

No. 629,430.

Patented July 25, 1899.

F. A. CORTIS.
GAS BURNER.

(Application filed Dec. 22, 1898.)

(No Model.)

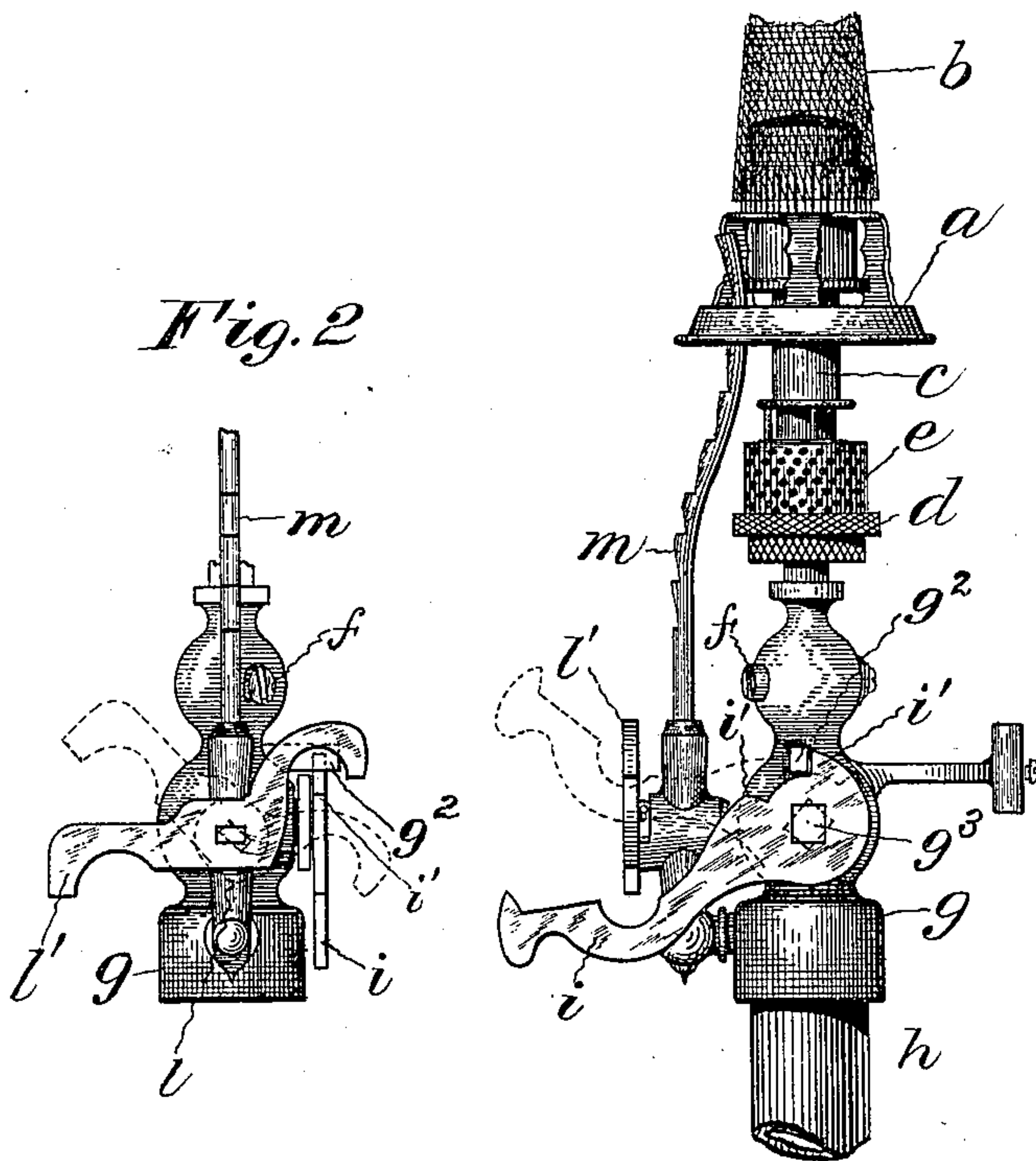


Fig. 3

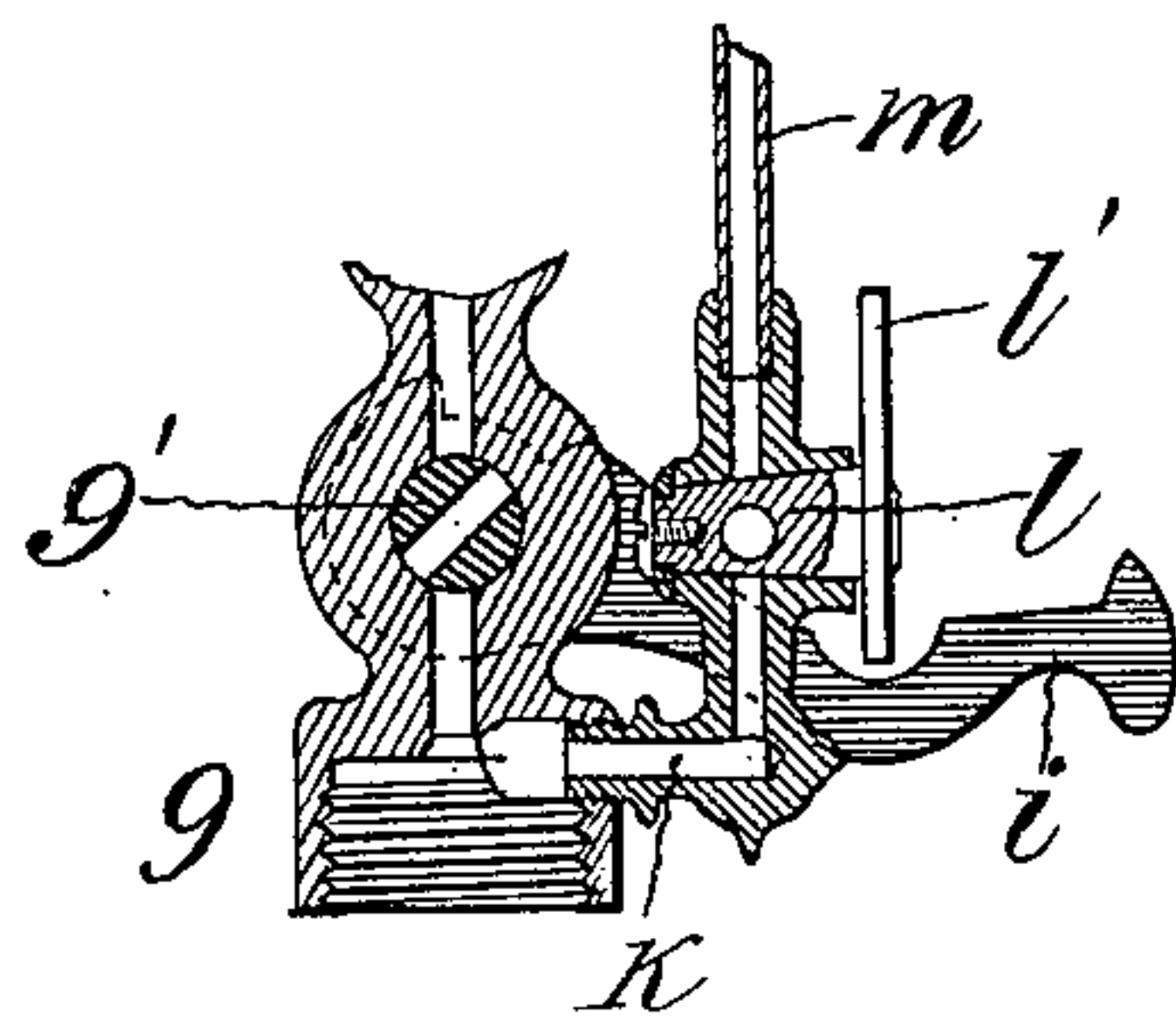
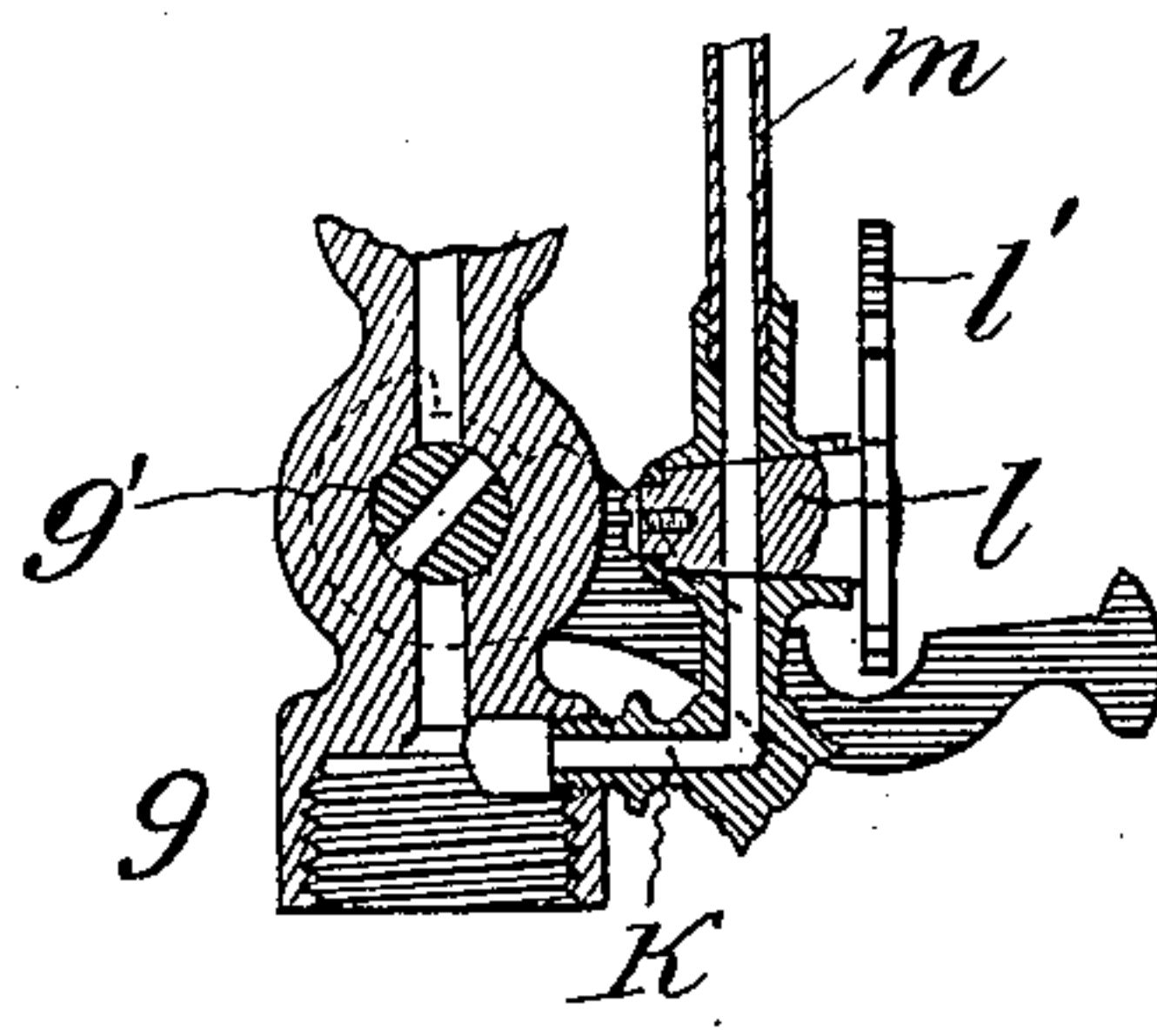


