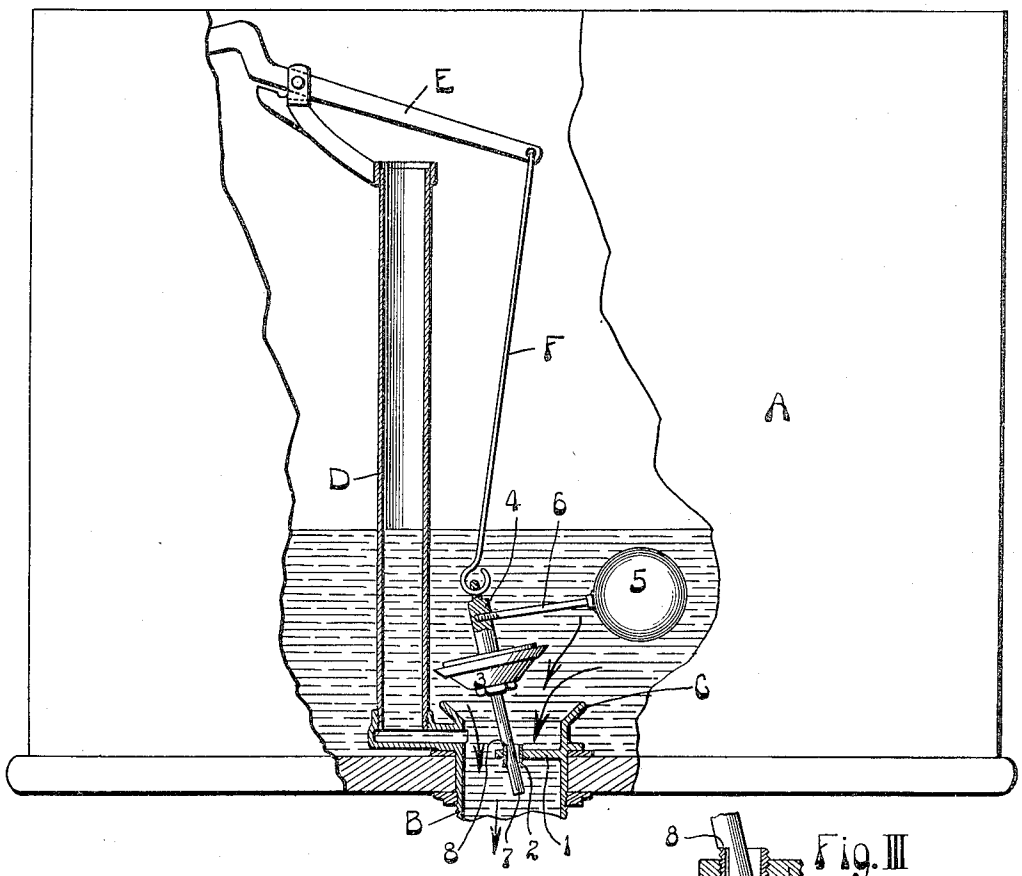
S. J. STEVENS.

WATER CLOSET FLUSHING MECHANISM.

APPLICATION FILED NOV. 19, 1913.

1,103,550. Patented July 14, 1914.

Fig. I.



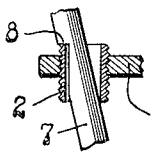


Fig. III

Fig. II.

Attest

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SAMUEL J. STEVENS, OF ST. LOUIS, MISSOURI, ASSIGNOR TO ALLEN R. GILMORE, OF ST. LOUIS, MISSOURI.

WATER-CLOSET-FLUSHING MECHANISM.

1,103,550. Specification of Letters Patent. Patented July 14, 1914.

Application filed November 19, 1913. Serial No. 801,810.

To all whom it may concern:

Be it known that I, SAMUEL J. STEVENS, a citizen of the United States of America, and a resident of the city of St. Louis and State of Missouri, have invented a certain new and useful Improvement in Water-Closet-Flushing Mechanisms, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to mechanisms for flushing water closets and, more particularly stated, the invention pertains to means associated with a valve of a flushing mechanism, and means with which said valve is coöperable, whereby the valve is automatically held from return to a closed position when it is unseated until the flushing tank is emptied, and whereby the valve is caused to automatically return to its seat immediately following the emptying of the tank.

Figure I is a vertical section through my valve mechanism, with the tank containing the mechanism shown partly in elevation and partly broken away and in section. Fig. II is an enlarged vertical section of the lower portions of the valve mechanism. Fig. III is an enlarged vertical section of the support and bushing for the valve stem, showing the stem in inclined and supported position.

In the drawings: A designates a flushing apparatus tank, in which is arranged an outlet connection B, which receives the attachment of a conducting pipe leading to a water closet. The connection B is provided at its upper end, within the tank A, with a valve seat member C, and has attached to it a vertical overflow pipe D. The overflow pipe serves as a support for the valve operating lever E, to which a valve lifting rod F is connected.

No invention *per se* is herein claimed for the parts thus far described, and they may be of any ordinary or preferred construction.

