

F. RYBAR.  
GAS BURNER.

APPLICATION FILED MAY 26, 1908.

919,645.

Patented Apr. 27, 1909.

2 SHEETS—SHEET 1.

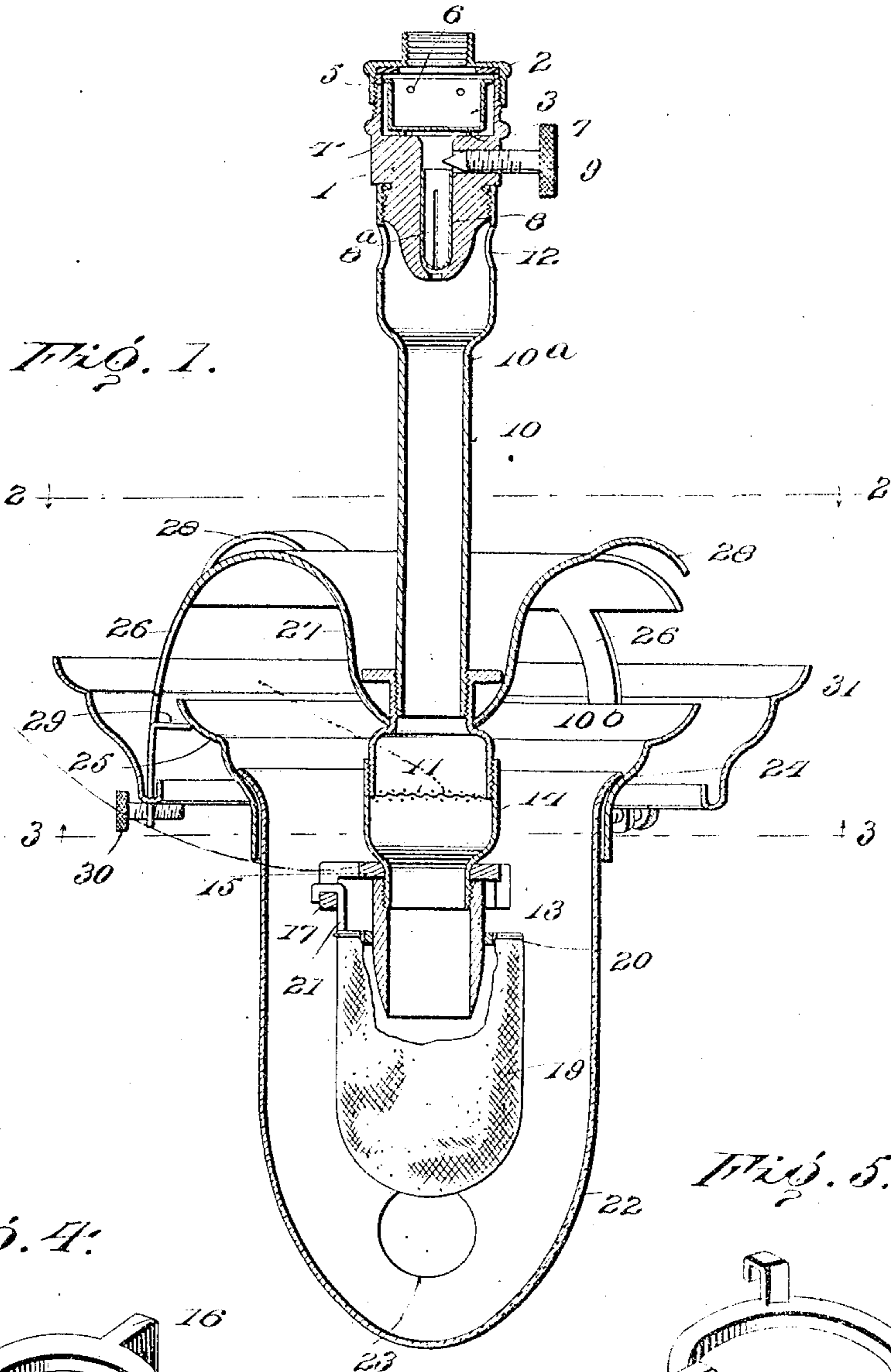


Fig. 4.

