No. 720,618. PATENTED FEB. 17, 1903.

A. RECTOR.

INCANDESCENT BURNER.

APPLICATION FILED APR. 12, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 4.

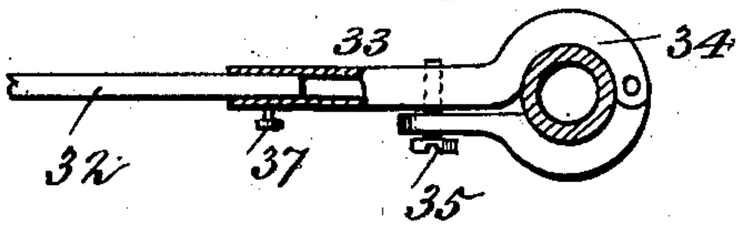
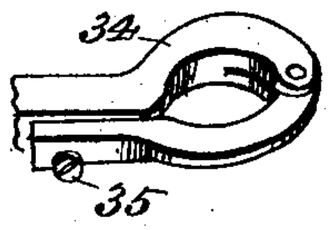


Fig. 5.



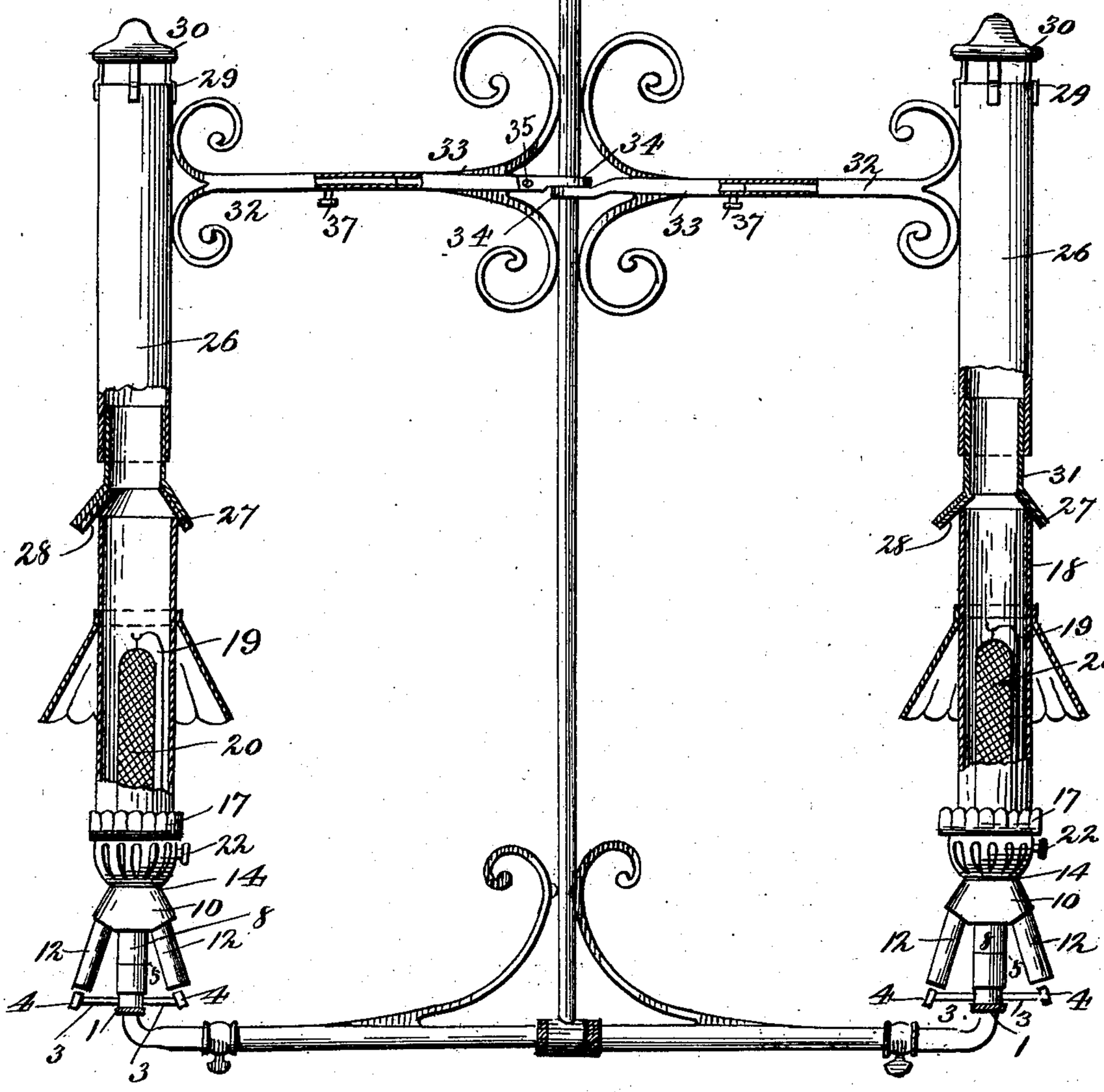


Fig. 1.

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NO MODEL. 2 SHEETS—SHEET 2.

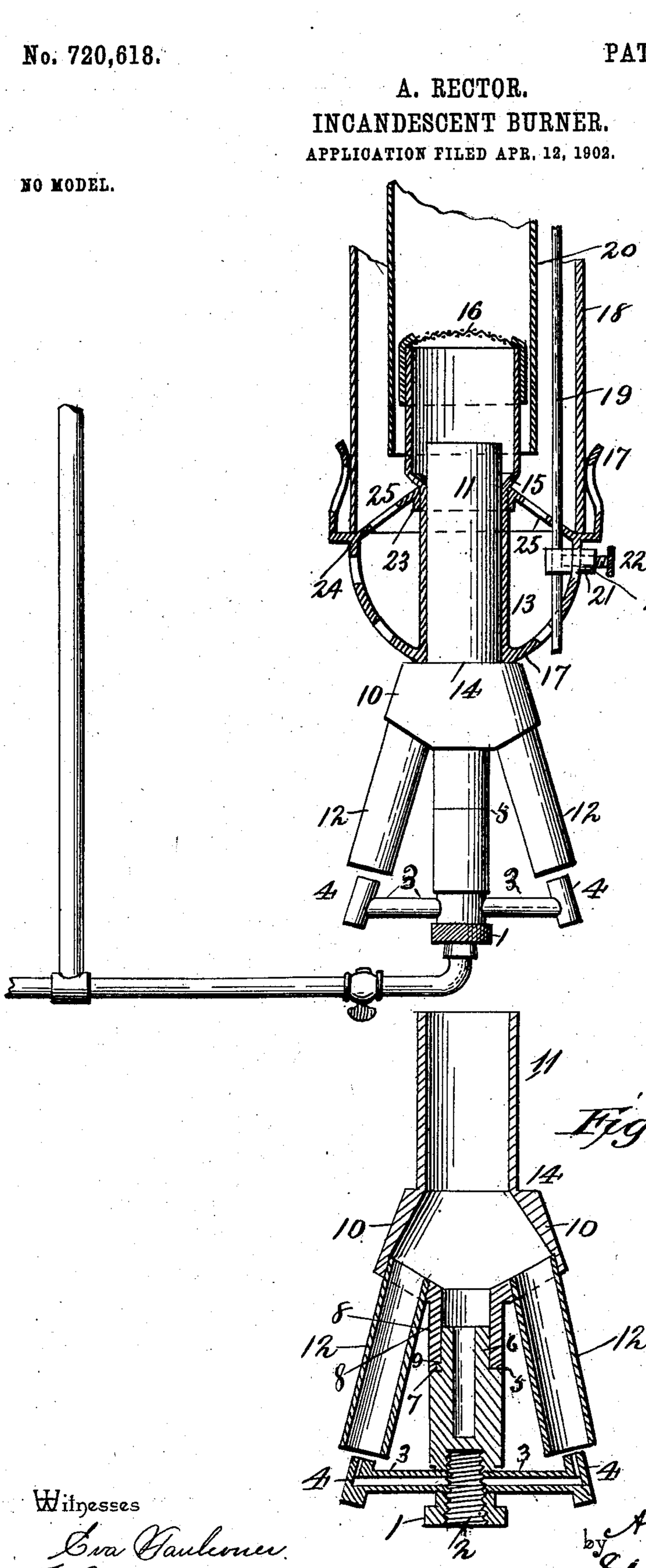

Fig. 2.

