

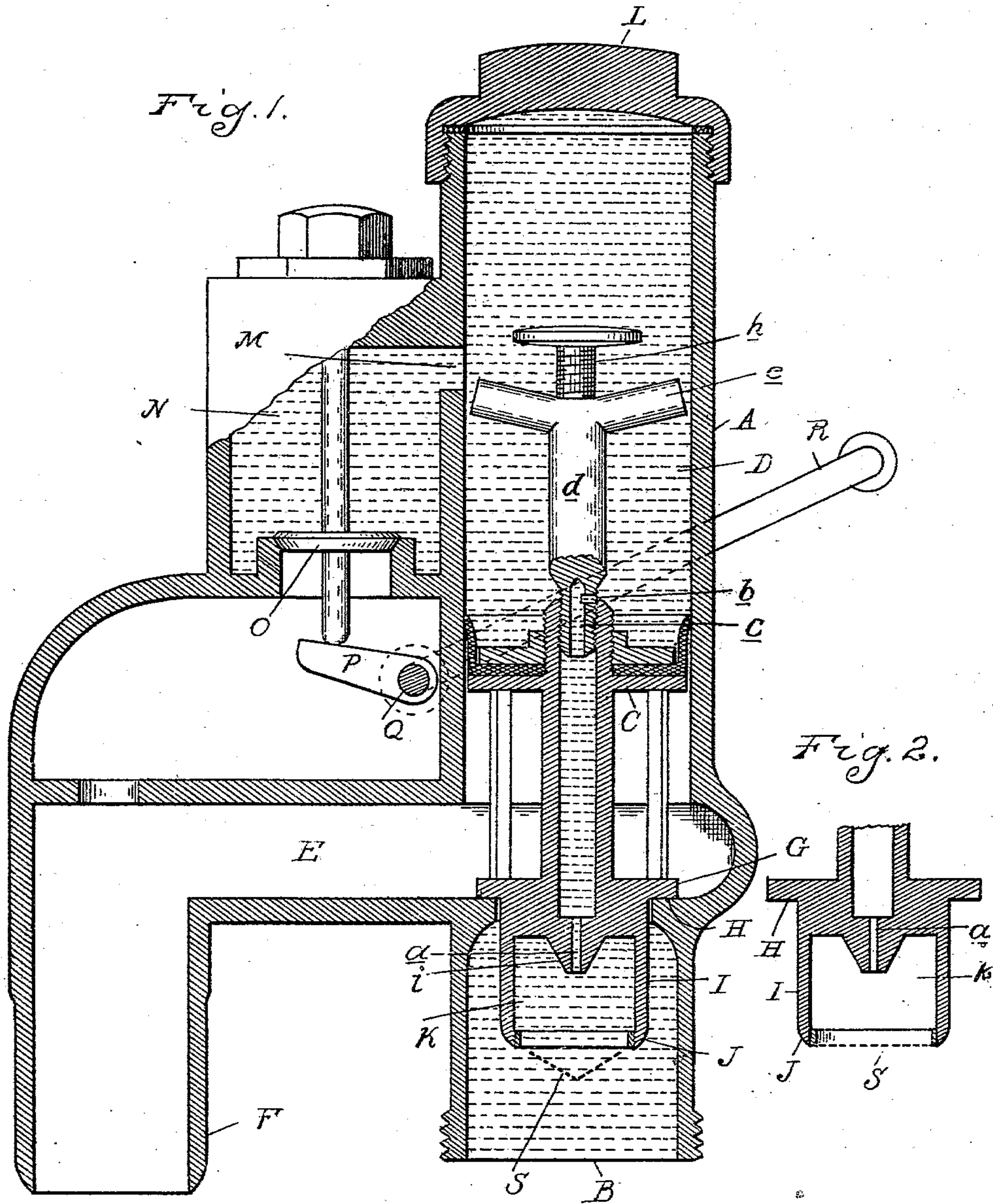
No. 716,856.

Patented Dec. 30, 1902.

A. F. BLESCH.  
SLOW CLOSING VALVE.

(Application filed Feb. 1, 1902.)

(No Model.)



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## SLOW-CLOSING VALVE.

SPECIFICATION forming part of Letters Patent No. 716,856, dated December 30, 1902.

Application filed February 1, 1902. Serial No. 92,098. (No model.)

