M. PETERSON.

VALVE FOR DOOR CHECKS.

APPLICATION FILED APR. 4, 1911.

1,018,265. Patented Feb. 20, 1912.

Fig. 1.

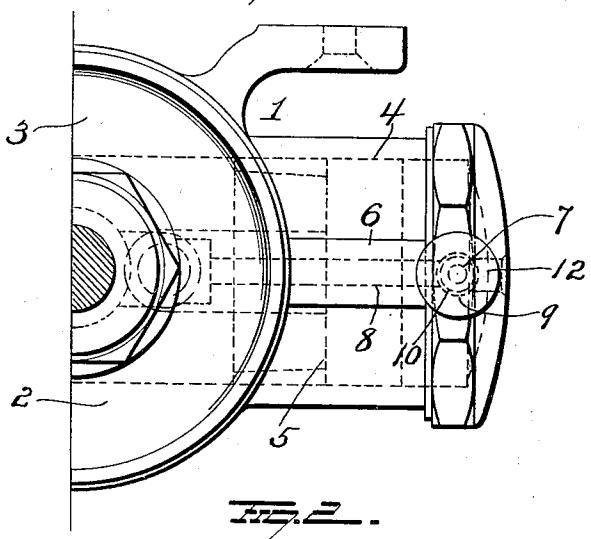
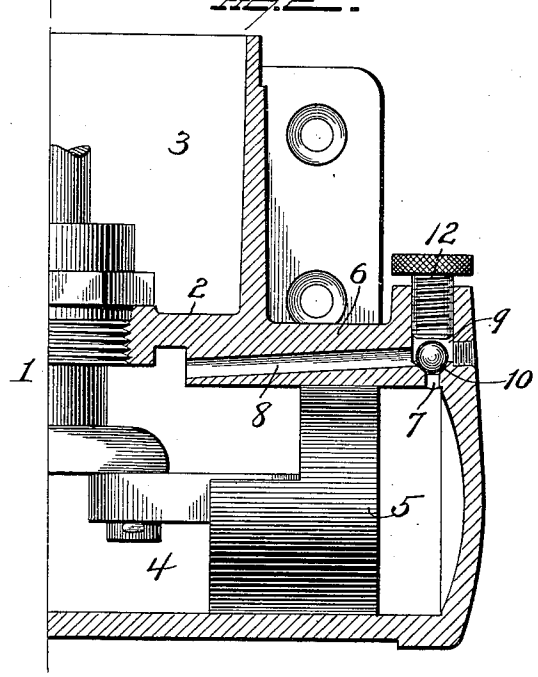


Fig. 2.



WITNESSES

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VALVE FOR DOOR-CHECKS.

1,018,265. Specification of Letters Patent. **Patented Feb. 20, 1912.**

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To all whom it may concern:

Be it known that I, MALCOLM PETERSON, of Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Valves for Door-Checks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in valves for door checks designed particularly for regulating the flow of liquid around the piston, and it consists in the parts and combination of parts as will be more fully described and pointed out in the claim.

In the accompanying drawings, Figure 1 is a view in plan of a portion of a door check and closer embodying my improvement and Fig. 2 is a view in vertical longitudinal section of same.

1 represents the casing of a door check and closer, divided by a partition 2 into an upper chamber 3, which contains the spring, and a lower chamber 4 which contains the liquid and in which the piston 5 moves. The partition 2 is provided with an opening which is closed by a packing nut having a central opening for the passage of a spindle, the latter being connected to the piston so as to actuate the latter, all the above parts being common in liquid door checks and closers. A section of the wall of chamber 4 is thickened, as at 6, and is provided with a port 7 leading from by-pass 8 to the liquid chamber 4 near the end of the latter and beyond the stroke of the piston, so that it will not be wholly covered by the piston during the forward stroke of the latter. The by-pass 8 is also located in the thickened wall 6 of the liquid chamber, and extends from the port to a point in rear of the piston, thus providing for the passage of the liquid from a point in front of the piston to a point in rear of the same and also providing for the return of the liquid from the rear of the piston to the front thereof. Located within an enlargement 9 of the port, immediately over the port is the ball valve 10, the bottom of the enlargement or ball housing 9, immediately around the upper edge of the port 7, being slightly concave, thus forming a curved seat for the valve. The ball valve 10 is of less diameter than its housing so that when the valve is raised from its seat, there will be ample clearance for the passage of the liquid around same to by-pass 8, or if passing from the rear of the piston, through by-pass 8 to port 7 into the liquid chamber in front of the piston.

Mounted in the thickened portion 6 of the wall of the liquid chamber, and in line with the valve 10 is the regulating screw 12. The shank of this screw has threaded engagement with the wall of the valve housing, whereby a turning movement of the screw moves same longitudinally toward or away from the valve. If the screw be in engagement with the valve the latter will shut off completely the escape of liquid from in front of the piston or its return to the front from the back, but if the screw be elevated to release the valve the latter will be elevated by the pressure of liquid from below and thus permit the latter to escape, or during the rearward movement of the piston the pressure of the liquid in the by-pass 8 will force the valve from its seat thus opening the port and permitting the liquid to pass into the cylinder in front of the piston. By adjusting the screw more or less toward the valve 12, the extent of movement of the latter may be regulated to control the escape of liquid in a most simple, economical and efficient manner.

By employing a spherical valve disconnected from its stem, the valve will during its movements, turn more or less, and thus frequently change its bearing surface, thereby preventing wear on any one portion or surface thereof which would result if the valve were attached to its stem.

It is evident that many slight changes might be resorted to in the relative arrangement of parts shown and described without departing from the spirit and scope of my invention. Hence I would have it understood that I do not wish to confine myself to the exact construction and arrangement of parts shown and described, but

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

The combination with a liquid chamber, a piston therein, a by-pass in the top wall of said chamber and communicating with the latter in rear of the piston, and a port connecting said by-pass and the cylinder in front of the piston, of a vertically movable gravity ball valve for normally closing the

upper end of said port, and a screw stem mounted in the wall of the cylinder above and in the plane of the ball valve, and adapted by its engagement with said valve to control the position of the latter with relation to its seat while the piston is moving, the said stem being disconnected from the valve.

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

MALCOLM PETERSON.

Witnesses:
W. H. TAYLOR,
J. C. REGAN.