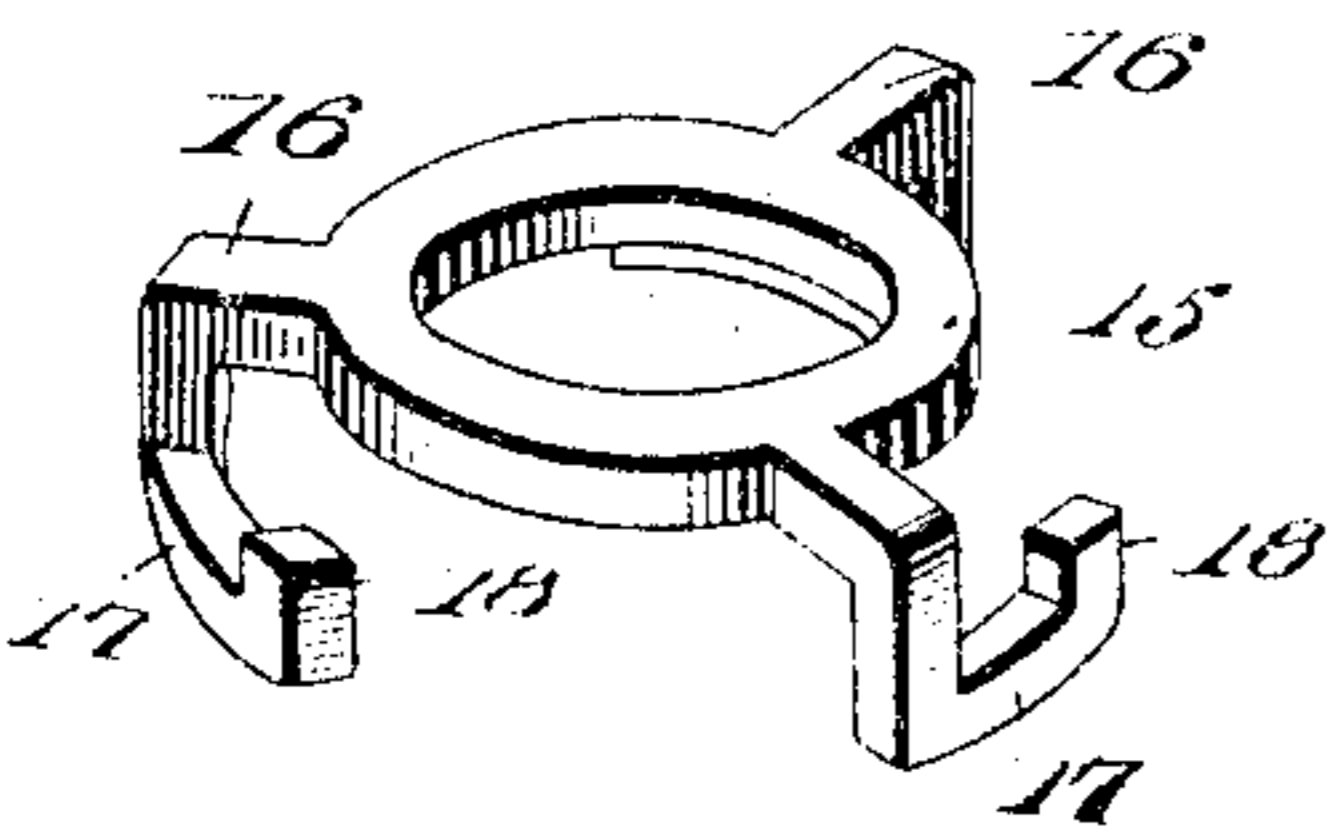
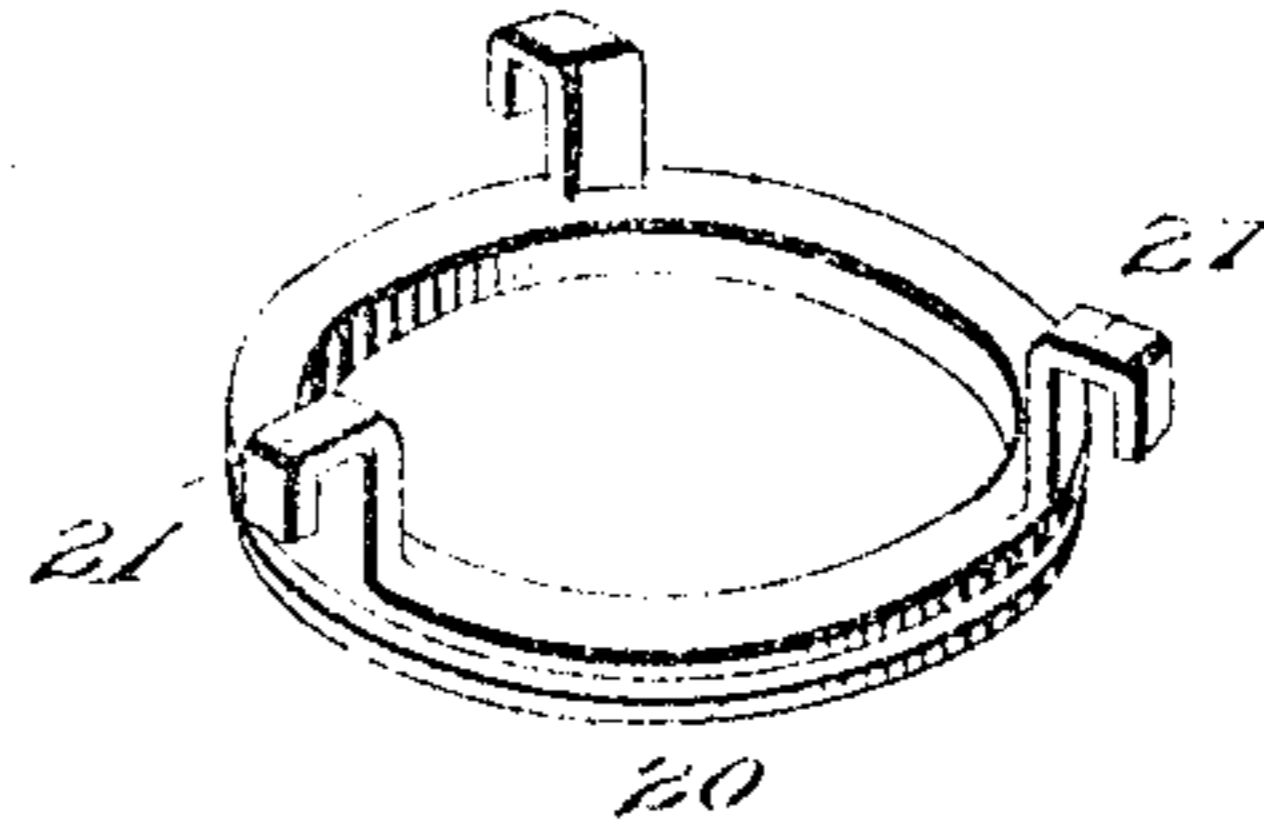