1 designates a support within the connection B, beneath the valve seat member C, this support being provided with a vertical opening located at the diametric center of the connection B. In the opening just mentioned I preferably arrange a bushing 2, which has screw thread engagement with the support 1, which is adjustable in and removable from said support, as will hereinafter more fully appear.

3 designates a valve, adapted to seat upon the valve seat member C of the outlet connection, to close said connection, as seen in Fig. II. The valve is provided with a top stem 4, to which the lift rod F is loosely fitted.

F designates a float connected to the valve stem 4 by a rod 6. The valve 3 is also provided with a lower stem 7, which is operable in the support 1, and is provided with a detent notch 8, the said notch being located diametrically opposite the float 5 connected to the upper valve stem 4.

In the practical use of my flushing mechanism, the operation is as follows: When the valve 3 is lifted from its seat to open the entranceway into the outlet connection B, the lower stem 7 is moved upwardly in the support 1, until the detent notch 8 becomes located above the top of said support; or where the bushing 2 is used, above the top of said bushing. The float 5, by its tendency to rise in the tank A, acts to tilt the valve and its stem into the position illustrated in Fig. I; and, as a result, the detent in the notch 8 in the lower valve stem immediately engages or settles upon the support or the bushing therein, if the bushing is employed, whereby said support is caused to sustain the valve in its elevated position, pending the emptying of the tank. Upon the escaping water reaching the level of the float 5 and passing therebeneath, the float is permitted to descend; and, in its downward movement, acts to return the valve and the lower stem 7 to an upright position, so that the detent of the lower valve stem is disengaged from the support 1 or its bushing, after which the valve readily resumes its normal position upon the valve seat C of the outlet connection, through which the water in the tank A has escaped.

It will be understood from the foregoing that the valve 3 is automatically adjusted into position to be upheld from its seat, due to the rise of the float 5 in the water in the tank A, when the valve is first lifted; and that the return of the valve to its normal position is automatically accomplished by the falling of said float, due to the escape of the water from the tank.

I preferably utilize the bushing 2 in the support 1, in order that the bushing may re-

ceive the wear of the valve stem 7, which would otherwise be imposed upon said support, and the bushing may be readily replaced by a new one from time to time, when necessary, without disturbing the connection B, or the support 1 carried thereby. The bushing being adjustable, its position in the support 1 may be readily altered, so that it will sustain the valve 3 at any desired elevation relative to the valve seat member C.

I claim:—

1. The combination with the valve seat of a flush tank outlet, of a support below said valve seat, a tiltable valve movable to and from said valve seat, a stem carried by said valve adapted to engage said support to hold the valve away from said seat when the valve is tilted, and a float by which said valve is tilted to place said stem in engagement with said support.

2. The combination with the valve seat of a flush tank outlet, of a support below said valve seat, a tiltable valve movable to and from said valve seat, a stem carried by said valve slidably fitted to said support and having a detent for engagement with said support, and a float for tilting said valve to cause the detent of said stem to engage said support when the valve is elevated from said seat.

3. The combination with the valve seat of a flush tank outlet, of a support adjacent said valve seat, a tiltable valve movable to and from said valve seat, a detent stem carried by said valve, and a float rigidly secured to said valve adapted to tilt it to place said detent in engagement with said support when the valve is elevated from said valve seat, said float being located at one side of the axis of the valve for the purpose set forth.

4. The combination with the valve seat of a flush tank outlet, of a support adjacent to said valve seat, a bushing removably mounted in said support, a tiltable valve having a detent stem operable in said bushing adapted to engage the bushing to hold the valve away from its seat when elevated and tilted, and a float carried by said valve by which the valve is tilted when elevated from said seat.

5. The combination with the valve seat of a flush tank outlet, of a support adjacent to said valve seat, a bushing adjustable in said support, a tiltable valve having a detent stem operable in said bushing adapted to engage the bushing to hold the valve away from its seat when elevated and tilted, and a float carried by said valve by which the valve is tilted when elevated from its seat.

6. The combination with the valve seat of a flush tank outlet, of a valve movable toward and away from said seat, a float located at one side of the axis of the valve and rigidly secured to said valve so as to tilt the latter when it rises from its seat, and a detent for holding the valve when it is tilted.

7. The combination with the valve seat of a flush tank outlet, of a valve movable toward and away from said seat, an upper float stem and a lower detent stem, both of said stems being rigidly secured to said valve, a float rod rigidly secured to said upper float stem and extending therefrom at an angle to the axis of the valve, a float secured to said float rod so as to tilt the valve when the latter rises from its seat, and a support below the valve adapted to engage said detent stem so as to support said valve and float when the valve occupies its tilted position.

8. The combination with the valve seat of a flush tank outlet of a valve movable toward and away from said valve seat, a stem extending from said valve, a float rigidly secured to said valve, the said float being located at one side of the axis of the valve, and the said stem being provided with a detent shoulder at the opposite side of the axis of said valve, and a support, the float being operable to tilt the valve so as to engage said detent shoulder with said support when the latter moves from its seat.

SAML. J. STEVENS.

In the presence of—
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E. B. LINN.

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