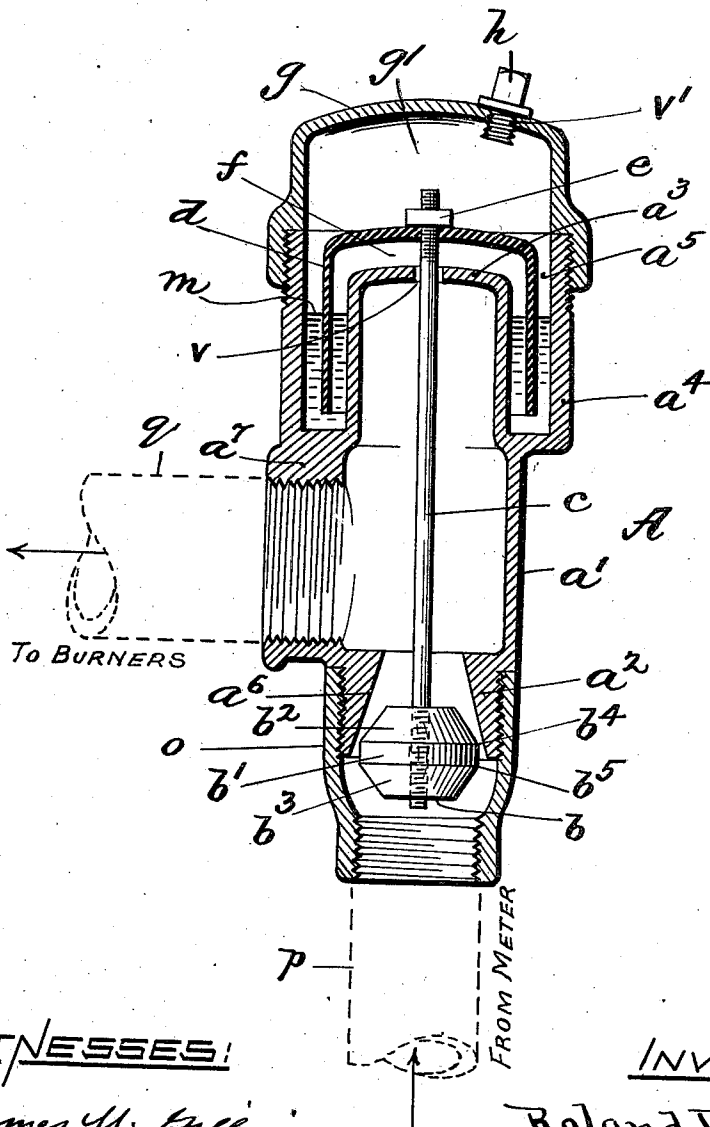


R. W. WEST.
GAS REGULATOR.
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1,044,958.

Patented Nov. 19, 1912.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ROLAND W. WEST, OF PAWTUCKET, RHODE ISLAND, ASSIGNOR TO HARRY WALTERS,
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GAS-REGULATOR.

1,044,958.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ROLAND W. WEST, a citizen of the United States, residing at the city of Pawtucket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Gas-Regulators, of which the following is a specification.

My invention relates to a device for regulating the supply of gas as it comes from a meter to be discharged at the burners or points of consumption. Heretofore, in devices of this character springs or weights are employed to keep the regulating valve always open or free of its seat. There are objections or disadvantages inherent in the use of such parts—that is to say, the main pressure being always variable the use of a spring-pressed valve or weighted valve does not allow the proper reduction of pressure from the supply pipe to the burners and the use of such parts can only operate to maintain a steady pressure at the burners when the initial or main pressure is constant or normal.

The objects of the present invention are to provide a device of this character with means to automatically act to govern the variable initial or main pressure of gas as it comes from a meter; and to maintain a steady equal pressure at the burners, irrespective of how many may be in operation.

With the above and other objects in view my invention consists in the special detail of construction and combination of parts, as hereinafter described and claimed.

Referring to the drawing the figure represents a central vertical section of my appliance, showing the parts embodying my improvements.

