

**1,031,224.**

FIG. 1.

*Fig. 1.*

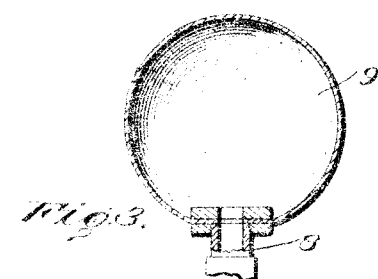


Fig. 3.

Witnesses

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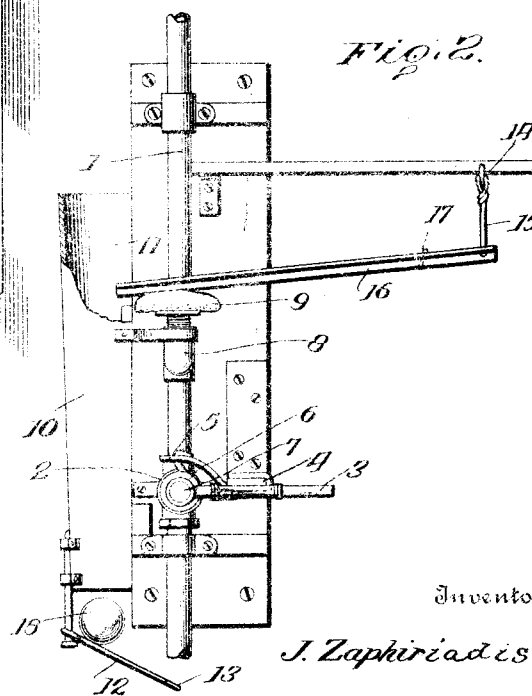


Fig. 2.

Invento

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334

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# UNITED STATES PATENT OFFICE.

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## AUTOMATIC GAS CUT-OFF.

1,031,224.

Specification of Letters Patent.

Patented July 2, 1912.

Application filed February 8, 1912. Serial No. 676,396.

*To all whom it may concern:*

Be it known that I, JOHN ZAPHIRIADIS, a citizen of the United States, residing at Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Automatic Gas Cut-Offs, of which the following is a specification.

This invention has relation to automatic gas cut-offs, and has for its object to provide a simple device adapted to be applied to the service pipe of a building and in which the parts are maintained in normal positions by the pressure of the gas. If for any reason the flow of the gas should be stopped or the pressure reduced the parts of the device assume abnormal positions, whereby a valve is operated to completely close the passage-way through the service pipe so that when the flow of gas is begun again and the pressure is reestablished, the gas cannot pass through the service pipe to any of the tips or burners in the building until the said valve has been opened. This will prevent danger and accident frequently caused by the sudden interruption of the flow of gas to lighted tips or burners when the flow is reestablished before the gas is cut off from the said tips or burners.

With the above object in view the device consists of an inflatable bulb which is connected with the service pipe. This bulb normally supports the free end portion of a trough in which is located a relatively heavy ball. A spring actuated valve is positioned in the service pipe and a chute extends from the delivery end of the trough in a downward direction. A link is pivotally connected with the lower end of the chute and is adapted to be engaged with the handle of the said spring actuated valve to hold the same open against the tension of its spring. It will therefore be seen that when the bulb is deflated by lack of pressure in the service pipe the trough will incline so that the ball may roll therefrom and pass down in the chute and hit the link and knock the same out of engagement with the handle of the spring actuated valve, whereby the said valve will automatically close and interrupt the passage-way through the service pipe.

For a full understanding of the invention reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a perspective view of the cut-

off; Fig. 2 is a side view of the same with parts broken away, showing the positions of the parts when the bulb is collapsed; Fig. 3 is a sectional view of the bulb distended.

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.

As illustrated in the accompanying drawing, the service pipe is indicated at 1. This pipe is provided with a spring actuated valve 2 having a handle 3. A stop 4 is mounted upon a fixed object and is located in the path of movement of the handle 3. An arm 5 is carried by the stop 4 and one end of a coiled spring 6 is attached to the arm 5 and the other end of the said spring is attached to the stem 7 of the valve 2.

