

No. 652,177.

Patented June 19, 1900.

H. F. GABEL.
GAS BURNER.

(Application filed Sept. 7, 1899.)

(No Model.)

Fig. 1.

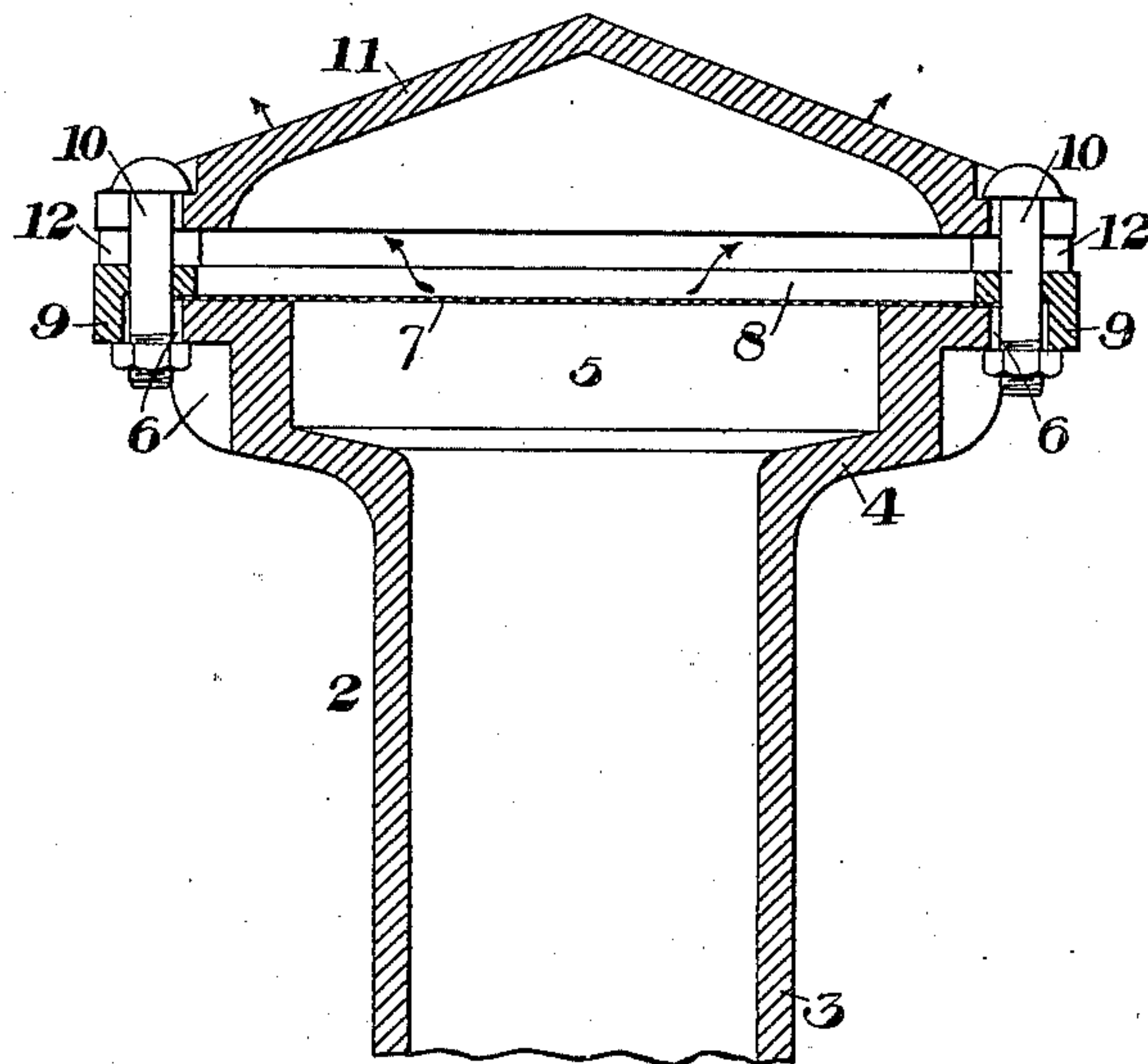
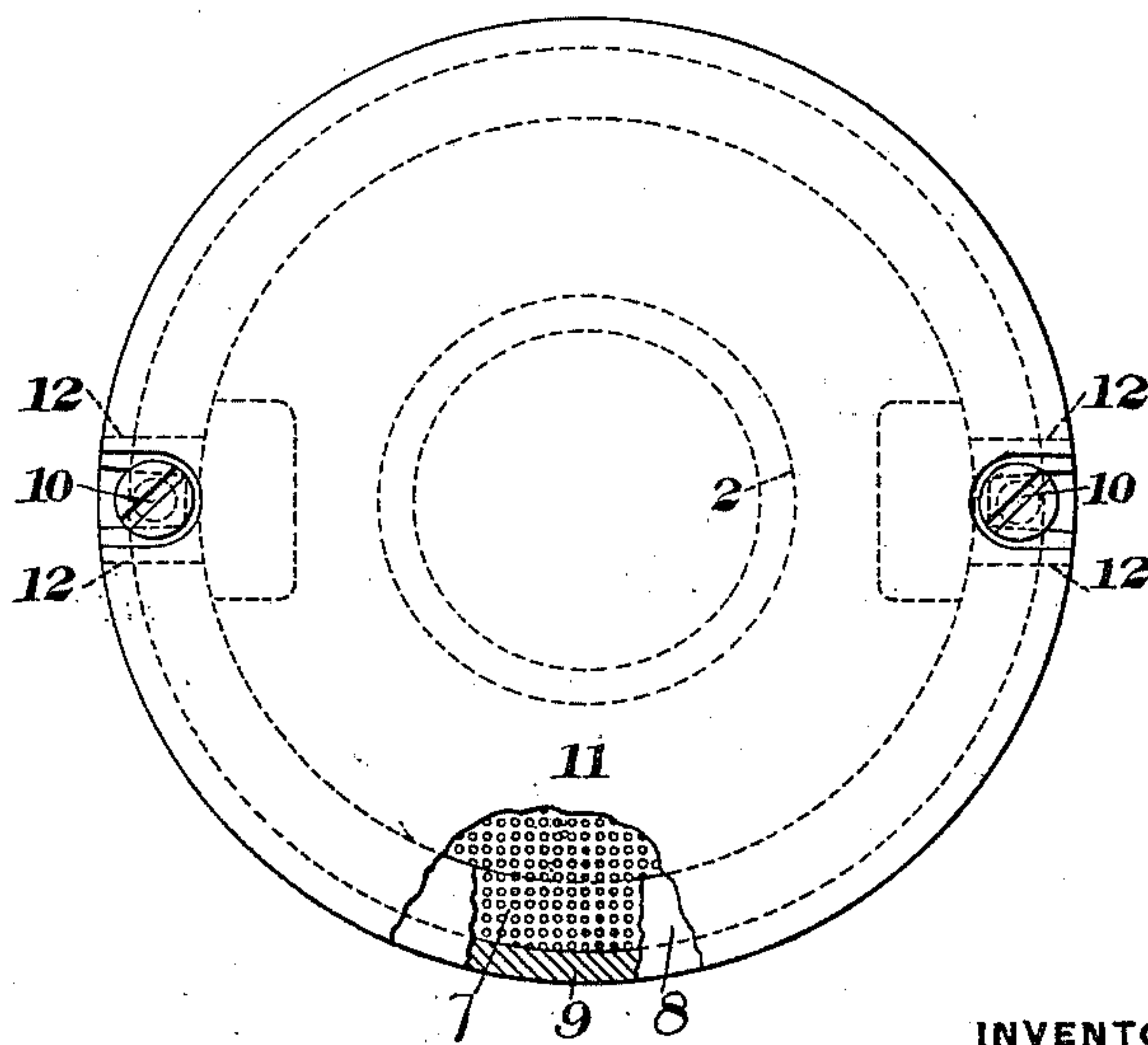


Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

HENRY F. GABEL, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO THE GABEL MANUFACTURING COMPANY, OF SAME PLACE.

GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 652,177, dated June 19, 1900.

Application filed September 7, 1899. Serial No. 729,685. (No model.)

To all whom it may concern:

Be it known that I, HENRY F. GABEL, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Gas-Burners, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical central section of my improved burner; and Fig. 2 is a plan view, partly broken away, showing the perforated diaphragm.

My invention relates to gas-burners, and is designed to prevent "flashing back" of the flame, which causes burning of the gas in the mixer.

In the drawings, 2 represents the tubular stem of a burner, the lower part 3 of which forms the mixer. The upper part 4 is swelled outwardly to form a chamber 5 and is preferably provided on opposite sides with slots 6 and recesses beneath and registering therewith. Upon the flat top of the burner-stem rests a partition or diaphragm 7, which is formed of No. 0 perforated metal, and this is secured in place by the ring 8, which fits upon its edge portion and is provided with a depending annular flange 9, which fits closely about the edge of the chamber 5. This ring is secured by screw-bolts 10, which extend through the ring and the slots in the sides of the chamber 5 and are secured by the nuts at their lower ends. These screw-bolts also serve to secure the burner-cap 11 in place, this cap resting upon opposite lugs 12, projecting from the flat upper face of the ring and having slots which are engaged by the screw-bolts, the heads of the bolts lying in suitable recesses surrounding the slots. The lower face of the edge portion of the burner-cap is made flat and parallel with the flat upper face of the ring.

In the use of the device the mixture of gas and air passing up through the perforated partition burns in an annular flame project-

ing outwardly from between the burner-cap and the ring 8, and flashing back of the mixture is prevented by the diaphragm and by the tight joint around its edges, which prevents gas escaping outwardly around it. I have found by actual experiment that a flange connection between the chamber and the ring or some similar arrangement to obtain a tight joint is absolutely necessary to obtain the desired result; also, that No. 0 perforated metal is most desirable, as larger-sized perforations will allow a flashing back, while smaller-sized ones choke the flow of the mixture and prevent proper action. Flat registering faces between the burner-cap and the clamping-ring are also very desirable in preventing flame passing back into the chamber above the diaphragm and in giving an even flame.

The advantages of my invention result from the preventing of the flashing back into the mixer, which is always liable to occur with ordinary burners and also from the simplicity and cheapness of the burner, which is of few parts and these held together by the single pair of screw-bolts. The clamping-ring may be made integral with the cap and its lugs, and many other changes may be made in the shape and arrangement of the burner, clamping-ring, and the other parts without departing from my invention, since I claim—

1. In a gas-burner, a burner-stem terminating in an enlarged burner-chamber, a cap entirely covering the said chamber, a lower ring with spacing-lugs between it and the cap, the said ring having a flanged connection with the burner-chamber, and a perforated partition clamped between the ring and the chamber; substantially as described.

2. In a gas-burner, a tubular burner-stem terminating in an enlarged burner-chamber, a conical cap entirely covering the chamber, a clamping-ring with spacing-lugs between it and the cap, said ring having means for securing it to the burner-stem with a flanged con-

nection, and a substantially-horizontal perforated partition clamped between the ring and the burner; substantially as described.

3. A burner-stem having an enlarged
5 chamber at its upper end, a perforated diaphragm seated thereon, a clamping-ring resting on the partition and having a depending flange surrounding the edge portion of the chamber, spacing-lugs on the top of the ring,

a burner-cap resting on the lugs, and securing to devices for said parts; substantially as described.

In testimony whereof I have hereunto set my hand.

HENRY F. GABEL.

Witnesses:

H. M. CORWIN,

L. A. CONNER, Jr.