April 13, 1926. 1,580,494

W. L. JONES

FLUSHING VALVE

Filed Jan. 3, 1925

Fig. 1.

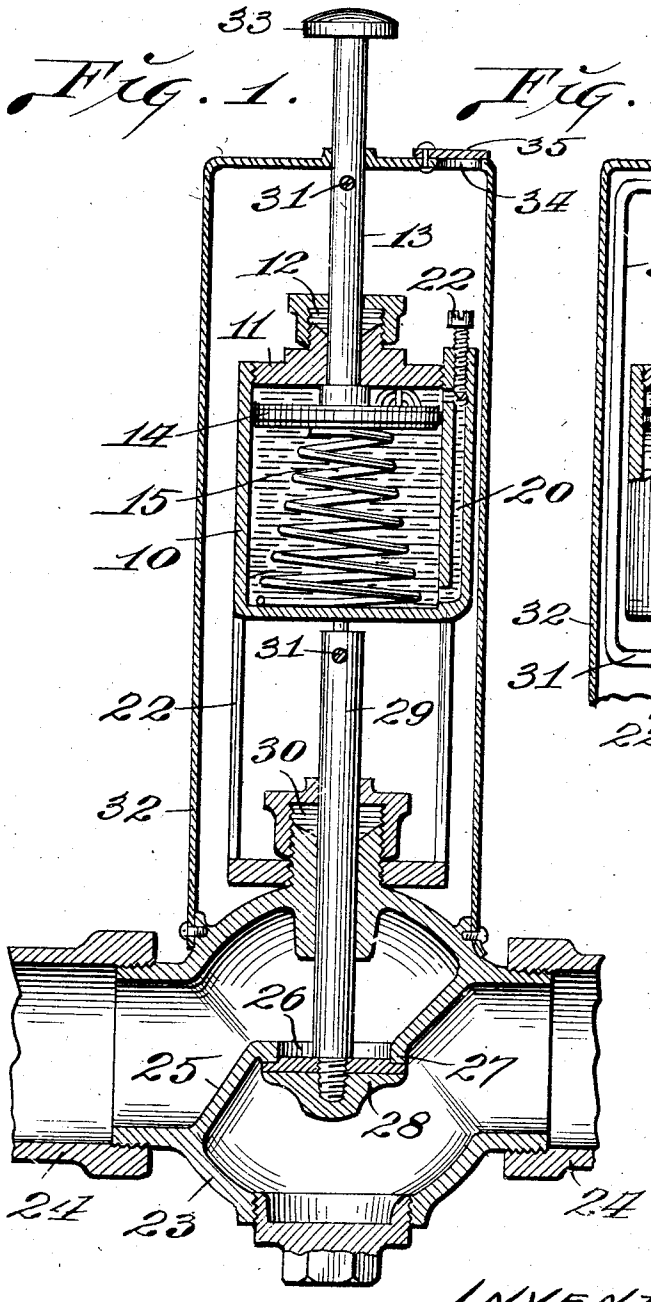


Fig. 2.

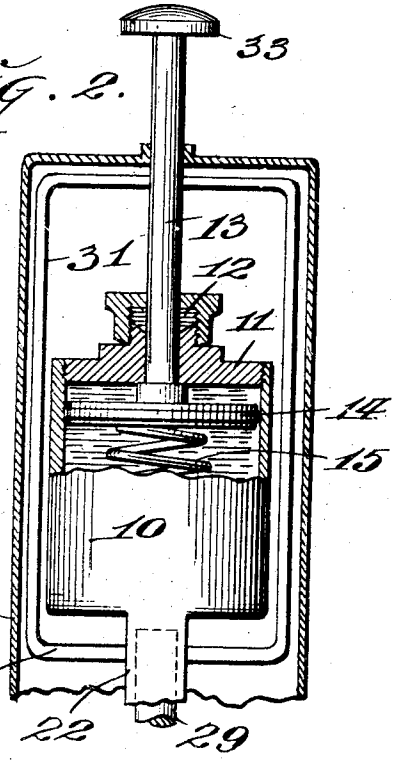
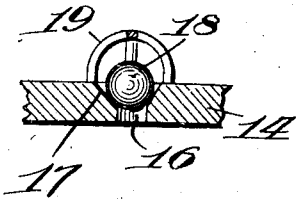


Fig. 3.



INVENTOR,
William L. Jones,
By Martin P. Smith, Atty.

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UNITED STATES PATENT OFFICE.

WILLIAM L. JONES, OF LOS ANGELES, CALIFORNIA.

FLUSHING VALVE.

Application filed January 3, 1925. Serial No. 323.

To all whom it may concern:

Be it known that I, WILLIAM L. JONES, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Flushing Valves, of which the following is a specification.

My invention relates to a flushing device of the type generally employed for flushing toilet bowls, sinks and the like, the principal objects of my invention being to generally improve upon and simplify the construction of the flushing devices now in general use; further, to provide a flushing device that may be easily and cheaply produced, and having relatively few operating parts, so as to minimize the liability of the device becoming inoperative as a result of said parts becoming disarranged and, further, to provide a device of the character described, that combines simplicity of structure with efficiency of operation.

