T. HUGHES.

DASH POT.

APPLICATION FILED SEPT. 22, 1911.

1,129,394. Patented Feb. 23, 1915.

Fig. 1

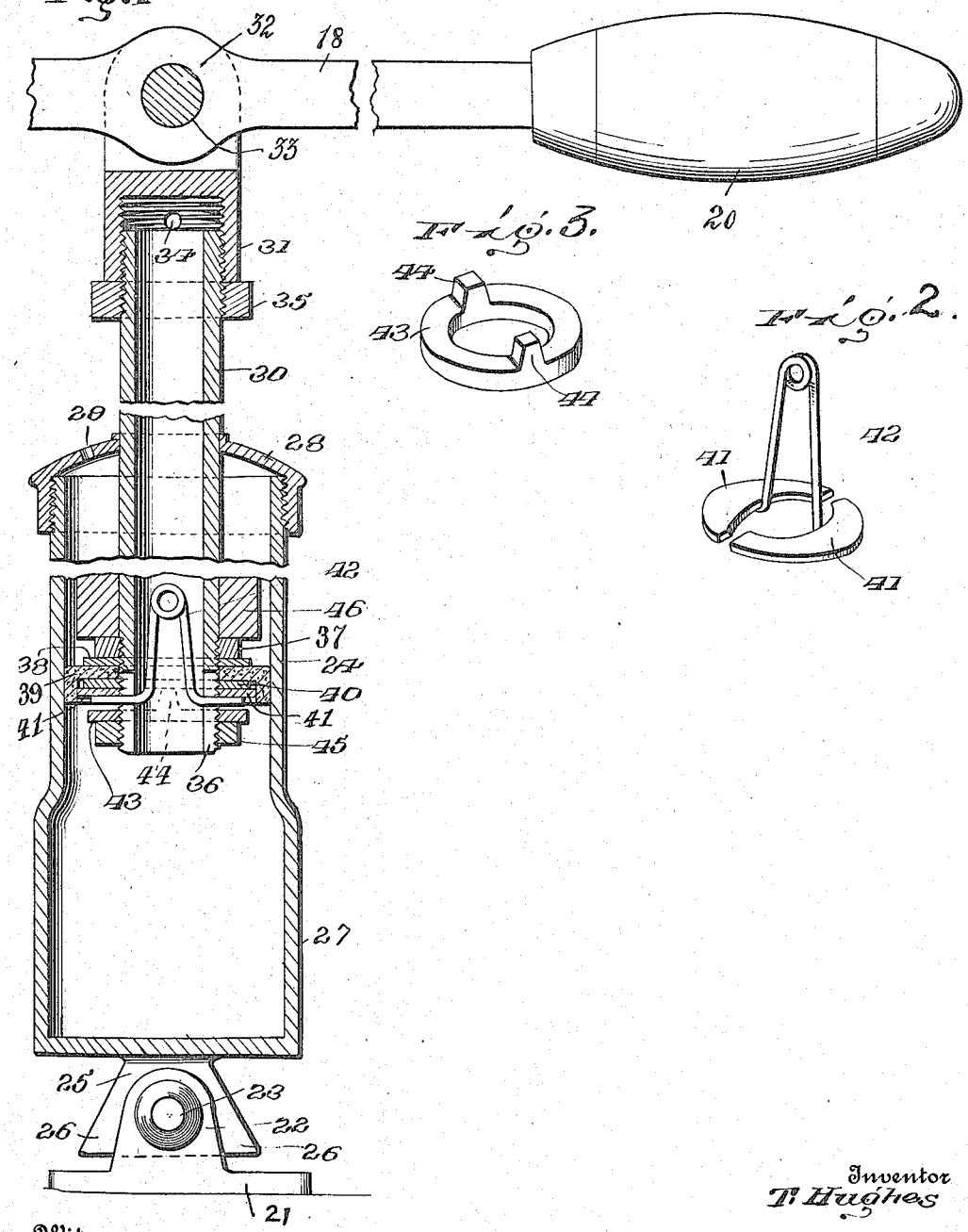


Fig. 3.

