

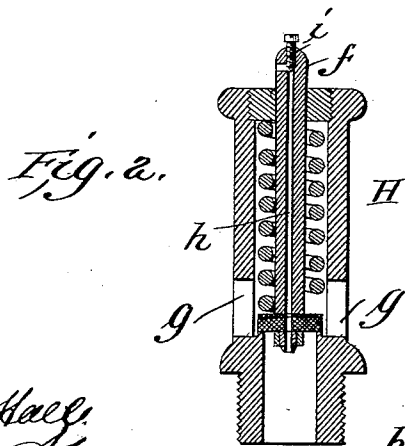
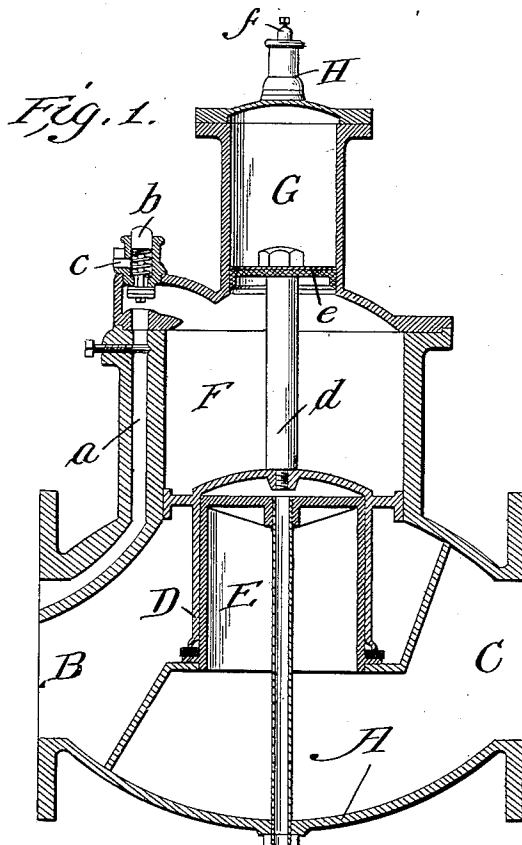
No. 655,342.

C. GULLAND.
VALVE.

Patented Aug. 7, 1900.

(Application filed Aug. 24, 1899.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES GULLAND, OF PITTSBURG, PENNSYLVANIA.

VALVE.

SPECIFICATION forming part of Letters Patent No. 655,342, dated August 7, 1900.

Application filed August 24, 1899. Serial No. 728,383. (No model.)

To all whom it may concern:

Be it known that I, CHARLES GULLAND, a citizen of the United States, residing at Pittsburg, Pennsylvania, have invented certain
5 new and useful Improvements in Valves, of which the following is a specification.

My invention is an improvement in valves of the class in which a movable piston controls the flow of water, the piston being kept
10 to its seat by the pressure and automatically operated by cutting off the pressure to the rear or upper side, so as to allow the pressure to be exerted on the opposite side to open the same.

15 My present invention is designed to provide means to lessen the shock of closing and to make the closing action gradual or to adjust this action as may be found desirable.

To this end my invention consists in adding to the construction heretofore patented to me—as, for instance, in reissued Letters Patent No. 71,122, of March 14, 1899—a plunger fitted to a cylinder, the cylinder having a vent controlled by a spring-pressed plunger, the
25 plunger being in turn provided with a vent for the gradual admission of air to allow the return of the main piston to close off the flow of water.

In the accompanying drawings; Figure 1 is
30 a sectional view of the form of automatic valve, while Fig. 2 is a detail view in section.

In the drawings, A represents the valve-casing, B the inlet, and C the outlet. A piston-valve D moves over and is guided by a
35 stationary cylinder E, which is provided with openings for the discharge of the water when the valve D is raised. A supplemental passage *a* passes from the pressure side to the space above the valve D and has the effect
40 to keep the valve closed normally. This pressure is interrupted by an auxiliary push-button valve *b*, which when pressed in closes the exit of the passage *a* and forms an outlet-

opening *c* for the discharge of the water in the chamber F. As soon as the pressure is
45 interrupted through the passage a full pressure is exerted on the under side of the valve D and has the effect of lifting this valve, forcing the water out of the chamber F. The valve D is provided with a rod or stem *d*, projecting from its upper surface, and this carries a disk *e*, which closely fits a cylindrical
50 extension G. Surmounting this extension is a tubular extension H, carrying a spring-pressed plunger *f*. As the valve D rises the disk *e* compresses the air in the cylinder G and unseats the spring-pressed disk of the
55 plunger *f* and the air escapes through lateral openings *g*. When it is desired to have the valve closed, the pressure is taken off of the push-button *b*, with the result that the water
60 under pressure flows into the chamber F and tends to force the valve to its seat; but this action is opposed by the partial vacuum formed in the chamber G. To allow the final
65 seating of the valve, I form a vent through the plunger *f*, as shown at *h*, and the size of this vent is regulated by a screw *i*, so that more or less air may be admitted to hasten or retard the descent of the disk *e* and the
70 valve D under the pressure of the water.

What I claim is—

In combination with an automatically-operating valve, a piston connected with said valve, a cylinder receiving the piston, a
75 spring-pressed plunger, closing exit-openings from said cylinder and an adjustable vent-opening carried by said plunger, substantially as described.

In testimony whereof I affix my signature 80 in presence of two witnesses.

CHARLES GULLAND.

Witnesses:

EDWARD VALLENTIN ANDERSON,
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