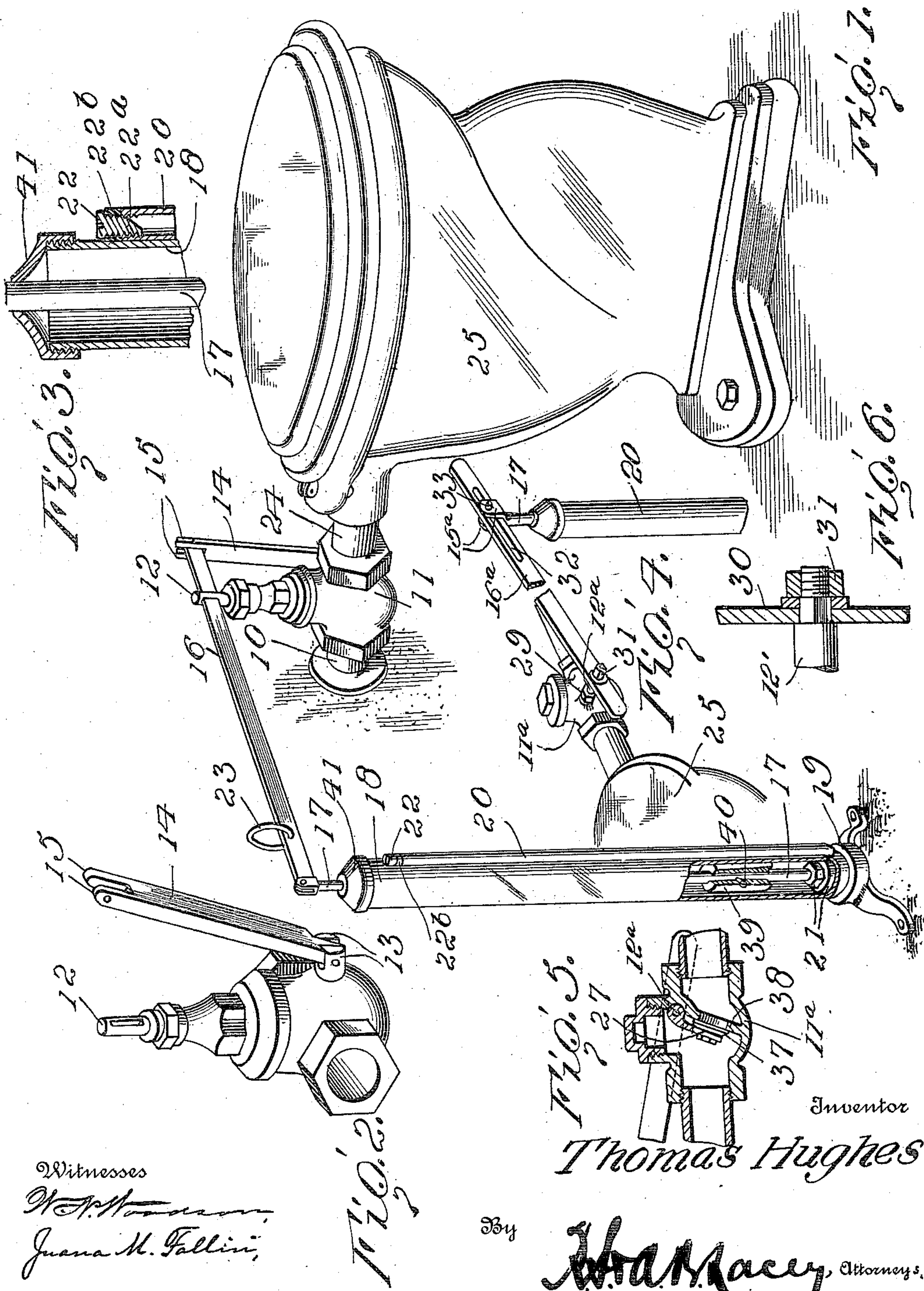


T. HUGHES.
VALVE CONTROLLING MECHANISM.
APPLICATION FILED JAN. 12, 1910.

985,414.

Patented Feb. 28, 1911.



Witnesses
W. H. Anderson,
Juana M. Fallini,

Inventor
Thomas Hughes
By
W. H. Macey, Attorneys.

UNITED STATES PATENT OFFICE.

THOMAS HUGHES, OF NEW ORLEANS, LOUISIANA.

VALVE-CONTROLLING MECHANISM.

985,414.

Specification of Letters Patent.

Patented Feb. 28, 1911.

Application filed January 12, 1910. Serial No. 537,691.

To all whom it may concern:

Be it known that I, THOMAS HUGHES, citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Valve-Controlling Mechanisms, of which the following is a specification.

This invention relates to valve controlling apparatus and refers particularly to a flushing device wherein a predetermined amount of water is to pass through a valve for the purpose of flushing.

An object of this invention is to provide means for timing the openings of the valve to admit of a predetermined amount of water to pass therethrough.

For a full understanding of the invention reference is to be had to the following description and accompanying drawing, in which:—

Figure 1 is a perspective view of the controlling apparatus partly in section. Fig. 2 is a detail perspective view of the valve employed. Fig. 3 is a sectional view of the upper end of the dash-pot. Fig. 4 is a fragmentary perspective view of a modification of the device. Fig. 5 is a sectional view of the modified form of valve. Fig. 6 is a detail section of the valve-stem of Fig. 4.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawing by the same reference characters.

