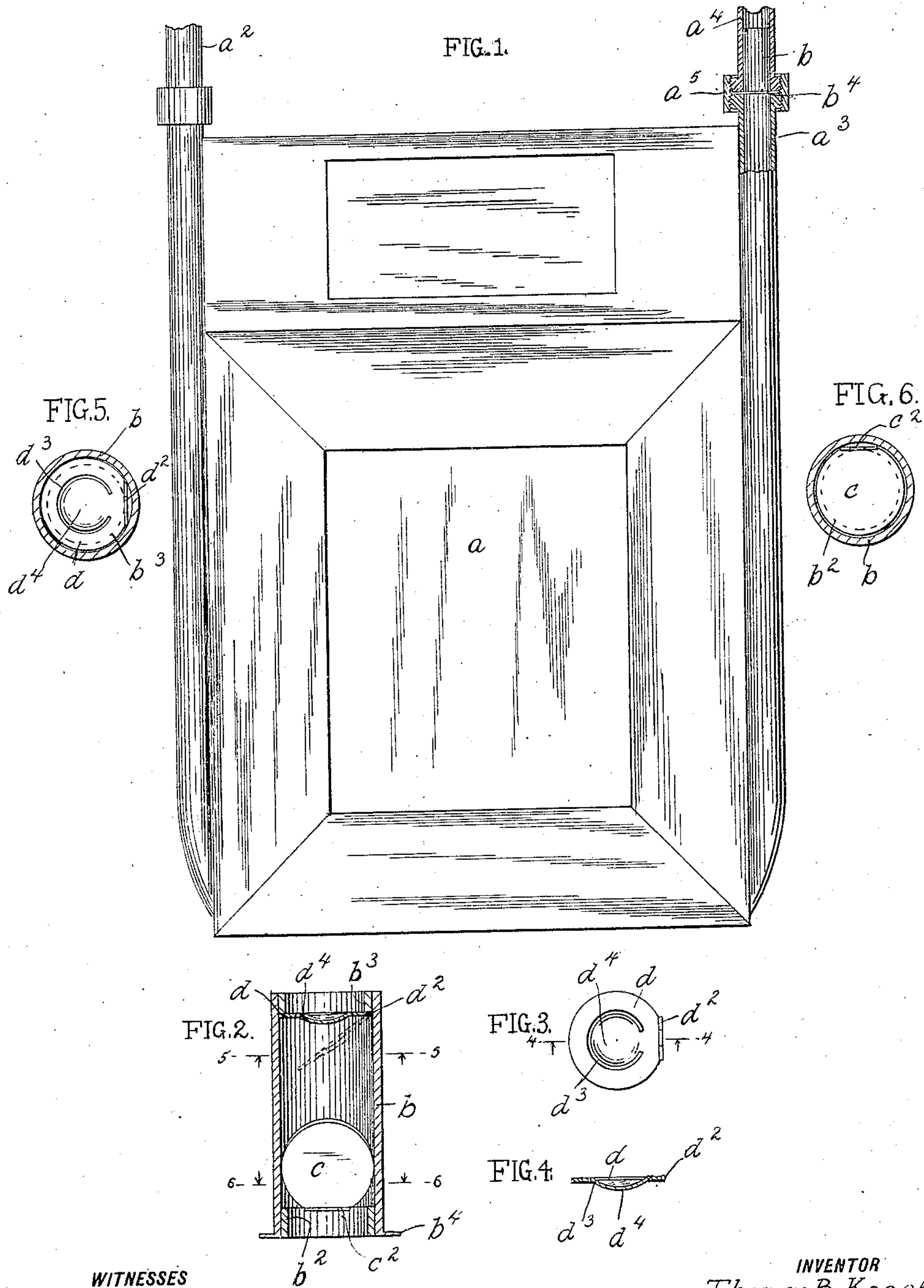


No. 877,932.

PATENTED FEB. 4, 1908.

T. B. KEOGH.  
GAS PRESSURE REGULATING DEVICE,  
APPLICATION FILED JULY 9, 1907.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

THOMAS B. KEOGH, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO MAX GARTENLAUB,  
OF NEW YORK, N. Y.

## GAS-PRESSURE-REGULATING DEVICE.

No. 877,932.

Specification of Letters Patent.

Patented Feb. 4, 1908.

Application filed July 9, 1907. Serial No. 382,853.

*To all whom it may concern:*

Be it known that I, THOMAS B. KEOGH, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Gas-Pressure-Regulating Valve Devices, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to devices for regulating the pressure of gas as it flows from a meter, or for regulating the pressure of gas in pipes wherever desired; and the object thereof is to provide an improved valve device for this purpose which is simple in construction and operation and which may be applied to the gas discharge pipe of a meter or placed in a gas pipe wherever required.

