W. U. GRIFFITHS.

COMPOUND LEVER BALL COCK FOR WATER CLOSETS.

APPLICATION FILED JAN. 26, 1911.

1,112,533. Patented Oct. 6, 1914.

FIG. 1.

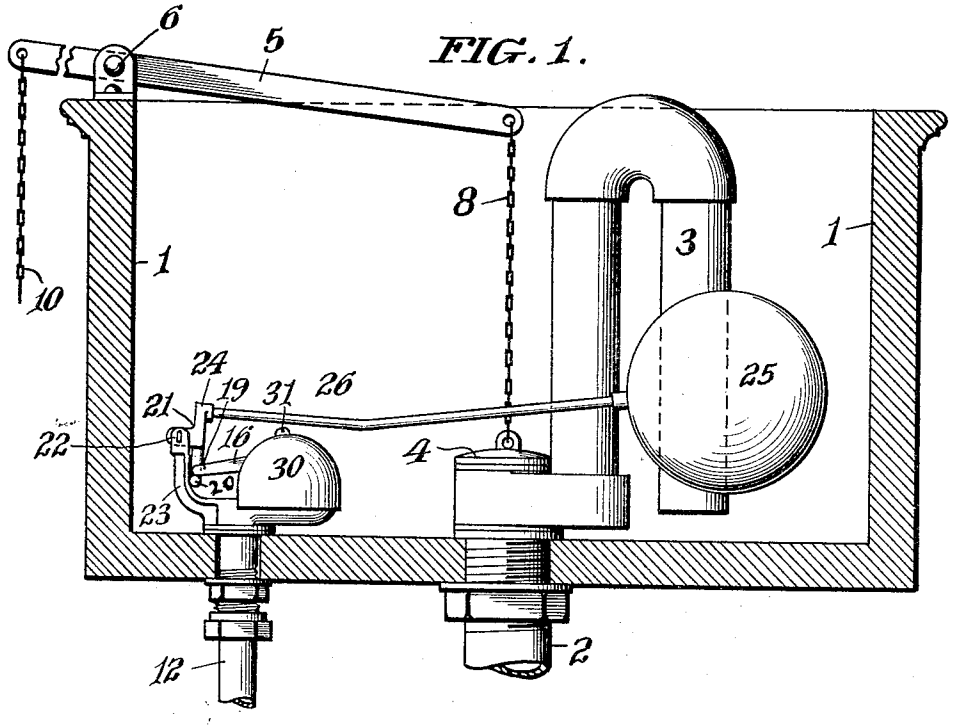


FIG. 2.

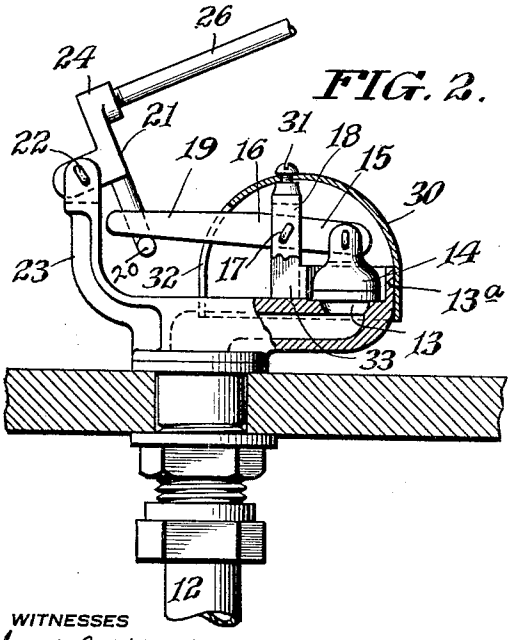
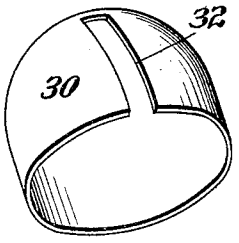


FIG. 3.



WITNESSES

Carrie E. Kleinfelder

Daniel Webster, Jr.

INVENTOR

William U. Griffiths

BY Cyrus K. Anderson

ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM U. GRIFFITHS, OF PHILADELPHIA, PENNSYLVANIA.

COMPOUND-LEVER BALL-COCK FOR WATER-CLOSETS.

1,112,533. Specification of Letters Patent. Patented Oct. 6, 1914.

Application filed January 26, 1911. Serial No. 604,736.

To all whom it may concern:

Be it known that I, WILLIAM U. GRIFFITHS, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Compound-Lever Ball-Cocks for Water-Closets, of which the following is a specification.

My invention relates to improvements in means for controlling the operation of valves for permitting and controlling the flow of water from any source of supply into the flush tank of a water closet apparatus or system; and it comprises in its construction a compound lever mechanism for causing the opening and closing of the valve which controls the port through which the water issues into the tank.

My invention also comprises means for preventing the upward projection of the water as it issues from the said port in the form of a stream or fountain. By the employment of such means the noise incident to the falling of the water into the tank is prevented as well as the spattering of the same over the sides of the tank.

