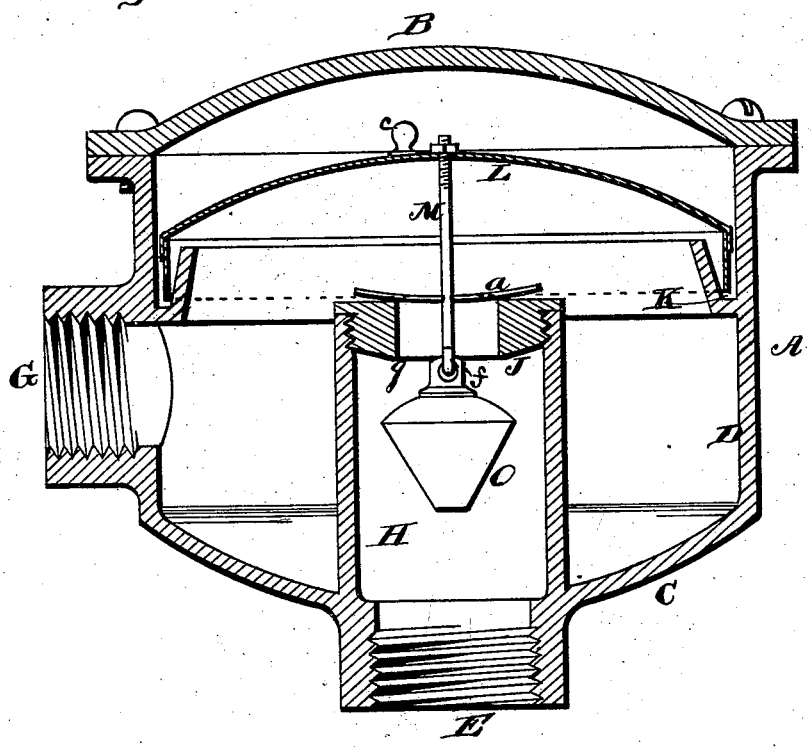
# A. F. CHACE.

## GAS-REGULATOR.

No. 191,402. Patented May 29, 1877.

*Fig. 1.*




WITNESSES

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# UNITED STATES PATENT OFFICE.

ALBERT F. CHACE, OF FALL RIVER, MASSACHUSETTS.

## IMPROVEMENT IN GAS-REGULATORS.

Specification forming part of Letters Patent No. **191,402**, dated May 29, 1877; application filed April 7, 1877.

*To all whom it may concern:*

Be it known that I, ALBERT F. CHACE, of Fall River, in the county of Bristol and State of Massachusetts, have invented a new and valuable Improvement in Gas-Regulators; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a cross-sectional view of my gas-regulator.

My invention has relation to gas-regulators; and it consists in the novel construction of devices hereinafter specified and claimed.

A of the drawings represents the case or shell of my regulator, ingress and egress openings, mercury-cup, bottom, sides, and raised valve-chamber, all cast in one piece.

The letter B represents the removable cover, connected with the shell by screws, as shown.

The letter C designates the bottom, and D the sides, of the shell. E represents the ingress-opening, in which screw-threads are formed for connecting with the gas-meter, and G a like opening for connecting with the gas-pipe leading from the meter.

The letter H represents the valve-chamber, extending upward above the ingress-port, and provided at its upper end with screw-threads, to adapt it for receiving the removable valve-seat collar J.

The letter K represents the mercury-cup, and L the metallic diaphragm, the flanges of which operate therein.

To this diaphragm I attach, by suitable nut and screw, the pendent valve-rod M, the position of which is regulated at will by means of said screws and nut.

O represents the valve. It is constructed with the usual convex upper surface, but, in addition thereto, an extended lower portion, representing the frustum of an inverted cone. This extension of the valve gives it weight and solidity, and effectually prevents it from adhering to its seat, as lift-valves too often do, and thereby closing the opening for the flow of gas.

The letter *a* represents a spring-rod, passing through the valve-rod, and adapted for resting upon the upper side of the valve-seat collar. It is light in construction, and, preferably, is slightly curved, as shown. This spring serves as a stop to regulate the movements of the valve, and also as a spring to aid in preventing the possibility of any of the working mechanism from being stuck together by the wax or tar that usually aggregates upon such valves when in use.

The diaphragm is provided with a lifting-knob, *c*, to aid in removing the same or in regulating its movements.

It will be observed that the valve is connected with its stem or rod by a hook and eye, as shown at *f* on the drawings. This mode of connecting serves all the purposes of a universal joint, and permits the valve to adjust itself to its seat with the least possible resistance. It will also be observed that the valve-seat has a sharp or knife edge, as shown at *g*, to aid the free movement of the valve.

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

In a gas-regulator, the valve-rod M, provided with the spring-rod *a*, in combination with the diaphragm L and valve O, as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ALBERT F. CHACE.

Witnesses:
S. B. SABENS,
E. F. MASON.