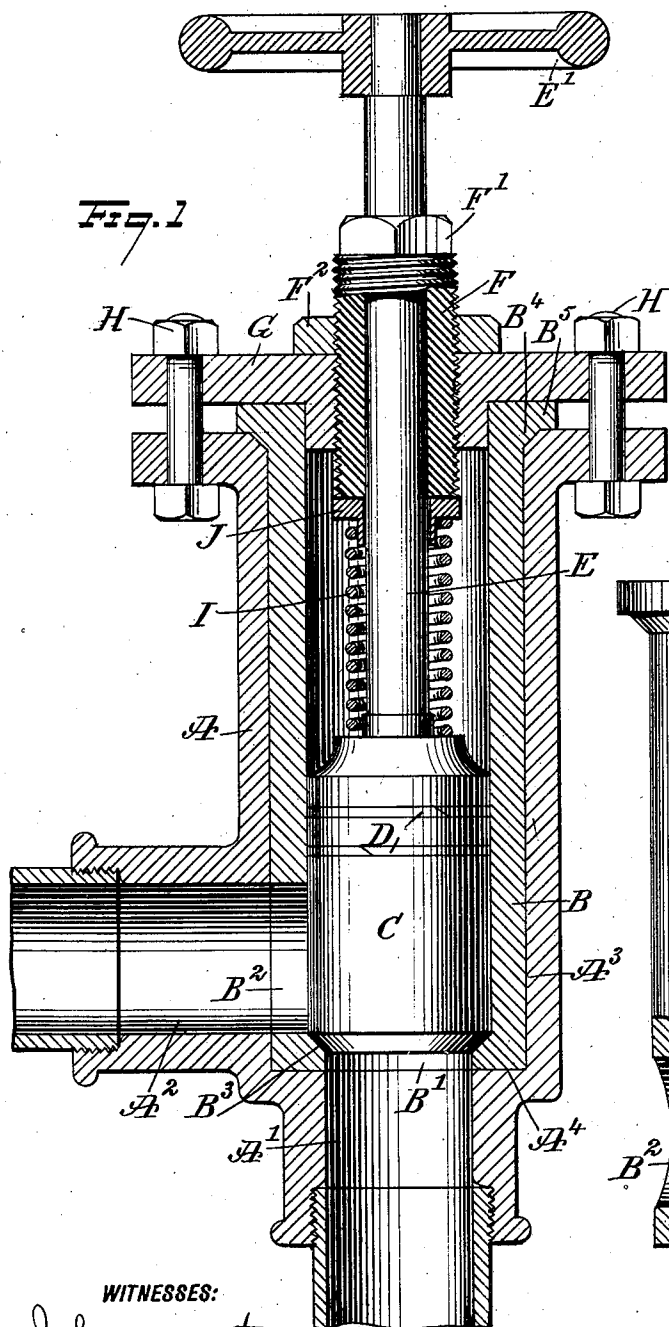
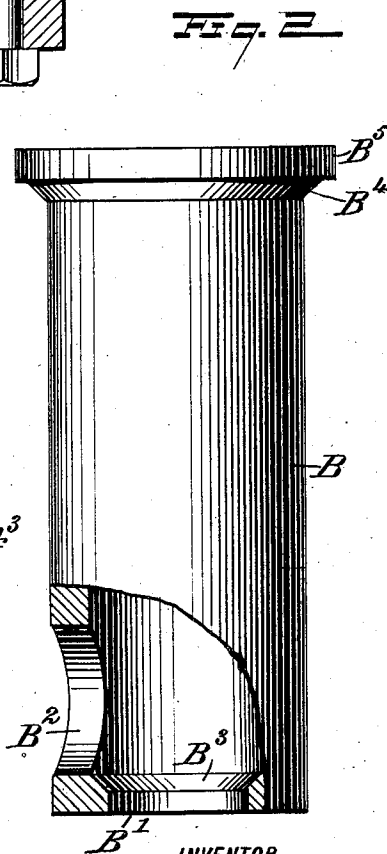


No. 852,819.

PATENTED MAY 7, 1907.

T. BRICK.
VALVE.

APPLICATION FILED JAN. 18, 1905.



WITNESSES:

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THOMAS BRICK, OF NEW YORK, N. Y.

VALVE.

No. 852,819.

Specification of Letters Patent.

Patented May 7, 1907.

Application filed January 18, 1905. Serial No. 241,559.

