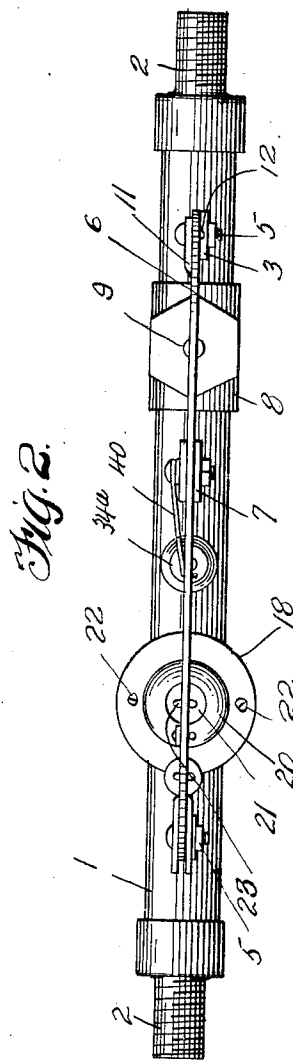
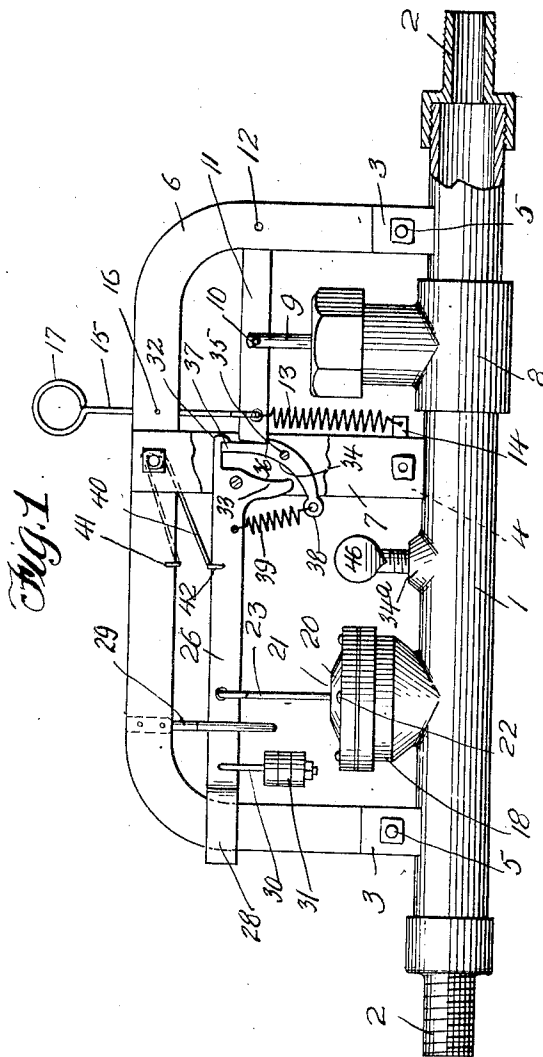


G. E. CROOKSHANK.
VALVE.
APPLICATION FILED OCT. 7, 1909.

986,694.

Patented Mar. 14, 1911.
3 SHEETS—SHEET 1.



WITNESSES:

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ATTORNEYS.

