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PATENTED AUG. 6, 1907.

R. THOMPSON.  
GAS BURNER.

APPLICATION FILED OCT. 11, 1906.

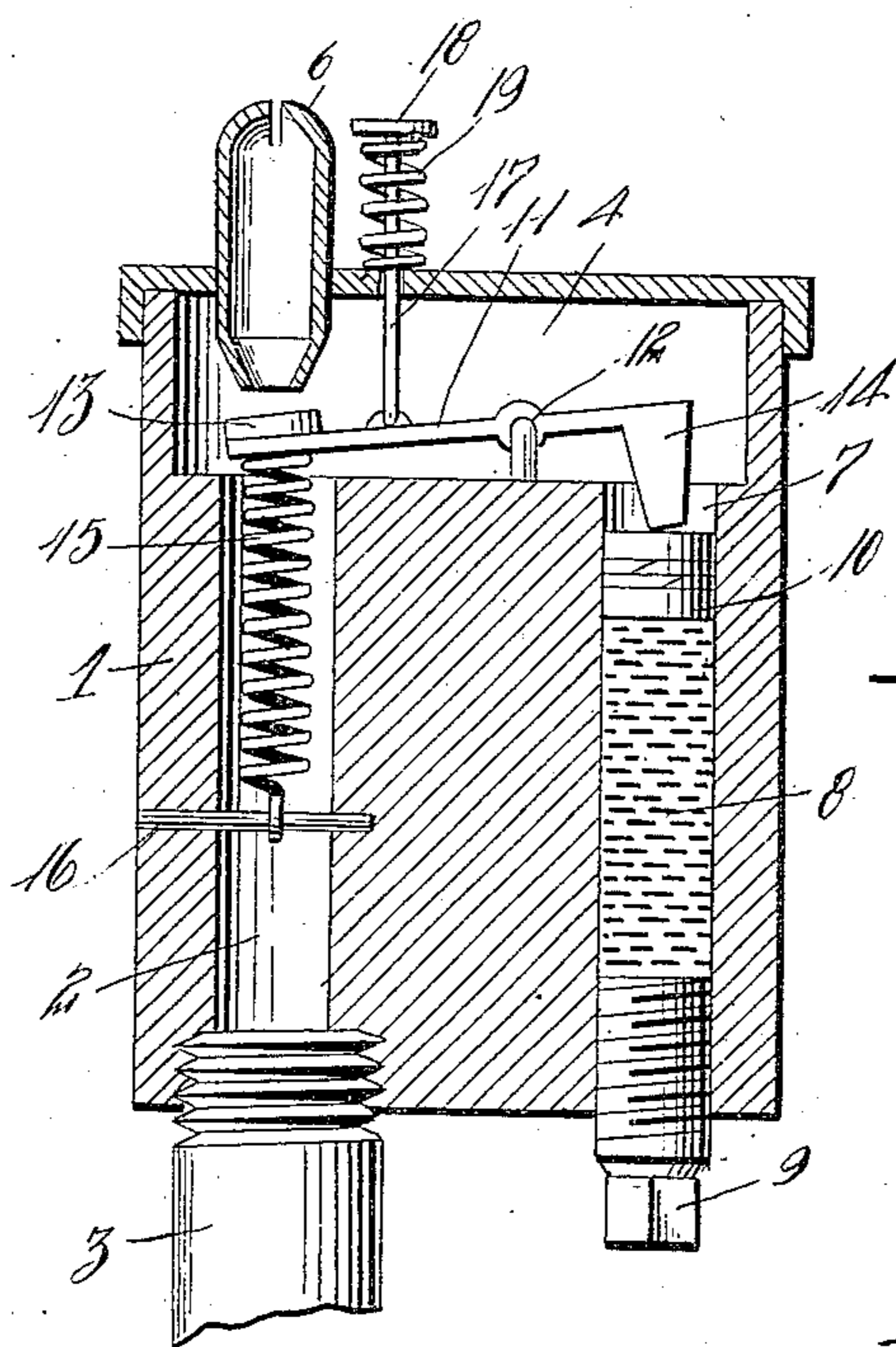
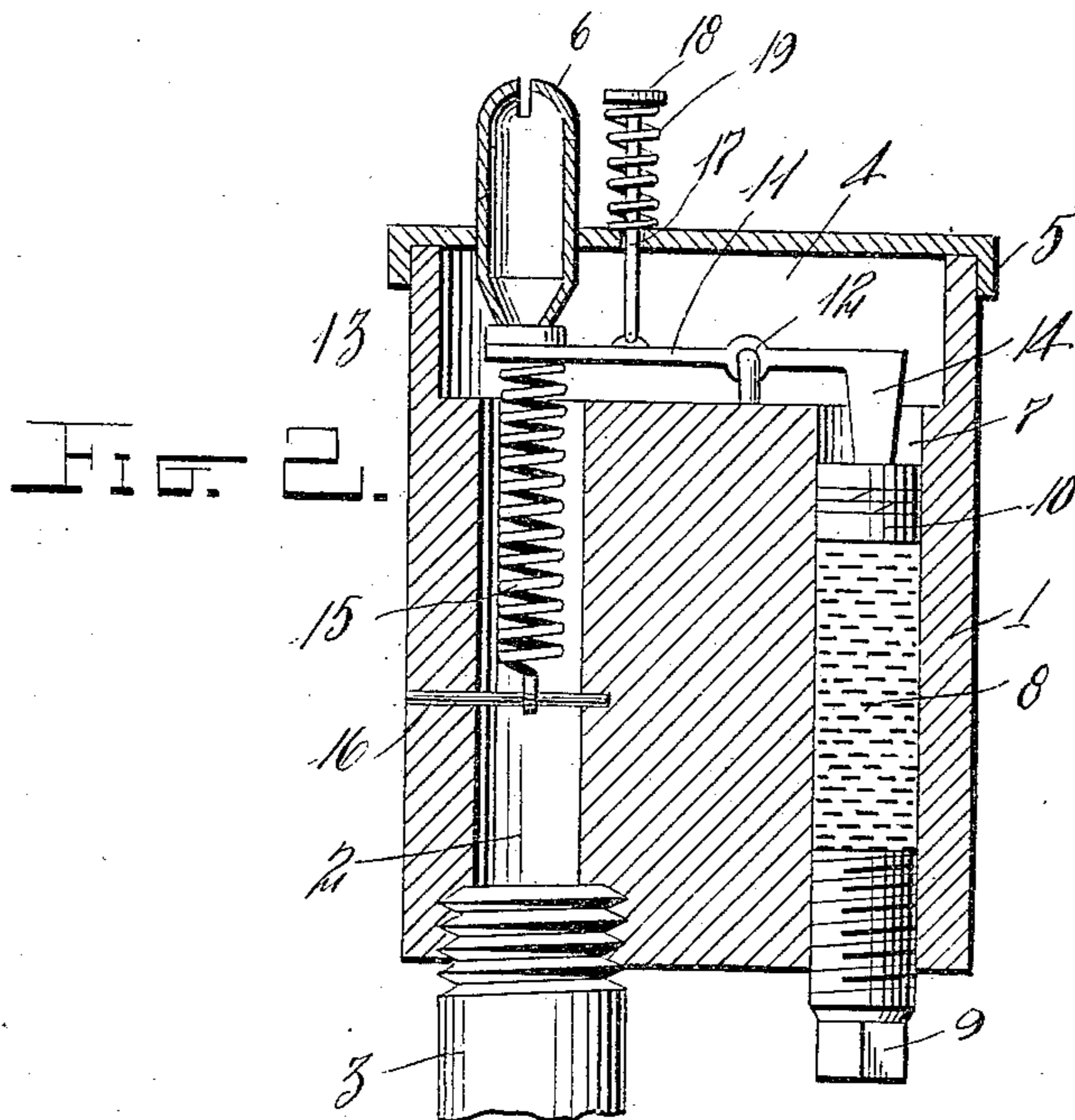


FIG. 1.

Witnesses.