Referring to the drawing the numeral 10 designates a supply-pipe which carries upon its outer end a casing 11 within which is housed a valve of common form which is provided with a reciprocating valve-stem 12. From one side of the housing 11 a pair of parallel lugs 13 project which pivotally support therebetween the lower extremity of a link 14. The link 14 extends upwardly and is provided with fork arms 15 between which a lever 16 is pivotally secured. The upper extremity of the valve-stem 12 is provided with a longitudinal slot to loosely receive the intermediate portion of the lever 16 to admit of the free movement thereof. The outer extremity of the lever 16 is pivotally connected to a piston-rod 17 extending downwardly through a cylinder 18. The cylinder 18 is vertically disposed beneath the lever 16 and is suitably supported upon a stand or base 19. An outlet tube 20

is arranged against the outer face of the cylinder 18 and is in communication therewith at its lower extremity to receive air which is forced out of the cylinder 18 by the downward movement of the piston 21 by its own weight together with the weight of the lever 16 and rod 17. The upper end of the tube 20 is provided with a valve 22 to regulate the flow of air therefrom to control the downward movement of the piston 21. The valve 22 comprises a screw plug having a beveled face 22^a which fits into the tube 20 and is adjusted to increase or decrease the size of the opening between the beveled face 22^a and the upper edge of the tube 20 to control the passage of air there-through.

A washer 22^b, preferably of yieldable material as shown in Fig. 3, engages about the upper end of the screw plug 22 to engage against the upper end of the tube 20. Adjacent the outer end of the lever 16 a ring 23 is positioned extending upwardly therefrom for the reception of the finger of the operator in order to raise the piston 21 and to open the valve within the casing 11 by imparting a slight upward movement to the stem 12. The valve casing 11 is provided with a stub-pipe 24 which extends therefrom to the device which is to be flushed, which in the present instance is in the form of a closet bowl 25, the valve in the casing 11 being adapted to regulate the amount of water which is introduced into the bowl 25. The control of the water through the valve is dependent upon the time which is required for the piston 21 to fall in the cylinder 18, which downward movement of the piston is regulated by the out-flow of air from the lower end of the cylinder 18 through the tube 20.

The regulating valve 22 is positioned at the upper end of the tube 20 so that the same can be readily operated to adjust the opening through which the air passes.

The modified form of the device which is disclosed in Figs. 4 and 5 comprises the valve casing 11^a which is provided with an oscillating valve 27 pivotally mounted upon a stem 12^a extending laterally through the casing 11^a and projecting from one side thereof. The stem 12^a is surrounded by a stuffing box 29 carried against the outer face of the casing 11^a, the stem 12^a extending considerably beyond the stuffing-box 29 and

having an angular portion to rigidly support the inner end of a lever 16^a. The lever 16^a is rigidly secured to the stem 12^a by a clamping nut 31. The outer end of the lever 5 16^a is provided with a longitudinal slot 32 through which engages a pin 33 carried in the fork arms 15^a formed upon the upper extremity of the piston rod 17. The piston rod 17 engages within the cylinder or 10 dash-pot 20 as has been hereinbefore described.

The valve 27 is provided, preferably, with a washer 37 formed of rubber, or the like, to engage against the shoulder 38 formed with- 15 in the casing 11^a to prevent the passage of water through the valve upon the closing of the leaf. In this latter construction it is readily seen that when the lever 16^a is raised the stem 12^a rotates thereby to open the 20 valve 27 to admit of the passage of water through the casing 11^a. For effecting the downward movement of the lever 16^a a weight 39 is employed which is of cylindrical form and engages about the piston rod 25 17. The weight 39 is retained in position by the provision of a set-screw 40 to adjust the weight 39 longitudinally upon the piston rod 17.

It will be noted that the upward move- 30 ment of the lever 16 or 16^a is determined by the position of the weight 39 on the rod 17, since the upward movement of the rod must cease when the weight 39 strikes the inner face of the cap 41.

Having thus described the invention what 35 is claimed as new is:—

1. A valve controlling mechanism including a valve, a stem projecting from said valve for operating the same, a lever connected to said stem, a piston rod pivotally 40 depending from said lever, a cylinder disposed about said piston rod, a piston located on said rod to reciprocate in the cylinder, and a weight adjustably disposed upon said rod to draw the same downwardly and to 45 limit the upward movement of the same.

2. A valve controlling mechanism including a casing having a valve within the same, an operating stem projecting from the valve 50 through the casing, a lever connected to said stem, a hand-hold carried upon the lever for raising the same to open the valve, a rod pivotally depending from the lever, a piston carried upon the lower end of the rod, a 55 cylinder for the reception of the piston and having a cap upon its upper end and about the rod, and a weight adjustably secured about the rod within the cylinder to draw the rod down and close the valve, said 60 weight being adapted to strike the cap during the upward movement of the rod to limit the stroke of the same.

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

THOMAS HUGHES. [L. s.]

Witnesses:

A. H. JOHNESS,

A. A. FREED.