Fig. 5.



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Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

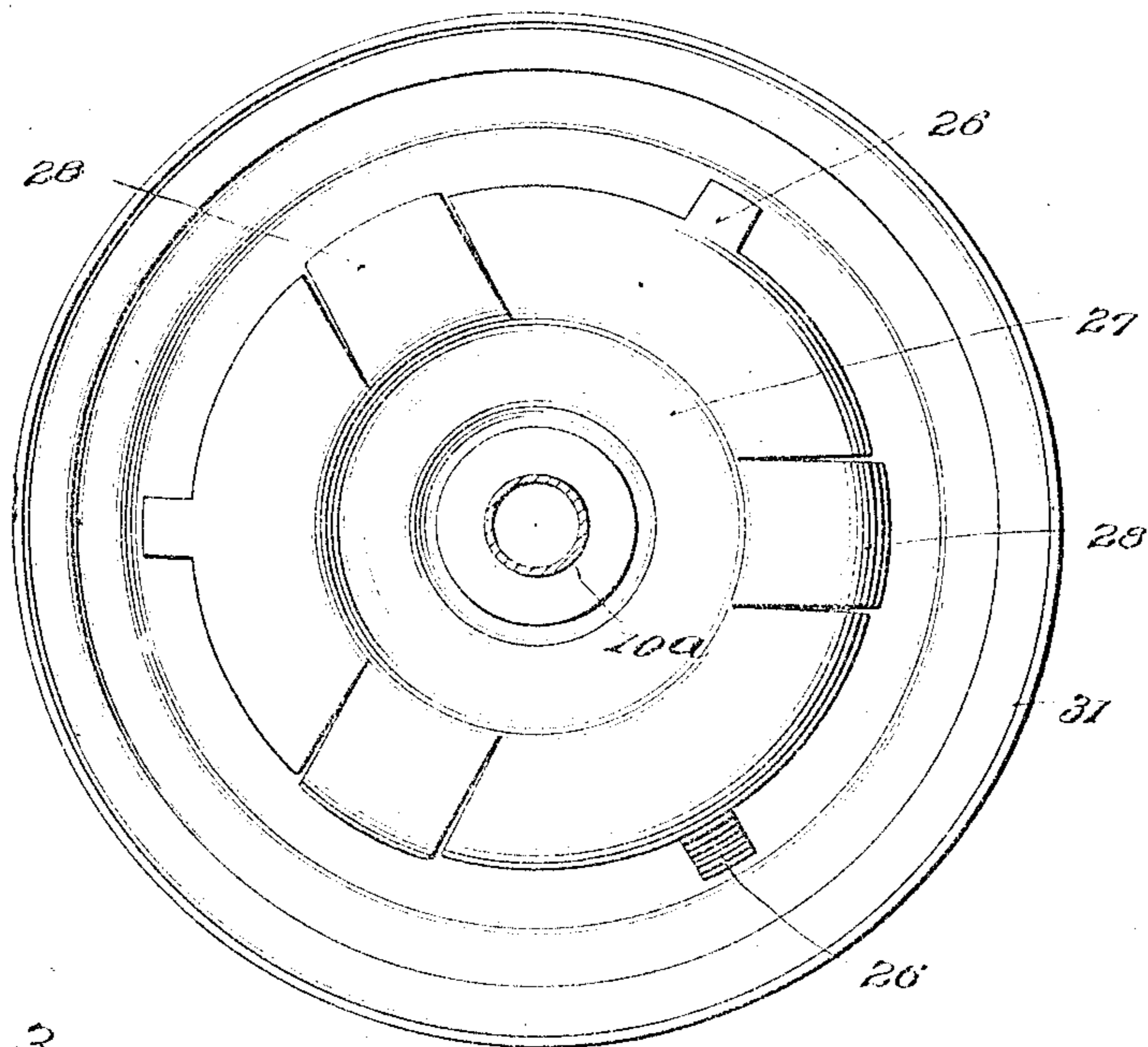
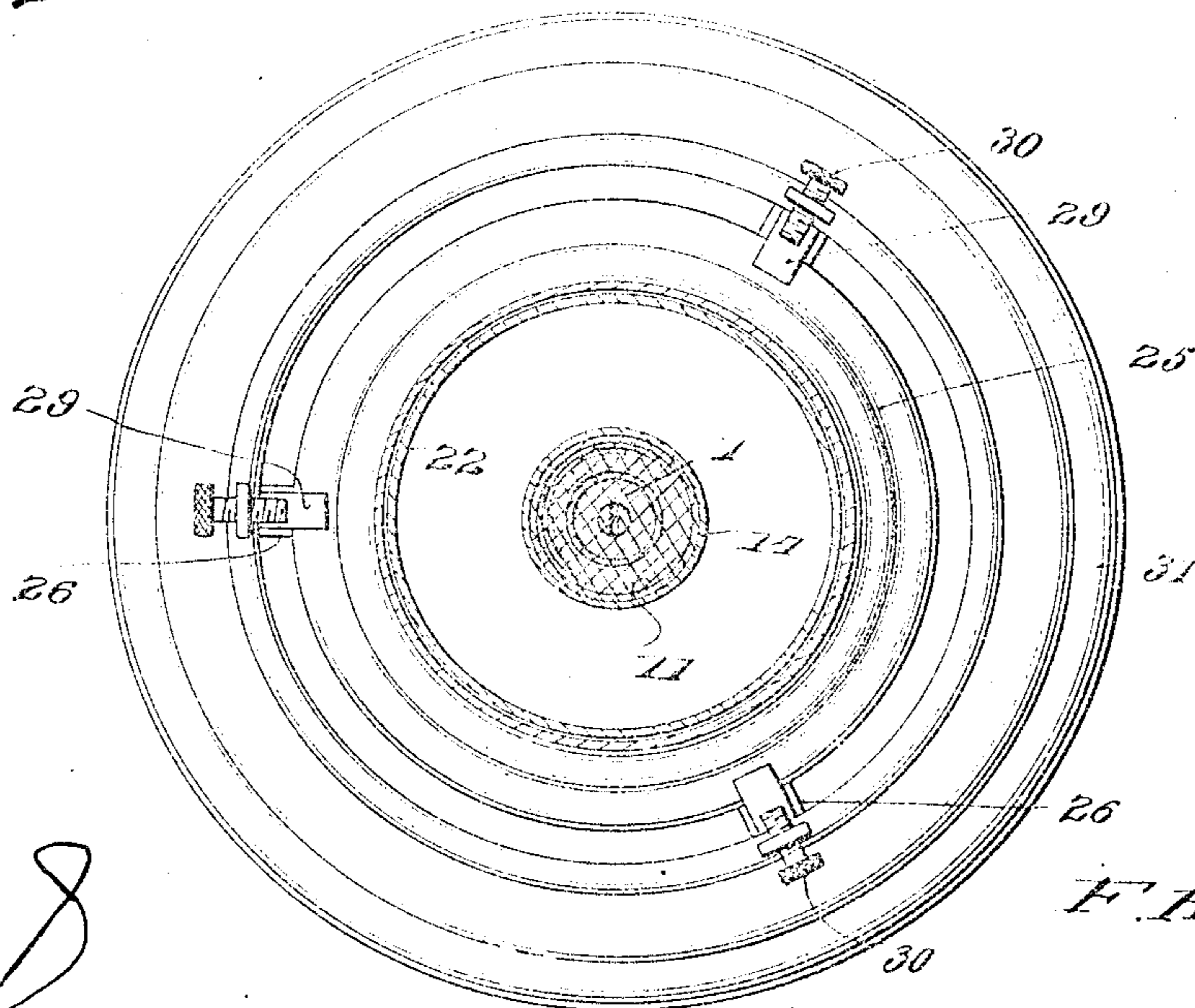


