

No. 799,424.

PATENTED SEPT. 12, 1905.

W. M. WELCH.
GAS BURNER.

APPLICATION FILED MAY 4, 1904.

FIG. 1.

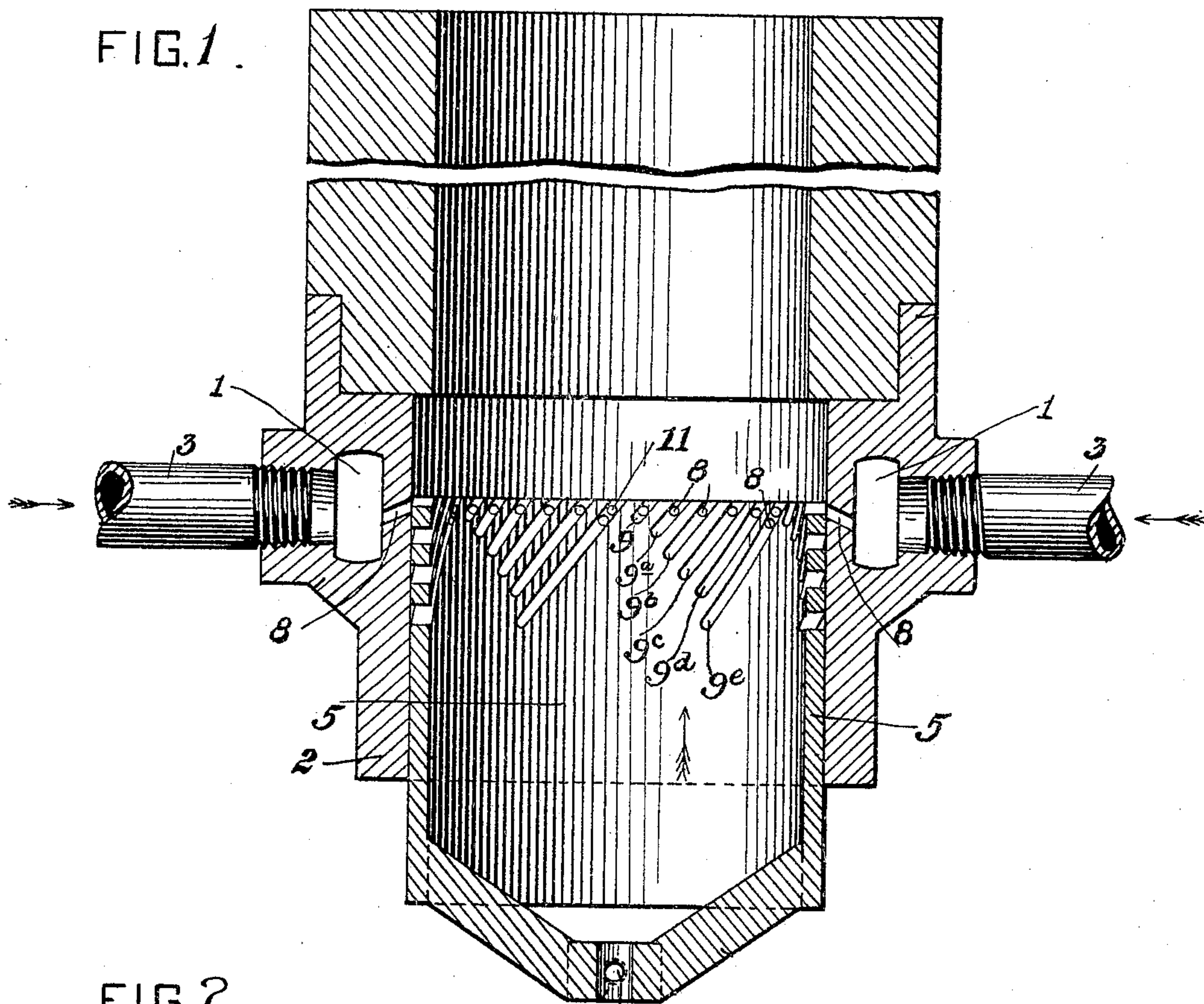
