

F. SCHMIDT.
 DEVICE TO CONTROL THE RECEPTION OF GAS IN BUILDINGS.
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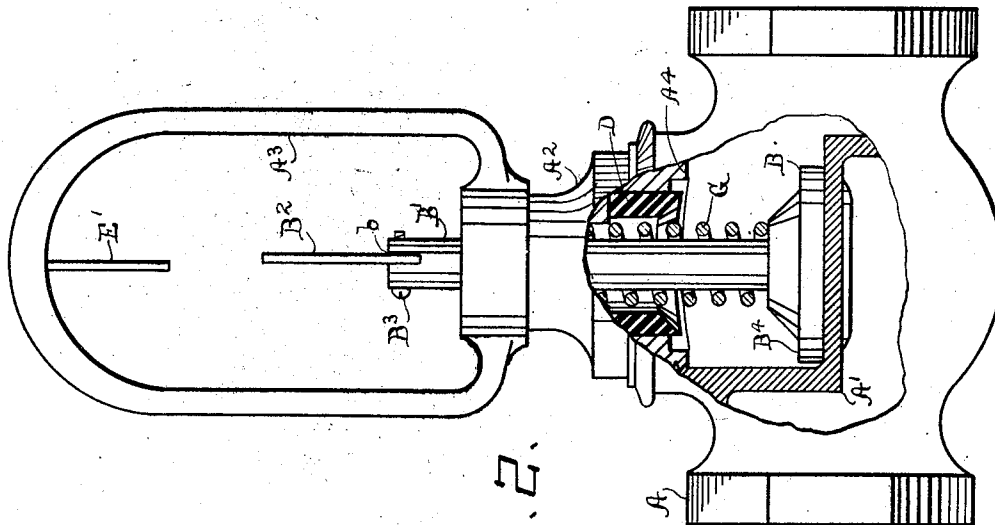


Fig. 2.

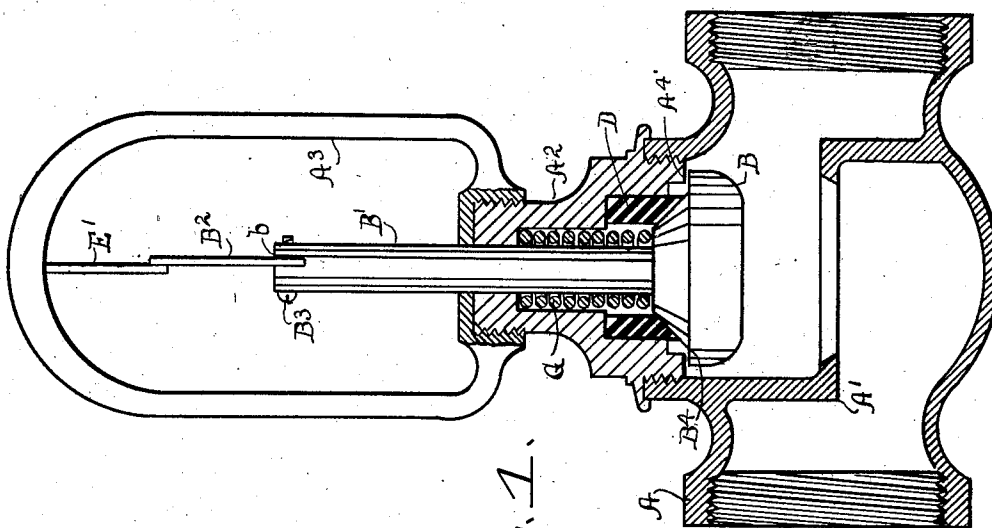


Fig. 1.

WITNESSES
 Arthur P. Garro
 S. H. Stodder

INVENTOR
 Fredrick Schmidt
 BY
 James D. Stetson
 ATTORNEYS

UNITED STATES PATENT OFFICE.

FREDRICK SCHMIDT, OF NEW YORK, N. Y.

DEVICE TO CONTROL THE RECEPTION OF GAS IN BUILDINGS.

944,638.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FREDRICK SCHMIDT, a citizen of the United States, residing in the borough of Brooklyn, in the city and State of New York, have invented a certain new and useful Device to Control the Reception of Gas in a Building; and I do hereby declare that the following is a full and exact description thereof.

The device is of the class which shuts off the gas automatically by the heat in case of fire. The meter or any connected member may be exploded or ruptured so that the restraint ordinarily imposed on the induction is removed and a strong flow of gas may tend to come from the street main into the more or less damaged building, and increase the fire but my invention prevents any such mischief. I prefer to apply it to the service pipe through which the gas flows from the street-main into the meter, and will describe it as thus used. I mount in a small casing of brass or other suitable metal a double-faced valve and a sufficiently strong spring arranged to press it into the seat which controls the flow into the building, and I provide means for holding open such valve against the force of the spring by the aid of an easily fusible metal which will hold the valve open while cold, but will melt and instantly liberate the valve when the heat of the air in the apartment rises above a certain predetermined temperature.

I have devised a construction possessing marked advantages as will be fully set forth below and recited in the claims.

As soon as practicable after the fire is discovered the gas is additionally shut off by the ordinary means, and the device will be ready to be again adjusted for useful work by simply forcing open the valve and again placing the same or other fusible link in position.

The following is a description of what I consider the best means of carrying out the invention. The accompanying drawings form a part of this specification.