Fig. 2.

Witnesses

Richard Eaper

Juana M. Fallin

Inventor

T. Hughes

By A. B. Stacy Attorney.

UNITED STATES PATENT OFFICE.

THOMAS HUGHES, OF NEW ORLEANS, LOUISIANA.

DASH-POT.

1,129,394. Specification of Letters Patent. Patented Feb. 23, 1915.

Application filed September 22, 1911. Serial No. 650,844.

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 Dash-Pots, of which the following is a specification.

This invention relates to improvements in dash-pots, more particularly to devices of this character employed in connection with flushing mechanism of various kinds, and has for one of its objects to improve the construction and increase the efficiency and utility of devices of this character.

Another object of the invention is to provide a device of this character wherein provision is made for controlling the speed of the closing action so that the valve will move slowly at the first portion of its closing action and will move rapidly at the final movement.

Another object of the invention is to provide an improved means for controlling the air vent of the valve closing mechanism.

With these and other objects in view the invention consists in certain novel features of construction as hereafter shown and described and then specifically pointed out in the claims.

The improved apparatus may be employed in connection with any of the various devices which require to be flushed, such as lavatories, sinks, closet bowls and the like, and it is not desired therefore to limit the invention to any specific device or apparatus with which it may be associated, but for the purpose of illustration the improved device is shown arranged in connection with an ordinary closet bowl in the drawings employed for illustrating the preferred embodiment of the invention.

Figure 1 is a sectional elevation of the improved device. Fig. 2 is a perspective view of the yieldable device for holding the plunger packing in engagement with the cylinder. Fig. 3 is a perspective view of the annular member for holding the valve packing.

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

The improved device includes a base block 21 having upstanding spaced lugs or ears 22 to receive a pivot pin 23. Extending above the base member 21 is a cylinder 24 closed at the bottom and with a lug 25 extending from the closed bottom, the lug being located between the ears 22 and through which the pin 23 passes. By this means the cylinder is mounted to swing upon the pin, and to prevent abnormal movement of the cylinder, the lug 25 is formed with lateral points 26 which engage the base 21 when the cylinder has been moved laterally to a predetermined extent. By this means the swinging movement of the cylinder is limited as will be obvious.

The cylinder 24 is formed with the lower portion laterally enlarged as shown at 27, the object to be hereafter explained. At its upper end the cylinder is externally threaded and provided with a closing cap 28 having an air vent 29. Movably disposed within the cylinder 24 is a tubular plunger rod 30, externally threaded at both ends and with an internally threaded cap member 31 engaging the threaded upper end, the cap having spaced ears 32 at its upper end adapted to receive an operating device, such as a lever 18 extending between the ears 32 and pivoted therein at 33, the lever having a hand-grip 20. The threaded portion of the cap member 31 is relatively long so that the cap may be adjusted relatively to the plunger 30. A vent aperture 34 is formed through the cap member 31 and so located that the communication through the vent may be cut off by rotating the cap member upon the threads of the plunger rod. By this means the vent may be entirely cut off or partly cut off or left entirely open as may be required by simply rotating the cap member 31. A jam nut 35 is threaded upon the upper end of the plunger rod 30 so that the cap 31 may be locked in position after it has been properly set to control the exposed portion of the vent 34 as hereafter explained.

At its lower end the plunger rod 30 is formed with longitudinal slots 36 which cut through the threads at the lower end of the plunger rod as shown. A clamp nut 37 engages over the lower threaded terminal of the plunger rod 30 and a metal washer 38 is located next to the nut, a packing of leather or similar material 39 is located next to the washer 38 and another washer 40 is located next to the packing 39. The packing 39 is considerably larger in diameter than the interior of the smaller portion of the cylinder 24, and when located therein

