(No Model.)

W. H. PIERCE.

STEAM OR GAS REGULATOR.

No. 501,437. Patented July 11, 1893.

Fig. 1.

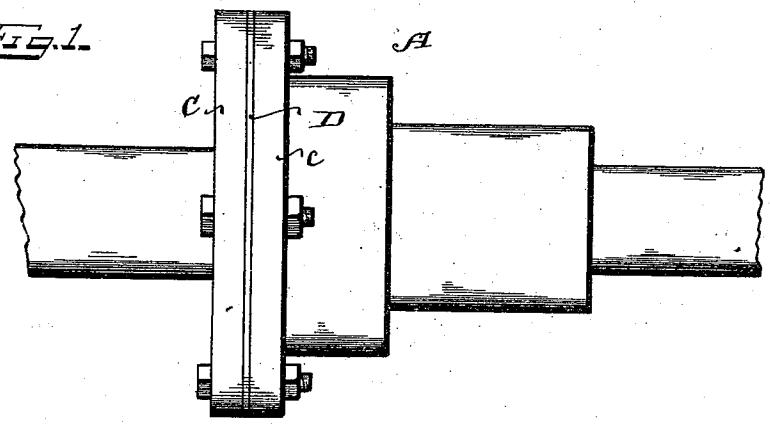
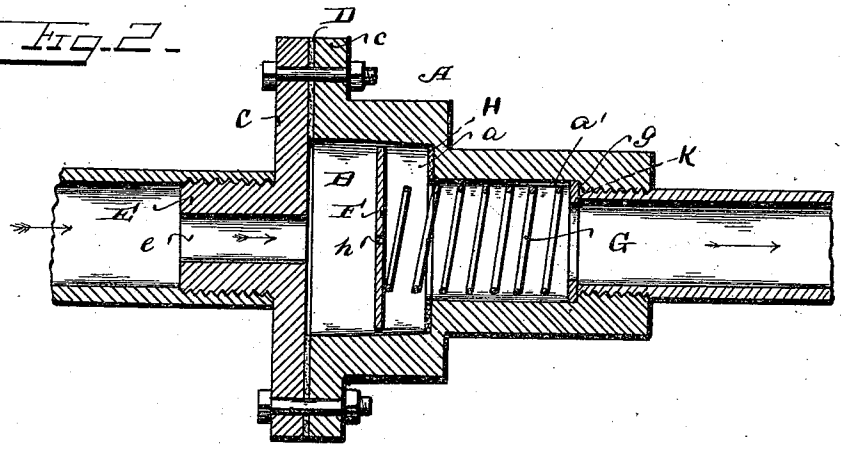


Fig. 2.



WITNESSES

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WILLIAM H. PIERCE, OF ANDERSON, INDIANA.

STEAM OR GAS REGULATOR.

SPECIFICATION forming part of Letters Patent No. 501,437, dated July 11, 1893.

Application filed March 11, 1893. Serial No. 465,551. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. PIERCE, a citizen of the United States, and a resident of Anderson, in the county of Madison and State of Indiana, have invented certain new and useful Improvements in Steam and Gas Regulators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a side elevation of the regulator and Fig. 2 is a vertical longitudinal section of same.

This invention has relation to certain new and useful improvements in gas regulators for stoves, the object being to provide means which will operate as a safeguard against danger arising from an excessive pressure or flow of gas to the burner, and the invention consists in the novel construction and combination of parts, all as hereinafter described and pointed out in the claims.

Referring to the accompanying drawings, the letter A designates a shell or casing, formed with a longitudinal opening or passage *a* therethrough, said opening or passage being enlarged at one end to form a chamber or reservoir B. Closing the outer end of said chamber is a cap C, which is bolted or otherwise secured to an annular flange *c* which surrounds that end of the shell or casing. A packing ring D is usually interposed between the cap and flange in order to form a gas-tight joint.

On the outer face of the cap is a centrally perforated boss or projection E, formed with an external thread, and to which is designed to be connected a service or supply pipe, (not shown.) The perforation *e* of the boss or projection opens into the chamber B.

F designates a diaphragm which is located in the chamber B, and is seated upon a coiled spring G, the lower end of which extends into the contracted portion *a'* of the passage or opening *a*, and seats upon an interior shoulder or flange *g*. The diameter of said diaphragm is somewhat less than the interior diameter of the chamber, so that said diaphragm may not only be capable of moving freely up and down in said chamber, but a small annular opening is provided around its edge through which gas may flow. Through the diaphragm is a small opening *h*. To the opposite end of the passage *a* is designed to be connected the burner pipe, (not shown.)

The operation is as follows:—The diaphragm F is normally balanced between the tension of the spring G and the normal pressure of the gas, which renders it sensitive to any increase or diminution of the pressure. Consequently any marked increase of the pressure will force said diaphragm against the inner wall of the chamber B, closing the passage *a*, and shutting off all flow of gas to the burner except that which passes through the opening *h* in the diaphragm. Upon a diminution of the pressure occurring, the tension of the spring partially overcomes the pressure of the gas, and the diaphragm is forced toward its normal position to an extent corresponding to the decrease of pressure. The spring G, instead of seating at its inner end directly upon the shoulder or flange *g*, may seat upon a washer *k*, as shown. A packing ring H should also be employed at the inner end of the chamber B for the diaphragm to seat against.

This regulator is also adapted for use with steam, as well as gas or with water.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. A regulator for gas or other fluids, comprising a shell or casing, having a passage therethrough said passage being enlarged at one end portion to form a chamber or reservoir, a diaphragm located in said chamber, and of less diameter than the diameter of said chamber, a spring upon which said diaphragm is seated, a small opening through said diaphragm, and means at the respective ends of said casing or shell for connection with inlet and outlet pipes, substantially as specified.

2. The herein described gas regulator, comprising a shell or casing having a chamber or reservoir therein, and a passage leading there-

through from said chamber or reservoir, a cap secured to one end of said casing or shell and closing the outer end of said chamber, a threaded boss or connection upon the outer face of said cap for connection with a service or supply pipe, a connection at the other end of said shell or casing for the burner pipe, a diaphragm seated in said chamber, said diaphragm being of less diameter that the interior of said chamber, and having a small opening therethrough, and a coiled spring bearing at one end upon said diaphragm, and at the other end against a shoulder in said passage, the tension of said spring being such as to balance said diaphragm against a normal pressure of the gas, substantially as specified.

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

WILLIAM H. PIERCE.

Witnesses:
WILLIAM J. DOVE,
DAVID A. TANNER.