

No. 640,303.

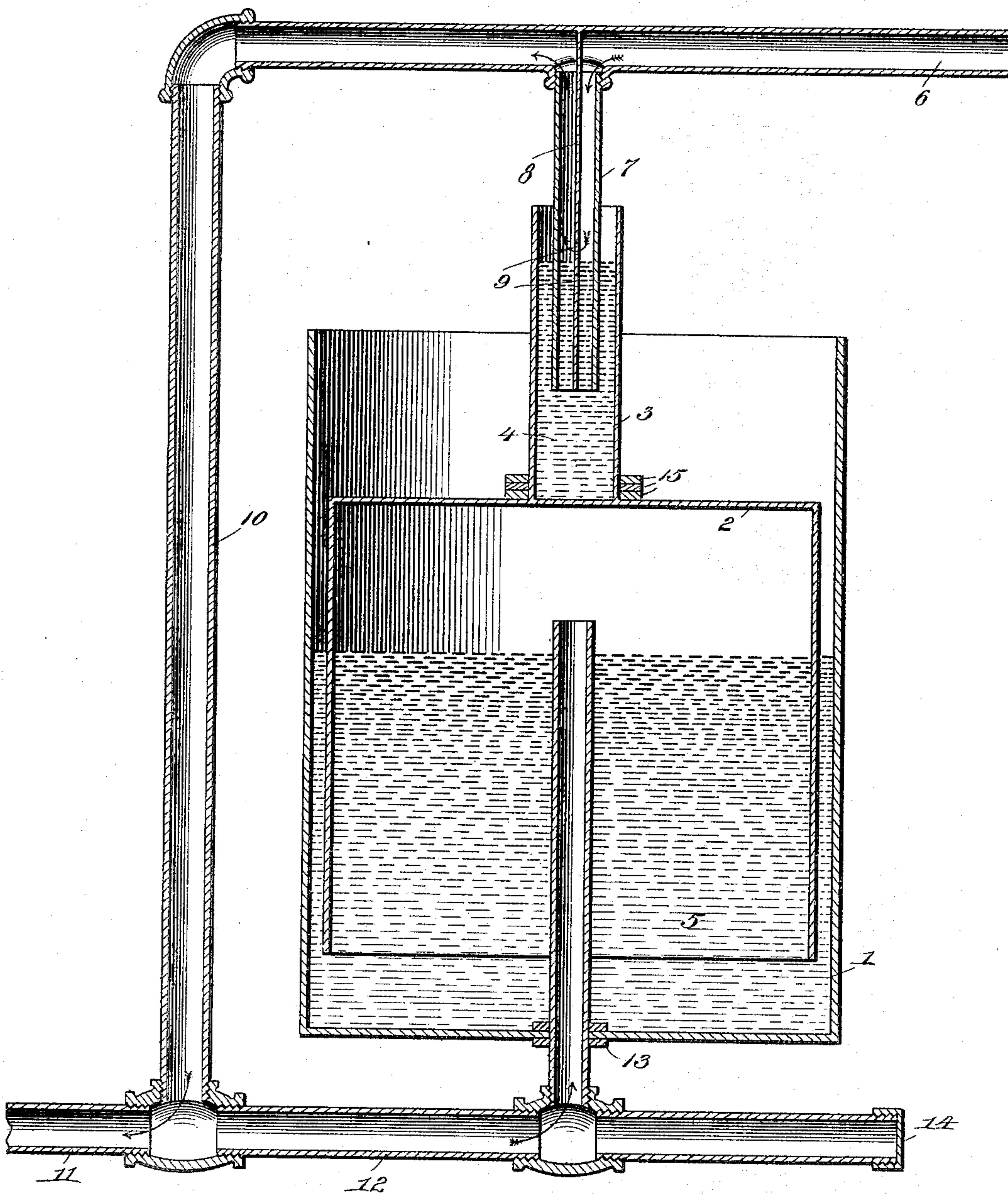
Patented Jan. 2, 1900.

T. H. J. LECKBAND.

AUTOMATIC PRESSURE REGULATOR AND CUT-OFF FOR GAS.

(Application filed Oct. 24, 1898.)

(No Model.)



Witnesses

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# UNITED STATES PATENT OFFICE.

THEODOR H. J. LECKBAND, OF ADAIR, IOWA.

## AUTOMATIC PRESSURE-REGULATOR AND CUT-OFF FOR GAS.

SPECIFICATION forming part of Letters Patent No. 640,303, dated January 2, 1900.

Application filed October 24, 1898. Serial No. 694,754. (No model.)

*To all whom it may concern:*

Be it known that I, THEODOR H. J. LECKBAND, a citizen of the United States, residing at Adair, in the county of Adair and State of Iowa, have invented certain new and useful Improvements in Automatic Pressure-Regulators and Cut-Offs for Gas; and I do hereby 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.

My invention relates to a combined automatic gas-extinguisher and pressure-regulator; and it consists of certain novel features of construction and combination of parts, as will be hereinafter fully described, illustrated, and claimed.

The object of my invention, among others, is to provide a reliably-efficient device of the character specified which will perform its office without the necessity of personal attendance after once adjusted and placed in its operative position. This object and others will be fully demonstrated and the means necessary for their accomplishment fully illustrated in the accompanying drawing, in which the figure shows my automatic pressure-regulator.

The details of my invention and the accessories deemed necessary to fully illustrate the same will be for convenience designated by figures of reference, the same figure being applied to a corresponding part throughout the view.

