No. 825,718. PATENTED JULY 10, 1906.

H. C. GRIMES.

GAS REGULATOR.

APPLICATION FILED MAR. 28, 1906.

Fig. 1.

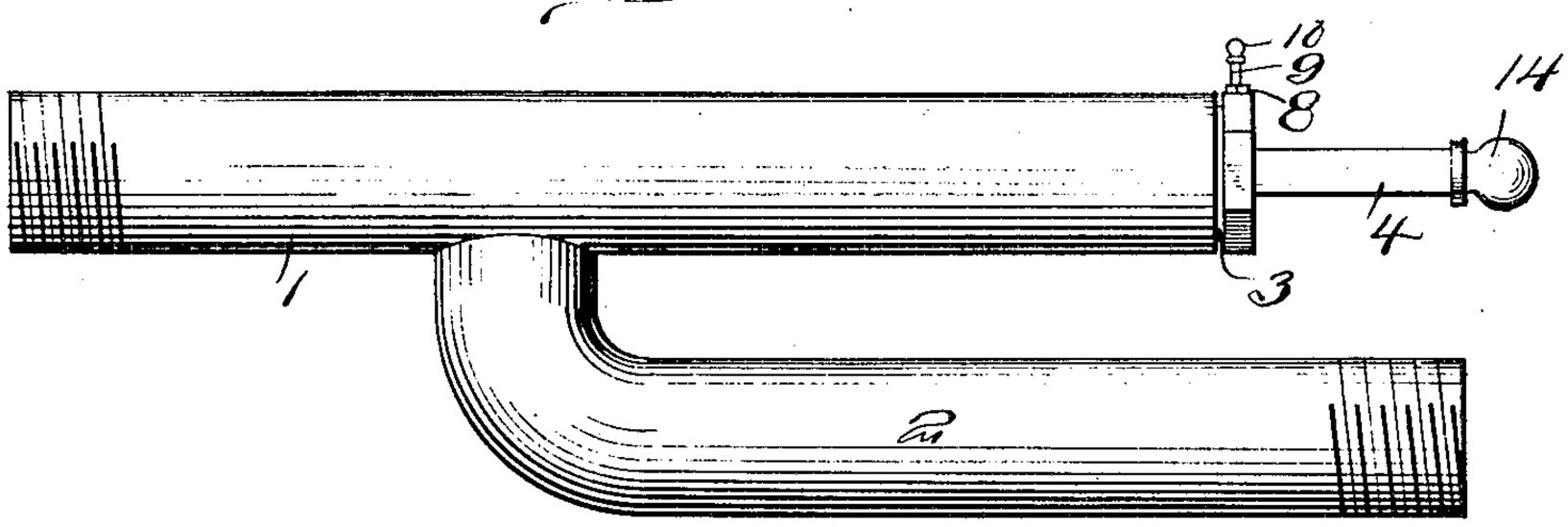

Fig. 2.