Fig. 3.



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# UNITED STATES PATENT OFFICE.

FRANK RYBAR, OF NEW YORK, N. Y.

## GAS-BURNER.

No. 919,645.

Specification of Letters Patent.

Patented April 27, 1909.

Application filed May 26, 1908. Serial No. 435,014.

*To all whom it may concern:*

Be it known that I, FRANK RYBAR, citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Gas-Burners, of which the following is a specification.

The present invention relates in general to gas burners, and has for its object to provide an improved burner embodying a novel construction whereby the mantle is suspended at the lower end thereof and the fixtures are prevented from interfering with the light as is the case with the ordinary burners in common use.

A further object of the invention is the provision of an improved regulator for controlling the supply of gas to the burner and securing a uniform flow of the same.

The invention also has for its object to provide novel means for detachably securing the mantle to the burner and for supporting a globe which incloses the mantle.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a vertical sectional view through a gas lamp embodying the invention. Fig. 2 is a horizontal sectional view on the line 2—2 of Fig. 1. Fig. 3 is a similar view on the line 3—3 of Fig. 1 looking upward. Fig. 4 is a detail view of the collar for supporting the mantle. Fig. 5 is a similar view of the ring applied to the mantle and designed to engage the collar shown in Fig. 4.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Broadly speaking the former comprises a vertically disposed mixing tube provided at its upper end with an improved regulator for controlling the supply of gas, and having an inverted mantle suspended from the lower end thereof. The gas regulator comprises a tubular head 1 having the lower end thereof contracted to form a nozzle through which the gas issues in a jet, a cap 2 being applied to the upper end of the head and provided with a coupling flange by means of which connection may be made in the usual manner with a supply pipe. The opening

through the tubular head 1 is enlarged at the upper end thereof and contracted at the lower end, a cup 3 being received within the said enlarged portion. This cup rests upon an annular shoulder 4 and is provided with an annular lip 5 which tends to prevent the passage of gas around the upper edge thereof. A plurality of openings 6 is formed in the sides of the cup 3 and the bottom of the cup is provided with projections 7 which engage the shoulder 4 and hold the cup spaced therefrom. It will thus be apparent that the gas entering the cup through the supply pipe must pass through the lateral openings in the cup and circulate around the bottom thereof between the projections 7. A tubular member 8 is loosely mounted within the lower portion of the tubular head 1, the said tubular member having the lower edges thereof curved inwardly and being bifurcated to form the spring jaws 8<sup>a</sup>. It will be observed that the bottom of the tubular member 8 is rounded so that by forcing the same downwardly within the head 1 the spring jaws 8<sup>a</sup> will be closed and the passage of gas through the nozzle shut off. For the purpose of regulating this tubular member a thumb screw 9 is utilized, the inner end of the said screw being pointed and having a wedge-like engagement with the upper extremity of the member 8 so that as the screw is forced inwardly the tubular member is moved downwardly. With this construction it will be obvious that by suitably manipulating the thumb screw the member 8 can be moved longitudinally within the tubular head and the jaws 8<sup>a</sup> either forced together or permitted to spread apart so as to regulate the passage of gas into the mixing tube.