Fig. 4



Witnesses:

William H. Barker.
Erma V. Coffin

Inventor:

Frank A. Cortis
By Chas. L. Burden,
attorney

UNITED STATES PATENT OFFICE.

FRANK A. CORTIS, OF MERIDEN, CONNECTICUT, ASSIGNOR TO DWIGHT T. CORTIS, OF BOSTON, MASSACHUSETTS.

GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 629,430, dated July 25, 1899.

Application filed December 22, 1898. Serial No. 700,060. (No model.)

To all whom it may concern:

Be it known that I, FRANK A. CORTIS, a citizen of the United States, and a resident of Meriden, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Gas-Burners, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

My invention relates to the general class of gas-burners, being especially applicable to the class of incandescent burners.

The object of my invention is to provide a device that may be lighted in such manner as not to interfere or destroy those parts appurtenant to the upper part of the burner.

To this end my invention consists in the device as a whole, in the combination of parts, and in the details and their combination, as hereinafter described, and more particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a side view of a gas-burner embodying my improvement. Fig. 2 is a side view of the parts shown in Fig. 1, looking from the left, with parts broken away and the upper part of the burner removed. Fig. 3 is a view in vertical section through the valves, showing both valves closed. Fig. 4 is a like view showing the auxiliary valve open.

My invention finds a ready application to incandescent gas-burners used for street-lighting purposes, and in the accompanying drawings the letter *a* denotes a gallery or like part, on which is supported a mantle *b*. A mixing-tube *c* forms part of the burner proper, this term "burner" as used in the description and claims herein including those parts above described, together with an air-shutter *d*, through which the mixing-tube passes and which is used for supplying the proper amount of air to support combustion in the burner. This air-shutter is surrounded by a screen *e*, the parts above described being of any well-known construction, those commonly used in connection with a Bunsen burner having been chosen herein for the purpose of illustrating my invention. A governor-valve *f* is located in the passage leading from the main-valve body *g* to the tube *c*.