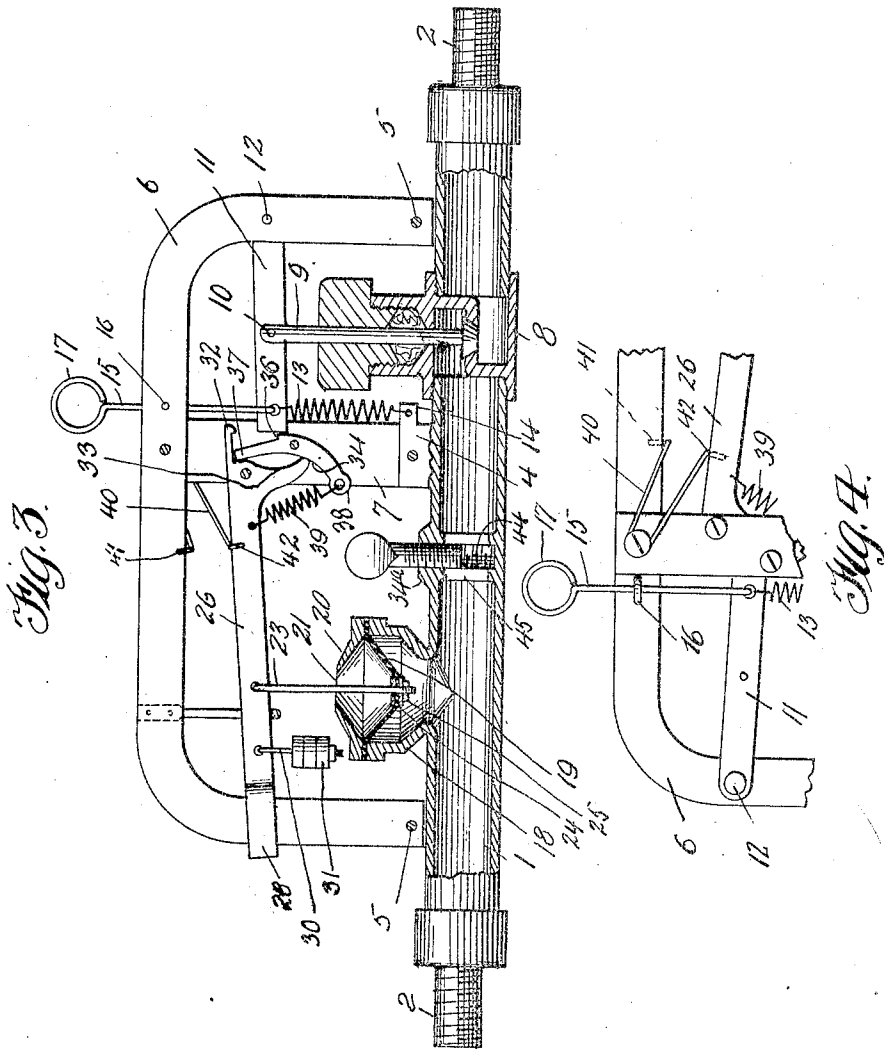
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986,694.

Patented Mar. 14, 1911.

3 SHEETS-SHEET 2.



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G. E. CROOKSHANK.
VALVE.
APPLICATION FILED OCT. 7, 1909.

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Patented Mar. 14, 1911.
3 SHEETS—SHEET 3.

Fig. 5.

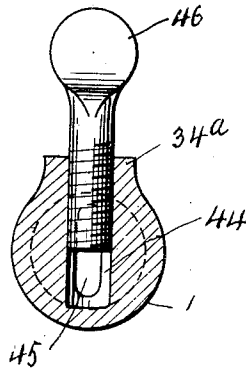


Fig. 6.

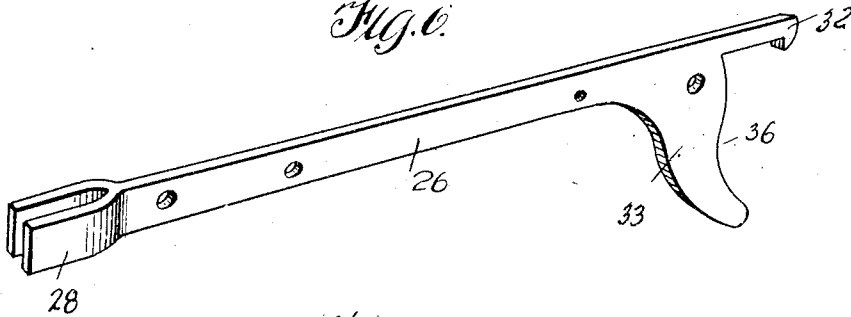
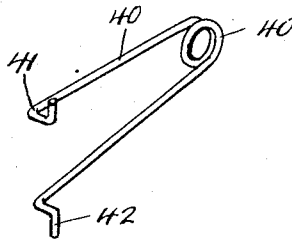


Fig. 7.



WITNESSES:--

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UNITED STATES PATENT OFFICE.

GEORGE E. CROOKSHANK, OF INDIANA, PENNSYLVANIA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF ONE-THIRD TO KATE CROOKSHANK AND ONE-THIRD TO EDITH I. ENGLE, BOTH OF INDIANA, PENNSYLVANIA.

VALVE.

986,694.

Specification of Letters Patent.

Patented Mar. 14, 1911.

Application filed October 7, 1909. Serial No. 521,469.

