements in gas-burners for use
 10 with Welsbach or other incandescent mantles, and is adapted for use especially with ordinary coal-gases, and more especially for the fuel grades of gases, which give a high amount of heat with a minimum of light.

15 The objects of my invention are to make a burner which will thoroughly mix the gas and air, and thereby secure the full benefit of the heat value of the gas, and which will concentrate the flame upon a mantle and heat it
 20 to incandescence.

With these objects in view my invention consists in the novel construction and arrangement of parts hereinafter more fully set forth in the drawing, specification, and
 25 claims.

The drawing shows a sectional elevation of my improved burner, taken on the center line.

Referring to the drawing, in which the parts are indicated by numerals of reference,
 30 1 is a thimble or sleeve for attaching the burner to a gas-pipe. This sleeve has a peak 2 at its upper end, which is pierced by a perforation 3 to permit the passage of the gas and which extending upward conveys the gas
 35 past the air-holes 4 in the conical air-inlet tube 5. This conical tube 5, which is fastened to and supported by the sleeve 1, contracts from the said sleeve to its point of attachment with an enlarged cylindrical mixing-chamber 6 and is concentrically located
 40 around the gas-inlet perforation 3.

7 is a gauze or wire netting. The burner is completed by a cap 8, which fits over the mixing-chamber 6 and which has a conical
 45 discharge-nozzle 8^a extending upward therefrom and converging toward its upper end 9, which is entirely open.

10 is a mantle surrounding the upper end of the nozzle 8^a and supported, if so desired,
 50 by any usual form of mantle-rod. I prefer, however, to make use of a specific form of support, consisting of a chimney 11, support-

ed by the chimney-gallery 12. This chimney has oppositely-disposed crimps 13 at its upper edge, in which crimps a mantle-rod 14
 55 rests. This rod 14 is preferably made entirely of some form of non-conducting heat-resisting material, but may, if so desired, be made of metal insulated at the ends where it rests on the glass chimney 11. It is made
 60 with shoulders, as shown, to prevent lateral movement.

In use gas rushes through the hole 2 in the cap 1 and into the conical air-inlet tube 5, drawing air with it through the air-holes 4.
 65 By reason of the contraction in the tube these are commingled, and the speed of movement is increased. They then rush into the enlarged mixing-chamber 6, where the sudden enlargement checks their speed and thor-
 70 oughly mixes them. From this chamber they pass into the conical-shaped nozzle 8^a and are discharged in a comparatively small stream and burn within the mantle 10. I am thus
 75 by the double use of the conical tubes (the air-inlet tube 5 and the nozzle 8^a) and the enlarged mixing-chamber 6 enabled to secure complete combustion of the gas, and that in a concentrated space just above the end of
 80 the nozzle 8^a. I can thus heat a mantle to incandescence and secure the entire heat equivalent of the gas in light with a very simple form of burner.

Having now fully described my invention, what I claim, and desire to secure by Letters
 85 Patent in the United States, is—

1. In a gas-burner, the combination with an incandescent mantle and a suitable support therefor, of a contracted gas-inlet, a conical-shaped air-inlet tube above said gas-inlet,
 90 perforations around the bottom of said air-inlet, an enlarged mixing-chamber fixed to the upper end of said air-inlet tube and an upwardly-converging conical nozzle for said mixing-chamber, substantially as shown and de-
 95 scribed.

2. In a gas-burner, the combination with an incandescent mantle and a suitable support therefor, of a contracted gas-inlet, a conical-shaped air-inlet tube concentrically located
 100 above said gas-inlet, perforations around the bottom of said air-inlet tube, an enlarged mixing-chamber fixed to the upper end of said air-inlet tube and an upwardly-converging

conical nozzle for said mixing-chamber, substantially as shown and described.

3. In a gas-burner, the combination with an incandescent mantle and a suitable support therefor, of a contracted gas-inlet, a conical-shaped air-inlet tube above said gas-inlet, perforations around the bottom of said air-inlet tube, an enlarged mixing-chamber fixed to the upper end of said air-inlet tube, a gauze screen over the upper end of said chamber, and an upwardly-converging conical nozzle for said mixing-chamber, substantially as shown and described.

4. In a gas-burner, the combination with an incandescent mantle and a suitable support therefor, of a contracted gas-inlet, a conical-shaped air-inlet tube concentrically located above said gas-inlet, perforations around the bottom of said air-inlet tube, an enlarged mixing-chamber fixed to the upper end of said air-inlet tube, a gauze screen over the upper end of said chamber, and an upwardly-converging conical nozzle for said mixing-chamber, substantially as shown and described.

5. In a gas-burner, the combination with an incandescent mantle and a suitable support therefor, of a contracted gas-inlet, an upwardly-converging conical-shaped air-inlet tube above said gas-inlet, perforations around the bottom of said air-inlet, an enlarged mixing-chamber fixed to the upper end of said air-inlet tube and an upwardly-converging conical nozzle for said mixing-chamber, substantially as shown and described.

6. In a gas-burner, the combination with an incandescent mantle and a suitable support therefor, of a contracted gas-inlet an upwardly-converging conical-shaped air-inlet tube concentrically located above said gas-inlet, perforations around the bottom of said air-inlet tube, an enlarged mixing-chamber fixed to the upper end of said air-inlet tube and an upwardly-converging conical nozzle for said mixing-chamber, substantially as shown and described.

7. In a gas-burner, the combination with an incandescent mantle and a suitable support

therefor, of a contracted gas-inlet an upwardly-converging conical-shaped air-inlet tube above said gas-inlet, perforations around the bottom of said air-inlet tube, an enlarged mixing-chamber fixed to the upper end of said air-inlet tube, a gauze screen over the upper end of said chamber, and an upwardly-converging conical nozzle for said mixing-chamber, substantially as shown and described.

8. In a gas-burner, the combination with an incandescent mantle and a suitable support therefor, of a contracted gas-inlet an upwardly-converging conical-shaped air-inlet tube concentrically located above said gas-inlet, perforations around the bottom of said air-inlet tube, an enlarged mixing-chamber fixed to the upper end of said air-inlet tube, a gauze screen over the upper end of said chamber and an upwardly-converging conical cap for said mixing-chamber, substantially as shown and described.

9. An improved Bunsen burner, for producing a self-burning mixture of air and gas, composed of an upwardly-converging hollow air-inlet cone into which the gas and air are admitted, a suddenly-enlarging mixing-chamber fastened to the top of said cone and an upwardly-converging conical nozzle, substantially as described.

10. An improved Bunsen burner, for producing a self-burning mixture of gas and air, composed of an upwardly-converging hollow air-inlet cone into which the air and gas are admitted a suddenly-enlarged mixing-chamber carried by said air-inlet cone to check the flow of gas and air and cause their thorough admixture, and an upwardly-converging conical nozzle, to concentrate the flame, substantially as shown and described.

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

HILLIARY ELDRIDGE.

Witnesses:

J. H. WEATHERFORD,
W. M. KYLE.