will be bent downwardly at its edges as shown in Fig. 1 so that the packing is caused to assume the form shown, and a spring device is employed to maintain the packing yieldably against the inner sides of the cylinder. This spring device comprises two segmental plates 41 connected by a spring, preferably of wire as shown at 42. The wire member 42 extends through the slots 36 of the plunger rod and upwardly into the interior of the rod as shown and thus exerts its force to maintain the plates 41 in constant engagement with the downwardly directed rim of the packing, and thus maintains the latter in constant yieldable engagement with the inner face of the cylinder, and effectually prevents the escape of air past the packing. The packing is thus maintained in close engagement with the cylinder and is thus caused to automatically adapt itself to any irregularities of the inner surface of the cylinder. By this means an automatic packing is produced which operates effectually to prevent the escape of air past the packing. Surrounding the rod 30 below the washer 40 is an annular member 43 having lugs 44 which bear against the washer 40 and thus space the member 43 from the washer to provide space for the operation of the segmental plates 41. A clamp nut 45 is threaded upon the rod 30 next to the member 43. By this means the packing and its supporting washers are firmly clamped against the nut 37 and retained in position while at the same time the spacing lugs 44 prevent pressure being applied to the plates 41. As before stated, the lower portion of the cylinder 24 is enlarged as shown at 27, and when the plunger in its downward movement passes into the open space 27, the packing 39 will extend into this larger space and thus permit air to pass around it and escape through the vent 29 in the cap 28. By this means the downward movement of the plunger and its rod is retarded while moving through the smaller portion of the cylinder owing to the relatively retarded outlet through the aperture 34, thus prolonging the flushing period, but the movement will be rapid when the plunger passes into the larger portion 27 of the cylinder. By this means when the plunger rod is operating, it moves slowly while passing through the smaller portion of the cylinder but moves very rapidly while passing through the larger and shorter portion of the cylinder. When employed in connection with a flushing tank the flushing action is prolonged until the predetermined supply of water has passed through the supply pipe and then the controlling valve is rapidly closed. By this means the valve is caused to close tighter than it would if the whole movement were uniformly slow as will be obvious. This is an important feature of applicant's device and materially increases its efficiency and utility. If required, a weight represented at 46 of lead or other material may be located upon the rod 30 at any convenient point to assist the action of the rod.

The improved device is simple in construction, can be inexpensively manufactured and applied, and operates effectually for the purpose described.

Having thus described the invention, what is claimed as new is:

1. The combination with a closed cylinder having an opening through one end, of a tubular stem operating through said cylinder opening, a plunger within said cylinder and carried by said stem and through which the stem extends, a cap closing the outer end of said stem externally of the cylinder and adjustable longitudinally thereof, said cap having a transverse vent orifice adapted to be opened and closed by the adjustment of said cap, and operating means connected to said cap.

2. In a device of the class described, a cylinder having a cap, a tubular stem operating through said cap and having a vent externally of the cap, said stem having longitudinally extending slots in its lower end, a plunger carried by said stem and including a packing member, segmental plates engaging said packing, and a spring connected to said plates and extending through said slots and operating to maintain the plates in yieldable engagement with the packing.

3. In a device of the class described, a cylinder having a cap, a tubular stem operating through said cap and having a vent externally of the cap, said stem being externally threaded, a plunger carried by said stem and including a packing member, segmental plates engaging said packing, a resilient means operating to maintain the plates in yieldable engagement with the packing, a washer having lugs engaging the plunger between the segmental plates, and a clamp nut engaging the stem and bearing against the washer, and an operating lever connected to said valve.

4. The combination with a cylinder having an opening through one end, of a tubular stem operating through said cylinder opening, a plunger within said cylinder and carried by said stem and through which the stem communicates, and a cap closing the end of said stem externally of the cylinder and adjustable longitudinally thereof, said cap having a transverse vent orifice adapted to be opened and closed by the adjustment of said cap, said cap adapted to receive an operating means.

5. The combination with a cylinder, of a tubular stem operating in said cylinder, a plunger within said cylinder and carried by said stem and through which the interior of

the stem communicates, and a cap closing the outer end of said stem externally of the cylinder and adjustable longitudinally thereof, said cap having a transverse vent orifice adapted to be opened and closed by the adjustment of said cap, said cap adapted to receive an operating means.

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

THOMAS HUGHES. [L. S.]

Witnesses:
A. H. JOHNESS,
J. F. SAUVÉ.