A branch pipe 8 is connected with the service pipe 1 and an inflatable bulb 9 is located over the end of the pipe 8. A chute 10 is located adjacent the pipe 8 and bulb 9 and is vertically disposed. This chute is open at its ends and at its side portion is provided with a recess 11. A link 12 is pivotally connected with the lower end of the chute 10 and is provided with an eye 13 which is adapted to receive the free end portion of the handle 3 of the valve 2. When the handle is in engagement with the eye of the link 12, the valve 2 is open, but when the handle 3 is disengaged from the eye of the said link the spring 6 will turn the handle 3 against the stop 4 so that the valve 2 is closed. An arm 14 is attached to a fixed support and a bail 15 is connected with the said arm. The said bail supports one end of a trough 16 and the other end portion of the said trough rests upon the bulb 9, and the extremity of the trough is located within the recess 11 in the upper portion of the chute 10. A barrier 17 is located in the trough 16 and a ball 18 is located in the said trough between the delivery end thereof and the said barrier 17.

The operation of the device is as follows: When there is a flow of gas through the service pipe 1 the gas enters the branch pipe 8 and inflates the bulb 9. The bulb thus inflated holds the delivery end of the trough 16 in an elevated position with relation to its other end so that the ball 18 lies against the barrier 17. The handle 3 is engaged with the eye 13 of the link 12 and thus the gas may readily flow through the service pipe 1. If for any reason, however, the flow

of gas through the pipe 1 is interrupted, the bulb 9 collapses and the delivery end of the trough 16 is lowered in the recess 11. Thus the delivery end of the said trough assumes a lowered position with relation to the other end thereof and the ball 18 rolls down the said trough and enters the chute 10 and falls down through the same and strikes the link 12 and knocks the eye 13 thereof out of engagement with the free end portion of the handle 3. As soon as the said handle is liberated, the tension of the spring 6 comes into play and the valve 2 is automatically closed. Thus the passageway through the pipe 1 is interrupted and when the flow of gas is again established through the same the gas cannot pass the valve 2 until it is opened and consequently any gas jets or burners which may have been open at the time that the flow of gas was interrupted will not be supplied. This prevents the escape of the gas at the said jets or burners with the dangers incident thereto.

While the foregoing description and accompanying drawings set forth the preferred embodiment of my invention, it is to be understood that various changes may be made in the details of construction and arrangement and proportions of the parts without departing from the scope of the invention as defined by the appended claims.

Having thus described the invention, what is claimed as new is:

1. In combination with a service pipe, a valve located therein, a chute supported adjacent the valve, a link pivotally connected with the chute and engageable with the valve to hold the same in open position, an inflatable member connected with the pipe,

and a releasing means retained by the member when in inflated condition and when deflated adapted to permit the same to descend through the chute and strike the link and disengage the same from the valve.

2. In combination with a service pipe, a valve located therein, means for holding the valve in open position, an inflatable member connected with the pipe, a trough having a free end portion resting upon the member, and a ball located in the trough and adapted when the member is deflated to fall and release the valve.

3. In combination with a service pipe, a valve located therein, means for holding the valve in open position, a chute supported adjacent the valve, a trough having an end portion entering the chute, a ball located in the trough, and an inflatable member connected with the pipe and normally holding the delivery end of the trough in elevated position.

4. In combination with a service pipe, a valve located therein, means for holding the valve in open position, a branch pipe connected with the service pipe, an inflatable member mounted upon the branch pipe, a trough having a free end portion resting upon the inflatable member and held in an elevated position when the said member is inflated, said trough having its delivery end above the valve holding means, and a ball located in the trough.

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

JOHN ZAPHIRIADIS. [L.S.]

Witnesses:

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ALBERT S. HOWARD.