To all whom it may concern:

Be it known that I, GEORGE E. CROOKSHANK, a citizen of the United States of America, residing at Indiana, in the county of Indiana and State of Pennsylvania, have invented certain new and useful Improvements in Valves, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to certain new and useful improvements in valves, and more particularly to that type of valve adapted to automatically shut off a supply of gas due to a reduction of pressure within the gas supply pipe, either by a burst hose connection, a shut off by the gas company controlling the main supply, a bursting of the gas mains from the supply, or any such accidents that may occur as to reduce the supply of gas to a gas burner, stove, furnace or similar structure.

The primary object of my invention is to provide a novel valve wherein positive and reliable means are employed for closing the valve when the pressure within the gas supply pipe is reduced or shut-off.

Another object of the invention is to provide an automatic gas valve which will remain in a closed position unless manually actuated to allow gas to pass through the same.

A further object of the invention is to provide an automatic valve that is simple in construction, durable and positive in its action.

A still further object of this invention is to provide a valve that can be advantageously used in connection with gas burners consuming either artificial or natural gas; the valve preventing a waste of gas and asphyxiation.

I attain the above objects by a valve construction that can be conveniently located between a burner and the meter interposed upon a gas supply line, the valve being located preferably in the cellar of a building wherein it will be inconspicuous and out of the road relative to a burner or compartment in which the same is located.

With such an understanding of the principal objects of my invention, it will be easy to observe other objects after reference is made to the drawings forming a part of this specification showing the detailed con-

struction, which will be hereinafter described and then claimed.

While I show in the accompanying drawing what I believe to be a practical embodiment of my invention, still it is to be understood that the structural elements thereof can be varied or changed, as to the size, proportion and manner of assemblage without departing from the spirit of the invention.

In the drawing:—Figure 1 is a side elevation of the valve. Fig. 2 is a plan of the same. Fig. 3 is a longitudinal sectional view. Fig. 4 is an elevation of a portion of the valve actuating mechanism. Fig. 5 is a cross sectional view taken on line $x-x$ of Fig. 3. Fig. 6 is a perspective view of a release lever, and Fig. 7 is a perspective view of a spring forming part of the valve mechanism.

In the drawings the reference numeral 1 denotes a section of pipe having the ends thereof provided with reduction nipples 2, and to these nipples can be connected the ends of hose, pipes or similar gas conduits.

3 and 4 denotes lugs carried by the pipe 1 and connected to the lugs 3 by screws and nuts 5 or other fastening means are the ends of an inverted U shaped frame 6. This frame approximately intermediate the ends thereof is connected by vertical parallel bars 7 to the lug 4, said lug being located between the lugs 3.

8 denotes a valve carried by the pipe section 1, said valve being of the well known type of shut-off valve. The stem 9 of said valve is pivotally connected by a pin 10 to a lever 11 pivotally connected, as at 12, to one end of the frame 6. The outer end of the lever 11 is connected by a coiled retractile spring 13 to an extension 14 at the lug 4. It is also connected to a vertical hand rod 15 movably supported by an eyelet 16, carried by the frame 6. The upper end of the rod 15 is looped or provided with a suitable handle 17, whereby the rod can be easily raised to open the valve 8.

18 denotes a cylindrical horizontal diaphragm casing carried by the pipe section 1 and communicating therewith. This casing is provided with a flexible or resilient diaphragm 19, and with a cover 20 having a central opening 21, said cover being secured to the casing 18 by suitable means, as screws 22.

23 denotes a vertical rod connected by washers 24 and a nut 25 to the diaphragm 19. The upper washer 24 is fixed upon the rod, while the other washer and nut are removable. The upper end of the rod 23 extends through the opening 21 and is pivotally connected to a release lever 26, which is pivoted between the bars 7 by a pin 27. The opposite end of said lever is bifurcated, as at 28 to straddle the end of the frame 6 and prevent the lever from unduly wobbling or shifting. The lever 26 is limited in its movement by a depending hook 29, carried by the frame 6, and connected to said lever, adjacent to the bifurcated end thereof, is a weight holder 30 having detachable weights 31. The pivoted end of the release lever is provided with a hook 32 and an arm 33.

