No. 693,352. Patented Feb. 11, 1902.

W. & I. GLOU.

SELF CLOSING GAS BURNER.

(Application filed Sept. 12, 1900.)

(No Model.)

FIG. 1.

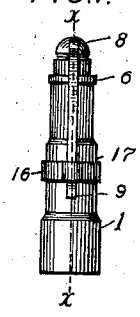


FIG. 2.

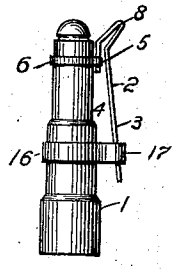


FIG. 4.



FIG. 5.



FIG. 3.

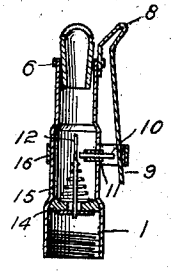


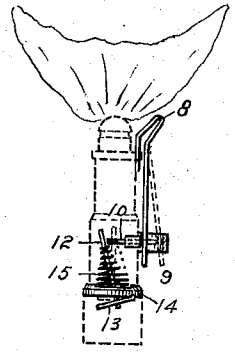
FIG. 6.



FIG. 7.



FIG. 8.



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WOLF GLOU AND ISIDOR GLOU, OF SCRANTON, PENNSYLVANIA.

SELF-CLOSING GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 693,352, dated February 11, 1902.

Application filed September 12, 1900. Serial No. 29,855. (No model.)

To all whom it may concern:

Be it known that we, WOLF GLOU and ISIDOR GLOU, citizens of the United States, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Self-Closing Gas-Burners, of which the following is a specification, reference being had therein to the accompanying drawings.

Our invention relates to that class of automatic opening and closing devices for gas-burners in which a strip of two metals of varying expansibility is used to form a thermostat adapted to be operated by the heat of the flame, and hence to open the flow of gas when it becomes heated and close it when the flame is extinguished.

The objects of the invention are to afford a simpler and more reliable device of the kind, to equip an ordinary gas-jet tube with such device, and to improve the efficiency in general.

To these ends the device consists in the construction, arrangement, and combination of the several parts illustrated in the drawings, in which—

Figure 1 shows a side elevation of a common jet-tube fitted with our device. Fig. 2 is a similar view taken at right angles to that of Fig. 1. Fig. 3 is a cross-section taken on the line *x x* of Fig. 1. Fig. 4 is a top plan view of a jet-tube fitted with the device. Fig. 5 is a detail view of the upper ring used in attaching the device. Fig. 6 is a detail view of the lower ring used in attaching the device. Fig. 7 is an under side view of the valve used in the device. Fig. 8 is a general view illustrating the operation of the device.

Similar figures of reference denote like and corresponding parts throughout the several views.

A common jet-tube (designated 1) is fitted with a thermostat 2, constructed from a bimetallic strip, the outer part thereof 3 being of brass and inner part 4 being of steel. This is rigidly secured at 5 to the jet-tube 1 by means of a metallic ring 6, having a socket 7 constructed therein. An upwardly-projecting loop 8 in proximity to the flame is designed to receive enough of heat to operate the device. The lower end 9 of this strip engages with a pin 10, sliding in an eyelet 11, fitted into one side of the jet-tube. The inner end of this pin engages with a valve-stem 12, which has a flattened portion against which the pin is designed to impinge. This valve-stem is connected with a valve-lid 13, which is hinged to a perforated diaphragm 14, secured in the lower part of the tube, the hinge being made by simply bending over the edge of the metal from which the valve-lid is constructed and hooking it into a narrow slot hacked into the under side of the diaphragm, simply sufficient to keep it from shifting about. The valve-lid is designed to cover the aperture or opening through the diaphragm which serves as a passage-way for the gas passing upward. The valve is kept closed by the action of an elongated spiral spring 15, having its large or base portion resting on the diaphragm 14 aforesaid and having its upper end attached to the valve-stem 12 aforesaid, the spring thus constructed acting doubly to lift upward on the valve, thus holding it in place, and also to hold the valve-stem in a vertical position, so as to swing it shut on its hinge. The ring 16 is fitted around the top of the jet-tube in the latitude of the operating-pin 12 and is designed by means of the loop 17, which loops over the lower end 9 of the thermostat, to prevent the thermostat from becoming sprung or strained after it has been properly adjusted.