Fig. 3

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UNITED STATES PATENT OFFICE.

ALCORN RECTOR, OF NEW YORK, N. Y.

INCANDESCENT BURNER.

SPECIFICATION forming part of Letters Patent No. 720,618, dated February 17, 1903.

Application filed April 12, 1902. Serial No. 102,629. (No model.)

To all whom it may concern:

Be it known that I, ALCORN RECTOR, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Incandescent Burners; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention is a device for brightening the light of illuminating-gases and is briefly described as a device for bringing gas-mantles to a more brilliant incandescence than the devices of the present; and it chiefly consists in a new air-mixer which automatically mixes the gas and air in proper proportions, a cap and gauze, a gallery for holding a chimney, a mantle with means for holding the same in place, a draft-tube secured above the chimney and in connection therewith with means for holding the said tube in proper position, and a heat-arrester secured over the top and a little above the draft-tube.

In the accompanying drawings, Figure 1 represents a gas-fixture with one of my invention secured on each end thereof and to said fixture. Fig. 2 represents one arm of a gas-fixture with my air-mixer and burner attached thereto. Fig. 3 is a sectional view of my air-mixer. Fig. 4 is a face view of an arm by means of which the draft-tube is held in position above the chimney and in connection therewith. Fig. 5 represents the clutch end of said arm.

My invention is described as follows:

1 is a nut having an internal thread 2, which is screwed onto the gas-fixture. Said nut has branching from it two or more hollow arms 3, and at the outer end of each hollow arm turns upwardly and at an angle of about forty-five degrees inwardly a gas-tip 4. Said nut 1 extends above the said arms 3 a short distance and then is reduced, forming a shoulder 5 and a neck 6. Said neck is provided with a lug 7 near the shoulder 5. Fitting on said neck and extending upwardly is an extension-tube 8 of the air-mixer and is provided with an internal slot 9, corresponding to the lug 7 and in which the lug 7 fits. The purpose of this lug 7 and slot 9 is to keep the extension-tube from turning on the neck 6. Just above the extension-tube 8 is a gas and air compression chamber 10, and extending upwardly from the said gas and air compression chamber is a tube 11. Extending downwardly from the lower part of said gas and air compression chamber 10, immediately over and at angles that exactly correspond to the angles of the gas-tips 4, are tubes 12. These tubes do not extend quite the entire distance to the said tips, but leave a short space between the upper ends of the said tips and the lower ends of said tubes, giving room for the entrained air to enter these tubes unobstructed, and as it passes up it mixes with the gas, and when the gas and air from the tubes collide in the air-compression chamber 10 a perfect mixture and a slight compression take place.

The combined areas of the inlet-tubes 12 is greater than the area of the outlet-tube 11, in consequence of which the gas and its entrained air meet with sufficient resistance to slightly press the gas and air in the chamber and cause a more perfect mixture of the two than would be otherwise produced and also gives an additional force to the escaping compound.

Fitting over and slipping down on the tube 11 is a sleeve 13 until its lower end rests against the shoulder 14 of the compression-chamber. This sleeve 13 enlarges a little near its upper end, leaving a shoulder 15 and forming a chamber, and over the upper enlarged end fits a gauze cap 16.

Secured at the bottom of the tube 13 and integral therewith is a gallery 17, in which fits the chimney 18, and depending from a wire support 19 is a Welsbach mantle 20. The wire support is adjustably secured to the gallery by means of a socket 21 and finger-screw 22.

Surrounding the tube 13 and below the shoulder 15 is a ring 23, and extending from said ring downwardly and outwardly and secured to the shoulder 24 of the gallery are arms 25 to brace the tube 13.

