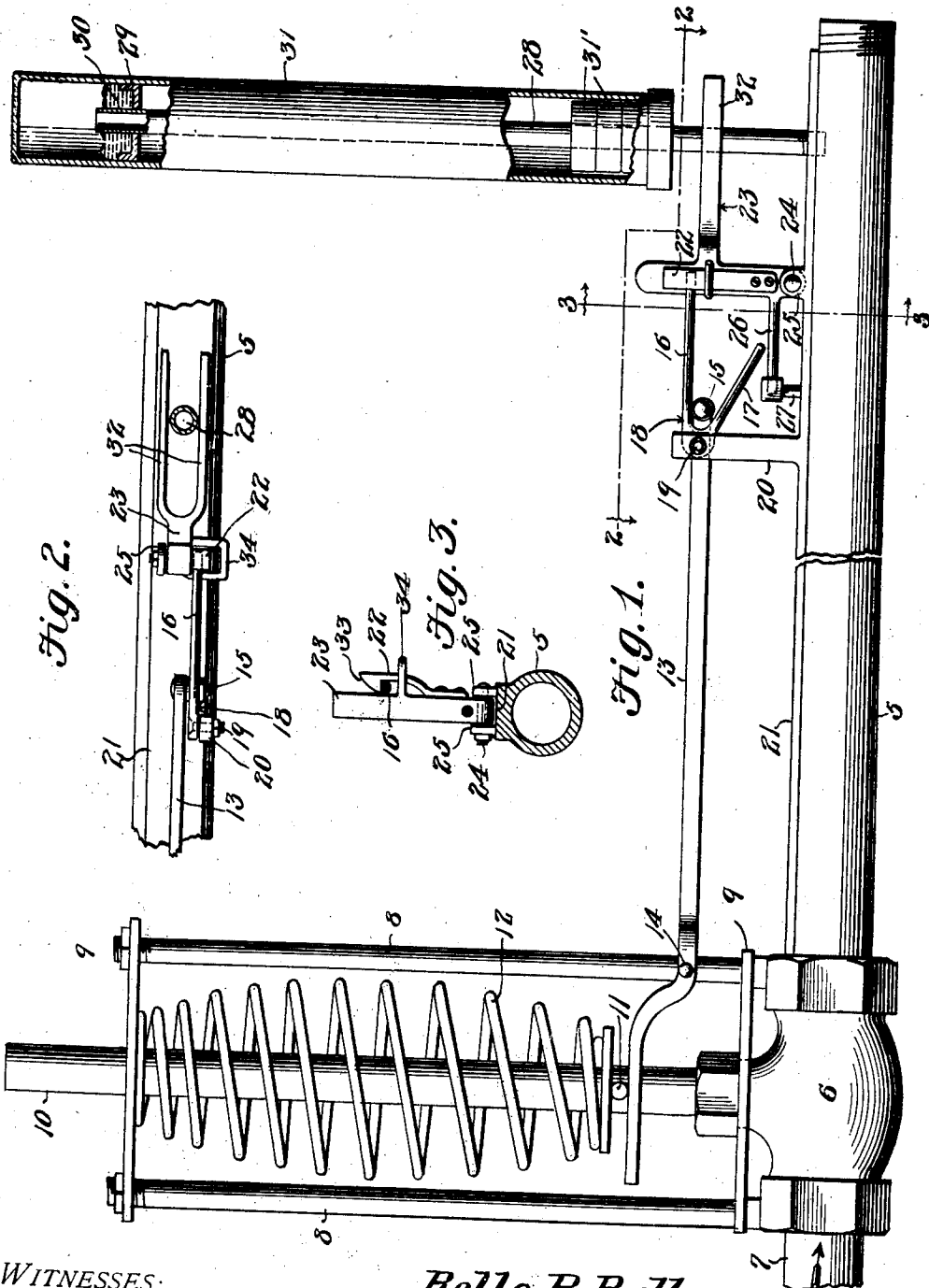


No. 826,530.

