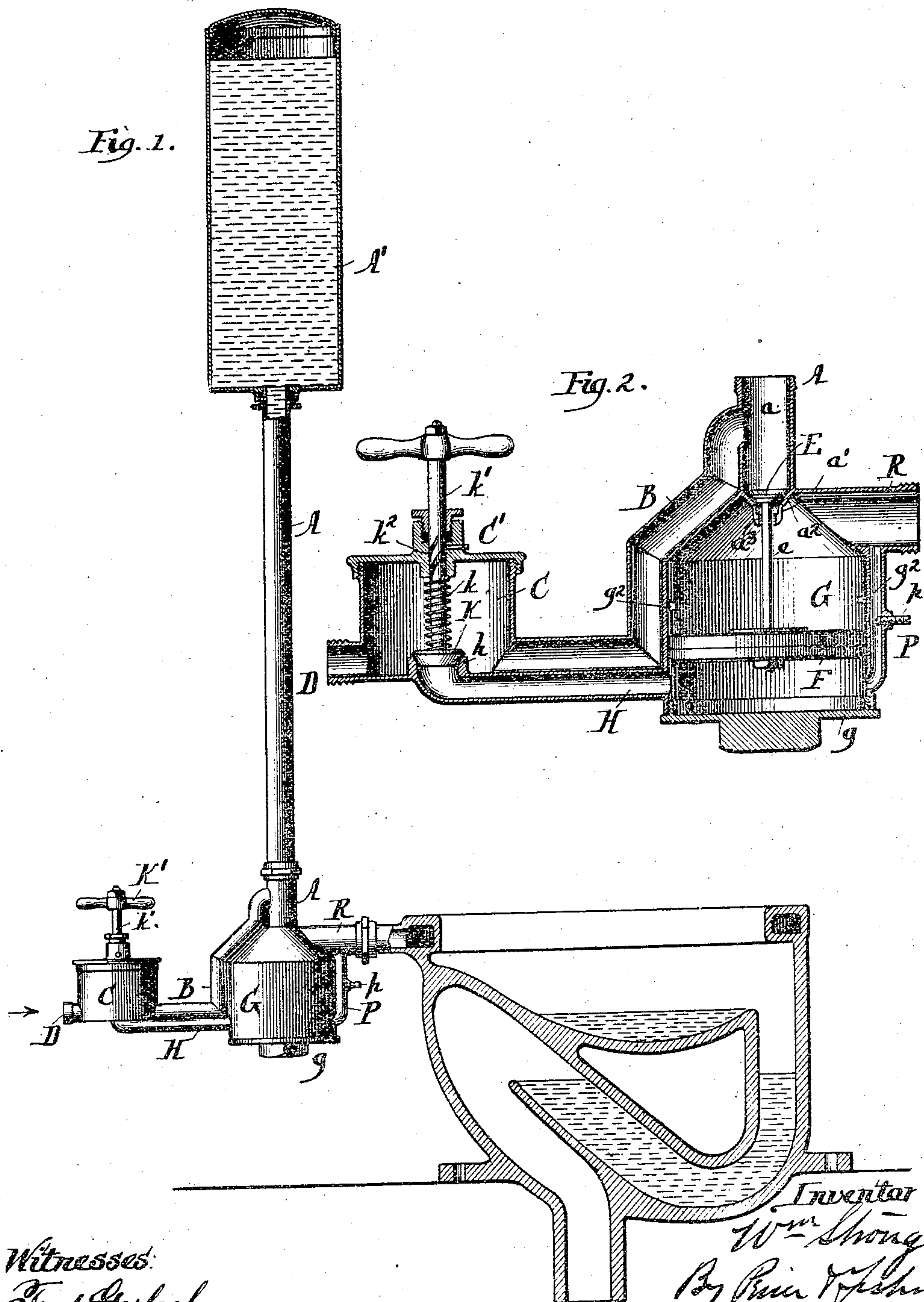


(No Model.)

W. STRONG.
FLUSHING VALVE.

No. 459,918.

Patented Sept. 22, 1891.



Witnesses:
Fred Gerlach
Alex Strong

Inventor:
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UNITED STATES PATENT OFFICE.

WILLIAM STRONG, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF ONE-HALF TO
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FLUSHING-VALVE.

SPECIFICATION forming part of Letters Patent No. 459,918, dated September 22, 1891.

Application filed May 6, 1891. Serial No. 391,717. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM STRONG, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Valve Mechanism for Closets, Basins, and Like Situations, of which I do declare the following to be a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My present invention has relation more particularly to that class of valve mechanism commonly known as "flushing-valve mechanism," and designed to effect the cleansing of the bowls or basins in connection with which it is used by permitting a considerable volume of water to be quickly passed into and through the basin or bowl.

My invention consists in the various novel features of construction hereinafter described, illustrated in the accompanying drawings, and particularly defined in the claims at the end of this specification.

Figure 1 is a view in side elevation of my improved valve mechanism. Fig. 2 is an enlarged view in vertical longitudinal section through the main portions of the mechanism.

