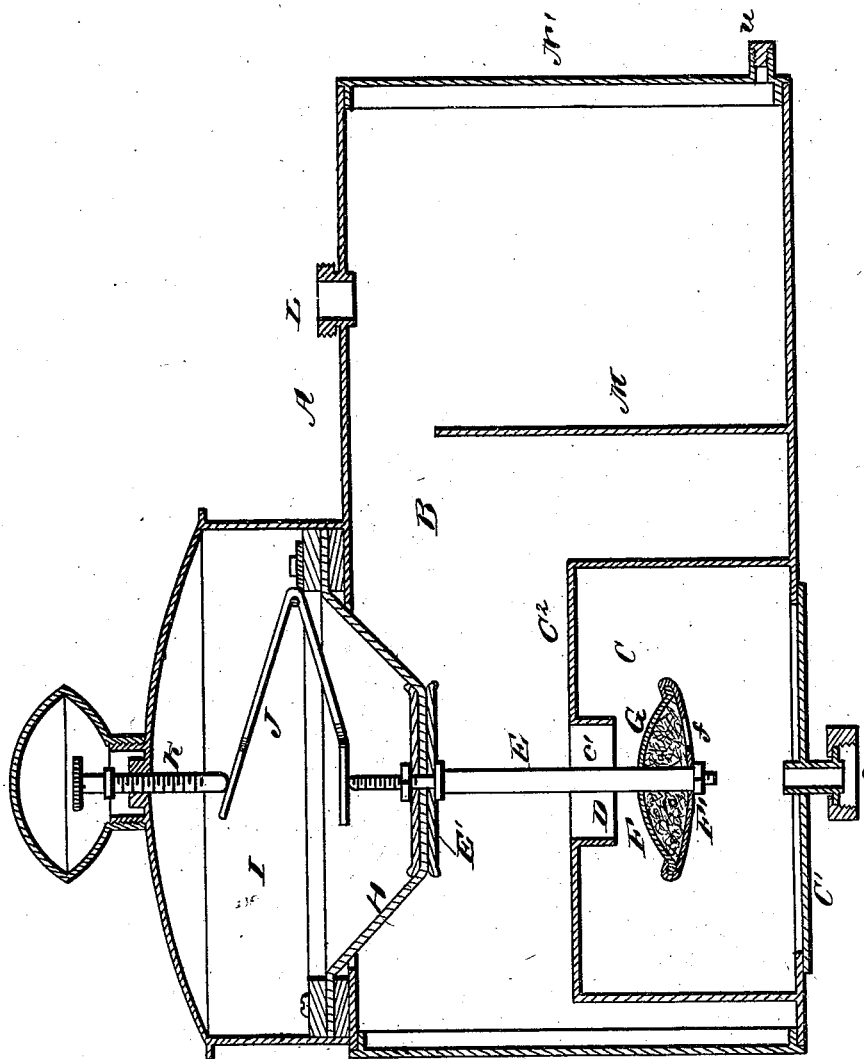


G. E. BINGHAM.  
GAS-REGULATOR.

No. 186,789.

Patented Jan. 30, 1877.



WITNESSES  
*E. H. Bates*  
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# UNITED STATES PATENT OFFICE.

GILBERT E. BINGHAM, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN GAS-REGULATORS.

Specification forming part of Letters Patent No. **186,789**, dated January 30, 1877; application filed June 17, 1876.

*To all whom it may concern:*

Be it known that I, G. E. BINGHAM, of Chicago, in the county of Cook, and State of Illinois, 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 drawing, making a part of this specification, and to the letters and figures of reference marked thereon.

The figure of the drawing is a representation of a central vertical section of my gas-regulator.

This invention has reference to gas-regulators; and it consists in a leather valve stuffed with hair, and provided with an opening for inserting a new filling or withdrawing the old; also, in a device for regulating the spring-pressure on the diaphragm; also, in a partition for preventing water of condensation from damaging the operative parts of the device; and, finally, in additional devices, hereinafter particularly described.

In the annexed drawing, A represents a metal casing, which contains gas-chamber B and valve-chamber C, said chambers being separated by a partition or floor, C<sup>2</sup>, and the former chamber located directly above the latter. The bottom of valve-chamber C is formed of a hinged door, C<sup>1</sup>, which may be fastened or unfastened by a rod that passes through perforated lugs or eyes on said door and casing, or any equivalent fastening device. Door C is perforated and provided with a short pipe and joining-nut, c, for attachment to the meter, or to a pipe leading therefrom, so as to admit the gas into said valve-chamber.

In the partition or flooring which separates the two chambers is a perforation, c', surrounded by a raised flange or valve-seat, D. Through this perforation reciprocates valve-rod E, on the lower end of which is secured valve F, consisting of metal back F' and flexible (preferably leather) face G. Back F' is perforated at f, to allow the insertion or removal of horse-hair or similar stuffing. In this way the stuffing may be changed when it has become unfit for use. When valve F is raised by the pressure of the gas, it fits tightly against valve-seat D, completely closing the perforation c', and thereby shutting off the supply of gas.

The other end of valve-rod E is attached, by a plate, E', to a diaphragm, H, preferably constructed of leather. Abovesaid diaphragm is a supplemental chamber, I, containing a bent spring, J. One of the ends of said spring bears down upon the upper end of valve-rod E, while the other end of said spring is held down by an adjusting-screw, K, which passes up through the top of said chamber, so that it may be readily operated by hand.

The office of spring J is to force down valve-rod E and valve F, thereby allowing ingress of gas to chamber B; and the office of adjusting-screw K is to regulate the amount of such pressure. By turning said screw down, the gas is let in; by turning it up, the gas is cut off.

L is an outlet-pipe or coupling and perforation, adapted to connect with the pipe that leads to the burners. M is a cross-partition, reaching about half-way to the top of casing A, and located between outlet L and the valve and diaphragm. Its office is to prevent the water of condensation from running back upon valve F and injuring the same. Said casing is closed at both ends by flanged detachable pieces N N', the latter being the nearer to partition M. N' is perforated at n, to allow the escape of the water of condensation from the casing.

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

1. The combination, with a gas-regulator, of a valve having a flexible convex face, and stuffed with horse-hair or similar material, substantially as set forth.

2. The combination, with a gas-regulator, of valve F, constructed with flexible face G and perforated back F', substantially as and for the purpose set forth.

3. The combination of valve-rod E with bent spring J and adjusting-screw K, substantially 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.

GILBERT E. BINGHAM.

Witnesses:

A. T. EWING,  
A. BENTZ.