To all whom it may concern:

Be it known that I, THOMAS BRICK, a citizen of the United States, and a resident of the city of New York, Long Island City, borough of Queens, in the county of Queens and State of New York, have invented a new and Improved Valve, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved valve, designed for use as a reducing-valve, safety-valve, equalizing-valve or a high or low pressure valve for steam, water or other fluid, the valve being simple and durable in construction and arranged to dispense with the usual packing, at the same time avoiding leakage and insuring at all times a proper and accurate working of the valve.

The invention consists of novel features and parts and combinations of the same, as will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in both views.

Figure 1 is a sectional side elevation of the improvement; and Fig. 2 is a side elevation of the bushing, parts being broken out.

The valve-casing A is provided with an inlet A', and an outlet A² standing at an angle to the inlet A', and the said valve-casing is provided with an enlarged bore A³ into which fits a bushing B provided with openings B' and B², of which the opening B' registers with the inlet A' and the opening B² registers with the outlet A². A valve-seat B³ is formed at the opening B', and the top of this valve-seat is preferably flush with the bottom of the opening B², registering with the outlet A². In the bushing B is mounted a piston-valve C, normally seated at its lower end in the valve-seat B³, and the said valve is adapted to slide upward in the bushing, according to the pressure of the fluid entering the inlet A', so that the valve C controls both openings B' and B², that is, the flow of the fluid from the opening A' to the outlet A². The upper portion, that is, the part above the opening B², is provided with suitable metallic packing-rings D, to prevent leakage into the bushing B, past the piston-valve C. The valve-stem E of the piston-valve C extends through a sleeve F having an external screw-thread engaging a flange

G fastened by bolts H to the end of the valve-casing A, and the said threaded sleeve F is provided at its upper end with a ploygonal portion F', for the convenient application of a wrench or other tool, to allow of screwing the sleeve F up or down in the flange G. When the sleeve F has reached the desired position, then it is locked against movement in the flange G by a suitable jam-nut F².

On the stem E, inside of the bushing B, is coiled a spring I resting with one end on the piston-valve C and abutting with its other end on a washer J resting on the inner end of the sleeve F, it being understood that by adjusting the sleeve F, that is, screwing the same in or out of the flange G, any desired tension can be given to the spring I, according to the use made of the valve at the time.

The bushing B is seated at its lower end upon a flat seat A⁴ of the casing and abuts at its upper end against the flange G. It is also exteriorly provided near its upper end with a conical portion B⁴ seated on a counterpart seat formed at the upper end of the casing. The seats at A⁴ and B⁴ are tightly fitted, preferably by grinding at the same time in the usual manner so that both will be fluid tight. When therefore the flange G is forced down upon the bushing B by tightening the bolts H, all leakage of fluid between the inlet and outlet and between the bushing and casing is completely prevented. It will be noted that the upper end of the bushing B is provided with a flange B⁵ which is also shown as seated against the top of the casing, whereby its bearing against the flange G is increased in extent, and that the flange G is shown as having a tubular extension projecting down into the bushing B, whereby the length of the threaded bearing of the sleeve F is increased. These features are of advantage but not are essential.

By the arrangement described, the fluid passing under pressure into the inlet A' acts on the spring-pressed piston-valve C, and when the pressure is sufficient to overcome the tension of the spring I, then the piston-valve C opens and the fluid can pass to the outlet A², and when the pressure falls below the tension of the spring I, then the latter causes the piston-valve C to close immediately, thus forming the valve into a reducing-valve. In case the piston-valve should stick it can be lifted by a suitable handle E' on the outer end of the valve-stem E.

The valve may be used for various pur-

poses, and hence I do not limit myself to the particular use mentioned or to the particular construction shown and described, as the same may be varied without deviating from the spirit of my invention.

The improved valve is very simple in construction, and in case the bushing is worn out it can be readily replaced by a new one without disturbing the valve-casing A.

Instead of using the valve in the manner described it may be so arranged that the flow of the fluid is reversed, that is, passes in at the opening B² and out through the seat B³ and the opening A'; the piston-valve C in this case not being controlled by the pressure of the fluid but by external means, such as levers, etc.

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

A valve comprising a valve casing having an enlarged bore and provided with an inlet

and an outlet for the fluid, a bushing removably fitting the enlarged bore of the valve casing and having openings registering with the inlet and outlet, a flange abutting against the top of the bushing, a flange upon the casing in proximity thereto, and adjustable means for drawing the two flanges together, the bushing being seated at its lower end against the valve casing and having a part projecting between the flanges and seated down upon the top of the casing, and a piston valve in the bushing and fitting fluid tight above the inlet and outlet openings, the bushing having formed thereon the seat for the valve, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS BRICK.

Witnesses:

MICHAEL J. MULLEN,
PATRICK QUINLAN.