The valve-body *g* is secured at the upper

end of a gas-supply pipe *h*. A main valve *g'* is located within the valve-body *g*, and a main-valve lever *i* is secured to the valve-spindle *g''* in the ordinary manner for the purpose of operating it. This valve may be of any well-known construction of straightway valve for controlling the flow of gas to the burner.

A stop for determining the open or closed position of the valve is provided. In the device shown this stop is formed by cutting away a portion of the main-valve lever *i*, forming stops *i'*, that strike against a stop *g''*, consisting of a projection on the valve-body. This construction allows the valve to be freely opened or closed to its full extent without obstruction.

In a gas-burner of the class described if a full head of gas be turned on and ignited there is danger of destruction of the mantle by the explosion of gas which follows, and for this reason it is desirable to provide means whereby flame may be applied to the burner-tip before gas shall have reached this point through the main passage, thus igniting the gas at the burner-tip before a quantity of gas sufficient to cause a great explosion shall have reached this point. To accomplish this result, I provide an auxiliary passage *k*, leading from the main supply-passage to the burner. This auxiliary passage is provided with an auxiliary valve *l*, having a valve-lever *l'* secured thereto. This valve-lever *l'* extends in a position to overlie the main-valve lever *i*, for a purpose to be hereinafter described. A ladder *m* extends upward from the auxiliary valve to a point in proximity to the burner-tip. This ladder consists of a tube having orifices in its side at certain intervals along its length. This auxiliary lever *l'* or its valve-spindle is provided with suitable stops to determine the open or closed position of the valve, and, as in the case of the main valve, this auxiliary lever is free to be opened or closed to its full extent without obstruction. This auxiliary lever *l'* preferably extends across the auxiliary-valve spindle, being secured thereto at a point between the ends of the lever, one end of which overlies the main-valve lever *i*, as above described, and the opposite end of the lever being utilized for the purpose of operating the valve.

In the operation of the device, the parts being in the position indicated in Fig. 1, both the valves are closed. It being desired to light the lamp, the outer end of the lever *l'* is pushed upward, as by means of a torch used to light the lamp, this opening the auxiliary valve *l* and allowing gas to flow through the auxiliary passage and through the ladder *m*. This operation has caused the opposite end of the valve-lever *l'* to be pressed down into the path of movement of the main-valve lever *i*. Flame is now applied to the lower end of the ladder, which flame travels upward to the top thereof. The main-valve lever *i* is now pushed upward by force applied to the outer end, allowing gas to flow through the main valve to the burner, which as soon as it reaches the burner-tip is ignited from the flame at the top of the ladder. This upward movement of the main-valve lever *i* has carried with it the auxiliary-valve lever *l'*, thus closing the valve *l*, the latter, however, not being fully closed and the flame at the top of the ladder extinguished until sufficient gas has passed through the main valve to be ignited by the flame at the top of the ladder.

It is obvious that devices embodying other forms of construction and in which a main passage for gas is used and an auxiliary passage for conducting a small supply of gas to the burner-tip, each passage being controlled by a separate valve capable of movement without interruption, may be employed and yet come within the scope of my invention, and I do not desire to limit myself to the precise construction herein shown and described.

I claim as my invention—

1. In combination with a gas-burner having a main and an auxiliary supply-passage thereto, a main valve controlling the flow of fluid through the main passage only, a main-valve lever secured thereto, an auxiliary

valve controlling the flow of fluid through the auxiliary passage only, an auxiliary lever secured thereto, said auxiliary lever having a free and independent movement in the direction to open the auxiliary valve and arranged to be actuated from such position to close the auxiliary valve by the main-valve lever in its opening movement, substantially as described.

2. In combination with a gas-burner having a main and an auxiliary supply-passage thereto, a main valve controlling the flow of fluid through the main passage, an auxiliary valve controlling the flow of fluid through the auxiliary passage, said valves being arranged to rotate with their axes in transverse planes, a main-valve lever secured to the main valve, and an auxiliary-valve lever secured to the auxiliary valve and extending across the main-valve lever and arranged to open the auxiliary valve without movement of the main-valve lever, but to close the auxiliary valve in the opening movement of the main-valve lever.

3. In combination with a gas-burner having a main and an auxiliary supply-passage, a main valve controlling the flow of fluid through the main passage and an auxiliary valve controlling the flow of fluid through the auxiliary passage, said valves being arranged to rotate with their axes in transverse planes, a lever secured to the main valve and a lever secured to the auxiliary valve with one end arranged to freely operate the valve and the opposite end of the lever lying in the path of movement of the main-valve lever, whereby the auxiliary valve is closed in the opening movement of the main-valve lever.

FRANK A. CORTIS.

Witnesses:

ARTHUR B. JENKINS,
ERMA P. COFFRIN.