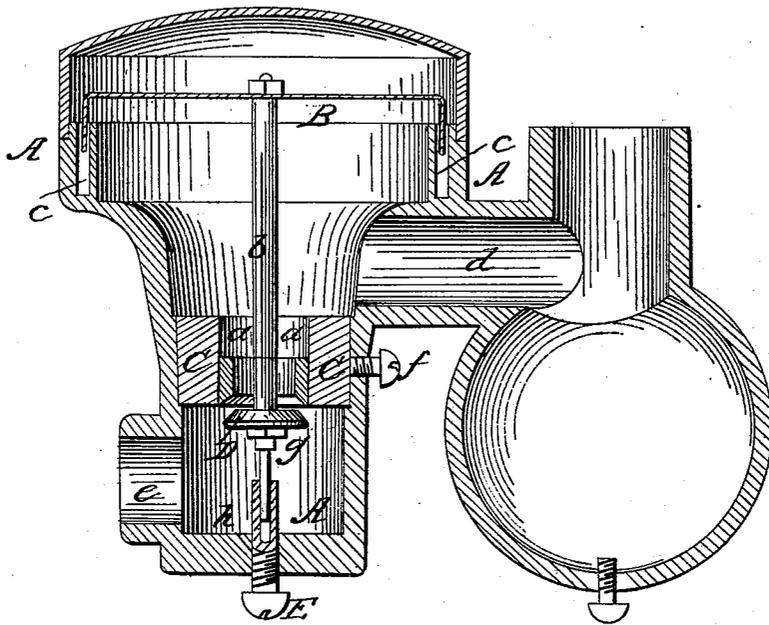


L. ABBOTT.
Gas Regulator.

No. 33,873.

Patented Dec. 10, 1861.



Witnesses:
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UNITED STATES PATENT OFFICE.

LEVI ABBOTT, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN GAS-REGULATORS.

Specification forming part of Letters Patent No. 33,873, dated December 10, 1861.

To all whom it may concern:

Be it known that I, LEVI ABBOTT, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Gas-Regulators; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, said drawing representing a central vertical section of a gas-regulator with my improvements.

My invention consists, first, in making the regulating-valve and valve-seat of a gas-regulator of vulcanized india-rubber, upon which, owing to its being a poor conductor of heat, the vapors contained in the gas are less likely to condense than they are upon a metal valve and seat, and by which I therefore obviate in a great measure the liability to the choking of the passage between the valve and seat.

It consists, secondly, in forming a guide for the valve-stem by providing a suitable hole for the reception of the lower part thereof in the center of the set-screw which is applied at the bottom of the stem to regulate the greatest width of opening of the valve, thereby dispensing with the necessity of a guide across or above the valve-seat, and obviating the obstruction which is offered to the passage of the gas by the cross-bar which supports or contains such guide.

To enable others to make and use my invention, I will proceed to describe its construction and operation.

A is the box, of substantially similar form to that which constitutes the exterior of other gas-regulators, having its lower part formed for the reception of the valve-seat *a*, and having in its upper part an annular reservoir *c*, containing the mercury in which works the inverted cup B, from which the valve-stem *b* is suspended.

d is the inlet communicating with the box A between the cap B and the valve-seat.

e is the outlet below the valve-seat.

The valve-seat *a* consists of a ring of vulcanized india-rubber, fitted tightly into a ring C of metal, and secured therein by what is known to gas-fitters as "brick-cement," with which material the exposed parts of the valve-seat are also completely covered to protect the india-rubber from the action of the gas. The ring C is fitted tightly into the box A, and secured therein by a set-screw *f*.

D is the valve, of the conical kind, made of vulcanized rubber and coated all over, like the seat, with brick-cement, for the same purpose. This valve is secured to the stem by a nut *g*, fitted to a screw-thread on the stem.

E is the set-screw screwing through the bottom of the box A, for the purpose of regulating the greatest width of opening of the valve by stopping the descent of the stem beyond a certain point. The lower part of the stem, which projects through the under side of the valve, is turned down, of small size, and of cylindrical form, to enable it to work within the hole *h*, which is drilled in the center of the screw E for its reception, and which constitutes the guide for the stem, by which the necessity for a guide above the valve is obviated.

The brick cement hereinbefore mentioned is made by boiling together equal parts of beeswax and tallow, and as much Venetian red as will make it hard when cool.

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

1. The construction of the valve and valve-seat of a gas-regulator of vulcanized india-rubber, substantially as and for the purpose herein specified.

2. Forming a guide for the valve-stem within the regulating-screw E, applied at the bottom of the stem, substantially as herein specified.

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Witnesses:

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