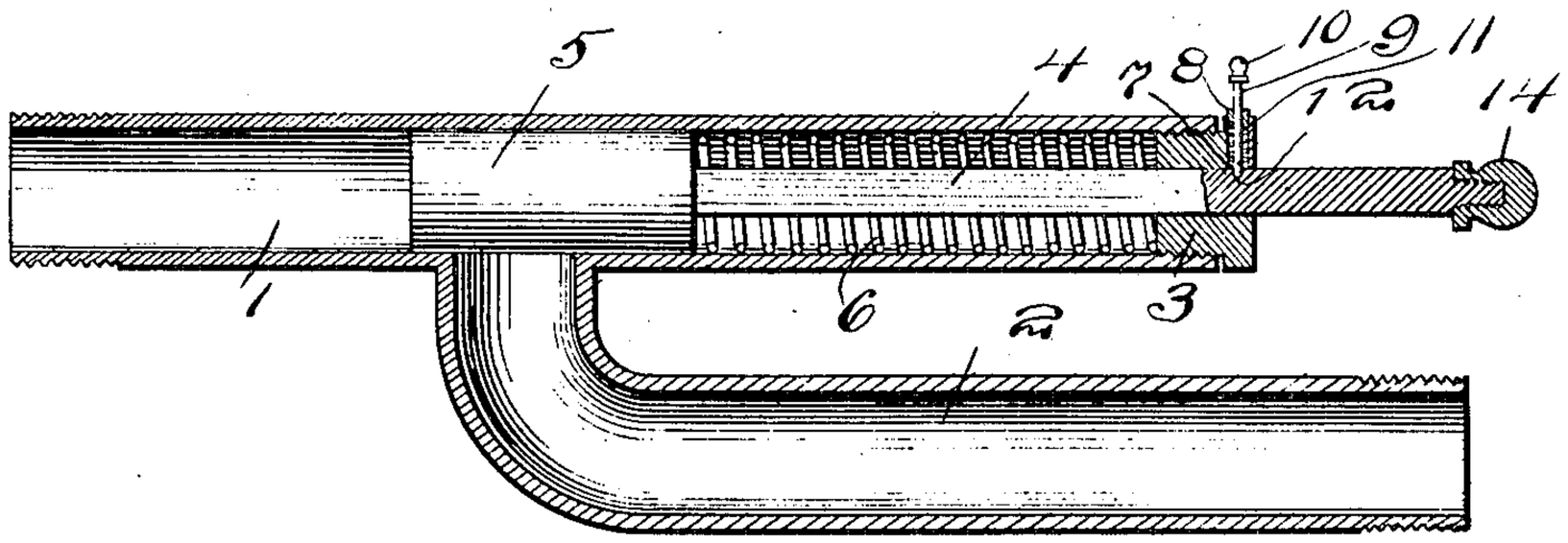

Fig. 3.

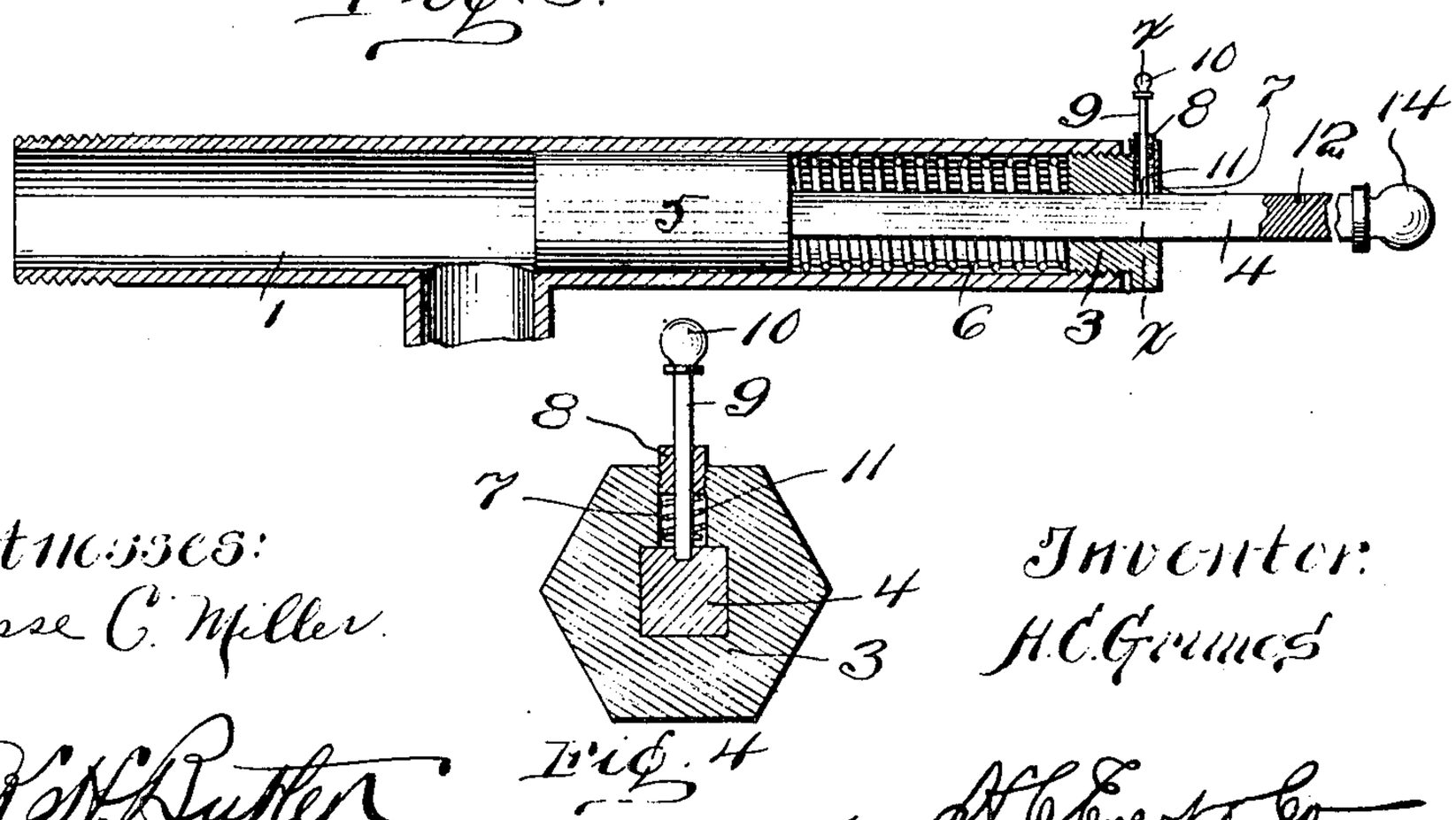

Fig. 4.

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UNITED STATES PATENT OFFICE.

HARRY C. GRIMES, OF TERRA ALTA, WEST VIRGINIA.

GAS-REGULATOR.

No. 825,718. Specification of Letters Patent. Patented July 10, 1906.

Application filed March 28, 1906. Serial No. 308,511.

