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AUTOMATIC CUT-OFF FOR GAS BURNERS.

APPLICATION FILED APR. 22, 1913.

1,098,670. Patented June 2, 1914.

Fig. 1.

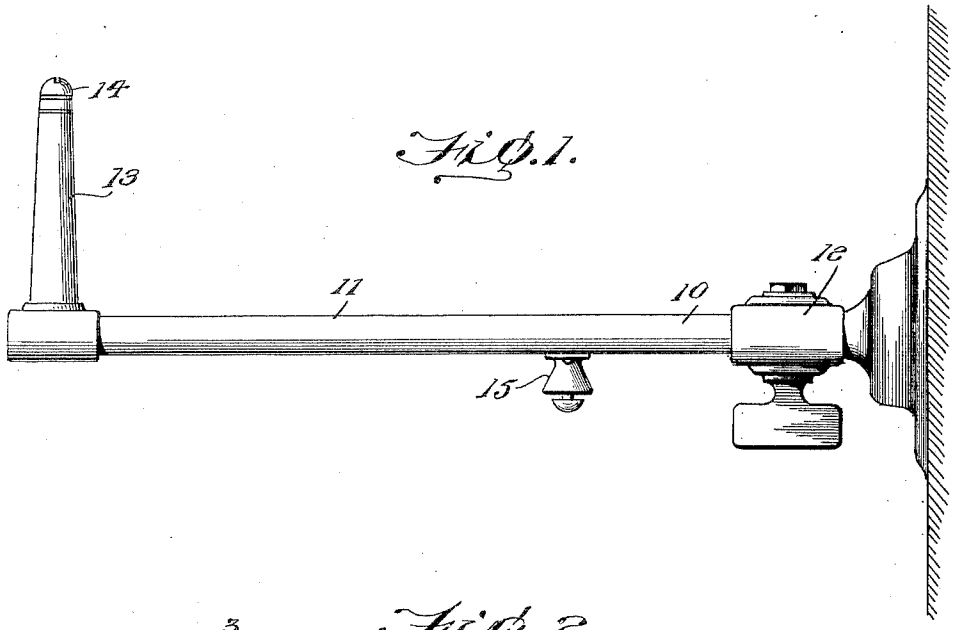


Fig. 2.

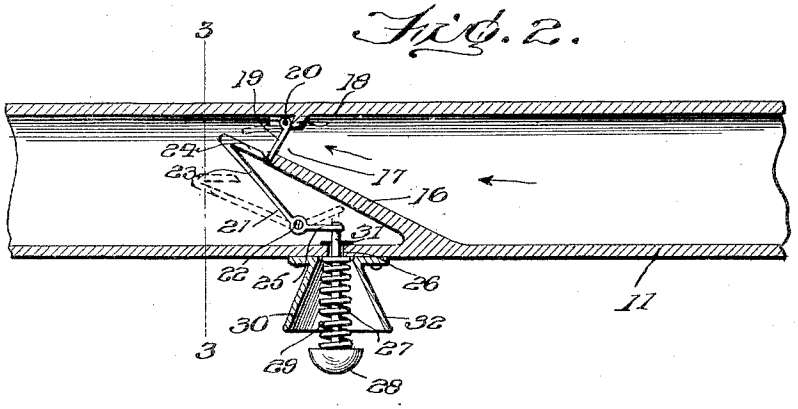
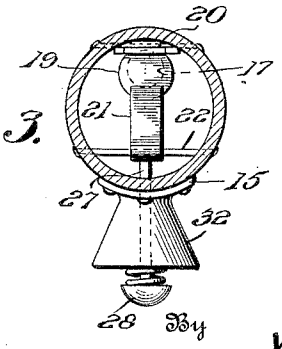


Fig. 3.



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AUTOMATIC CUT-OFF FOR GAS-BURNERS.

1,098,670. Specification of Letters Patent. Patented June 2, 1914.

Application filed April 22, 1913. Serial No. 762,896.

To all whom it may concern:

Be it known that I, HERMAN S. LEINSS, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Automatic Cut-Offs for Gas-Burners, of which the following is a specification.

