

UNITED STATES PATENT OFFICE.

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BALL-VALVE STOP.

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To all whom it may concern:

Be it known that I, JAMES C. RYAN, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Ball-Valve Stops; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to flush valve mechanism and particularly to means for controlling the amplitude of movement of the valve for the inlet port. The primary object of the invention is to provide a novel inexpensive easily applied means which can be readily associated with a conventional form of flush valve mechanism and be so regulated that the valve can only move off its seat a determined amount. In other words its amplitude of movement may be controlled.

The novel construction of the invention will be clearly apparent by reference to the following description in connection with the accompanying drawings, in which—

Fig. 1 is a sectional view through a flush valve mechanism constructed in accordance with my invention, part of the supply pipe being shown in elevation, and

Fig. 2 is a disassociated view of the cap to be applied to the flush valve pipe with the regulating device for determining the amplitude of movement of the valve.

The flush valve consists of a housing 1 having a valve seat 2 therein which controls the effective port area of the inlet port 3. The depending threaded pipe portion 4 being adapted to be connected to any suitable source of supply. A discharge nozzle 5 is above the inlet port 3 and is adapted to discharge into the tank as will be readily understood. A reciprocatory valve 6 is mounted in the valve housing 1 and is adapted to move onto and off the seat 2. The valve 6 has a slot 7 through which a pivoted lever 8 extends. One end of the lever is pivoted to the bracket 9 and the other end is connected to an elbow lever 10 by a link 11, the elbow lever 10 being pivoted to a bracket 12 connected to a float stem 13 on

the outer end of which is a float 14 adapted to rise and fall with the liquid within the tank so that when the float 14 rises the valve 6 will seat and when the float falls the valve will unseat. All of this construction is old and well known and constitutes a part of the conventional type of flush valve mechanism.

It is desirable to control the amplitude of movement of the valve 6 and it is the primary object of this invention to simplify the means of controlling the amplitude of movement of the valve 6 or a valve corresponding thereto. In order to accomplish the desired result I provide a threaded cap member 15 removably secured on the upper end of the housing 1 and depending from the curved spider arms 16 is an inwardly extending projection or lug 17 which may act as a stop for the unseating movement of the valve.

It will be observed that the cap member comprises a ring having spider arms 16 and the depending stop lug 17 all integrally formed. The spaces between the arms forming sight openings so that the position of the stop member 17 with respect to the valve will be observed, it being apparent that when the internally threaded cap is screwed upon the external portion 18 of the housing the stop 17 may be adjusted with respect to the valve to control its amplitude of movement.

It is an important feature of the invention that the amplitude controlling means is adapted to be associated with known types of flush valve mechanisms now on the market and it will therefore not be necessary to re-arrange the construction of the flush valve mechanism in order to include the advantages of my invention.

It will be apparent that by so constructing the cap, sight openings are provided and the lug 17 will be integral but preferably axially disposed within the cap and the housing, that a very inexpensive means is provided for controlling the amplitude of movement of the valve and that such cap may be easily associated with known types of flush valve mechanisms.

What I claim and desire to secure by Letters-Patent is:

1. In combination with a flush valve mechanism having a reciprocatory valve of an internally threaded cap on the end of

the housing for the valve having sight spider arms providing sight openings be-
openings therein, and an integral inwardly tween them and an inwardly projecting 10
projecting stop lug carried by the cap so rigid stop member connected to the spider
that the position of the cap with respect arms in their points of intersection.
5 the housing will determine the amplitude In testimony whereof I affix my signa-
of movement of the valve. ture.

2. A stop cap for valves comprising an internally threaded ring having curved

JAMES C. RYAN.