PATENTED JULY 24, 1906.

R. R. BELL.
AUTOMATIC FLUID PRESSURE REGULATOR.

APPLICATION FILED JAN. 29, 1906.



WITNESSES:
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UNITED STATES PATENT OFFICE.

ROLLO ROBIN BELL, OF CHICKASHA, OKLAHOMA TERRITORY, ASSIGNOR
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AUTOMATIC FLUID-PRESSURE REGULATOR.

No. 826,530.

Specification of Letters Patent.

Patented July 24, 1906.

Application filed January 29, 1906. Serial No. 298,488.

To all whom it may concern:

Be it known that I, ROLLO ROBIN BELL, a citizen of the United States, residing near Chickasha, in the county of Caddo, Oklahoma Territory, have invented a new and useful Automatic Fluid-Pressure Regulator, of which the following is a specification.

This invention relates to automatic fluid-pressure regulators for gas stoves, burners, and the like, and has for its object to provide improved means for effecting the automatic closing of the intake-valve should the pressure in the supply-pipe be materially reduced or for any reason temporarily cut off.

A further object of the invention is to provide a lever for normally holding the valve in open position, said lever being connected, through the medium of a pivoted trigger, to a trip device movable to release the lever when the pressure in the supply-pipe is reduced.

A still further object is to generally improve this class of devices, so as to add to their utility and durability, as well as to reduce the cost of manufacture.

With these and other objects in view the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in form, proportions, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side elevation of a gas-regulator constructed in accordance with my invention. Fig. 2 is a top plan view of the pivoted trigger and trip device. Fig. 3 is a vertical sectional view taken on the line 3 3 of Fig. 1.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

The improved regulator is principally designed for use in connection with gas-stoves; and it consists of a section of pipe 5, one end of which is provided with an intake-valve 6 for connection with the main supply-pipe 7, while the opposite end thereof is threaded for the reception of a pipe leading to the gas-burners.

Secured in any suitable manner to the valve-casing is a supporting-frame consisting of a pair of spaced uprights 8, connected by cross-bars 9, and through which is slidably mounted for vertical movement the valve-stem 10. The stem 10 is provided with a laterally-extending pin 11, and carried by the stem and interposed between the pin 11 and the upper cross-bar 9 is a coiled spring 12, the normal tendency of which is to close the valve and shut off the supply of gas to the burners.

The valve is movably held in open position by means of a horizontally-disposed lever 13, pivoted at 14 to one of the side bars or uprights 8 and having its adjacent or short end bifurcated for the reception of the valve-stem. The opposite or long end of the lever 13 is provided with a laterally-extending lug 15, adapted to engage the divergent arms 16 and 17 of a pivoted lock-trigger 18. The trigger 18 is pivoted at 19 to a post or standard 20, extending vertically from the flat surface 21 of the pipe-section 5, the long arm 16 of the trigger being normally held in horizontal position, so as to prevent pivotal movement of the lever 13, by a spring-catch 22, carried by a trip device 23. The trip device 23 is pivoted at 24 between a pair of spaced lugs 25, secured to or formed integral with the flat surface of the pipe 5, and extending laterally from one side of the trip is a weighted arm or projection 26, adapted to engage a stop-lug 27 for limiting the tilting movement of the trip and supporting the latter in vertical position.

Threaded in the pipe-section 5 in advance of the trip device is an auxiliary pipe 28, to the free end of which is secured a cup 29, adapted to contain a quantity of mercury 30, and mounted for sliding movement on said tube is a closed tube or cylinder 31, having one or more weights 31' resting on the bottom thereof, as shown. Extending laterally from the trip are arms 32, which span the tube 28 and extend in the path of movement of the cylinder 31, so that when the pressure in the pipe 5 is reduced the weights will cause the cylinder to engage the arms and tilt the trip, thereby relieving the trigger and valve-lever and causing the spring to automatically close the valve.

