D. SLOAN.

Gas-Regulator.

No. 162,704. Patented April 27, 1875.

Fig. 1.

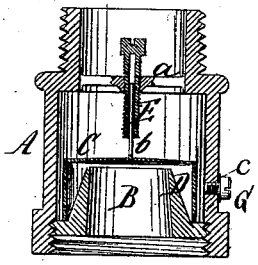
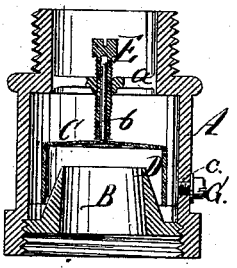


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

DANIEL SLOAN, OF NEW YORK, N. Y.

IMPROVEMENT IN GAS-REGULATORS.

Specification forming part of Letters Patent No. **162,704**, dated April 27, 1875; application filed March 13, 1875.

To all whom it may concern:

Be it known that I, DANIEL SLOAN, of the city, county, and State of New York, have invented a certain new and useful Improvement in Gas-Regulators, of which the following is a specification:

This invention is illustrated in the accompanying drawing, in which—

Figure 1 is a section, showing the valve resting on its seat. Fig. 2 is a section, showing the valve raised.

Similar letters indicate corresponding parts.

This invention relates to the class of gas-regulators constructed of a gravitating-valve, which rises and falls under the influence of gas issuing from the valve-seat, and serves to regulate the latter's flow, and of a set-screw, which serves to regulate the extent of movement of the valve.

My invention consists, mainly, in certain improvements in the valve-seat together with the valve, whereby I promote the uniform flow of the gas, and overcome the impediment arising from impurities in the gas collecting on the valve-seat to a proper working of the valve.

The valve-seat has the form of a truncated cone, while the valve is perpendicular, or nearly so, so that a tapering space is formed between the seat and valve, by means of which the gas is caused to flow very uniformly, while, if a sediment accumulates on the valve-seat, the valve simply occupies a more elevated position, and its working is not interfered with.

The valve shell or casing is constructed with a cross-bar, through which a tubular set-screw projects downwardly, and to the upper edge of the valve is secured a guide-stem, which projects upwardly into the tubular screw, all of which will be fully hereinafter described.

In the drawing, the letter A designates the shell of my apparatus, provided with an internal and external screw-thread, whereby it may be secured in a gas-pipe or any other place. The internal thread of the shell receives and retains the threaded flange of a nipple, B, which constitutes the seat of the valve C.

The outline of the seat B is that of a truncated cone, while that of the valve is perpendicular; or, if seen fit, may be made slightly conical.

By these shapes a tapering space, D, is produced between the inner surface of the valve and the outer surface of the valve-seat. The gas passing through the seat B and striking the valve is caused to retrace its way and pass through the tapering space D, and thence around the lower edge of the valve C to the place of consumption. The gas in its passage through the tapering space D is concentrated, and thus escapes to the place of consumption with a uniform flow.

It is well known that from impure gases a sediment accumulates on the valve-seat in gas-regulators, and, if permitted to grow, impedes the working of the valve. This is overcome by my invention, in that as the sediment accumulates on the conical seat B, the valve only remains in a more elevated position, which, of course, becomes greater as the sediment grows; but which does not in the least interfere with a proper working of the valve.

E designates a set-screw, situated above the valve, and against which the valve C strikes in its up-and-down movement, so that the extent of movement of the valve is regulated. This screw E is held in a cross-bar, *a*, of the valve-shell, is hollow, and receives a guide-stem, *b*, rising from, and which is soldered or otherwise secured to, the valve. The stem *b* slides in the hollow or tubular screw D when the valve rises or falls, and by this means the valve is prevented from tipping. In the valve-shell A I form an opening, *c*, for the purpose of letting out any products of condensation of the gas passing through the valve-chamber. This opening *c* receives a plug, G, which is held in place by means of a screw-thread, or any other suitable means, so that no gas is allowed to escape by the opening.

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

The combination, in a gas-regulator, of the valve-casing A, having the conical nipple B, and the cross-bar *a*, arranged above the same,

the perpendicular valve *c* arranged over said nipple to create a tapering chamber between the two, and having the guide-stem *b* projecting upwardly from its upper top, and the tubular set-screw E, projecting down through the said cross-bar of the valve-casing, all substantially as and for the purposes specified.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 9th day of March, 1875.

DANIEL SLOAN. [L. S.]

Witnesses:

E. F. KASTENHUBER,

CHAS. WAHLERS.