

No. 613,044.

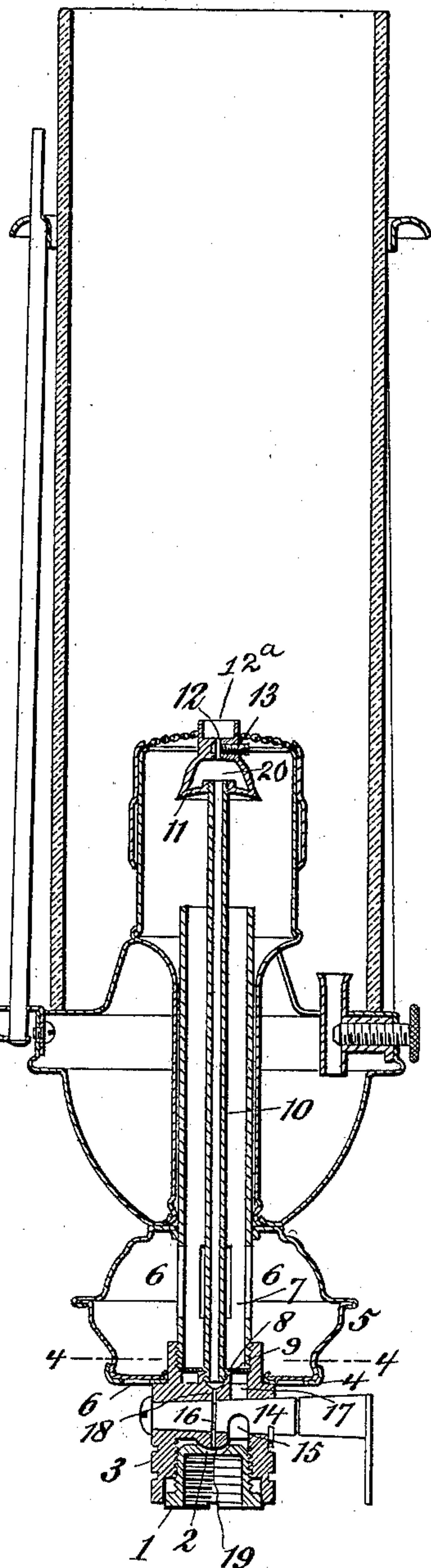
Patented Oct. 25, 1898.

R. MOMAND.  
GAS BURNER.

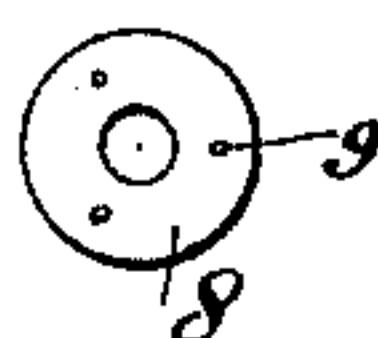
(Application filed July 7, 1897.)

(No Model.)

