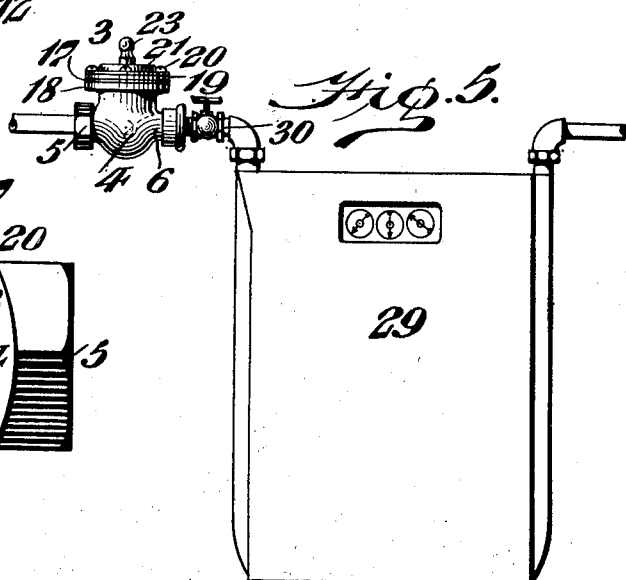
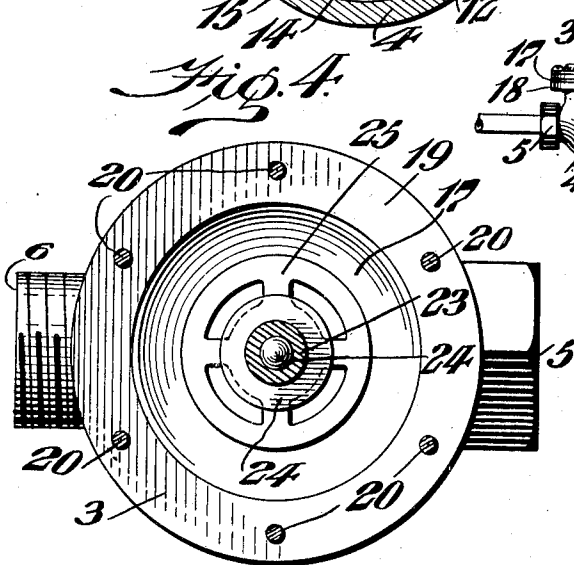
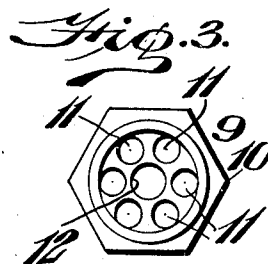
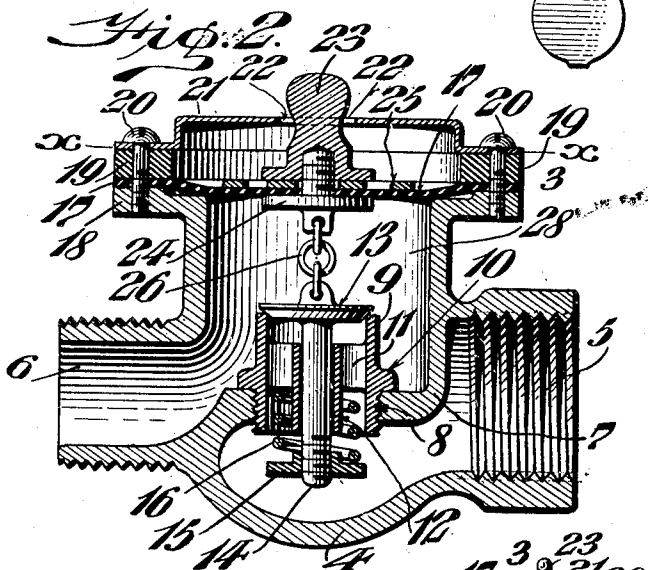
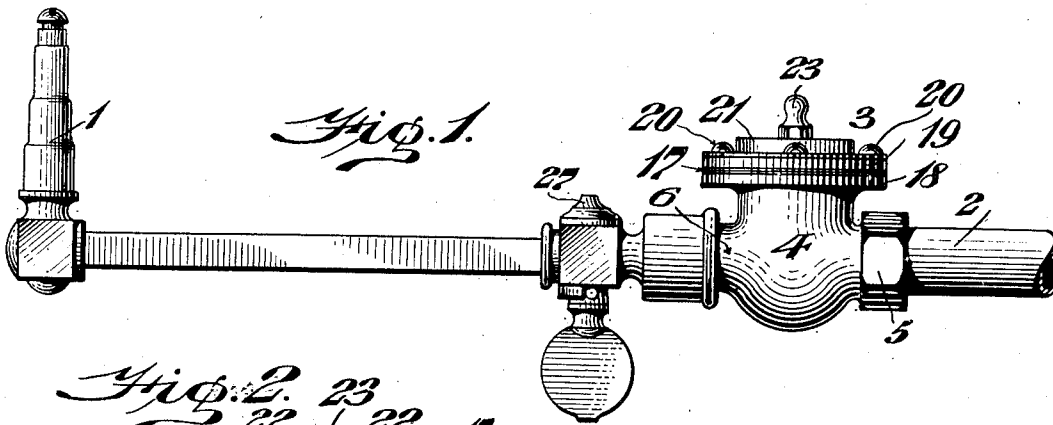