A designates a stand-pipe, at the upper portion of which is a reservoir A', the reservoir A' being preferably a closed reservoir. The lower portion of the stand-pipe A is provided with a port or opening a , to which water will be admitted through the supply pipe or channel B, this pipe or channel communicating with a valve-chamber C, to which water is admitted by an induction-port D. At the bottom of the stand-pipe A is formed a discharge-opening a' , furnished with a valve-seat a^2 , whereon will rest the egress-valve E, the stem e of this valve passing, preferably, through a bearing a^3 , that is formed in piece or attached to the bottom of the stand-pipe A. To the lower end of the stem e is attached the operating-piston F, this piston working within a piston-chamber G, the bottom of which is preferably closed by a screw-threaded and removable cap g . With the lower portion of the piston-chamber G communicates a pipe or channel H, the opposite end of which connects with the valve-chamber C and is pro-

vided with the seat h , whereon rests the controlling-valve K. This valve K is pressed normally to its seat by means of a coiled spring k , that encircles the stem k' of the valve, and by preference this stem k' is furnished with a spiral groove k^2 , in which will work a suitable pin fixed to the cover C' of the valve-chamber through which the stem k' passes. The purpose in thus providing the stem k' with a spiral groove of steep pitch engaged by a pin is to permit the gradual lifting of the valve K from its seat by a turning-handle K'. From the lower portion of the piston-chamber G leads a vent pipe or passage P, communicating, preferably, with the outflow-pipe R, and by preference this pipe or passage P is furnished with a valve p , whereby the escape of water through the vent pipe or passage can be regulated. The interior of the piston-chamber G is preferably formed with stops g^2 to limit the upward movement of the piston.

From the foregoing description it will be seen that when the valve mechanism is in the normal position illustrated in the drawings the water from the street-main or other source of supply will pass into and fill the valve-chamber C, the supply pipe or channel B, the stand-pipe A, and the reservoir A', and at such time the egress-valve E, resting, as it does, upon the seat a^2 , will close the discharge-opening a' at the bottom of the stand-pipe. If now it is desired to flush the bowl or basin, it is only necessary to turn the handle K', thereby causing the valve K to be lifted from the seat h of the pipe or channel H, permitting water to pass through the pipe or channel H into the piston-chamber G beneath the piston F. It is manifest that inasmuch as the piston F is of considerably greater diameter and area than the egress-valve E the force of water upon the piston F will force this piston upwardly and will cause the egress-valve E to be lifted from its seat. This lifting of the egress-valve will permit the head or supply of water within the pipe A and reservoir A' to pass from the bottom of the pipe A, and thence through the outflow-pipe R to the bowl or basin. As soon as the handle K' of the operating-valve K is released, the coiled spring k will return the valve K to

its seat *h*, thereby cutting off the supply of water through the pipe *H* into the piston-chamber. The force of water within the pipe *A*, and as well, also, the weight of the piston *F*, will cause a downward movement of the piston, which will continue until the egress-valve *E* is again firmly in position upon its seat *a*².

In order to permit the water to flow from the bottom of the piston-chamber, I have provided the vent pipe or passage *P*, and it is manifest that as the piston *F* moves toward its normal position the water behind such piston can escape through this vent pipe or passage as the piston *G* falls to its normal position. Hence it will be seen that the length of time during which the flushing operation will continue will depend upon the rapidity with which the water is allowed to escape from beneath the piston *F* through the vent pipe or passage *P*, and this extent of flush can be regulated by the adjusting-screw *p*, which serves to control the pipe or passage *P*.

It will be readily understood that the details of construction above set out may be varied widely without departing from the spirit and scope of my invention.

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

1. In apparatus of the class described, the combination of a suitable flushing pipe or reservoir, a supply pipe or channel for admitting water thereto, an egress-valve for controlling the flow of water therefrom, a piston for effecting the movement of said egress-valve, a chamber for said piston, and a valve for controlling the flow of water into said piston-chamber, substantially as described.

2. In apparatus of the class described, the combination of a suitable flushing pipe or reservoir, a supply pipe or channel for admitting water thereto, an egress-valve for controlling the flow of water therefrom; a piston for effecting the movement of said egress-valve, said piston being of considerably larger diameter than said valve, a chamber for said

piston, and a valve for controlling the flow of water into said piston-chamber, substantially as described.

3. In apparatus of the class described, the combination of a suitable flushing pipe or reservoir, a supply pipe or channel for admitting water thereto, an egress-valve for controlling the flow of water therefrom, a piston for effecting the movement of said egress-valve, a chamber for said piston, a valve for controlling the flow of water into said piston-chamber, and a vent pipe or passage leading from said piston-chamber to the outflow-channel to permit the escapement of water therefrom, substantially as described.

4. In apparatus of the class described, the combination of a suitable flushing pipe or reservoir, a supply pipe or channel for admitting water thereto, an egress-valve for controlling the flow of water therefrom, a piston for effecting the movement of said egress-valve, a chamber for said piston, a valve for controlling the flow of water into said piston-chamber, and a vent pipe or passage leading from said piston-chamber to the outflow-channel to permit the escapement of water therefrom, and an adjusting device for controlling the escape of water through said pipe or passage, substantially as described.

5. In apparatus of the class described, the combination of a flushing-pipe *A*, a reservoir *A'*, a supply pipe or channel *B*, communicating with said flushing-pipe *A*, a valve-chamber *C*, communicating with said supply pipe or channel *B*, an egress-valve *E* for obstructing the flow from said flushing-pipe *A*, a piston *F*, connected to said egress-valve, a piston-chamber *G*, an outflow port or passage *R*, a pipe or channel *H*, communicating with said piston-chamber *G* and with said valve-chamber *C*, a valve *K* for obstructing the flow of water into said pipe or channel *H*, and a vent passage or channel *P*, leading from said piston-chamber *G*, substantially as described.

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Witnesses:

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