*Fig. 1,*



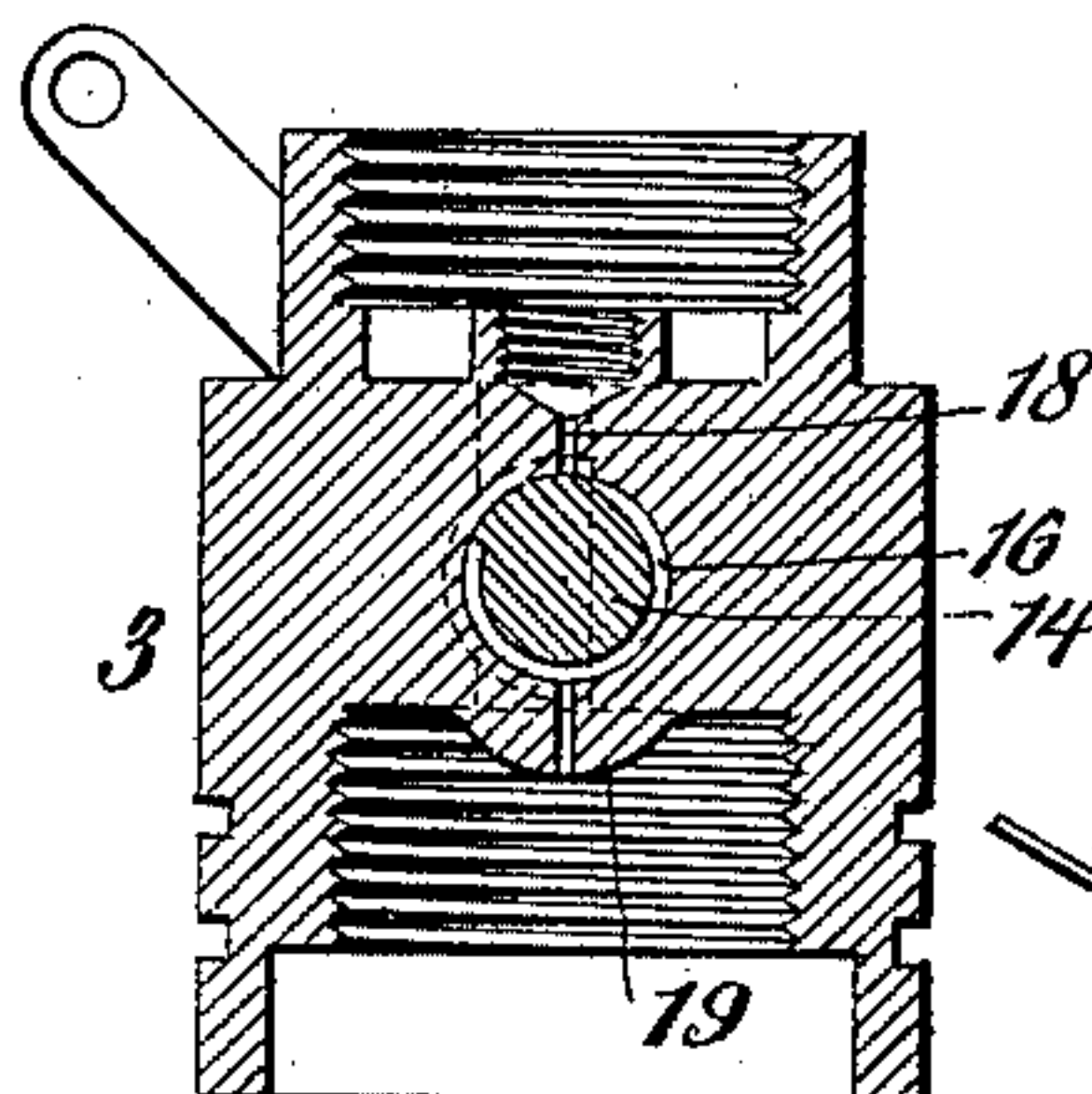
*Fig. 5,*



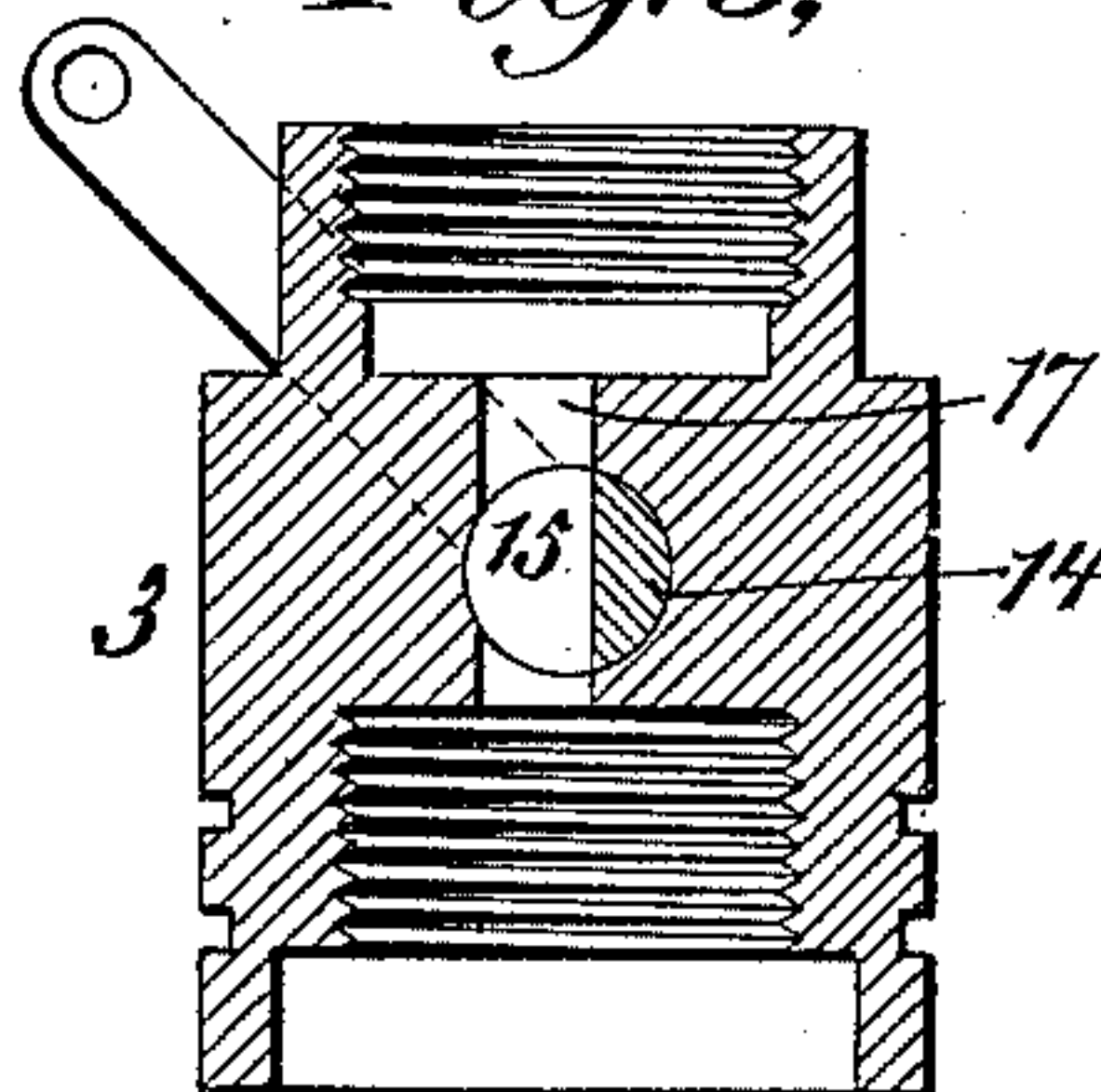
*Fig. 6,*



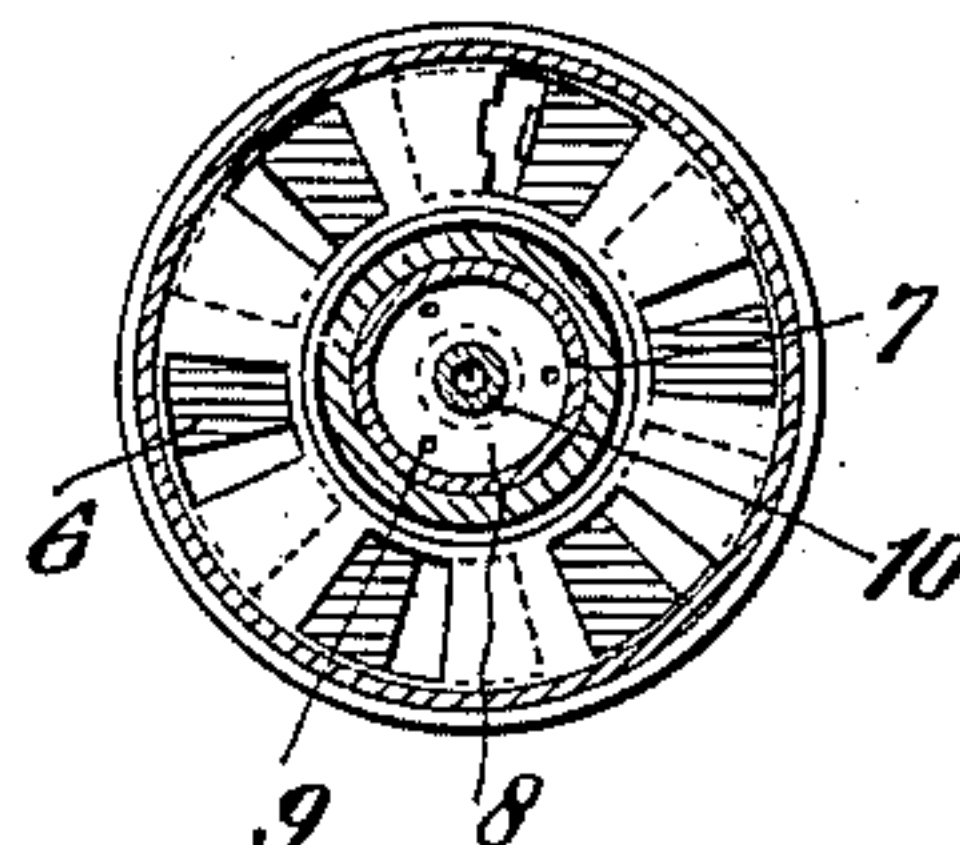
*Fig. 2,*



*Fig. 3,*



*Fig. 4,*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

RAGLAND MOMAND, OF NEW YORK, N. Y., ASSIGNOR TO THE AMERICAN LIGHTING COMPANY, OF NEW JERSEY.

## GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 613,044, dated October 25, 1898.

Application filed July 7, 1897. Serial No. 643,699. (No model.)

*To all whom it may concern:*

Be it known that I, RAGLAND MOMAND, of the city, county, 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 to gas-burners, and especially to that class of burner which is adapted to burn mixed air and gas and effect an illumination by heating a mantle of reticulated metals to incandescence.

More particularly the object of the present invention is to provide in such a burner a pilot-light for igniting the main supply. It is desirable in the class of burners here referred to that the pilot-light should be of the smallest possible dimensions for the reason that said light burns pure gas, and hence there is more or less unconsumed carbon thrown off, which has a deleterious effect upon the mantle.

By the use of my invention I obtain a pilot-light which burns only during the time when the main gas-supply is cut off, coming into operation simultaneously with the cutting off of the main gas-supply and being extinguished when the gas-supply passage is turned to its full opening.

In the drawings I have illustrated a construction embodying my invention, in which—

Figure 1 is a vertical section of a gas-burner provided with my improvements. Fig. 2 is an enlarged detail view, in central vertical section, of parts shown in Fig. 1, on a plane at right angles to the section-plane of Fig. 1. Fig. 3 is a view similar to Fig. 2, taken on a plane parallel with the plane of Fig. 2, but passing through the main valve-passage. Fig. 4 is a section along line 4 4 of Fig. 1. Fig. 5 is a detail plan view of the gas-supply disk. Fig. 6 is a section along line 6 6 of Fig. 1.

Like numerals of reference refer to like parts throughout the several views of the drawings.

Referring to the drawings in detail, 1 designates an internally-threaded nipple, which is adapted to screw onto the gas-fixture to which the burner is to be applied. This nipple is provided on its upper portion with an opening-tube.

3 designates a coupling which is threaded onto the nipple-tube. On its upper portion this nipple is provided with a shoulder portion upon which rests the flange 4, which supports the radially-movable gallery 5. The bottom of the gallery 5 and the flange 4 are provided with openings 6, the size of the openings being varied by the pressure rotation of one of the parts 4 or 5 relatively to the other, so that the amount of air admitted may be correspondingly varied. The tube 7 is screwed into the upper portion of the coupling 3 and has secured in its lower portion the gas-supply disk 8, which is provided with apertures 9 for the passage of the gas; also screwed into the upper portion of the coupling 3 is the tube 10, which feeds the gas to the pilot-flame. Upon the upper portion of this tube is detachably mounted a hollow bell-shaped gas-reservoir 11, which is provided with a gas-passage 12, into which projects the screw 13, by means of which the amount of gas passing is regulated. The hollow bell-shaped gas-reservoir 11 is provided with a recess 12<sup>a</sup> on its upper side, within which recess the pilot-flame burns, the purpose of this recess being to hide the pilot-flame and at the same time protect it from drafts, so as to insure its being constantly ignited.

14 designates a valve-plug. This valve-plug passes diametrically through the coupling 4 and is provided with passages 15 and 16, registering with ports 17 and 18, formed in said coupling. The valve-passage 15 puts in communication the port 17 with the gas-supply, constituting the main gas-supply. The passage 16 extends, substantially, four-fifths of the circumference of the valve-plug and puts the port 18, which communicates with the tube 10, into communication with the gas-supply. The passages 15 and 16 are so disposed upon the valve-plug relatively to each other that when the valve-plug is partially rotated to cut off the main gas-supply the first movement brings the passage 16 into communication with the port 18, thus immediately establishing a flow of gas to the pilot-flame before the main gas-supply has appreciably diminished. When the valve-plug is rotated to open the main gas-supply, the pas-



sage through the tube 10, the port 18, and the valve-passage 16 will be maintained open until the main gas-supply passage is fully opened, thus insuring a supply of gas to the pilot-flame until the main gas-supply shall have reached the point of consumption, where it will be ignited by the pilot-flame. The pilot-flame is maintained by the supply of gas contained in the gas-reservoir 11 even after the gas-supply is cut off, thus insuring the main gas-supply being ignited in case the valve is operated quickly and the passages to the pilot-flame closed suddenly when the main gas-passage is opened.