My invention relates to a new and improved cut-off for gas burners and more particularly to a cut-off which will be automatic in its action, and the object of my invention is to provide a burner bracket with a cut-off valve so arranged that it can be manually opened to permit the passage of gas to the burner and further so arranged that if for any reasons the flow of gas through the bracket to the burner is momentarily interrupted the valve will be automatically closed and locked to prevent escape of gas when the gas again begins to flow.

A further object of my invention is to provide a cut-off valve of the above-described character which will be entirely independent of the ordinary cut-off valve or turn-cock now in use and which will be located between said turn cock and the burner.

With these and other objects in view, my invention will be more fully described, illustrated in the accompanying drawings and then specifically pointed out in the claims which are attached to and form a part of this application.

In the drawings: Figure 1 is a side elevation of a conventional form of gas burner bracket showing my automatic cut-off valve applied thereto; Fig. 2 is a vertical, central, longitudinal sectional view of a portion of the body of the burner tube showing the details of construction of the cut-off valve; Fig. 3 is a transverse sectional view on the line 3—3 of Fig. 2.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawings by the same reference characters.

In order to insure a full and clear understanding of my improved cut-off valve and its operation, I have illustrated the same in connection with a conventional form of wall bracket 10 the body or pipe 11 of which is provided at that end adjacent the wall with a cut-off valve 12 of the usual turn-cock type and at its opposite end with a burner 13 of any preferred type having a burner tip 14. The automatic cut-off valve, designated as a whole by the numeral 15, is located at a point between the valve 12 and the burner, preferably near the valve 12.

Referring more specifically to Figs. 2 and 3 of the drawing, it will be seen that in order to provide a valve seat for the automatic cut-off valve I have formed the body or pipe 11 of the bracket, interiorly, with an upwardly and outwardly diagonally extending web 16 which entirely closes the tube save for a reduced gas passage 17, which is further reduced by a relatively short downwardly and forwardly extending web 18. The valve proper consists of a metallic disk 19 of relatively light metal swingingly mounted at its upper edge upon a pivot pin 20 and adapted to fall by gravity to close the opening 17 and to be opened by pressure of the gas in the tube to the position shown in dotted lines in Fig. 2.

In connection with this valve I have provided a locking device including a lever 21 pivoted intermediate its length upon a pin 22 passed transversely of the bracket tube and having an upwardly and forwardly directed arm 23 terminating in a rearwardly directed locking finger 24. This finger is adapted to engage against the forward face of the valve disk 19 and hold the same in locked position and is normally held in such position by the opposite arm 25 of the lever 21 which extends in parallel spaced relation to the bottom of the bracket tube and is preferably counter-weighted sufficiently to hold the lever in place.

As clearly shown in the drawing, the locking finger 24 of the lever is so formed with respect to the lever that upward swinging of the arm 25 will move the same out of the path of the valve disk and permit the valve to open under the pressure of the gas. As soon as the lever is free the counter-weighted arm 25 thereof will cause it to swing back to bring its locking finger into engagement with the web 16. If now, for any reason, the gas stops flowing through the tube the valve disk 19 will swing downwardly by gravity, striking against the locking finger 24 to swing the lever out of engagement with the web 16 to permit the closing of the valve. As soon as the valve has been closed, the lever will automatically swing back to the position shown in Fig. 2 to lock the valve against opening upon renewed flow of the gas through the tube.

In order to provide means for manually opening the cut-off valve the tube immediately below the free end of the lever arm 25 is perforated as at 26 for the passage of a spring-pressed pin 27 provided at its outer end with a head 28, the spring 29 engaging in a bearing between the head of the pin and a washer 30 surrounding the opening 26. The pin is provided interiorly of the tube with a collar 31 of rubber or other suitable material which, under normal conditions, is held by the spring in close engagement against the inner face of the tube to prevent leakage through the perforation 26 thereof. The pin and spring are protected from injury by a flared conical sleeve or housing 32.

In operation the gas is turned on in the usual manner by opening the valve 12 and the pin 29 is then forced inwardly to swing the locking lever out of engagement with the valve 19 and permit the pressure of gas through the tube to swing said valve to open position, in which position it will be held as long as gas continues to flow through to the burner. If, for any reason, the flow of gas to the burner is interrupted, as by a momentary cutting off of the gas in the mains, or for any other reason, the valve will fall by gravity and be locked in closed position in the manner previously described. Presuming that the gas again begins to flow, it will be apparent that it cannot pass through the closed and locked valve 19 and therefore cannot escape through the burner tip.