The mixing tube 10 is formed in two sections having a threaded connection with each other, the upper section 10<sup>a</sup> having the mouth thereof enlarged and secured to the tubular head 1 while the lower section 10<sup>b</sup> has the mouth thereof enlarged and provided with a screen 11 for preventing the flame from working its way backward into the tube. It will also be observed that the enlarged mouth of the upper section 10<sup>a</sup> of the mixing tube is provided with the air inlet openings 12 through which the air is drawn as the gas enters the mixing tube in the form of a jet discharged through the nozzle at the lower end of the tubular head. The gas and air are thoroughly commingled

with each other as they travel through the mixing tube so that perfect combustion is produced as they issue from the discharge tube which is threaded upon the lower contracted end of a sleeve 14 secured to the lower end of the mixing tube.

Clamped between the upper end of the discharge tube 13 and the enlarged portion of the sleeve 14 is a collar 15 formed with the radial arms 16 terminating in the lateral extensions 17, the said lateral extensions being provided at their extremities with the upwardly extending lugs 18. The mantle 19 is suspended in an inverted position and is secured at its mouth to a ring 20 formed with the upwardly extending hook members 21 designed to detachably engage the lateral extensions 17 of the radial arms projecting from the collar 15. With this construction it will be obvious that by lifting the ring 20 upwardly until the hook members 21 have been elevated above the lugs 18 and then imparting a rotary movement to the ring the mantle can be readily disengaged from the burner. It will also be apparent that in exactly the reverse manner the mantle can be applied to the burner.

For the purpose of protecting the mantle from injury an inverted globe 22 is utilized, the said globe being provided with the openings 23 through which air is admitted to the burner. The upper end of the globe is flared outwardly as indicated at 24 and engages a ring 25 which is supported by the arms 26. These arms are shown in the present instance as formed integral with a deflector 27 which serves to prevent the heat interfering with the upper portion of the mixing tube or the gas regulator. As shown on the drawings the deflector 27 has an inverted bell-shaped formation, the mouth of the deflector being flared outwardly and then turned downwardly, the arms 26 being integral with the deflector and constituting extensions of the downwardly turned edge thereof. It will also be observed that lips 28 are stamped from and bent upwardly from the edge of the deflector to prevent the accumulation of heat within the annular space formed by the downwardly turned edge thereof. The arms 26 are formed with the inwardly extending lugs 29 which engage the globe supporting ring 25, and are provided at their extremities with screws 30 serving to support an exterior ring 31. It will be observed that in the present instance the lower edge of the exterior ring is returned upon itself and that the arms 26 pass through openings in this returned edge.

In the operation of the burner the gas

enters the mixing tube through the nozzle at the lower end of the regulator and air is drawn into the mixing tube through the inlet openings 12. The air and gas are thoroughly mixed as they pass through the tube and a perfect combustion is produced when they issue from the discharge tube 30 into the inverted mantle 19. The mantle is thereby heated to incandescence so as to produce light in the usual manner, the deflector hood 27 preventing the heat from rising and coming into direct contact with the upper portion of the mixing tube and the gas regulator.

Having thus described the invention, what is claimed as new is:

1. In a gas burner, the combination of a mixing tube, a mantle supported at the lower end of the mixing tube, an inverted bell shaped deflector carried by the mixing tube over the mantle and having its upper edge flared outwardly, downwardly extending arms projecting from the said flared edge of the deflector, a globe supporting ring carried by the arms, and a globe surrounding the mantle and supported by the ring.

2. In a gas burner, the combination of a mixing tube, a mantle supported at the lower end of the mixing tube, an inverted bell shaped deflector supported by the mixing tube over the mantle and having its upper edge flared outwardly, downwardly extending arms projecting from the said flared edge of the deflector, lugs projecting from the arms, a globe supporting ring engaged by the lugs, an exterior ring supported by the arms, and a globe surrounding the mantle and supported by the globe supporting ring.

3. In a gas burner, the combination of a mixing tube, a mantle supported at the lower end of the mixing tube, an inverted bell shaped deflector carried by the mixing tube over the mantle, the upper edge of the deflector being flared outwardly and having lips cut therefrom to prevent the accumulation of heat thereunder, arms extending downwardly from the flared upper end of the deflector, a globe supporting ring carried by the said arms, and a globe inclosing the mantle and supported by the globe supporting ring.

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

FRANK RYBAR. [L. S.]

Witnesses:

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KATHERINE O. HASSEL.