The operation of the device is now readily explained. When the gas-jet is unlighted, the parts assume the position illustrated in Fig. 3 and also shown in dotted lines in Fig. 8. In lighting the gas a match or taper is applied, and the thumb or finger is also applied to the tip of the thermostat 9, pressing it inward, so as to open the valve. A flame being thus ignited, the heat of the same on the upward-extending loop 8 causes the thermostat to remain in the position shown in full lines in Fig. 8, thus keeping the valve opened and a full supply of gas. It is now evident that if from any accident the flame should be extinguished the thermostat becomes cooled and assumes the position shown in Fig. 3, thus closing the valve and suspending the flow of gas. It is also evident that in lighting the taper may be first applied to the loop 8,

heating it, which will cause the gas to flow without necessity of touching the thermostat with the hand.

The simplified shape of the thermostat, together with its direct action on the valve of the gas-jet, constitute the principal features of our invention. Of course the details of their construction may be varied without departing from the general spirit of the invention.

What we claim, and desire to secure by Letters Patent, is—

1. The herein-described automatic opening and closing device for gas-burners comprised in a thermostat constructed from a bimetallic strip attached to the upper end of a jet-tube and extending radially therefrom, the said strip recurved at a short distance from the vicinity of the flame and bent backward so as to extend longitudinally along said jet-tube, in combination with a horizontal sliding pin, a valve in the lower part of said jet-tube arranged to be operated by the horizontal sliding pin and arranged to impinge on the lower end of the metallic strip aforesaid for the purpose of transmitting action of the thermostat to the valve, substantially as specified.

2. In a gas-burner the combination with a jet-tube and valve of a bimetallic strip having one end secured at the upper portion of said jet-tube, and the other end bent over and extending downward substantially parallel to the side thereof, and forming an upwardly-projecting loop extending into the vicinity of the flame, the said downward-extending end engaging with a horizontal sliding pin extending through the walls of the jet-tube and arranged to tilt the valve thereof, the valve arranged to be tilted by the horizontal sliding pin aforesaid, and means for holding the said valve normally closed, substantially as specified.

3. In a closing device for gas-jets the combination with the jet-tube of a diaphragm having a central aperture or passage-way, a valve-lid covering the same, and a stem to said lid extending through the aperture and fitted with an elongated spiral coil having its base resting on the diaphragm aforesaid opposite the said lid and designed to normally hold the lid closed, a sliding pin extending out through the walls of said jet-tube and having its inner end in contact with the stem, and a thermostat arranged to actuate said sliding pin for tilting said lid when the gas is lighted, substantially as specified.

4. In a closing device for gas-jets, a jet-tube and valve, the said jet-tube having an opening in its side, and a horizontal sliding pin extending therethrough, the inner end of said pin adapted to tilt a valve-lid, a stem to said valve-lid arranged in contact with said sliding pin, the valve-lid arranged to be tilted by the said horizontal sliding pin, a thermostat adapted to actuate said sliding pin by pressure on it from without, and a guard-ring encircling the tube in the vicinity of said sliding pin, and adapted to guard the thermostat from disadjustment, substantially as specified.

5. The herein-described self-closing device for gas-burners comprised in a jet-tube, a bimetallic strip secured to the upper end of the said jet-tube, and having a loop extending into the vicinity of the flame, and an arm extending downwardly along the said jet-tube and arranged to engage with a sliding pin extending through the walls thereof, a sliding pin extending through the walls of the jet-tube and adapted to engage with the said downwardly-extending arm, a valve-stem connected with an opening and closing valve and arranged to engage with the inner end of said sliding pin, a valve controlled by said valve-stem and held normally closed by means of an elongated coiled spring, an elongated coiled spring secured at its small end to said valve-stem, and its large end resting on the diaphragm of the valve, a diaphragm having an aperture or passage-way through which said valve-stem extends, the said aperture being arranged to be closed by the lid controlled by said stem, together with a guard-ring extending around and including the downwardly-extending arm of the thermostat, all arranged for joint operation as and for the purpose described.

In testimony whereof we affix our signatures in presence of two witnesses.

WOLF GLOU.
ISIDOR GLOU.

Witnesses:
D. G. MORAN,
GEO. GELATT.