The invention is fully disclosed in the following specification, of which the accompanying drawing forms a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which;—

Figure 1 is a side view of an ordinary gas meter showing one use or application of my improved gas pressure regulating valve device; Fig. 2 a sectional view of the valve device detached; Fig. 3 a plan view of one of the valves which forms a part of my improved valve device; Fig. 4 a transverse section on the line 4—4 of Fig. 3; Fig. 5 a section on the line 5—5 of Fig. 2; and, Fig. 6 a section on the line 6—6 of Fig. 2.

In the drawing forming part of this specification, I have shown at *a* an ordinary gas meter provided with the usual inlet pipe *a*<sup>2</sup> and outlet pipe *a*<sup>3</sup>, and in the practice of my invention, I provide a valve device of the class specified, comprising a short tube *b* in the bottom of which is secured, formed or placed an annular band *b*<sup>2</sup>, which forms an annular shoulder in said tube and which decreases the diameter of the lower end of said tube, and to the top of which, or the annular shoulder formed thereby, is hinged a flap valve *c* which is of slightly less diameter than the inner diameter of said tube *b*, and the hinge of which is shown at *c*<sup>2</sup>, and said annular band *b*<sup>2</sup> or the shoulder formed thereby forms a valve seat on which the valve *c* is adapted to rest.

In the top portion of the tube *b* is placed another annular band or similar device *b*<sup>2</sup>,

which forms an annular shoulder in said tube to which is hinged a flap valve *d*, which also is of slightly less diameter than the inner diameter of the tube *b* and the hinge of which is shown at *d*<sup>2</sup> and the annular shoulder formed by the band or similar device *d*<sup>3</sup> forms a valve seat for the valve *d*. The valve *d* is provided around the central portion thereof with a segmental slot *d*<sup>3</sup> forming a central body portion *d*<sup>4</sup>, and the valve *c* opens upwardly as shown in full lines in Fig. 2, while the valve *d* opens downwardly as shown in dotted lines in Fig. 2.

In practice, the valve device is placed in or connected with the pipe *a*<sup>3</sup> through which the gas passes from the meter, and in Fig. 1 of the drawing, I have shown this accomplished by means of a supplemental pipe *a*<sup>4</sup> connected with the pipe *a*<sup>3</sup> by an ordinary screw-threaded coupling band *a*<sup>5</sup>, and the lower end of the tube *b* of the valve device is provided with an annular flange or rim *b*<sup>4</sup> which fits between the pipes *a*<sup>4</sup> and *a*<sup>3</sup>, and by means of which the valve device is held securely in place.

In the operation of this device the gas passing from the meter raises the valve *c*, the extent to which said valve is raised being determined, to an extent, by the pressure of the gas, but the said valve is of such transverse diameter that it cannot be raised beyond a predetermined point, and a portion of the passageway through the tube *b* is always closed by said valve.

The valve *d* is normally open as shown in dotted lines in Fig. 2 but the gas is free to pass through this valve or through the segmental slot *b*<sup>3</sup> formed therein, and a portion of gas is always passing through said valve or around said valve in said manner, but any material increase of pressure in the tube *b* will raise the valve *d* to its seat as shown in full lines in Fig. 2, and the passage of gas through the valve device will be cut off except for the amount that is constantly flowing through the opening formed by the segmental slot *d*<sup>3</sup>.

It will be seen that the movement or operation of each of the valves *c* and *d* is effected by the pressure of gas passing through the tube *b*, and the extent to which said valves are open will depend on this pressure, and the operation of said valves is, as will be understood, automatic and the flow of gas through the valve device is thus regulated at all times, and the pressure of gas in the pipe *a*<sup>3</sup> is always



sufficient to raise the valve *c* far enough to permit a certain amount of gas to pass through the tube *b*, and this amount will pass on through said tube and through the valve *d*, or  
5 around said valve, the latter being in the position shown in dotted lines in Fig. 2.

My improved gas pressure regulating valve device may be placed in connection with a meter as shown in Fig. 1, or it may be placed  
10 in gas pipes wherever required, and changes therein and modifications thereof may be made, within the scope of the appended claims, without departing from the spirit of my invention or sacrificing its advantages.

15 Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

A gas pressure regulating device adapted

to be secured in a gas main or pipe and comprising a tube provided in each end with an  
20 annular band, the inner ends of said bands forming valve seats, and flap valves hinged to said valve seats and adapted to open inwardly, said valves being of slightly less diameter than said tube and one of said valves  
25 being provided with an aperture substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of the subscribing witnesses this 8th  
30 day of July 1907.

THOMAS B. KEOGH.

Witnesses:

C. E. MULREANY,  
A. WORDEN GIBBS.