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# UNITED STATES PATENT OFFICE.

ROBERT THOMPSON, OF ROCHESTER, NEW YORK.

## GAS-BURNER.

No. 862,772.

Specification of Letters Patent.

Patented Aug. 6, 1907.

Application filed October 11, 1906. Serial No. 338,479.

*To all whom it may concern:*

Be it known that I, ROBERT THOMPSON, a subject of the King of England, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Gas-Burners; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention is an improved gas burner, and it consists in the construction, combination and arrangement of devices hereinafter described and claimed.

The object of my invention is to provide an improved gas burner, which will only operate to permit the discharge and the burning of the gas while the burner is heated to some extent, and which, in the event that the jet should become extinguished without the gas having been first cut off, will, as its temperature lowers, automatically cut off the escape of gas, and hence secure the occupant or occupants of the room against the danger of asphyxiation.

In the accompanying drawings,—Figure 1 is a sectional view of my improved burner, showing the same in operation; Fig. 2 is a similar view, showing the burner closed against the escape of gas. The drawings are on an exaggerated scale in order to clearly show the details of construction of my improved burner.

In the construction of my burner, I provide a body 1, which may be cylindrical, or of any other suitable shape, and has a longitudinal passage 2 in one side for the gas, and means at the lower end of said passage, as at 3, to enable the burner to be attached to a gas fixture. In the upper end of the body is a chamber 4, and the same is provided also with a cap 5, which carries a gas tip 6. The lower end of the said tip projects below the cap 5, is disposed directly above, and is spaced somewhat from the upper end of the gas passage 2. The body is also provided with a cylindrical bore 7, parallel with the gas passage 2, and which forms a chamber for the reception of a column of mercury, indicated at 8. The lower end of the mercury chamber is closed by a screw-plug 9, which also acts as an adjuster for the mercury column. In the upper end of the mercury chamber or cylinder, is a plunger 10, which will rise and fall as the mercury expands and contracts under varying temperatures. A yoke link 11 is disposed in the chamber 4, pivoted at 12, provided at one end with a valve 13 to coact with the lower end of the gas tip, and its opposite end is provided with a depending portion 14, which bears on the plunger 10. The valve 13

is here shown as a disk, which may be made of rubber or of any other suitable material. A spring 15 acts to normally close the valve against the lower end of the gas tip to prevent the escape of gas from the tip. The said spring is here shown as a coiled, extensible spring having its lower portion in the gas passage 2 and supported by a pin 16. A trip pin 17, which is disposed near the burner tip and passes through and is guided in an opening in the cap 5, has its lower end loosely connected to the yoke link 11. At the upper end of the said trip pin is a head 18. A spring 19 is here shown on the trip pin to coact with the spring 15 in normally closing the valve 13, but the use of the said spring 19 is optional.

The operation of my invention is as follows: In order to light the gas, the trip pin must be first depressed to open the valve 13 and this may be done by bearing down on the said trip pin with the match which is used for igniting the gas. The body of the burner and the mercury column therein become heated to some extent by radiation from the gas jet, and the column of mercury rises and acts on the plunger 10 and yoke link 11 to keep the valve 13 open, against the tension of the springs 15, 19. In the event that the gas should become extinguished without having been turned off by the usual gas-cock or valve, the burner will become cooled, and as the mercury column lowers, the spring 15 will act against the valve 13 to close the latter against the lower end of the gas tip and hence cut off the escape of gas from the burner and avoid danger to persons in the room.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention, as defined by the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by Letters-Patent, is,—

The hereindescribed gas burner comprising a body having a gas passage, a chamber communicating therewith, and a bore containing a mercury column, an adjusting plug at the bottom of said column, a plunger at the upper end of said column, a tip secured in the top of the chamber and having its inner end projecting into said chamber, a yoke link mounted in the chamber, operated by the plunger and having a valve, and a spring to move the yoke link in one direction and normally close its valve against the lower end of the tip.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ROBERT THOMPSON.

Witnesses:

LINCOLN L. WEST,  
HENRY E. LEONARD.