Secured above the chimney 18 is a draft-tube 26, the lower end of which is turned out, forming an inverted funnel 27, the inner face

of which is lined with asbestos 28. This funnel fits down on the top of the chimney 18, and the asbestos makes it air-tight, and consequently the draft is greater, and the brilliancy of the light is thereby increased. Secured on the top of said draft-tube by means of arms 29 is a heat-arrester 30. This heat-arrester is for the purpose of protecting ceilings from the heat. Said draft-tube is made in two parts. An upper part is a straight tube, its sides being parallel. Slipping up, however, in the lower end of the said tube is the asbestos-lined inverted funnel 31, and when I wish to remove the chimney 18 I slip the funnel up out of the way first and then the lower end of said tube out of the way. Said draft-tube 26 has secured to it an arm 32, which fits and telescopes in another arm 33. The other end of said last-mentioned arm terminates in a clutch 34, which is secured around the dependent arm 36 of the gas-fixture and held tightly thereto by means of a screw-bolt 35. The free end of the arm 32 is adjustably secured in the free end of the arm 33 by means of a screw-bolt 37. The purpose of having these two arms telescoped is to adjust the draft-tube centrally over the burner.

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

1. The combination of a nut, adapted to fit on the end of a gas-fixture; hollow arms extending from said nut; an extension running upwardly from said nut, terminating in a neck; gas-tips secured to the outer ends of said hollow arms, and slanting inwardly; an air and gas compression chamber, provided with a lower extension, fitting on said neck; tubes extending downwardly from said compression-chamber, immediately over, and on an angle with said gas-tips; a tube extending from the upper part of said compression-chamber, and leaving a shoulder; a sleeve fitting down, over and around said tube just mentioned; said sleeve enlarging near its upper end, forming a chamber; a gauze cap fitting over the top of said sleeve; a gallery secured to the lower end of said sleeve, and adapted to hold a chimney, and a wire secured to said gallery, and adapted to hold a mantle, substantially as shown and described and for the purposes set forth.

2. In a device for brightening the light of illuminating-gases, the combination of a threaded nut 1, adapted to screw on the end of a gas-fixture; hollow arms 3, extending from said nut; an extension running upwardly from said nut, terminating in a neck 6, leaving a shoulder 5; a lug 7, extending from said neck; gas-tips 4, secured to the extreme ends of said hollow arms 3, and slanting inwardly; an air and gas compression chamber 10, provided with a lower extension-tube 8, having an internal slot 9, fitting over the lug and neck of the extension running upwardly from said nut; inlet-tubes extending downwardly from said compression-chamber, immediately over and on an angle with said gas-tips; a straight tube 11, extending upwardly from the upper part of said compression-chamber; a sleeve 13, fitting down over and around said straight tube; a gauze cap fitting on the top of said sleeve; a gallery secured to said sleeve, and a wire secured to said gallery, and adapted to carry a mantle, substantially as shown and described and for the purposes set forth.

3. In a device for brightening the light of illuminating-gases, the combination of a nut 1, adapted to fit on the end of a gas-fixture; said nut provided with hollow arms 3, extending from the same; an extension running upwardly from said nut, and terminating in a neck; gas-tips 4, secured to the ends of said arms 3, and slanting inwardly; an air and gas compression chamber 10, provided with a lower extension-tube 8; said extension-tube fitting down over the said neck 6; inlet-tubes extending downwardly from said compression-chamber on an exact angle with said gas-tips; a tube 11, extending upwardly from the upper part of said compression-chamber, and leaving a shoulder 14; a sleeve 13, fitting down over and around said tube 11; said sleeve enlarging near its upper end, and adapted to carry a gallery; a gauze cap 16, fitting over the top of said sleeve; a gallery secured to the lower end of said sleeve, and adapted to hold a chimney; a ring 23, passing around the sleeve 13, immediately under the shoulder 15 of the same; braces 25, secured to said ring, and extending outwardly, and secured to the inner wall of the gallery; a wire 19, secured to said gallery, and adapted to hold a mantle, substantially as shown and described and for the purposes set forth.

4. In a device for brightening the light of illuminating-gases, an inverted funnel 27, fitting over and down on the top of the lamp-chimney; a draft-tube 26, secured above the said funnel, and telescoping with the neck 31, thereof; an outer arm 32, having one end secured to said draft-tube 26, its other telescoped in an inner arm 33; said inner arm 33, provided with a clutch 34, and screw-bolt 35, and adapted to be secured around a depending gas-fixture 36, and a set-screw adapted to adjustably secure the said arms 32, and 33, together, substantially as shown and described and for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ALCORN RECTOR.

Witnesses:
EVA FAULCONER,
J. E. LAMBERT.