34 denotes a latch pivotally mounted between the bars 7 by a pin 35. This latch is provided with a shoulder 36 adapted to engage the end of the valve lever 11 and hold the valve in an open position, and with a hook 37 adapted to be engaged by the hook 32, and with an apertured end 38, which is connected to the release lever by a coiled spring 39.

40 denotes a spring mounted on the end of the fastening screw 5 of the frame 6 and bars 7, said spring having the ends thereof bent, as at 41 to engage under the frame, and as at 42 to engage the upper edge of the release lever 26.

34* denotes a regulator arranged in the pipe section 1 adjacent to the diaphragm casing. This regulator comprises a shell having a vertical interior threaded opening 44 communicating with the interior of the pipe section 1 through the medium of oppositely disposed vertical slots 45. A screw 46 is adjustably mounted in the shell and is adapted to control the passage of gas to the diaphragm casing 18.

Operation: A valve constructed as above described operates in the following manner:—Operation: To set the valve in an open position, the handle-rod 15 is gripped and the valve-lever 11 is raised to allow the shoulder 36 of the latch 34 to engage under the outer end of the valve-lever 11 and retain said lever in an elevated position with the spring 13 under tension. The valve 8 is then opened and gas can pass through the valve to the regulator 34*. This regulator is adjusted in case of an abnormal pressure, whereby the pressure of gas entering the casing 18 cannot injure or burst the diaphragm within said casing. Assuming that the pressure within the pipe section 1 is reduced, the diaphragm 19 immediately lowers and moves on release lever 26, causing the arm 33 of said lever to impinge the latch 34 and release the valve-lever 11, allowing the tension of the spring 13 to close the valve 8, which remains in a closed position

until the handle-rod 15 is elevated. The springs 40 and 39 cooperate in retaining the shoulder 36 of the latch 34 in engagement with the valve-lever 11. It is through the medium of the weights 31 that the diaphragm can be held against certain excessive pressures within the pipe section 1.

Having now described my invention what I claim as new, is:—

1. In a valve, the combination with a gas supply pipe, a shut-off valve carried by said pipe, and a regulator adapted to control the passage of gas through said pipe, of a frame carried by said pipe, bars connecting said frame to said pipe, a valve lever pivotally connected to said frame and to the valve stem of said valve, a handle rod connected to said valve lever and guided by said frame for raising said lever, a spring connected to said lever and adapted to normally maintain said valve in a closed position, a latch pivotally mounted between said bars and adapted to engage said valve lever and hold said valve in an open position, a release lever pivotally connected to said bars and adapted to hold said latch in engagement with said valve lever, and means actuated by a reduction in the pressure of gas within said gas supply pipe to move said release lever and cause said latch to release said valve lever.

2. In a valve, the combination with a gas supply pipe, a shut-off valve carried by said pipe, and a regulator adapted to control the passage of gas through said pipe, of a frame carried by said pipe, bars connecting said frame to said pipe, a valve lever pivotally connected to said frame and to the valve stem of said valve, a handle rod connected to said valve lever and guided by said frame for raising said lever, a spring connected to said lever, and adapted to normally maintain said valve in a closed position, a latch pivotally mounted between said bars and adapted to engage said valve lever and hold said valve in an open position, a release lever pivotally connected to said bars and adapted to hold said latch in engagement with said valve lever, means actuated by a reduction in the pressure of gas within said gas supply pipe to move said release lever and cause said latch to release said valve lever, said means including a casing communicating with said pipe and a diaphragm within said casing and adapted to move said release lever by a reduction in the pressure of gas within said gas supply pipe.

3. In an automatic valve, the combination with a gas supply pipe, a shut-off valve carried by said pipe, of a frame to said pipe, a lever pivotally connected at one end to said frame carried by said pipe, bars connecting said frame and adapted to open and close said valve, a spring connecting said

lever to one of said bars, a latch pivotally
mounted between said bars and adapted to
engage said lever and hold the valve in an
open position, a release lever pivotally
5 mounted between said bars and adapted to
engage said latch and release said valve
lever, a controlling spring connecting said
latch to said release lever, means actuated
by a reduction of the pressure of gas within
10 said gas supply pipe and adapted to move
said release lever and cause said latch to
release said valve lever to close said valve,
said means including a casing communi-
cating with said pipe and a diaphragm with-
in said casing and connecting with said re- 15
lease lever.

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

GEORGE E. CROOKSHANK.

Witnesses:

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J. A. CRUSSMAN.