*To all whom it may concern:*

Be it known that I, AUGUST F. BLESCH, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Slow-Closing Valves, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to new and useful improvements in slow-closing valves, especially intended for flushing water-closets, &c., and has for its object the construction of such a valve, which comprises the casing, a valve closed by pressure, a restricted port leading to a chamber above the valve, and a valve-controlled by-pass from this chamber to the exit-pipe, with means for straining the water which goes through the passage to the restricted port, so that it may be used in sections of the country where the water-supply contains more or less impurities, sediment, &c., without danger of obstruction to the restricted port; also, to the construction of the device, whereby it may be manufactured cheaply and simply and whereby the flow of water through the casing will tend to keep the screen clean and free from collection of floating particles or sediment, and thus prevent the clogging of the screen.

The invention further consists in the construction, arrangement, and combination of the various parts, as more fully hereinafter described.

In the drawings, Figure 1 is a vertical central section through my slow-closing valve, and Fig. 2 is a similar section of a slight modification of the lower end of the tubular extension of the valve.

A is a tubular casing, preferably cylindrical, having the inlet connection B at one end. The other end is capped, as shown, and in the upper cylindrical portion thereof is a piston C, having suitable packing to make a tight joint between the piston and the casing, as shown. Above the piston C is a chamber D.

E is an exit-passage leading laterally from the casing A and having a discharge-nipple F.

G is the valve proper, closing against a seat H, formed at the junction of the inlet and exit

passages. The valve G has a tubular extension I extending into the exit-passage, as shown, and having the tapering lower end J. Within this extension is a chamber K. Leading from this chamber K is a restricted passage *a*, which leads through the stem of the piston-valve to the upper end thereof, where it communicates with the chamber D through the restricted port *b*, formed in the tubular extension *c* of the plug *d*, adjustably engaging the upper end of the piston-valve, as shown in the drawings. This plug has suitable wings *e*, by means of which it may be readily turned to adjust its position, and consequently the size of the port *b*. In the upper end of the plug *d* is an adjusting-screw *h*, which determines the amount of throw or travel of the piston-valve, this screw striking the cap L in its upper position.

Leading from the chamber D is a passage M, which communicates, through the valve-chamber N, with the exit-passage E. This forms what I call a "by-pass" between the valve-casing and the exit-pipe and is controlled by a valve O, which may be opened by the cam or toe P on the shaft Q, this shaft having a suitable actuating-handle R extending to the outside of the casing.

Secured to the lower end of the tubular extension I is a screen S, preferably conical in shape, as shown in Fig. 1, and preferably depending below or flush with the lower end of the tubular extension. In Fig. 2 I have shown the screen S as flush with the face of the extension.

The parts being thus constructed, their operation is as follows: The operator turning the handle R will lift the valve O, and thus open the by-pass from the chamber D to the exit-passage E. The pressure of water on the lower end of the piston-valve will lift that valve from its seat, moving the upper end of the tubular extension I clear of the seat H. This movement will of course force out the water in the chamber D into the exit-pipe, and the inflowing water from the inlet-opening will pass directly from the inlet-opening through the passage E to the bowl of the closet. As soon as the operator releases the handle R the valve O will seat, thus closing



the by-pass. The water coming in through the inlet-passage will pass through the screen S into the chamber K, thence through the restricted ports *a b* into the chamber D, 5 and as the upper end of the piston-valve has a larger surface exposed to the water-pressure than the lower end thereof will gradually force down the piston-valve and close it upon the seat H. The screen S will prevent 10 any particles carried by the water from entering the chamber K and also will strain out all the coarser sediment, so that there is no danger of clogging the ports *a b*.

By having the screen S arranged at the 15 lower end of the tubular extension I the water flowing from the inlet to the exit passage when the valve G is open will wash off and cleanse the screen at each operation, so that although the water contains much sediment 20 and floating particles the screen will not clog up in use.

In many parts of the country it has been found impossible to use these slow-closing valves with any satisfaction or certainty, be- 25 cause of the large amount of sediment and other particles that are carried by the water, especially in the times of freshet or other times when the water is impure.

I preferably form a tapering nozzle *i* around the port *a* in the chamber I, so that there will 30 be no seat around the port upon which any particles which may pass the screen can lodge to obstruct the port, and thus I doubly insure the continued perfect work of the operation even with the dirtiest water. 35

What I claim as my invention is—

In a slow-closing valve of the character described, the combination of the casing having an inlet at one end and a lateral discharge therefrom, of the valve G, a piston to which 40 the valve is secured working in a cylindrical portion of the casing, the tubular extension I projecting into the inlet-pipe below the seat and having the chamber K within, the screen S across said extension a conical projection *i* 45 in the chamber K, the ports *a* from the apex of said extension leading through the valve to the chamber D and a valve-controlled by-pass leading from the chamber D to the exit-pipe.

In testimony whereof I affix my signature 50 in presence of two witnesses.

AUGUST F. BLESCH.

Witnesses:

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