B. L. BOND & G. V. KARLSON.
ATTACHMENT FOR GAS PIPES, BURNERS, &c.
APPLICATION FILED FEB. 13, 1912.

1,056,001.

Patented Mar. 18, 1913.



WITNESSES

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UNITED STATES PATENT OFFICE.

BENJAMIN L. BOND AND GUSTAV V. KARLSON, OF PHILADELPHIA, PENNSYLVANIA.

ATTACHMENT FOR GAS PIPES, BURNERS, &c.

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Specification of Letters Patent.

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Application filed February 13, 1912. Serial No. 677,374.

To all whom it may concern:

Be it known that we, BENJAMIN L. BOND, a citizen of the United States, and GUSTAV V. KARLSON, a subject of the King of Sweden, both residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Attachment for Gas Pipes, Burners, &c., of which the following is a specification.

Our invention relates to a new and useful attachment for gas pipes, burners, or other suitable points in a gas system, to prevent accidental escape of gas therefrom, and consists of providing a valve which will automatically close when the pressure of the gas is reduced and which valve, it is necessary to operate manually before the gas can pass to the desired point.

It further consists of providing a diaphragm, suitably connected with the valve proper, and which diaphragm is adapted to be held by the pressure of the gas in order to open the valve and to hold the same from its seat.

It further consists of other novel features of construction, all as will be hereinafter fully set forth.

For the purpose of illustrating our invention, we have shown in the accompanying drawings one form thereof which is at present preferred by us, since the same has been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which our invention consists can be variously arranged and organized and that our invention is not limited to the precise arrangement and organization of these instrumentalities as herein shown and described.

Figure 1 represents a side elevation of a gas burner showing our novel attachment in suitable connection therewith. Fig. 2 represents a vertical sectional view, on an enlarged scale, of the attachment. Fig. 3 represents a top plan view of a part of the device in detached position. Fig. 4 represents a sectional view on line *x-x* Fig. 2. Fig. 5 represents a diagrammatic view showing the device connected to a gas meter.

Similar numerals of reference indicate corresponding parts in the figures.

Our invention is designed to prevent accidental escape of gas from a burner, or other point, where the stop cock of the valve

of the burner or other fixture has been left open.

We have found in buildings where gas is supplied by means of a coin inserted into meters, that considerable loss of life has been occasioned by reason of the fact that a stop cock valve or burner has not been closed or turned off, when the gas automatically ceases to flow by reason of the fact that the amount of gas equal to the value of the coin has been consumed, and where another member of the household has inserted another coin, gas has been permitted to pass from the burner into the room and occasioned the death of the inmate.

Our invention consists in providing a valve in the gas pipe at a suitable point with respect to the burner which will automatically close as soon as the flow of gas has ceased, or the pressure thereof is reduced sufficiently to permit the valve to close, and which valve must be manually operated in order to permit the gas to again pass to the burner.

Referring to the drawings:—1 designates a gas burner and 2 the pipe leading to a suitable source of supply (not shown), and at a suitable point we provide a valve 3. As here shown, the valve consists of a casing 4 having the inlet 5, and the outlet 6, with the dividing wall 7 therein provided with a suitable opening 8. In the opening we mount a sleeve 9, which may be provided, as here shown, with the flange 10 to seat on the dividing wall 7. The said sleeve 9 is provided with a plurality of ports 11 there-through and also with the guide tube 12. The sleeve and guide-tube are of the same interior diameter and form a nozzle by means of which entering gas is projected directly upward against a controlling diaphragm hereinafter described.