Other objects and advantages of my invention will be hereinafter set forth or will be apparent from the detailed description of my invention.

In order that my invention may be more readily and fully comprehended, reference may be had to the accompanying drawings showing one convenient form of embodiment of my invention and in which,—

Figure 1 is a transverse section of a flush tank with the operative parts of the mechanism therein shown in elevation; Fig. 2 is a view showing the upper end of the supply pipe and certain portions connected to and associated therewith in side elevation and certain other parts being shown in section; and Fig. 3 is a perspective view of a hood which is placed over the port through which the water escapes into the flush tank.

Referring to the drawings:—1 designates a tank; 2 a flush pipe leading from the tank to the water closet hopper (not shown); and 3 designates the siphon by means of which the water is conveyed from the tank to the flush pipe 2.

4 designates a valve which is adapted to close the upper end of the flush pipe 2 which valve may be opened by means of a lever 5 pivoted at 6 upon one side of the flush tank and which is connected to the valve by means of a chain 8.

10 designates a portion of a chain by means of which the lever 5 may be moved about its pivot at 6 to raise the inner end of the lever to open the valve 4.

12 designates a portion of a supply pipe through which water is supplied from any source to the tank 1. The upper end of the pipe 12 communicates with a port 13 surrounded by a flange 13^a and which port is adapted to be closed by a valve 14 which is pivotally connected to the inner end 15 of a lever 16 pivoted at 17 upon a post 18 which springs from the part in which the port 13 is formed. The outer end 19 of the said lever 16 extends over and is in contact with a lateral projection 20 at the lower end of a lever 21 pivoted at 22 upon a bracket 23.

To the upper end 24 of the lever 21 a floating ball 25 is connected by means of a rod 26 which is of considerable length as shown in Fig. 1 so that the said ball 25 is located a considerable distance from the pivot point 22 of the lever 21.

In order to prevent the projection of the water from the port 13 to a greater height than is desirable, I have provided a hood 30 which is secured in position over the said port. The hood is supported upon the upper end of the post 18, being secured thereon by means of a screw 31. The said hood is provided with a slot 32 through which the end 19 of the lever 16 extends. In line with the slot 32 there is also a slot or opening 33 through the lower end of the post 18 and through the adjacent side of the flange 13^a which surrounds the port 13.

In the construction illustrated, the hood is of dome shape but it will be understood that it may be of any other shape which may be preferred or desired. The water which escapes from the port 13 strikes the interior surface of the said hood and is deflected therefrom downwardly into the tank. The water is thus caused to enter the tank silently and without any objectionable splashing and spattering.

In operation it will be understood that when there is no water in the flush tank the ball 25 will occupy the position indicated in Fig. 1 in which the end 19 of the lever 16 occupies its lowermost position and permits the opening of the valve 14 by pressure of the water thereon from the pipe 12. As the

water enters and rises in the tank 1 the ball 25 is lifted so that the lever 21 is turned about its pivot causing inward and upward movement of the lower end thereof to raise the end 19 of the lever 16 and cause depression of the valve 14 to close the port 13. Upon the closing of the said valve the flow of water into the tank is discontinued, and the arrangement and adjustment of the parts is such that the discontinuance of the flow of water is caused when the water in the tank is at the height desired.

Upon the opening of the valve 4, when it is desired to flush the water closet hopper, the water rushes from the tank 1 into the pipe 2 and starts the operation of the siphon 3 after which the valve 4 may be permitted to close. The water will continue to flow through the siphon 3 until the tank is emptied and as it is emptied the ball 25 drops until it finally reaches the position shown in Fig. 1 in which position the valve 14 is permitted to open and allows the flow of water from the pipe 12 into the tank 1.

Having thus described my invention, I claim:—

1. In a device of the character described, the combination of a tank having a water supply port opening thereinto, a flange surrounding the said port, said flange having an opening therein, a valve for closing and opening said port, a pivoted lever for supporting said valve, means upon which the said lever is pivoted, an inverted cup-like device located over the said port and supported upon the said lever supporting means, the said cup having an opening therein in alinement with the opening in the said flange and through which the valve supporting lever extends, and means for causing movement of the said lever to operate said valve.

2. In a device of the character described, the combination of a tank having a water supply port opening thereinto, a horizontal lever pivoted intermediate its ends and having a valve secured to one end for opening and closing the said port, a lever pivoted intermediate its ends and disposed in a generally vertical position, one end of the said lever being in contact with the end of the said horizontal lever upon the opposite side of the pivot from the said valve, a float secured to an arm having connection with the opposite end of the said vertically disposed lever, said float rising and falling in the said tank to cause pivotal movement of the said vertically disposed lever and thereby causing pivotal movement of the said horizontal lever to control the said valve.

In testimony that I claim the foregoing as my invention, I have hereunto signed my name this 25th day of January, A. D. 1911.

WILLIAM U. GRIFFITHS.

In the presence of—
GEO. H. WEIDNER,
CARRIE E. KLEINFELDER.

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