Briefly stated, my invention consists in providing a pressure-controlled mechanism to be connected to the supply-pipes at a point intermediate the generator and the point of combustion, said device being so constructed that a substantially uniform pressure will be maintained according to a predetermined extent or quantity, in order that when the pressure is purposely reduced the parts will operate to entirely cut off the flow of gas to the burner, and thereby extinguish the light.

Referring in detail to the several parts, 1 illustrates a suitable receptacle designed to contain a sealing liquid of any suitable and preferred kind, preferably a non-evaporating liquid, as glycerin or the like, while 2 illustrates a bell designed to fit loosely within the

receptacle 1, both parts being those usually employed to form a seal in order that said bell may retain a quantity of gas in its upper end, these parts being of old and well-known construction.

Centrally disposed upon the upper portion of the bell 2 is the preferably tubular tank 3, properly secured to the bell at its lower end and open in its upper end and designed to contain a suitable sealing liquid 4, corresponding to the sealing liquid 5, contained in the receptacle 1. A supply-pipe 6 in proper connection with the generator or source of gas-supply is properly secured above the receptacle 1 in any suitable way, it being understood that said receptacle is also properly supported in any desired and suitable manner. At a point immediately over the tank 3 a section of pipe 7, properly connected to the pipe 6, is arranged to extend downward into the tank 3, while properly mounted in position within said pipe 7 and extending from the pipe 6 is a partition 7, having suitable apertures or slots 9 provided therein at a proper point, the purpose of which will be hereinafter fully set forth. After extending across the receptacle 1 pipe 6 communicates with pipe 10, and it in turn is connected to pipes 11 and 12, the latter being connected with the discharge-pipe 13, which extends into the receptacle 1 and reaches above the sealing liquid 5 contained therein, the extreme outer end of the pipe 12 being provided with a seal-cap 14, or said pipe may terminate at its point of union with the pipe 13, as preferred.

Suitable weights, consisting of a series of collars 15, are centrally disposed upon the top of the bell 2, preferably by encircling the tank 3, as clearly shown. The pipe 11 may connect by suitable pipes directly with the burner.

The manner of using or the operation of my invention may be stated to be as follows: The generator or source of supply being properly connected to the pipe 6, as shown in the drawing, will cause the gas to pass downward through one of the apertures 9, formed in the partition 8, it being obvious that as many of said apertures may be provided as circumstances may indicate desirable. The gas after passing through the apertures 9 will pass upward upon the opposite side of the partition 8,



and from thence into the pipes 10 and 11, and from there directly to the burner. If the pressure should become greater than is warranted by the quantity necessary to supply the burn-  
 5 ers, the excess will pass into the pipes 12 and 13 and from the latter into the upper end of the bell 2, which will cause the latter to rise upward as the quantity increases and incidentally raise the tank 3 sufficiently to immerse  
 10 the apertures 9 in the partition 8, and thereby seal or check the flow of gas through said apertures and entirely cut off all further flow until the quantity of gas contained in the  
 15 bell 2 has been forced out through pipe 13 and from thence to the burner. When the gas within the bell 2 has been forced outward sufficiently to lower the tank 3 out of sealing position with the apertures 9, the flow of gas  
 20 will again be automatically started toward the burner, the backflow being received by the bell 2, as before, when upon an excess of pressure the bell will become filled and the operation just referred to repeated.

The result from the coöperation of my pressure-regulating device and extinguisher will be that the device illustrated in the figure will automatically control or regulate the pressure or quantity of gas delivered through the pipe 11, which may be graduated to any  
 30 desired extent by means of the weights or collars 15, it being understood that if the bell 2 is heavily weighted it will be less responsive to pressure than where the weight has been reduced to a minimum.

35 While I have described the preferred form of construction deemed necessary by me in carrying out my ideas for the control of the quantity of pressure requisite for supplying a burner or a series of burners with the de-  
 40 sired quantity of gas, yet it will be understood that I desire to comprehend by this application such reasonable modifications there-

of as may be fairly considered within the scope of my invention.

Having thus fully described my invention, 45 what I claim as new, and desire to secure by Letters Patent, is—

1. In a pressure-regulator and cut-off for gas, a telescoping reservoir and seal therefor; an auxiliary seal carried by the movable part 50 of said reservoir; a supply-pipe having a branch extending into said auxiliary seal, and a perforated partition-wall in said branch so adjusted that the flow of gas will be permitted or cut off according to the position oc- 55 cupied by the movable part of the reservoir, as specified and for the purpose set forth.

2. In a pressure-regulator, and cut-off for gas, a telescoping reservoir having a sealing liquid; an auxiliary seal carried by the bell 60 of said telescoping reservoir; a supply-pipe extending to the burner and communicating with said reservoir and having a branch co-operating with said auxiliary seal, said branch being provided with a perforated partition 65 by means of which the flow of gas from the supply-pipe to the burner and telescoping reservoir will be entirely cut off when the movable part of the reservoir is raised, and the flow restored when said part is lowered, 70 as specified and for the purpose set forth.

3. A sealing-cup, and a gas-supply pipe having a branch with a partition-wall extending into said cup, all arranged as set forth.

4. A sealing-cup, and a supply-pipe having 75 a branch with a perforated partition-wall extending into said cup, all arranged as set forth.

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

THEODOR H. J. LECKBAND.

Witnesses:

WM. LECKBAND,  
 MARTIN LIST.