13 designates the valve which has a seat on the upper end wall of the sleeve 9, in order to control the passage through the ports 11. The valve 13 is provided with a stem 14 which is movable in the guide 12. The stem 14 is suitably threaded in order to receive the nut 15 against which bears a spring 16, which also bears against a suitable part of the sleeve 9, as will hereinafter be explained. It will be seen that by the adjustment of the nut 15, the tension of the spring 16 may be varied.

17 designates a diaphragm suitably sup-

ported in the casing 4, and as here shown, the diaphragm 17 is secured, in any suitable manner, between the flange 18 on the casing 4 and the ring 19, it being noted that the 5 diaphragm is of suitable size and material in order to rise and fall a suitable distance. The fastening means as here disclosed, consists of the screws 20 which also serve to hold a cap 21 in place to suitably close the 10 casing. The cap is provided with an opening 22 through which is movable a plug 23 which serves as a grasping means for manually operating the valve 13, it being noted that said plug 23 is in threaded engagement 15 with a washer 24, and that the diaphragm and a disk 25 are firmly connected together by means of the said plug 23 and washer 24, suitable means 26 connecting the washer 24 with the valve 13. It will be noted that 20 the diaphragm 17 is situated directly within the large chamber 28 of the casing and upon the opposite side of the valve 13 from the inlet of the casing and that the said diaphragm 17 is situated in the direct path of 25 the flow of the gas to be acted upon by the full pressure thereof when the said valve 13 is open so that the full direct pressure of the gas will hold the valve 13 in elevated position until the said pressure lowers for 30 any reason.

The operation of the device is as follows:—When the valve is in the position shown in Fig. 2, the pressure of the gas from the pipe 2 is not sufficient to remove 35 the valve 13 from its seat against the tension of the spring 16, but when it is desired that the gas reach the burner 1, the operator by grasping the plug 23 can raise the diaphragm and so the valve 13 from its 40 seat against the tension of the spring 16, immediately upon which the gas will pass through the ports 11 and issue from the nozzle 9 in a jet to enter the large chamber 28 in the casing 4, and the direct pressure 45 of the jet of gas will directly impinge against the diaphragm 17 and move and hold it in its elevated position to which it has been raised by the operator. The gas can thus pass the cock 27, which has been 50 suitably turned for this purpose, and reach the burner 1. As heretofore stated, where the slot meter in a gas system is used, as soon as the amount of gas equal to the value of the coin, has been consumed, the flow of 55 gas from the pipe 2 will cease, immediately upon which the pressure having been relieved from the diaphragm 17, the spring 16 will act to lower the valve 13 and close the same against the seat, and drawing down 60 the diaphragm 17 into the position seen in Fig. 2, so that no further gas can pass to

the burner until the valve 13 is again manually opened. The advantage of this will readily be apparent for should the stop cock of the burner not be closed, and another 65 member of the household drop another coin into the slot of the meter, the gas would readily pass to the room and the burner not being lighted, the gas would be wasted and if the occupant of the room be asleep, suf- 70 focation may result. This is impossible with our device.

As shown in Fig. 5, it will of course be apparent that the valve 3 is adapted to be used at any point where it is desired to pre- 75 vent the improper escape of gas. In this connection the valve 3 is placed at a suitable point with respect to the meter 29 and the main supply pipe 30, the operation being that the gas entering the inlet 5 of the valve 80 will have sufficient pressure in order to hold the diaphragm 17 in suitable position to keep the valve 13 from its seat during the ordinary consumption of gas through the building, but should the supply of the meter be broken, as often occurs when the met- 85 ers are broken into to obtain money, a free flow of gas occurs, this would reduce the pressure against the diaphragm 17 causing the spring 16 to immediately operate to 90 close the valve 13 so that the further improper escape of gas is prevented.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent, is:— 95

In a device of the character stated, a casing formed with a dividing wall having an opening and forming an inlet chamber on one side and an outlet chamber on the other side, having, respectively, an inlet and an 100 outlet, an imperforate sleeve secured in said opening to form a nozzle, projecting above said dividing wall, and having a seat at its open upper end situated within said outlet chamber and at a level above the outlet; a 105 valve fitting said seat and movable in said outlet chamber, said sleeve and valve being of considerably less diameter than the interior diameter of said outlet chamber, a diaphragm in said outlet chamber directly 110 opposed to said sleeve, means connecting said diaphragm and valve, yielding means connected to seat said valve against the inlet pressure, and means exterior of the casing and connected to positively move the 115 diaphragm and the valve from its seat.

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Witnesses:

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