A. L. SMYLY.

FLUID SAFETY VALVE.

APPLICATION FILED NOV. 12, 1915.

1,243,998. Patented Oct. 23, 1917.

Fig. 1.

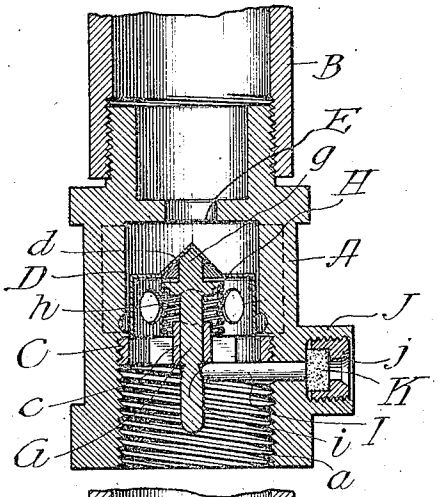


Fig. 2.

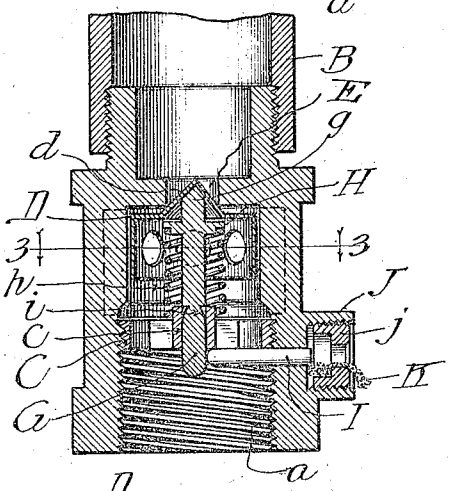
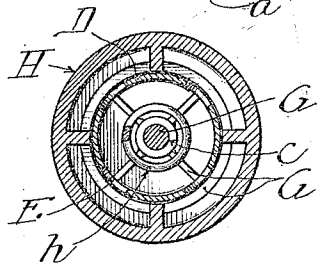


Fig. 3



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FLUID SAFETY-VALVE.

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To all whom it may concern:

Be it known that I, ARTHUR L. SMYLY, a citizen of the United States of America, and resident of Chicago, Illinois, have invented a certain new and useful Improvement in Fluid Safety-Valves, of which the following is a specification.

My invention relates to gas safety valves of that kind in which a movable valve member is arranged to rise and shut off the flow of gas when the pressure becomes too great, and means are also provided for closing said valve in case of fire, the heat serving to release a spring which then automatically operates to close the valve.

The object of my invention is to provide an improved construction and arrangement whereby the heat responsive means for causing the automatic closing of the valve are accessible without opening the casing of the valve and without breaking into the gas pipe connections, thus permitting immediate inspection of the valves, and allowing renewal of the heat responsive means, such as solder, in a more convenient and satisfactory manner than heretofore.

It is also an object to provide novel features of construction and combinations tending to increase the general efficiency and serviceability of a safety valve of the foregoing general character.

To the foregoing and other useful ends my invention consists in matters hereinafter set forth and claimed.

In the accompanying drawings—

Figure 1 is a vertical section of a gas safety valve embodying my invention, showing the condition of the parts before the valve is operated by heat.

Fig. 2 is a similar view showing the solder or other heat responsive means melted and the valve in closed position as the result of fire.

Fig. 3 is a horizontal section on line 3—3 in Fig. 2.

As thus illustrated, my invention comprises a valve casing A having its upper end adapted to be screw connected with a gas pipe B, and having its lower end internally threaded at *a* to receive the pipe which feeds the gas thereto. A spider-shaped support C is screwed into the lower end portion of said valve casing and forms a support for the lower edge of the inverted cup-shaped movable valve member D, which latter has a cone-shaped top portion *d* for closing the opening or valve seat E when the said valve member is raised from its normal position. This valve member has its sides provided with openings for the passage of the gas upward, but abnormal pressure will raise this sheet metal valve member until it engages the seat E and thereby stops the flow of gas. A post G is disposed centrally of the spider C in a vertical opening *c*, and the upper end of this post is provided with a cone-shaped portion *d*, whereby the valve member D is accurately centered in the structure when at rest. This post has a shoulder H near its upper end, and a spring *h* is interposed between this shoulder and the top of the spider C, this spring being normally under compression. The post G is held normally in the position shown in Fig. 1 by a locking pin I inserted through the side of the casing A, the post G having a notch *i* for the end of said pin, whereby the latter holds the post against rising. The valve casing is provided with a boss J which is internally threaded to receive the hollow plug or thimble *j*, which latter contains a body of solder K at its inner end. The outer end of the pin I bears against the solder K, whereby the tension of the spring *h* is normally resisted.

Under ordinary conditions, the valve member D will remain unseated by gravity as shown in Fig. 1, but will rise whenever the pressure of the gas increases. Also, and in case of fire the solder K will melt, thereby releasing the pin I and allowing the latter to move endwise as a result of the wedging action produced on its inner end by the notch *i*, thus permitting the spring to raise the post G and close the valve. When the valve is inspected the condition thereof can be readily determined, as the solder is exposed to view and will show whether it is in original condition or has been melted by heat. Other substances, of course, can be used as a substitute for solder and can be employed for holding the pin I in normal position.

What I claim as my invention is:—

1. A heat-operated fluid safety valve comprising a movable valve member held normally in open position by gravity, a spring to close said member in case of emergency only, a locking pin to restrain the spring from acting to close the valve, but permit-

ting closure of the valve by other means, and means having a fusible body to hold said pin in its operative position.

2. The heat-operated fluid safety valve (substantially as set forth in claim 1), said pin extending laterally of the valve, and said body engaging the outer end of said pin.

3. The heat-operated fluid safety valve (substantially as set forth in claim 1), said valve having a portion to engage the inner end of said pin, and said body when melted permitting outward endwise shift of said pin by said portion in response to the action of said spring.

4. The heat-operated fluid safety valve (substantially as set forth in claim 1), said means including a readily removable screw-threaded element which contains said body.

5. A fluid safety valve comprising a movable valve member held normally in open position by gravity, a spring to close said member in case of emergency only, and instrumentalities having a fusible body to restrain the spring from acting to close the valve, but permitting closure of the valve by other means, said instrumentalities including a readily removable screw-threaded element which contains said body.

6. The fluid safety valve (substantially as set forth in claim 5), and said body being visible to permit easy inspection thereof.

7. The fluid safety valve (substantially as set forth in claim 5), said body being exposed to the atmosphere, and said instrumentalities including a pin which pushes outward against the body.

8. The heat-operated fluid safety valve (substantially as set forth in claim 1), and said member being operable by abnormal gas pressure.

9. The fluid safety valve (substantially as set forth in claim 5), and said member being operable by abnormal gas pressure.

Signed by me at Chicago, Illinois, this 27th day of October, 1915.

ARTHUR L. SMYLY.

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