A semispherical or conical projection 19 is formed on the coupling 3 and is adapted to enter the opening 2 in the nipple 1. As the pressure of gas fed to the burner varies, the passage existing between the projection 19 and the walls of the opening 2 is varied to compensate for differences in pressure.

By these means it will be seen that I obtain a gas-burner in which variations in pressure of the gas-supply may be easily compensated for to insure a uniform supply of gas to the burner, and the pilot-light is only maintained ignited when the main gas-supply is cut off, so that there is a minimum amount of wasteful consumption of gas and practically no deposit of unconsumed carbon on the mantle.

It will be noted that the hollow bell-shaped gas-reservoir acts also as a spreader of the mixed gas and air.

What is claimed as new is—

1. The combination with a gas-burner of the character described, of a main gas-supply and a secondary gas-supply, means for alternately maintaining one or the other of said gas-supplies ignited, and means detachably carried by the secondary gas-supply for spreading the gas from the main gas-supply, substantially as specified.

2. The combination with a gas-burner of the character described, of a main gas-supply, a secondary gas-supply, a spreader for the main gas-supply, a gas-reservoir in communication with the secondary gas-supply, and means for alternately maintaining one or the other of said gas-supplies constantly ignited, substantially as specified.

3. The combination with a gas-burner of the character described, of a main gas-supply and a secondary gas-supply, a recess at the upper end of the tube through which the secondary gas-supply passes, in which recess the secondary gas-supply is burned, means for spreading the main gas-supply, a gas-reservoir in the secondary gas-supply, and means for maintaining one or the other of said gas-supplies constantly ignited, substantially as specified.

4. The combination with a gas-burner of the character described, of a main gas-supply, a secondary gas-supply, a gas-reservoir located near the point of ignition of the secondary gas-supply and acting as a spreader

of the main gas-supply, and means for alternately maintaining one or the other of said gas-supplies constantly ignited, substantially as specified.

5. In a gas-burner of the character described the combination of a nipple having a central opening, a coupling provided with two gas-passages, a gas and air tube communicating with the main gas-passage, a central tube communicating with the secondary gas-passage, a gas-reservoir located at the upper portion of said tube, a valve-plug provided with a main and a secondary passage, so disposed relatively to each other that the secondary passage is closed when the main passage is open, and a projection on the coupling entering the opening formed in the nipple, substantially as specified.

6. In a gas-burner of the character described the combination of a nipple provided with an opening at its upper portion, a coupling provided with inner and outer flanges, a gas-mixing tube threaded into the outer flange, a smaller tube located within the gas-mixing tube and threaded into the inner flange, a shoulder formed on the walls of the outer flange, an apertured disk resting on said shoulder, a gas-reservoir located on the upper portion of the inner tube, a recessed burner on the upper portion of the gas-reservoir, main and secondary gas-passages communicating respectively with the outer and inner tubes and a valve controlling said passages, so as to alternately maintain one or the other of said passages open, substantially as specified.

7. In a gas-burner of the character described, the combination of a main gas-supply, a secondary gas-supply and a gas-reservoir for said secondary supply, the said reservoir being adapted to serve as a spreader for the gas from the main supply, substantially as described.

8. In a gas-burner of the character described, the combination of a main gas-supply, a secondary gas-supply and a gas-reservoir for said secondary supply, said reservoir being formed with a recess in which the secondary gas-supply is burned, and adapted to serve as a spreader for the gas from the main supply, substantially as described.

9. The combination with a gas-burner of the character described of a main gas-supply and a secondary gas-supply, a gas-reservoir for said secondary supply, said reservoir being provided with a recess through which passes the secondary gas-supply and in which recess the secondary gas-supply is burned, means for regulating the supply of gas to said recess, means for spreading the main gas-supply, and means for maintaining one or the other of said gas-supplies constantly ignited, substantially as described.

10. In a gas-burner of the character described, the combination of a gas-supply passage having a constricted opening, an adjust-



able coupling interposed between said opening and burner, said coupling being formed with a projection which extends into the constricted opening of the gas-supply for controlling the same, a main and secondary supply through said coupling to the burner and means for controlling said passage whereby the flow of gas is maintained alternately through either the main or secondary supply, substantially as described.

11. In a gas-burner of the character described, the combination of a main gas-sup-

ply, a secondary gas-supply and a gas-reservoir for said secondary supply, said reservoir being formed with a recess in which the secondary gas-supply is burned, substantially as described.

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

RAGLAND MOMAND.

Witnesses:

ERNEST HOPKINSON,  
D. A. DAVIES.