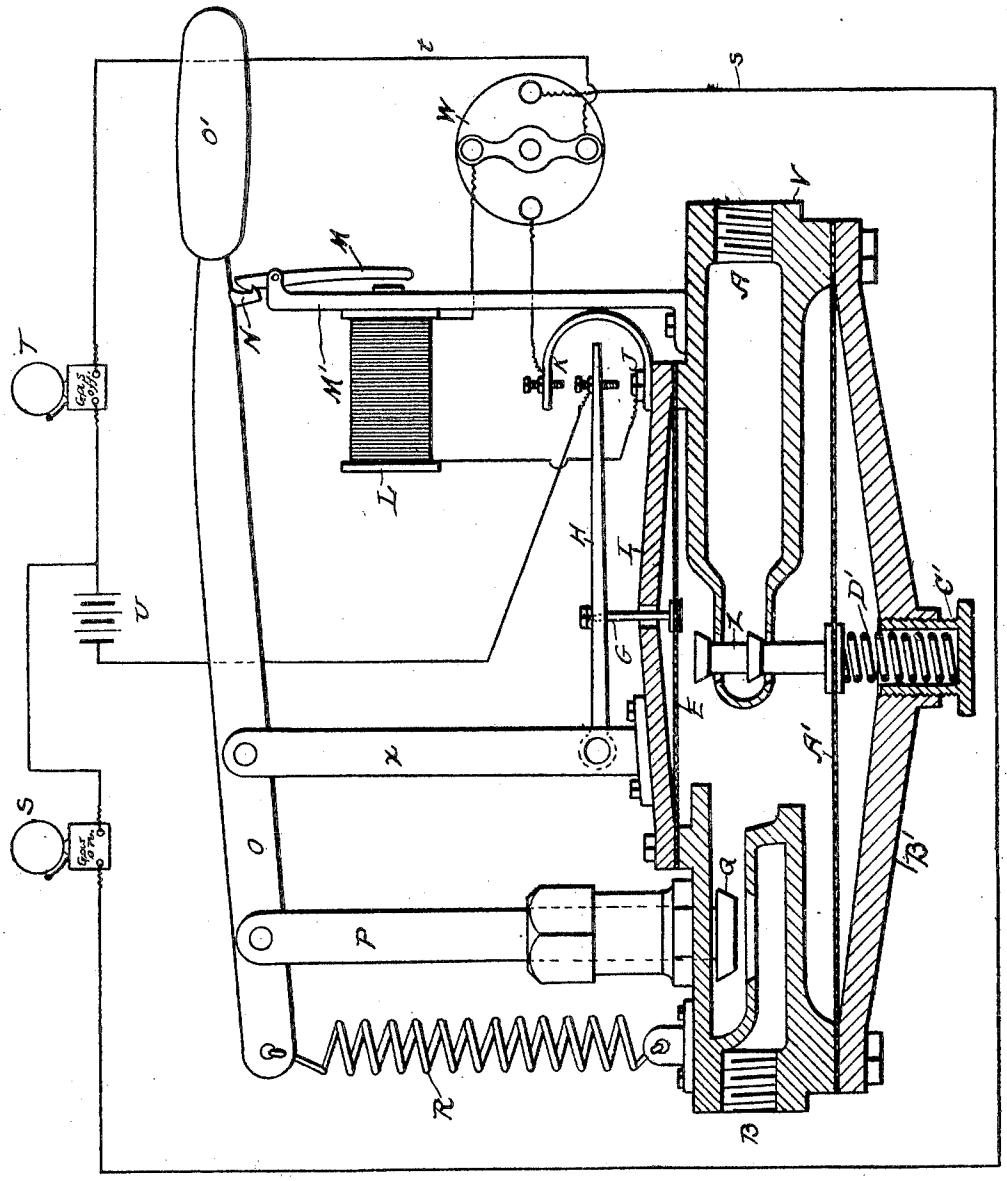
No. 797,664. PATENTED AUG. 22, 1905.

J. W. COTTINGHAM & C. W. FRANKLIN.

AUTOMATIC GAS PRESSURE REGULATOR AND CUT-OFF.

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JOHN W. COTTINGHAM AND CHARLES W. FRANKLIN, OF LEIPSIC, OHIO.

AUTOMATIC GAS-PRESSURE REGULATOR AND CUT-OFF.

No. 797,664. Specification of Letters Patent. Patented Aug. 22, 1905.

Application filed March 16, 1905. Serial No. 250,390.

To all whom it may concern.

Be it known that we, JOHN W. COTTINGHAM and CHARLES W. FRANKLIN, citizens of the United States, residing at Leipsic, in the county of Putnam and State of Ohio, have invented new and useful Improvements in Automatic Gas-Pressure Regulators and Cut-Offs, of which the following is a specification.