Like reference characters indicate like parts.

In carrying out my invention I construct each part of the device in cylindrical form. A, designates a vertically-arranged tubular casing, as a whole, having a body portion a^1 which terminates at its lower end with a concentrically-reduced hub a^2 and having its upper end closed to form a dome a^3 , which is surrounded by a concentric wall a^4 in order to provide a receptacle a^5 between said dome and said wall for containing a certain quantity of mercury, as m . The hub a^2 , of the tubular member or casing A, is provided with a centrally-arranged

beveled opening therethrough and extending at an angle of about 20° inwardly of the body portion a^1 , as at a^6 , and said opening forms an inlet for the main supply of gas and also serves as a valve-seat.

My improved means for regulating the main supply consists of a peculiar form of valve b , concentrically-secured upon a screw-thread formed on the lower part of a rod c , which has connection at its upper part with a bell-shaped float d . This valve has a centrally-arranged straight side face, as b^1 , which meets with inclined faces that extend toward the axis of the rod c and at angle of about 45° , as at points b^2 and b^3 , in order to provide a sharp corner, as at b^4 , and thereby reduce the area of metal contact of said valve in seating against the beveled inlet a^6 . By this construction of valve b the latter is made reversible to permit either of its corners b^4 or b^5 to seat whenever desired. The rod connection c is also screw-threaded at its upper portion to engage a threaded opening formed centrally in the top of the bell-float d , and a nut e on the threaded portion of said rod is had to impinge against in holding said float in a fixed position.

An opening is provided at v in the dome a^3 , through which the gas pressure can act on the bell float d for controlling the operation of the valve. That is to say, with variations in the pressure of the gas, the bell float will rise or fall and vary the effective inlet opening or port between the annular edge b^4 of the valve and the valve seat a^6 . The bottom edge of the bell float is immersed, as usual, in a body of mercury m . Disposed over the top of the bell float is a cap g which is threaded on the upper end of the casing A, said cap being provided with a filling or other opening v^1 , that is normally closed by a plug h . This vent v^1 is closed by a threaded plug h .

A screw-threaded union o is employed to respectively engage a screw-thread formed on the hub a^2 of the casing A and the threaded end of a supply pipe p having close communication with a common gas-meter. (Not shown).

On the side of the casing A is formed a hub a^7 provided with a screw-threaded opening to receive the threaded end of a discharge pipe q , which communicates with the chamber of said casing and leading to the burners. (Not shown).

When the initial or main pressure becomes lower than the pressure at which the valve is set for, by means of the adjusting nut *e*, said valve immediately drops to open wider 5 and afford a greater supply. Should the main pressure increase suddenly this improved valve and its operative parts immediately act to provide the proper amount of closure to regulate the pressure in accordance with the number of burners in use, and 10 at no time can the valve impede the flow of gas nor can an excess of pressure be forced through it.

By my construction and arrangement of 15 parts I provide a device of this character which, as by actual test, automatically acts to regulate in reducing variable gas pressure in coming from a meter, and at the same time a device that is simple, compact, 20 reliable in operation, and inexpensive to manufacture.

What I claim and desire to secure by Letters-Patent, is:—

25 In a device of the character described, the combination of a casing having a dome at

its upper end and an inlet at its lower end, and an outlet between the dome and inlet, said inlet being in the form of a frustum of a cone and tapering inwardly, a valve rod extending through the inlet, a valve on 30 the rod having a cylindrical portion of less diameter than the larger diameter of the inlet and formed with a frusto-conical portion which has an altitude considerably less than the altitude of the conical inlet where- 35 by an inwardly expanding space is provided between the walls of the inlet and the conical portion of the valve and an inwardly contracting space between the walls of the inlet and the cylindrical portion of the valve 40 body, a bell float attached to the rod and disposed above the dome, and a sealing chamber in the upper end of the casing for the said float.

In testimony whereof I affix my signature 45 in presence of two witnesses.

ROLAND W. WEST.

Witnesses:

JAMES M. GILLRAIN,
JOHN HAYES.

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