W. E. SNAMAN.

FLOAT VALVE.

APPLICATION FILED SEPT. 23, 1910.

1,018,937. Patented Feb. 27, 1912.

FIG. 1

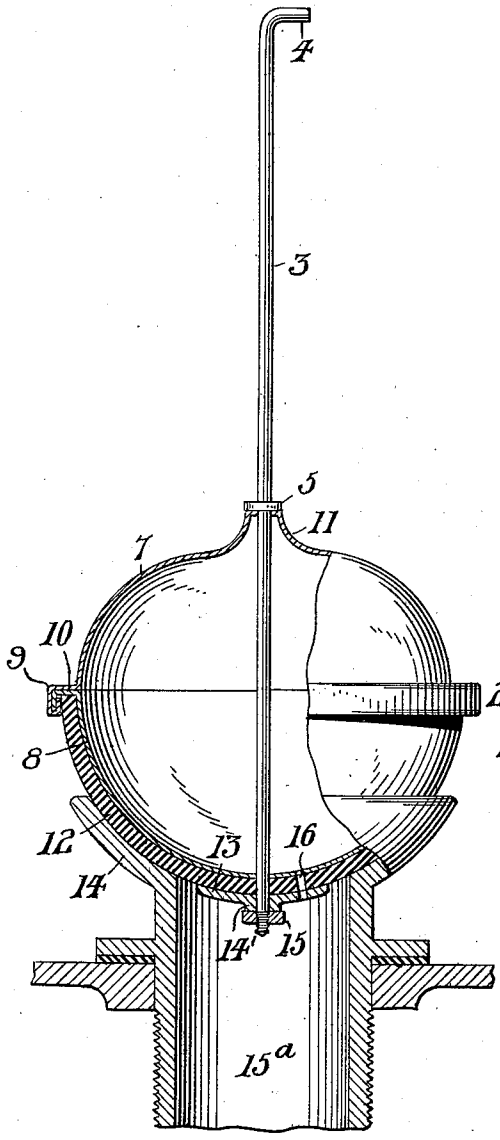
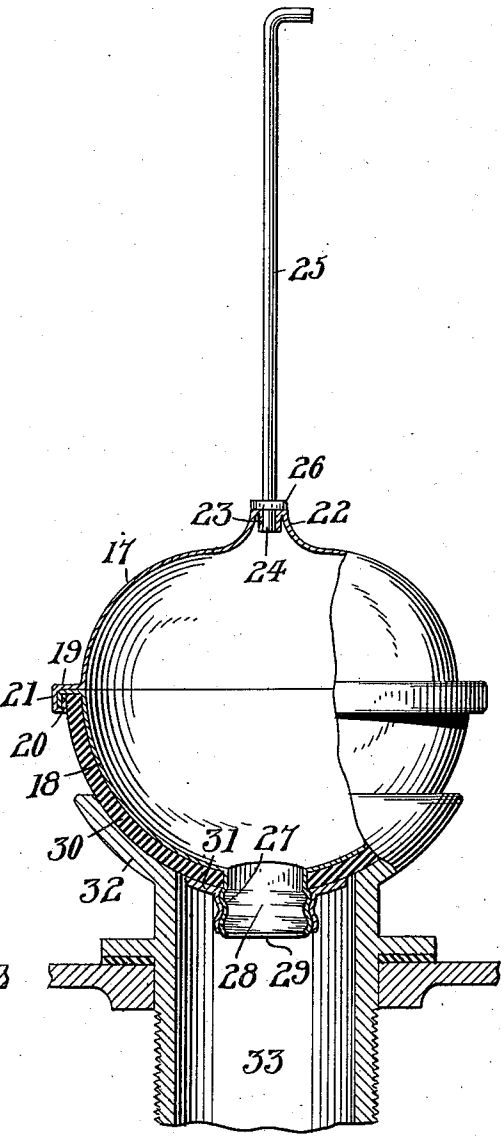


FIG. 2



WITNESSES

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FLOAT-VALVE.