Figure 1 is a vertical section showing the device in its ordinary condition with the valve open to allow an unobstructed flow to the meter and the system of pipes throughout the building, and tightly forbidding any escape of gas around the valve stem. Fig. 2 is an elevation with a portion broken away. It shows the device in the condition it assumes when the temperature of the

room becomes unduly heated. The valve has been liberated by the fusible metal and has been forced to its seat by the action of its spring.

Similar letters of reference indicate like parts in both the figures where they appear.

A is the body or casing of the valve, certain portions being further designated when necessary by super-numerals.

A' is a horizontal partition near the middle height in the interior, in which the valve seat is formed.

A² is a screw-threaded cap closing a liberal aperture in the top, the upper end allowing the easy traverse of the valve stem and rigidly supporting a yoke A³ extending across the stem as shown.

The valve is finished at its edge to match its lower surface against the seat A', and its upper surface to form a tight junction with the work above, which will be more specifically described farther on.

B is the valve, B' the stem thereof extending upward from the valve and having a saw-kerf *b* at its upper end.

B² is a thin plate of metal preferably copper held in the kerf *b* by a transverse pin or screw B³. The length of this thin plate B² which extends above the heavier valve stem must be sufficient to allow of soldering such projecting part with the fusible solder to the corresponding thin plate E' which is secured by a transverse screw or otherwise to a yoke which is engaged with a part of the fixed portion of the device. In adjusting the parts the valve B is lifted against the force of a spring so that the thin plates B² and E' overlap each other. They are united by the fusible solder with proper skill and care in the manufacture, and so long as its ordinary temperature obtains the gas flows freely from the street main to the meter not shown through the liberal passage produced by the lifting of the valve B off the seat A', and my device is of no effect.

The upper part of the cap A² matches loosely without packing around the stem. Below that easy fitted bearing the orifice is enlarged and receives the spring before referred to, a helical spring G which loosely incloses the stem B' and exerts a longitudinally distending force.

The upper surface B⁴ of the valve outside of and concentric to the spring seat is finished to serve as an extra valve-face ready to close against any proper seat above. The

under face A⁴ of the cap may be matched directly metal to metal with the upper face of the valve, but this is not generally preferable; I so proportion the length of the plates B² E' and the extent of their overlap to be maintained by the fusible metal that there will be considerable space between the valve and the cap. In the space thus produced, I insert a ring D of soft vulcanized rubber of such thickness that in its uncompressed condition it will a little more than fill it. The thin plates will usually be put together with care in a manufactory and inserted in their united condition in the yoke and valve stem. Thus a ring D of soft rubber is fitted between the two faces,—below the cap and above the valve,—and by its elastic quality forms a tight joint with each. So long as the fusible metal uniting the thin plates B² and E' remains intact, the valve B is held up thereby against the force of the spring, but whenever a fire occurs and this carefully alloyed solder rises above the moderate temperature, say 150 Fahr. for which it is adapted, the solder will melt and releasing its hold on the valve stem the valve will smartly drop to its seat and the flow of gas through my valve is stopped and remains stopped.

I attach importance to the screw-threads for connecting the base of the yoke A³ to the cap A² because it not only affords convenient facilities for assembling the parts, but also allows very fine adjustment of the height of the yoke and consequently of the pressure of the upper face of the valve against its seat either with or without the elastic bearing ring D.

Modifications may be made without departing from the principle or sacrificing the advantages of the invention.

Instead of the stem and valve being cast in one or otherwise united rigidly, with all the parts made and applied together with exactness, I can use a loose joint by which the valve disk is allowed to change its position a little to better match its two seats above and below.

I claim as my invention:

1. A valve for gas having provisions for automatically shutting in case of accidental fire, comprising a valve disk having two opposite faces, a valve stem therefor, a casing inclosing these parts and having two

seats, one receiving one face of the valve and thereby controlling the flow from the street main into the building, and the other controlling the flow around the unpacked valve stem, in combination with provisions for urging such valve disk when liberated toward the proper seat to stop the valve passage, two slender strips conditionally joining the yoke and the valve stem, and a quantity of fusible material uniting overlapping ends of these strips together.

2. A valve for gas having provisions for automatically shutting in case of accidental fire, comprising a valve disk having two opposite faces, a valve stem therefor, a casing inclosing these parts and having two seats, one receiving one face of the valve and thereby controlling the flow from the street main into the building, and the other controlling the flow around the unpacked valve stem, in combination with a bearing ring of elastic material surrounding said valve stem, thereby insuring a tight joint without frictional resistance to the closing movement and without requiring nicely finished surfaces, two slender strips conditionally joining the yoke and the valve stem, and a quantity of fusible material uniting overlapping ends of these strips together.

3. A valve for gas having provisions for automatically shutting in case of accidental fire, comprising a valve disk having two opposite faces, a valve stem therefor, a casing inclosing these parts and having two seats, one receiving one face of the valve and thereby controlling the flow from the street main into the building, and the other controlling the flow around the unpacked valve stem, in combination with a screw-threaded ring engaged adjustably on a screw-threaded portion of the casing and carrying a slender yoke which is thus adjustable in its distance from the last named valve seat, two slender strips conditionally joining the yoke and the valve stem, and a quantity of fusible material uniting overlapping ends of these strips together.

Signed at New York, N. Y. this 8th day of March, 1909.

FREDRICK SCHMIDT.

Witnesses:

ARTHUR P. MARR,
SAMUEL H. HOYGSON.