W. C. WESTAWAY.

VALVE.

APPLICATION FILED SEPT. 28, 1905.

922,986. Patented May 25, 1909

Fig. 1.

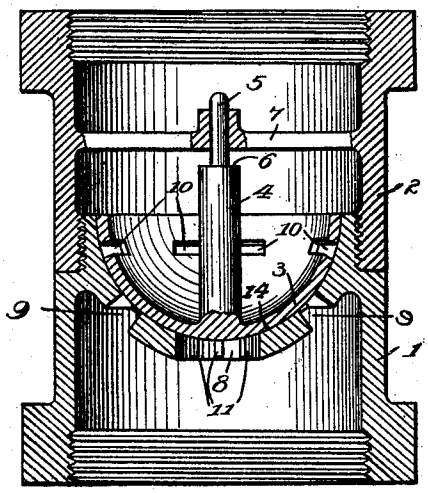


Fig. 2.

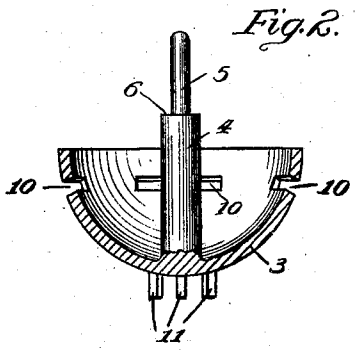


Fig. 4.

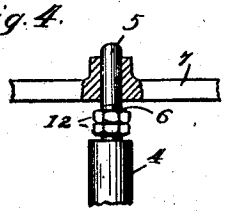


Fig. 5

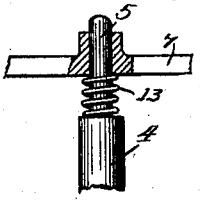
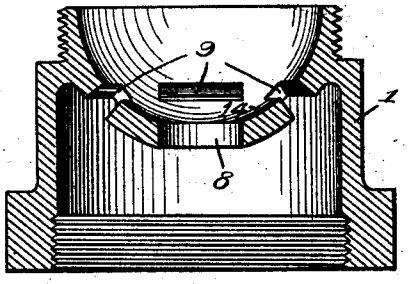


Fig. 3.



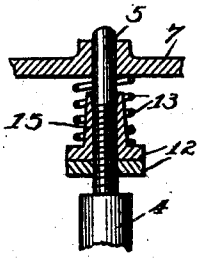


Fig. 6.

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UNITED STATES PATENT OFFICE.

WALTER C. WESTAWAY, OF ROCKFORD, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO J. W. DUNTLEY, OF CHICAGO, ILLINOIS,

VALVE.

No. 922,986. Specification of Letters Patent. Patented May 25, 1909.

Application filed September 28, 1905. Serial No. 280,408.

To all whom it may concern:

Be it known that I, WALTER C. WESTAWAY, a citizen of the United States, residing at Rockford, county of Winnebago, and State of Illinois, have invented certain new and useful Improvements in Valves, of which the following is a description.

My invention belongs to that class of valves adapted to prevent back flow in gas, liquid, or the like conducting systems, and has for its object the production of a simple, durable and efficient means for the purpose which will thoroughly and perfectly accomplish the object sought.

To this end my invention consists in the novel construction, arrangement and combination of parts herein shown and described and more particularly pointed out in the claims.

In the drawings wherein like reference characters indicate like or corresponding parts; Figure 1 is a central vertical section of the preferred form of my invention. Fig. 2 is a central vertical section of the movable part. Fig. 3 is a vertical section of the valve seat. Fig. 4 is a sectional view of a portion of my device showing a way of regulating the valve travel. Fig. 5 is a sectional view of a portion of my device, showing means for normally maintaining the valve closed. Fig. 6 is a sectional view of a portion of my device showing means for both regulating the valve travel and normally maintaining it in the valve seat.

In the preferred form shown in the drawings, the casing is made in two parts 1 and 2 secured together in any convenient or preferred manner. In the part 1 is positioned the valve seat 14, the seat being preferably concave. The cross-bar 7 is, as shown, made integral with the part 2, but it is obvious that the parts 1 and 2 may be made in one piece, and the bar 7 be made removable. Openings 8 and 9 are provided in the valve seat to admit the passage of the gas, liquid or the like. The number of these openings, their size and shape are as may be preferable.