Further objects of my invention are, to provide a flushing device having readily accessible parts that may be easily and quickly adjusted, so as to regulate and control the time periods of water flow or discharge through the device, and to provide a flushing device that automatically controls itself during its closing action.

With the foregoing and other objects in view, my invention consists in certain novel features of construction and arrangement of parts that will be hereinafter more fully described and claimed and illustrated in the accompanying drawings in which:

Fig. 1 is a vertical section taken through the center of a flushing device of my improved construction.

Fig. 2 is a vertical section taken on the line 2—2 of Fig. 1.

Fig. 3 is a detail section of a check valve that is utilized in carrying out my invention.

Referring by numerals to the accompanying drawings, 10 designates a small substantially cylindrical container for a relatively heavy liquid such as oil or glycerine, and the top of said container is closed by a readily removable plug or cap 11 in the center of which is formed a stuffing box 12 for a vertically movable rod 13.

The lower end of this rod, within container carries a piston 14 beneath which is arranged an expansive coil spring 15, the lower end of the latter resting on the bottom of container 10.

Formed through piston 14 is a port 16 having at its upper end, a seat 17 for a downwardly seating check valve 18 and the latter being retained adjacent to the port by a suitable cage 19.

Formed in the wall of container 10 is a vertically arranged duct 20, the upper and lower ends of which communicate respectively with the upper and lower ends of the chamber within said container.

Seated in the upper end of the wall of the container 10, and above the duct 20 is a screw 21, the lower end of which is adapted to enter the upper portion of duct 20 and throttle the flow of heavy liquid therethrough.

Obviously, by adjusting screw 21, the volume flow of liquid through duct 20 may be very accurately regulated and controlled.

Container 10 is supported in any suitable manner, preferably by brackets 22, a short distance above a valve housing 23, and which latter is adapted to be located in a water supply pipe 24. This valve housing has a partition 25, in which is formed a port 26 and on the underside of said partition around said port, is a seat 27 for a downwardly opening valve 28. This valve is carried by the lower end of a stem 29, that passes upwardly through a stuffing box 30 in the top of housing 23 and the upper end of said stem terminates immediately beneath the center of container 10.

A substantially rectangular yoke 31 connects the intermediate portion of rod 13 with valve stem 29.

A suitable housing 32, preferably of sheet metal enclosed container 10 and brackets 22 and the lower end of this housing is preferably secured to valve housing 23.

Rod 13 is arranged to slide through an opening in the top of housing 32 and carried by the upper end of said rod, is a button 33.

Formed in the top of housing 32 above screw 22 is an opening 34, that is normally closed by a pivotal plate 35. This aperture enables a screwdriver to be inserted into housing 32 for the purpose of adjusting screw 22.

Under normal conditions, or while valve

28 is closed, as illustrated in Fig. 1, piston 14 under the influence of spring 15 maintains a position within the upper portion of housing 10 with practically the entire volume of the heavy liquid in the chamber beneath said piston.

To unseat a valve 28 and permit liquid to flow through pipe 24 for a predetermined period downward pressure is applied to button 33, thus moving rod 13 and piston 14 downward and, as such action takes place, the heavy liquid beneath the piston will flow upwardly through port 16 past upwardly opening check valve 18.

Due to yoke 31, the downward movement of rod 13 is imparted to stem 29 and valve 28 carried thereby and thus said valve is unseated to permit water or other liquid to flow through port 26.

As the downward pressure is relieved from button 33 and the power in spring 15 is exerted to move piston 14 upward, ball check valve 18 closes port 16, so that the liquid in order to pass from the chamber above piston 14 to the chamber below it must flow through bypass duct 20. As the size of this bypass is restricted by screw 22, the flow of liquid therethrough will necessarily be slow and thus an appreciable and predetermined period of time will elapse before valve 28 is permitted to return to its seat to cut off the further flow of water or liquid through pipe 24.

Thus it will be seen that I have provided a flushing valve that is relatively simple and compact in structure, capable of being readily adjusted so as to regulate the flushing periods and very effective in performing its intended functions.

It will be understood that minor changes in the size, form and construction of the various parts of my improved flushing valve may be made and substituted for those herein shown and described without departing from the spirit of the invention, the scope of which is set forth in the appended claim:

I claim as my invention:

The combination with a liquid flow control valve housing, its valve and valve stem, of a support mounted on the valve housing and extending upwardly therefrom, a container for heavy liquid carried by said support above the valve stem, a piston within said heavy liquid container, a compression spring beneath said piston, an upwardly opening check valve carried by said piston, the wall of the liquid container having a duct that leads from the top of the chamber in said container to the bottom thereof, means for regulating the flow of liquid through said duct, a push rod secured to said piston and projecting through the top of the heavy liquid container, a yoke connecting said push rod with the upper portion of the valve stem and a housing secured to the valve housing for enclosing the heavy liquid container and the support therefor, which housing is provided in its upper portion with an opening for the purpose of affording access to the liquid flow regulating means and with a centrally arranged opening for the accommodation of the push rod.

In testimony whereof I affix my signature.

WILLIAM L. JONES.