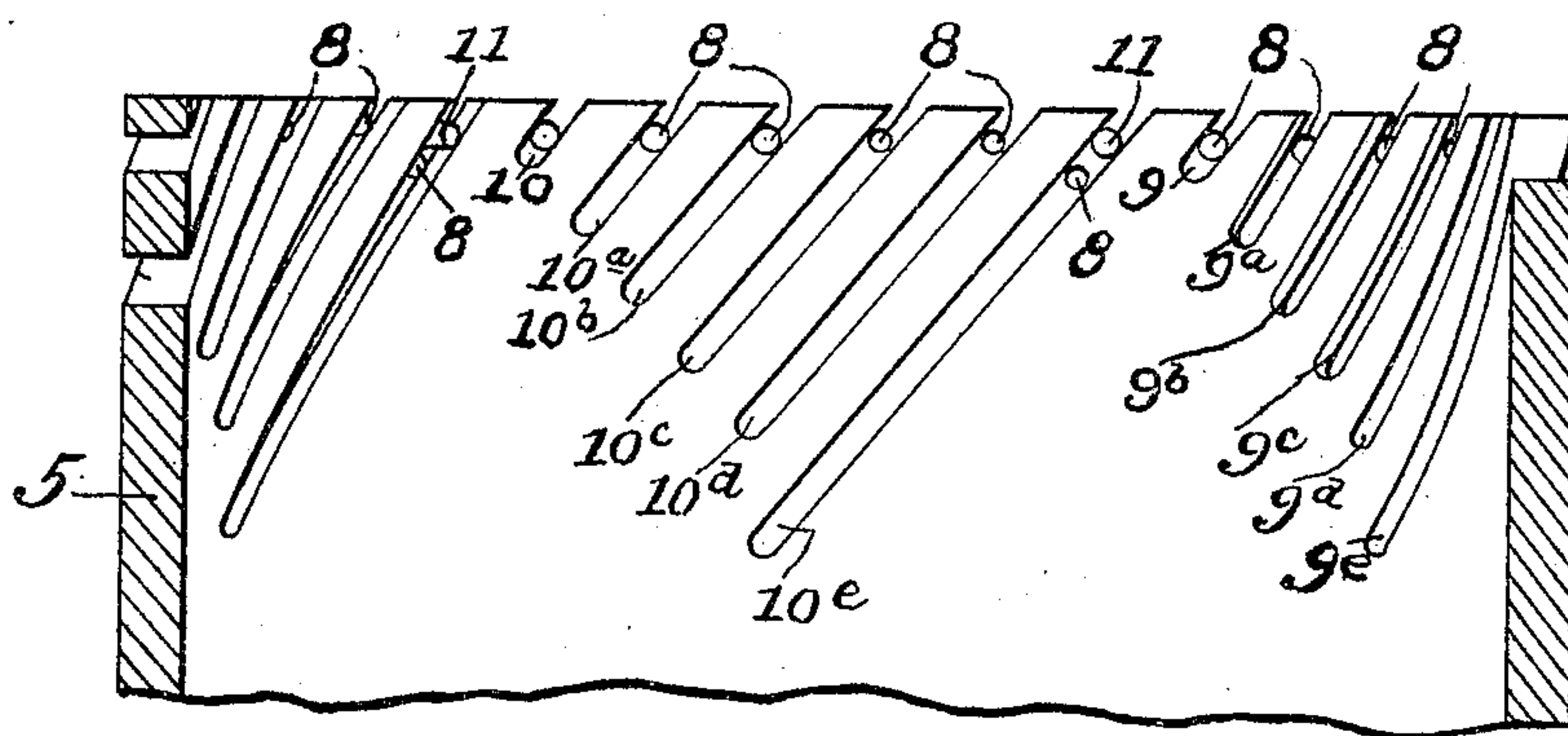


FIG. 2.



WITNESSES:
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WILLIAM M. WELCH, OF PITTSBURG, PENNSYLVANIA.

GAS-BURNER.