In the foregoing description it will be apparent that I have provided an effective form of automatic cut-off valve and one with which burners may be left burning without watching with impunity. It will of course be understood that I do not wish to limit myself to the specific details of construction illustrated in the drawing as certain minor changes, within the scope of the appended claims, may be made at any time without departing from the spirit of my invention.

What I claim is:

1. In automatic cut-offs for gas burners, a burner tube having a reduced passage, a valve mounted to swing by gravity to close the passage and by pressure of gas to open the same, and a lever swingingly mounted in the tube and having a rearwardly directed upper end over which the valve swings in closing and which in turn swings to engage the valve when closed to lock the same in position.

2. In automatic cut-offs for gas burners, a burner tube having a reduced passage, a valve mounted to swing by gravity to close the passage and by pressure of gas to open the same, a counter-weighted lever swingingly mounted in the tube and having a rearwardly directed upper end over which the valve swings in closing and which in turn swings to engage the valve when closed to lock the same in position, and exteriorly operable means for manually releasing the valve.

3. In automatic cut-offs for gas-burners, a burner tube having a reduced passage, a valve mounted to swing by gravity to close the passage and by pressure of gas to open the same, and means for locking the valve in closed position, said means including a counter-weighted lever swingingly mounted in the tube and having a normally horizontally disposed rear arm and an upwardly and forwardly directed forward arm, and a rearwardly directed arm formed on the upper end of the forward arm, said valve being adapted in closing to swing over the rearwardly directed arm, which in turn swings back to engage the valve when closed to lock the valve in closed position.

4. In automatic cut-offs for gas burners, a burner tube having a reduced passage, a valve mounted to swing by gravity to close the passage and by pressure of gas through the tube to open the passage, and means pivoted within the tube and rearwardly of the valve and engageable with the valve for locking the valve in closed position.

5. In automatic cut-offs for gas burners, a burner tube having a reduced passage, a valve mounted to swing by gravity to close the passage and by pressure of gas through the tube to open the passage, and means pivoted rearwardly of the valve and engageable therewith for locking the valve in closed position, said means being adapted to be moved into inoperative position by the valve as this latter member swings into closed position, and to resume its normal locked position as soon as the valve swings back to a complete closed position.

6. In automatic cut-offs for gas burners, a burner tube having a reduced passage, a valve mounted to swing by gravity to close the passage and by pressure of gas to open the passage, and means for locking the valve in closed position, said means including a lever pivoted in the tube at a point in the rear of the valve and having a normally horizontally disposed rear arm and an upward and forwardly directed forward arm, and a rearwardly directed arm formed on the upper end of the forward arm, said valve being adapted in closing to swing over the rearwardly directed arm, which in turn swings back to engage the valve when closed to lock the valve in closed position.

7. In automatic cut-offs for gas burners, a burner tube having a reduced passage, a valve mounted to swing by gravity to close the passage and by pressure of gas through the tube to open the passage, and means pivoted within the tube and rearwardly of

the valve for locking the valve in closed position, said means being moved into inoperative position upon the movement of the valve into closed position and being adapted to automatically resume its normal locked position as soon as the valve reaches a completely closed position, said means being engageable with the passage closing portion of the valve.

8. In automatic cut-offs for gas burners, a burner tube having a reduced passage, a valve mounted to swing by gravity to close the passage and by pressure of gas through the tube to open the passage, a counter-weighted lever swingingly mounted in the tube with its pivotal point disposed rearwardly of the valve, a rearwardly directed upper arm formed on the lever, said upper arm being moved into inoperative position during the movement of the valve into closed position, said upper arm being adapted to swing back into normal locking engagement with the valve as soon as the valve has reached a complete closed position.

9. In automatic cut-offs for gas burners, a burner tube having a reduced passage, a valve mounted to swing by gravity to close the passage and by pressure of gas through the tube to open the passage, and means pivoted within the tube rearwardly of the valve for locking the valve in closed position by engaging the passage closing portion of the valve.

In testimony whereof I affix my signature in presence of two witnesses.

HERMAN S. LEINSS. [L. S.]

Witnesses:

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JAMES G. LESLIE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."