The movable member 3 is made to fit the valve seat 14, and is preferably provided with a suitable number of ports 10. On the upper end of the valve 3 is an extension or stem 4, which passes through the cross-bar 7 and guides the member 4, a shoulder 7 or equivalent means limiting the distance of the valve travel. Pins 11 may also be suitably placed in the lower part of the valve. They serve to aid in guiding the valve to the seat and prevent it from binding in the cross-bar 7.

In the preferred construction the coöperating parts of my device are semi-spherical and are intended to partially imprison enough fluid between the valve and seat to prevent the valve from seating with too great a shock, but without the ports 9 and 10 the necessary movement of the valve is so great as to quite defeat this purpose owing to the increased drop of the column of water as the valve seats. The ports however entirely remedy this difficulty giving ample capacity for the passage of fluid with a moderate movement the valve yet retaining sufficient stock in both valve and seat to afford ample strength and imprisoning sufficient fluid to avoid any undesirable violent seating of the valve.

The valve and valve seat instead of as shown may be made spheriform, cone shaped, or otherwise to perform the functions described. When made as shown or cone shaped, dirt or sediment tends to flow down the sides of the seat and through the central hole 8, so that the valve is not prevented from closing tight. This is assuming the valve placed in the position shown.

Any suitable or preferred means may be used to regulate the valve travel, jam nuts 12—12 being shown in the drawing.

When the valve is placed in the preferred form shown, the weight of the valve tends to keep it in its seat, when there is no upward pressure. It is obvious however that it is not necessary to place the valve in this position as the back pressure will tend to close the valve and prevent back flow. If preferred resilient or other means may be employed to keep the valve in its seat, in the drawings a spring 13 being shown.

By the terms "concave" and "convex" in the claims, I wish to be understood as including the parts substantially shown, whether spheriform, concave or conical, so long as the parts preserve the functions described.

Having thus described my improvement it is obvious that various immaterial modifications may be made in my device without departing from the spirit of my invention, hence I do not wish to be understood as

limiting myself to the exact form and construction shown.

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

1. In a device of the kind described, a casing, a concave valve seat having a plurality of lateral openings through its walls positioned in said casing, a convex valve adapted to coöperate with said valve seat having a plurality of lateral openings through its walls offset from the openings in said valve seat to prevent the passage of fluid through said casing when the valve is closed.

2. In a device of the kind described, a casing, a concave spheriform valve seat having a plurality of lateral openings through its walls, positioned in said casing, a spheriform valve adapted to coöperate with said valve seat and having a plurality of lateral openings through its walls offset from the opening in said valve seat to prevent the passage of liquid through said casing when the valve is closed, and resilient means tending to normally hold said valve closed.

3. In a device of the kind described, a casing a concave spheriform valve seat having a central opening and a plurality of lateral openings through its walls positioned in said casing, a spheriform valve adapted to coöperate with said valve seat and having a plurality of lateral openings through its walls offset from the opening in said valve seat to prevent the passage of liquid through said casing when said valve is closed.

4. In a device of the kind described, a concave valve seat, and a movable convex valve adapted to coöperate therewith, the walls of said valve and valve seat being each provided with a plurality of lateral openings therethrough, said openings being offset from each other when said valve and valve seat are in contact, thereby preventing the flow of fluid therethrough.

5. In a device of the kind described, a valve seat, and a movable valve adapted to coöperate therewith, the walls of said valve and valve seat being each provided with a plurality of lateral openings therethrough, said openings being offset from each other when said valve and valve seat are in contact thereby preventing the flow of fluid therethrough, and means tending to normally hold said valve in contact with said valve seat.

6. In a device of the kind described, a valve seat, and movable valve adapted to cooperate therewith, the face of one being concave and of the other convex, and means for directing the movements of said valve, the walls of said valve and valve seat being each provided with a plurality of lateral openings therethrough, said openings being offset from each other when said valve and valve seat are in contact, thereby preventing the flow of fluid therethrough, and means tending to normally hold said valve in contact with said valve seat.

In testimony whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

WALTER C. WESTAWAY.

Witnesses:

BLANCHE PARDRIDGE,

R. F. LOCKE.