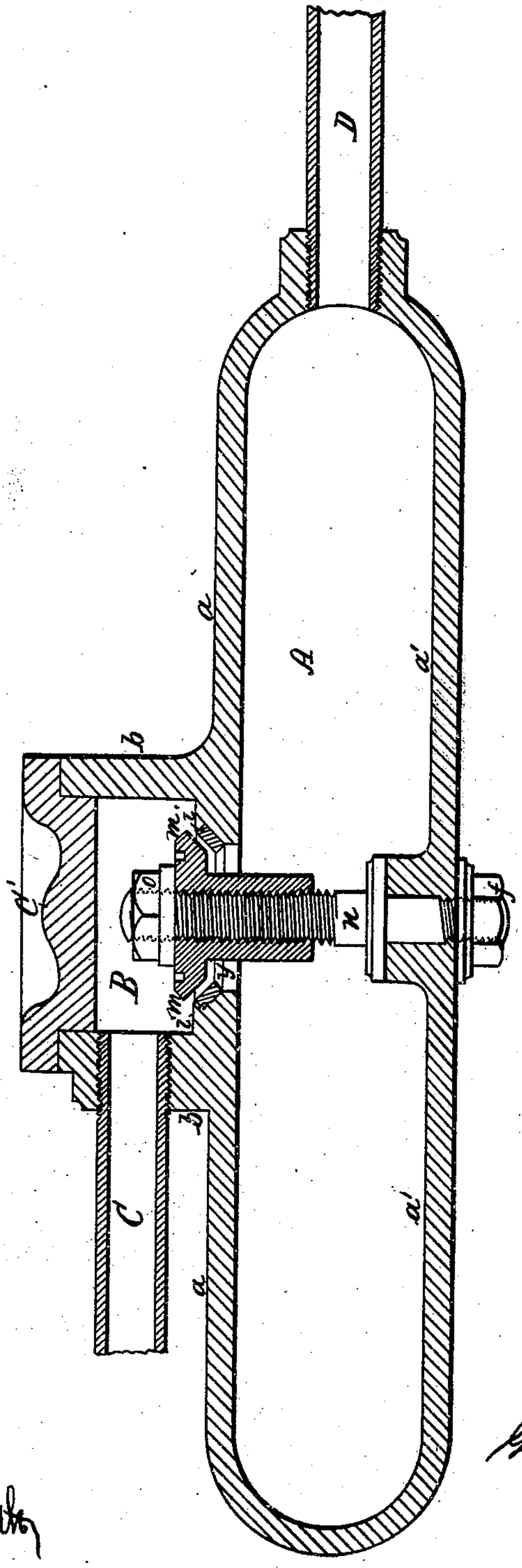
G. H. Corliss

Pressure Regulator.

No. 85,566. Patented Jan. 5, 1869.



Witnesses.

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GEORGE H. CORLISS, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN STEAM-PRESSURE REGULATORS.

Specification forming part of Letters Patent No. **85,566,** dated January 5, 1869.

To all whom it may concern:

Be it known that I, GEORGE H. CORLISS, of the city and county of Providence, and State of Rhode Island, have invented a new and Improved Pressure-Regulator; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing, making a part of this specification, in which my invention is represented by a longitudinal section through the center of the device.

This invention is for the purpose of effecting an automatic reduction of the pressure of steam, when it is to be used for heating, or where a higher pressure is raised in the boiler than is required for the purposes to which it is to be applied, and making such reduced pressure uniform. This is accomplished by causing the steam to pass through a vessel having flexible sides, which, as the vessel fills with steam, are pressed outward in exact proportion to the direct pressure of the steam in chamber B acting upon the valve *m*, and the pressure of the reduced steam acting upon the sides of the vessel A, which, in expanding, close, or partially close, a check-valve, thus diminishing the flow of steam just in proportion to the combined pressure in chamber B and vessel A, thus giving, by the combined action of the high-pressure steam upon the area of the valve *m* and the reduced steam upon the walls of the vessel A, a nearly uniform pressure of reduced steam under varying pressures in the boiler or chamber B.

In the drawings, A represents a metallic vessel, having flexible sides *a a'*, capable of being sprung outward when subjected to pressure from within. B is an external chamber, formed on the side *y* of the vessel A, and provided with a cap, C'.

The steam passes from the induction-pipe C into the chamber B, thence through a port, I, into the vessel A, whence it escapes through the eduction-pipe D.

The port I is opened and closed by a disk-valve, *m*, attached to the side of the vessel *a'*, while the seat is attached to the opposite side, *a*.

The stem of the valve *m* thus extends from the side *a* through the vessel and port I; and when the port is closed by the expansion of the vessel A, the valve and its stem subserve the purpose of a tie or stay, and form a rigid and firm connection between the sides of said vessel, thus limiting their outward movement, and preventing any liability of damage to the vessel by an accidental increase of pressure.

The apparatus thus forms an automatic steam-regulator, controlling the flow of steam through the eduction-pipe, and rendering the reduced pressure uniform.

To facilitate the adjustment of the valve to any required pressure, it is, as shown in the drawing, screwed upon its stem, and may be held firmly in any position by a check or jam nut.

I do not, however, limit myself to any particular method of adjusting the position of the valve, but may use any available means that will answer the purpose.

It is evident at a glance that while this apparatus is perfectly self-regulating, its simplicity of construction is such as to render it inexpensive and durable to a degree not attained in any other device hitherto constructed for the same purpose.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A vessel with flexible sides, when the same is constructed and arranged substantially as herein shown and described.

2. The combination and arrangement of vessel A, valve-stem *n*, and valve *m*, whereby to limit the outward movement of the flexible sides of the vessel A, substantially as described.

3. The construction and arrangement of the vessel A and valve *m*, whereby the combined pressure in chamber B and vessel A shall operate to close the valve, substantially as set forth.

GEO. H. CORLISS.

Witnesses:

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