1,018,937. Specification of Letters Patent. Patented Feb. 27, 1912.

Application filed September 23, 1910. Serial No. 583,362.

To all whom it may concern:

Be it known that I, WILLIAM E. SNAMAN, a citizen of the United States of America, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Float-Valves, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a float valve for use in connection with and for controlling the water outlet of a flushing tank, but it is to be understood that the valve can be used in connection with any structure or for any purpose wherein it is found applicable.

The invention has for its object to provide a float valve including a hollow body portion substantially in the form of a sphere and constructed of metal or celluloid, whereby distortion of the body portion is prevented but at the same time retaining the body portion unusually light in weight so that the weight of the body portion will not interfere with the opening movement of the valve.

A further object of the invention is to provide a float valve including a hollow rigid body portion carrying a flexible seating member whereby when the valve is moved to its seat it will snugly engage the same and to further provide the valve with means for conveniently removing the seating member when it becomes worn and providing a new one, and by such operation enabling the utilization of the body portion.

Further objects of the invention are to provide a float valve, which is simple in its construction and arrangement, strong, durable, efficient and convenient in its use, readily set up in operative position and comparatively inexpensive to manufacture.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described and illustrated in the accompanying drawing, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations, and modifications can be resorted to which come within the scope of the claims hereunto appended.

In describing the invention in detail, reference is had to the accompanying drawing, wherein like reference characters denote corresponding parts throughout the several views, and in which:

Figure 1 is an elevation partly in section of a float valve in accordance with this invention, and Fig. 2 is a like view of a modification.

Referring to Fig. 1 of the drawings, 3 denotes a valve stem having an angular upper end 4 for connecting it to an actuating means and guide. The stem 3 intermediate its ends is provided with an integral collar or boss 5 and at its lower end is threaded, as at 6. Mounted upon the stem 3 and abutting against the boss 5 is a substantially spherical hollow body portion constructed of rigid material, preferably metal and including an upper section 7 and a lower section 8. The upper section 7 at its bottom is flanged, as at 9, and the lower section 8 at its top is flanged, as at 10. The flanges 9 and 10 are crimped together, as clearly shown in Fig. 1, whereby the sections of the body portion are fixedly secured together. The crimped portion of said flanges extends around and is spaced from said lower section thereby providing a recess. The section 7 centrally of its top is formed with a vertically disposed tapering extension 11, which abuts against the collar 5. Mounted against the periphery and snugly engaging the periphery of the section 8 and abutting against the flange 10 and secured in position by the crimped portion of the flange 9 is a removable semi-spherical resilient seating member 12 preferably constructed of rubber. Mounted upon the lower end of the stem 3 and abutting against the periphery of the member 12 is a concave washer 13 provided with a boss 14′ against which abuts a nut 15, carried by the threaded end 6 of the stem 3. The nut 15 in connection with the washer 14 maintains the lower portion of the seating member 12 against the section 8 of the body portion and provides for the removal of the member 12, when it becomes worn so that another seating member can be used with the body portion, or in other words, by setting up the member 12 in the manner as stated, it does not necessitate the throwing away of the body portion. The member 12 engages the seat 14 at the inner end of the outlet pipe 15^a. A drainage opening 16 is provided at the lower end of the valve. The washer 13 in connection with the nut 15 not only constitutes means for maintaining the lower portion of the flexible member 18 in position on the body portion, but further secures the body portion upon the valve stem

3, while the boss or collar in connection with the nut 15 prevents longitudinal movement of the valve with respect to the stem. The washer 13 in connection with the nut 15 and the manner in which the stem is positioned prevents any possible distortion of the valve when the latter is elevated or moved toward its seat.