No. 799,424.

Specification of Letters Patent.

Patented Sept. 12, 1905.

Application filed May 4, 1904. Serial No. 206,375.

To all whom it may concern:

Be it known that I, WILLIAM M. WELCH, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Gas-Burners, of which improvements the following is a specification.

The invention described herein relates to certain improvements in that class or kind of gas-burners in which provision is made for separating the gas into a number of small jets or streams which are injected into a moving column or body of air; and the invention has for its object a construction wherein the orifices through which the gas passes into the air are arranged in a series and a valve or cut-off is provided to close or open the orifices successively.

The invention is hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a sectional elevation of my improved burner; and Fig. 2 is a sectional view, on an enlarged scale, of the sliding valve or cut-off shown in Fig. 1, showing also the gas-orifices in the body or block.

In the practice of my invention I provide an annular chamber 1, which is preferably formed in the walls of a tubular body or block 2. This annular chamber is connected, by one or more pipes 3, with a suitable source of gas-supply. Through the inner wall of the annular chamber is formed a series of orifices 8, whereby the gas from the annular chamber 1 may pass into the axial opening through the block or tube 2. Provision is made whereby the gas entering through these orifices into the air flowing through the tube 2 may be cut off, so as gradually to diminish the flow of gas into such tube. In the construction shown this cut-off is made in the form of an internal sleeve 5, adapted to move through the tube 2 and successively open or close the passages or orifices 8. In the construction shown these orifices 8 are arranged in or approximately in the same plane at right angles to the axis of the tube, and provision is made for cutting off these orifices in groups by suitably constructing the sleeve 5 so that

different portions of such sleeve will be moved over different orifices in succession.

As shown in Fig. 2, the inner end of the sleeve 5 is slotted, as at 9, 9^a, 9^b, 9^c, 9^d, 9^e, and 10 10^a, &c., the slots being arranged in groups. Each group in the construction shown consists of six slots varying in length, so that by the inward movement of the sleeve certain orifices are cut off in succession. While not necessary, it is preferable that the slots should be inclined in order that the sleeve or valve will be given a rotary motion as it moves inwardly. The rotary movement of the sleeve can be effected in many ways, a convenient means to that end consisting of a pin 11, projecting through the tube 2 into the longest slot of one or more of the groups or series, so that as the sleeve is pushed inwardly it will be given a rotary movement, as required. The slot in which the pin is located is made slightly longer than its due proportional length by an amount equal to the diameter of the pin, so that the orifice in line with such slot may be covered on the full inward movement of the sleeve. The orifices in line with these longest slots are arranged slightly out of the plane of the other orifices 8.

The orifices 8 may vary in size, as shown in Fig. 2, thereby permitting of a more delicate adjustment of the flow of gas. In the arrangement shown in Fig. 2 the orifices in line with the shortest slots are made largest and those in line with the longest slots are made the smallest, so that when the sleeve is shifted to close the orifices in line with the shortest slots the flow of gas is reduced an amount greater than due simply to the closing of a certain number of orifices, and while by a further movement of the valve an equal number of orifices is closed an equal reduction in the flow of gas is not effected.

I claim herein as my invention—

1. A gas-burner having in combination an open-ended tube having internal orifices or openings adapted to be connected to a gas-supply and a movable sleeve provided with angularly-arranged slots varying in length and arranged opposite the orifices or openings, substantially as set forth.

2. A gas-burner having in combination an open-ended tube having internal orifices or

openings adapted to be connected to a gas-sup-
ply and varying in size and a movable sleeve
provided with slots varying in length and ar-
ranged opposite the orifices and openings,
5 substantially as set forth.

3. A gas-burner having in combination an
open-ended tube having internal orifices or
openings adapted to be connected to a gas-sup-
ply, and a movable sleeve provided with slots

varying in length and arranged opposite the 10
orifices or openings, substantially as set forth.

In testimony whereof I have hereunto set
my hand.

WILLIAM M. WELCH.

Witnesses:

F. E. GAITHER,

DARWIN S. WOLCOTT.