To all whom it may concern:

Be it known that I, HARRY C. GRIMES, a citizen of the United States of America, residing at Terra Alta, in the county of Preston and State of West Virginia, have invented certain new and useful Improvements in Gas-Regulators, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in gas-regulators; and the invention has for its primary object the provision of novel means for automatically controlling a supply of gas passing through a pipe.

My invention aims to provide positive and reliable means for automatically shutting off a supply of gas as the pressure of the gas decreases. In this connection my improved regulator is particularly adapted for residence and similar buildings where natural and artificial gas is used as a fuel and for illuminating purposes.

To this end I have devised a regulator which is actuated when a reduction of the gas-pressure takes place and is adapted to entirely shut off the gas should the pressure of the gas become very low.

With the above and other objects in view the invention consists in a novel construction, combination, and arrangement of parts to be hereinafter more fully described and claimed.

Referring to the drawings accompanying this application, like numerals of reference designate similar parts throughout the several views, in which—

Figure 1 is a side elevation of a regulator constructed in accordance with my invention. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a similar view illustrating the piston or valve in the position it occupies when full pressure of gas is against the same, and Fig. 4 is a transverse vertical sectional view taken on the line *x x* of Fig. 3.

To put my invention into practice, I provide a fitting which is adapted to be connected to a supply-pipe (not shown) and has communication with a lamp, stove, burner, or other like device in which gas is used. This fitting comprises a main or body member 1 in the form of a tube or cylinder, one end of which is threaded, as shown, for convenient attachment to a supply-pipe. Integral with the main or body member 1 is an outlet member 2, which joins with the main or body member 1 substantially at right angles thereto and is bent to lie in a plane substantially parallel with said main or body member 1. The free end of the member 2 is also threaded, as shown, for attachment to either a pipe or to the device in which the gas is consumed.

The opposite end of the main or body member 1 is interiorly threaded and receives a plug 3, provided with an aperture therethrough to receive a piston-rod 4. This piston-rod 4 is preferably square in cross-section, though not necessarily so, and works in the plug 3. On its inner end the piston-rod 4 carries a piston or valve 5 of a cylindrical form to fit the inner circumference of the member 1. If desired, packing-rings may be used on this piston or valve to effect an air-tight connection between the periphery thereof and the walls of the chamber within the member 1. A spring 6 encircles the piston-rod 4 between the piston or valve 5 and the plug 3, and said plug 3 is provided with a radial opening in which is fitted an auxiliary plug 8. Arranged in the plug 8 is a locking-pin 9, provided on its outer end with a suitable knob or handle 10. Within the opening 7 beneath plug 8 is a spring 11, one end of which is attached to the locking-pin to hold the lower end of the latter normally in engagement with piston-rod 4. Said rod 4 is provided with a notch 12 to receive the end of said pin when the piston or valve is in the closed position, as shown in Fig. 2. The outer end of the piston-rod 4 is preferably provided with a removable handle or knob 14 to permit of easy manipulation of said rod.

The spring 6 employed has a tension corresponding to the pressure of the gas entering the main body or member 1—that is, the said spring is of slightly less tension than the pressure of the gas—whereby the latter will normally hold the piston or valve in the open position, as shown in Fig. 3 of the drawings. If, however, the pressure of the gas ceases or becomes materially reduced, the spring acts to force the piston head or valve 5 to the closed position. (Shown in Fig. 2 of the drawings.) When the piston head or valve reaches this position, locking-pin 9 takes into notch 12 in the piston-rod 4 and holds the piston head or valve 5 in closed position.

The device is adapted to prevent accidental escape of the gas after the same has been reduced to such an extent as to extinguish

the flame, the pressure afterward increasing and the gas discharging without being ignited.

To reset the device or permit the gas to again flow when desired, it is merely necessary to raise pin 9, so as to remove the same from notch 12 in order that the pressure of the gas may overcome the tension of spring 6 and allow the gas to again pass from the supply-pipe through outlet branch 2.

Having fully described my invention, what I claim is—

1. An automatic cut-off comprising a fitting embodying a main tubular inlet member, and an integral outlet member, communicating with the main tubular member intermediate its ends, and lying substantially parallel therewith, in combination with shut-off mechanism comprising a plug, in the end of the inlet member, a piston-rod working in said plug, a piston or valve on the inner end of said rod, a spring encircling the rod between the piston or valve and said plug, and a locking-pin at the closed end of the inlet member for locking the piston and piston head or valve against movement.

2. An automatic cut-off comprising a fitting embodying a tubular inlet member, open at one end and closed at its other end by a plug, an outlet member communicating with the inlet member intermediate its ends, and closer to the open end of said inlet member than to the closed end thereof, a piston-rod working through the plug in the closed end of the inlet member, and carrying a piston head or valve, a spring between said piston head or valve and the plug in said member, and locking means supported at the closed end of the inlet member for locking the piston-rod and its piston head or valve against movement.

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

HARRY C. GRIMES.

Witnesses:

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