Referring to Fig. 2 of the drawings, the body portion is formed of two sections of rigid material preferably metal, said sections being indicated by the reference characters 17 and 18, the former provided with a flange 19 and the latter with a flange 20, the said flanges are crimped together, as at 21, whereby the sections 17 and 18 are fixedly connected together. The section 17 at its top is formed with a tapering extension 22 having an inwardly extending collar 23 in which is secured the lower end 24 of the valve stem 25, which is formed with a collar or boss 26, abutting against the outer terminus and the extension 22. The section 18 approximately centrally of its bottom is formed with a threaded cylindrical extension 27 having an open lower end 28. Positioned against the section 18 and maintained at its top against said section is a flexible seating member 30 having an opening through which projects the extension 27. Surrounding the extension 27 and bearing against the member 30 is a retaining member 31, which maintains the member 30 against the periphery of the section 18. The member 31 is formed with threads for engagement with the threads of the extension 27. The member 30 is adapted to engage the valve seat 32 at the inner end of the water outlet pipe 33. The member 31 movably secures the member 30 in position so that when it becomes worn, it can be removed and a new one substituted without destroying or throwing away the body portion. The body portion is of such material so that it will not become distorted when elevated by the stem 25.

What I claim, is:

1. A float valve comprising a hollow substantially spherical rigid body-portion formed of two flanged sections, with the flange of one section overlapping the flange of the other section thereby connecting the sections together, the overlapping portions of said flanges extending around and spaced from the lower section of the body-portion thereby providing a recess, a semi-spherical resilient seating member arranged against the lower section of said body and extending in said recess and having its upper portion maintained in position by the overlapping portions of said flanges, a valve stem for said body-portion, and means for securing the lower part of said seating member against said lower section.

2. A float valve comprising a hollow substantially spherical rigid body-portion formed of two flanged sections, with the flange of one section overlapping the flange of the other section thereby connecting the sections together, the overlapping portions of said flanges extending around and spaced from the lower section of the body-portion thereby providing a recess, a semi-spherical resilient seating member arranged against the lower section of said body and extending in said recess and having its upper portion maintained in position by the overlapping portions of said flanges, a valve stem extending through said body-portion, means carried by the valve stem for arresting movement of the body-portion in one direction, and means carried by the valve stem for maintaining the lower portion of said seating member against said lower section.

3. A float valve comprising a hollow substantially spherical rigid body-portion formed of two flanged sections, with the flange of one section overlapping the flange of the other section thereby connecting the sections together, the overlapping portions of said flanges extending around and spaced from the lower section of the body-portion thereby providing a recess, a semi-spherical resilient seating member arranged against the lower section of said body and extending in said recess and having its upper portion maintained in position by the overlapping portions of said flanges, a valve stem extending through said body-portion, means carried by the valve stem for arresting movement of the body-portion in one direction, means carried by the valve stem for maintaining the lower portion of said seating member against said lower section, and means to provide a vent opening for said body-portion.

4. A float valve comprising a hollow substantially spherical rigid body-portion formed of an upper and a lower flanged section, the flange of the upper section overlapping the flange of the lower section whereby said sections are connected together, the overlapping portions of said flanges extending around and spaced from said lower section to provide a recess, a removable semi-spherical resilient seating member arranged against the lower section and extending in said recess and having its upper portion maintained in position by said flanges, a valve stem extending through said body-portion and provided with means for arresting movement in one direction of said body-portion, and removable means carried by the lower end of the valve stem for maintaining the lower portion of the seating member against said lower section.

5. A float valve comprising a hollow substantially spherical rigid body-portion formed of an upper and a lower flanged section, the flange of the upper section overlapping the flange of the lower section whereby

said sections are connected together, the overlapping portions of said flanges extending around and spaced from said lower section to provide a recess, a removable semi-spherical resilient seating member arranged against the lower section and extending in said recess and having its upper portion maintained in position by said flanges, a valve stem extending through said body-portion and provided with means for arresting movement in one direction of said body-portion, removable means carried by the lower end of the valve stem for maintaining the lower portion of the seating member against said lower section, and means to provide a vent opening for said body-portion.

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

WILLIAM E. SNAMAN.

Witnesses:
MAX H. SROLOVITZ,
KARL H. BUTLER.