The spring-catch 22 is preferably provided with an inclined or beveled head 33, so as to

permit the long arm of the pivoted trigger to be readily locked in engagement with the trip device, the lateral movement of the catch being limited by a yoke 34.

5 Under ordinary conditions the gas will flow from the main supply-pipe 7, through the pipe 5, to the burners without affecting the valve. Should, however, the pressure in the supply-pipe be materially reduced or for any
10 reason the supply of gas to the burners temporarily cut off, the cylinder will depress the arms 32 and tilt the trip to release position, thereby releasing the trigger and permitting the spring to close the valve, as before stated.
15 It will thus be seen that the cylinder acts as a governor to automatically regulate the supply of gas to the burner. To reset the device, it is merely necessary to move the trip until the arm 26 engages the stop-lug 27, and
20 subsequently force the long arm 16 of the trigger past the inclined head of the spring-catch, when the valve will be locked in open position.

Having thus described the invention, what
25 is claimed is—

1. In an automatic pressure-regulator, a supply-pipe, a valve, a lever for normally holding the valve in open position, a trigger provided with angularly-disposed arms for
30 engagement with the lever, a trip adapted to engage one of said arms for locking the trigger in set position, and means for actuating the trip to release the trigger and close the valve when the pressure in the supply-pipe is
35 reduced.

2. In an automatic pressure-regulator, a supply-pipe, a valve, an auxiliary pipe communicating with the supply-pipe, a lever for normally holding the valve in open position,
40 a trigger provided with angularly-disposed arms adapted to engage the lever, a trip adapted to engage one of said arms for locking the trigger in set position, and a closed tube slidably mounted on the auxiliary pipe
45 for actuating the trip to release trigger and close the valve when the pressure in the supply-pipe is reduced.

3. In an automatic pressure-regulator, a supply-pipe, a valve, an auxiliary pipe communicating with the supply-pipe, a lever for
50 normally holding the valve in open position, a standard secured to the supply-pipe, a trigger pivotally mounted on the standard and provided with angularly-disposed arms adapted
55 to engage the adjacent end of the lever, a

trip provided with a spring-catch adapted to engage one arm of the trigger for locking the same in set position, and a closed tube slidably mounted on the auxiliary pipe for actuating the trip to release the trigger and close
60 the valve when the pressure in the supply-pipe is reduced.

4. In an automatic pressure-regulator, a supply-pipe, a valve, a frame carried by the valve-casing, a lever pivoted to the frame
65 and having its short end engaging the valve-stem, a spring interposed between the lever and frame, a pivoted trigger adapted to engage the long end of the lever, a trip for locking the trigger in set position, and means for
70 actuating the trip to release the trigger and close the valve when the pressure in the supply-pipe is reduced.

5. In an automatic pressure-regulator, a supply-pipe, a valve-casing, a valve, a frame
75 secured to the valve-casing, a lever pivoted to the frame and having its short end engaging the valve-stem, a spring interposed between the lever and frame, a standard secured to the supply-pipe, a trigger pivoted to the
80 standard and adapted to engage the long end of the lever, a pivoted trip for locking the trigger in set position, means for limiting the pivotal movement of the trip, and means for actuating the trip to release the trigger and
85 close the valve when the pressure in the supply-pipe is reduced.

6. In an automatic pressure-regulator, a supply-pipe, a valve-casing, a valve, a frame
90 carried by the valve-casing, a lever pivoted to the frame and having its short end engaging the valve-stem and its long end provided with a laterally-extending lug, a spring interposed between the lever and frame, a standard secured to the supply-pipe, a trigger piv-
95 oted to the standard and provided with divergent arms embracing the lug on the lever, a pivoted trip adapted to engage one of the trigger-arms for locking the trigger in set position, and means for actuating the trip to re-
100 lease the trigger and close the valve when the pressure in the supply-pipe is reduced.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ROLLO ROBIN BELL.

Witnesses:

HARRIET E. BELL,
ROBERT S. BELL.