This invention is an automatic gas-pressure regulator and cut-off intended for the purpose of regulating gas-pressure and for cutting off the supply when the pressure fails, at the same time sounding a signal to give notice of that fact.

A further feature is the sounding of another signal when the gas pressure or supply comes on again.

The invention is characterized by improvement in the features above referred to and also in other features, as will be more fully apparent from the following description.

The accompanying drawing is a sectional elevation of the apparatus.

Referring specifically thereto, the apparatus comprises a casing containing inlet and outlet valves, a diaphragm to control the inlet-valves, and another diaphragm controlling the electrical apparatus having a double contact to operate different signals when the gas is on or off.

A indicates the inlet to the casing V from the supply-main, and B the outlet to service-pipes. Within the casing is an inlet-valve Z, the stem of which is secured to a diaphragm A′, clamped to the bottom of the casing by a cap B′. The pressure required to close the valve is adjusted and regulated by means of a spring D′ and adjusting-screw C′, which is tapped into the cap B′. As the pressure increases the diaphragm A′ is forced down against the tension of the spring, and the opening of the valve Z decreases accordingly, thereby regulating the supply and the pressure.

The outlet B is controlled by a valve Q, which works through a gland in the top of the casing and is connected by its stem P to a lever O, pivoted to a standard X on top of the casing and having at one end a handle O′ and at the other end a spring R in tension tending to pull down that end of the lever and close the valve Q.

M is an armature pivoted to the bracket M′ and having at the upper end a hook arranged to engage a hook N on the under side of the lever O.

L is an electromagnet supported on the bracket and controlling the armature. By means of a four-pole switch W this magnet may be put in circuit with a "gas-off" bell T.

S is a "gas-on" bell in circuit with two poles of the switch and the battery U and the contact K by means of the wire *s*, the other circuit being through the contact J and wire *t* to the other bell and the battery. These contacts J and K are located on opposite sides of a lever H, which is pivoted to the standard X and carries a pin which rests upon a diaphragm E, clamped between the cap I and the casing V. The pin G works loosely through a hole in the cap, and the diaphragm is under the pressure of the gas in the casing beyond the inlet-valve Z.

By changing the switch W the circuits may be established either with the bell S or the bell T. In the drawing, J is shown in circuit with the gas-off bell T, ready to sound said bell if the gas-pressure should fail. In the event of such failure the diaphragm E and lever H drop, making the contact at J, which closes the circuit through the magnet L, which draws the armature and unhooks the lever O, allowing the spring R to close the valve Q, which thus stays closed until opened by hand. At the same time the alarm T is sounded and continues to sound until some one comes and turns the switch to break the circuit. A quarter-turn of the switch cuts in the bell S, and the parts remain in this condition until the gas-pressure comes on again. Then the diaphragm E lifts and makes contact at K, which starts the bell S to ringing, notifying the people that the gas is on. Then the switch is turned back to connect the circuit of the bell T and the valve Q is opened by the lever O and hooked by the armature, as in the beginning.

What we claim as new, and desire to secure by Letters Patent, is—

1. In a pressure-regulator, in combination, a casing having an inlet and an outlet, a valve at the inlet, and a separate cut-off valve at the outlet, and pressure-operated controlling means for each of said valves located in the casing between the valves and both subject to the same pressure.

2. In a gas cut-off, the combination with a casing having a cut-off valve, and a diaphragm therein controlling the valve, of means actuated by the diaphragm to sound a signal when the gas-flow fails, and means including a hand-

operated device and devices actuated by the diaphragm to also sound a signal when the gas-flow resumes.

3. In a pressure-regulator, in combination, a casing, separate inlet and cut-off valves in the casing, diaphragms in the casing, subject to the pressure between the valves, one diaphragm being connected to and controlling the inlet-valve, and means for controlling the cut-off valve connected to and actuated by the other diaphragm.

4. In a gas cut-off, the combination with a casing having a diaphragm and a cut-off valve therein, of a lever connected to the diaphragm, separate bells having separate circuits with contacts on opposite sides of said lever, a latch constructed to hold the valve open, and electromechanical means operated by the lever to release the latch and sound one of the bells when the pressure falls, and means including devices operated by said lever to sound the other bell when the pressure resumes.

5. In a gas cut-off and signal, the combination with a cut-off valve, and "gas-off" and "gas-on" bells having separate circuits and contacts in each, of a switch in the circuits, constructed to respectively open and close the same, electromechanical means in the circuit of the "gas-off" bell to close the cut-off valve, and pressure-actuated means to close the respective contacts when the gas-pressure fails and resumes.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

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Witnesses:
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