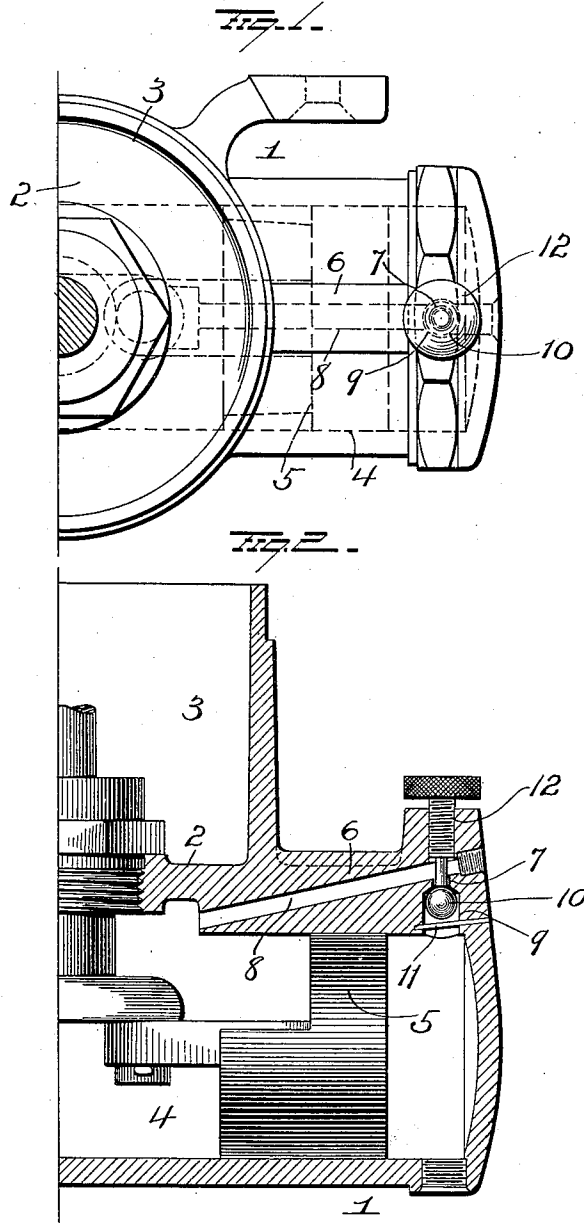


J. C. REGAN.
VALVE MECHANISM FOR DOOR CHECKS.
APPLICATION FILED APR. 6, 1911.

1,018,268.

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WITNESSES
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UNITED STATES PATENT OFFICE.

JOSEPH C. REGAN, OF STAMFORD, CONNECTICUT, ASSIGNOR TO THE YALE & TOWNE MANUFACTURING COMPANY, OF STAMFORD, CONNECTICUT.

VALVE MECHANISM FOR DOOR-CHECKS.

1,018,268.

Specification of Letters Patent.

Patented Feb. 20, 1912.

Application filed April 6, 1911. Serial No. 619,427.

To all whom it may concern:

Be it known that I, JOSEPH C. REGAN, of Stamford, in the county of Fairfield and State of Connecticut, have invented certain
5 new and useful Improvements in Valve Mechanism 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
10 to which it appertains to make and use the same.

My invention relates to an improvement in valve mechanism for door checks, and it consists in the parts and combination of
15 parts and in the details of construction as will be more fully described and pointed out in the claims.

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 central partition 2
25 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
30 having a central opening for the passage of a spindle, the latter being connected to the piston so as to actuate the latter, 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 the passage 8 to the compression chamber 9, which latter is simply an enlarged continuation of the port 7
40 connecting the latter and 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 compressive stroke of the latter. The passage 8 is also located in the thickened wall 6 of the liquid chamber, and extends from the port 7 to a point in rear of the piston, thus providing for the passage of liquid
45 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 the compression chamber 9 is the ball valve 10, the latter being of a

size sufficient to close the lower end of the
port 7. The top wall or roof of the compression chamber 9, which is the seat for the valve 10, is preferably made slightly conical so as to cause the ball valve to seat
60 itself centrally with relation to the port, and the valve is held in place within said chamber by the pin 11, the latter being sufficiently removed from the lower end of port 7, so that when the ball valve is resting on the pin ample clearance will be left
65 for the free passage of liquid from the compression end of liquid chamber 4, into passage 8, or from the liquid chamber in rear of the piston, through passage 8 and port 7 into the liquid chamber in front of the
70 piston.

Mounted in the thickened portion 6 of the wall of the liquid chamber, and in line with the port 7 is the regulating screw 12. The shank of this screw has threaded engagement with the wall of the liquid chamber, whereby a turning movement of the screw moves same longitudinally, and the end of the shank is reduced in size to rest within port 7 without materially obstructing same.

In the operation of the device the forward movement of the piston forces the ball valve 10 outwardly, either against the reduced end of the regulating valve 12 or
85 against its seat. If the adjusting screw be withdrawn sufficiently to permit the ball to engage its seat, the port 7 will be closed, and the flow of liquid prevented from the forward end of the liquid chamber. By adjusting the screw 12 more or less toward
90 the valve 10, the latter will be prevented from seating itself, thus leaving a space around same for the escape of the liquid. During the reverse movement of the piston, 95 the ball valve will fall onto its supporting pin 11, thus leaving the port open for the free passage of the liquid from the rear to the front of the piston. With this construction, by simply adjusting the screw any desired amount of liquid may be allowed to pass through the port and passage at the will of the operator, and by removing the screw entirely from the ball, the latter will, when there is liquid under compression in the forward part of the cylinder, be forced
105 to its seat and completely cut off the escape of liquid from in front of the piston. By

this improvement, I obtain absolute control of the liquid by a most simple, economical and effective means.

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:—

1. The combination with a liquid chamber, a piston therein, a passage in the wall of said chamber and communicating with the latter in rear of the piston and a port connecting said passage and liquid chamber in front of the piston and having a seat therein for the valve, of an unsupported ball valve located in a position to close the port and movable away from its seat by

gravity, and a valve stem disconnected from the valve and adapted to control the position of the valve relative to its seat whereby the escape of the liquid may be regulated and controlled.

2. The combination with a liquid chamber, a piston therein, a passage in the wall of said chamber, and communicating with the latter in rear of the piston, a port connected with said passage and a compression chamber connecting the port and liquid chamber in front of the piston, of an unsupported ball valve located within said compression chamber for regulating the flow of liquid through said port, and a valve adjusting stem disconnected from the valve.

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

JOSEPH C. REGAN.

Witnesses:

SCHUYLER MERRITT,
CHARLES E. VAIL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."