

J. H. MAHONEY.
FLUSHING VALVE.
APPLICATION FILED MAY 12, 1910.

986,478.

Patented Mar. 14, 1911.

FIG. 1

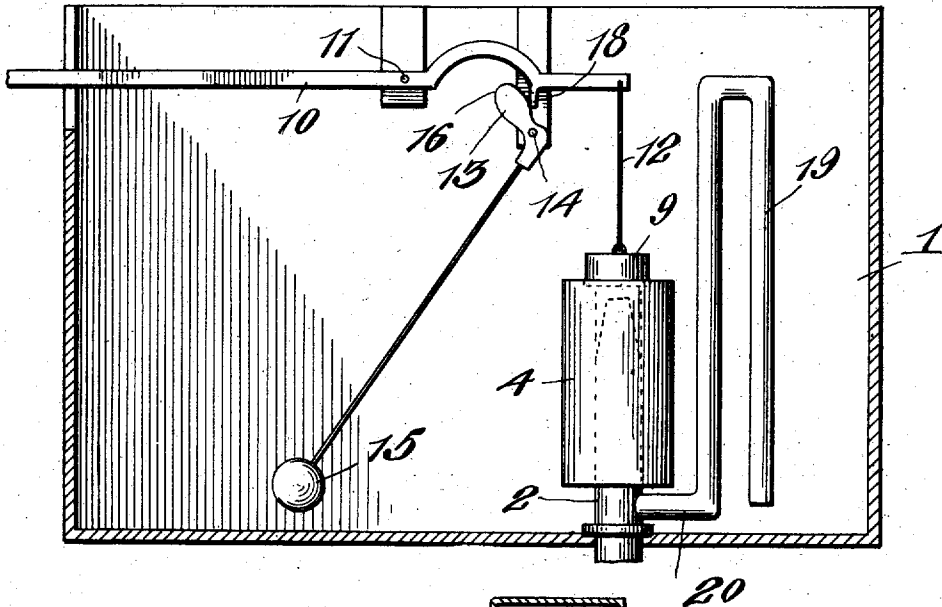


FIG. 2.

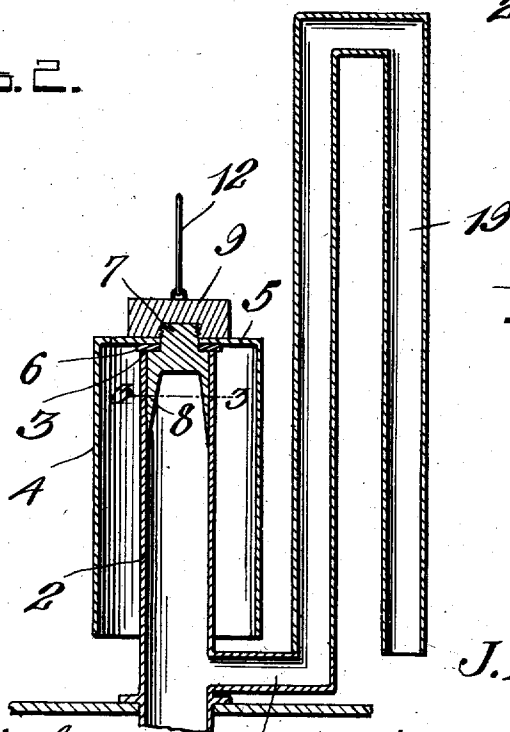
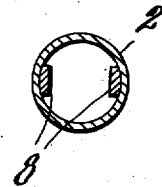


FIG. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES H. MAHONEY, OF WORCESTER, MASSACHUSETTS.

FLUSHING-VALVE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JAMES H. MAHONEY, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Flushing-Valves, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in flushing valves for flush tanks used in connection with water closets.

The object of the invention is to provide a valve of this character in which the vacuum is formed, not by the suction created by the flow of water through the valve, but by the water passing through the top of the valve, forcing the air out before it, this object being attained by the peculiar construction of the valve and its arrangement with respect to the water valve in the tank.

With the above and other objects in view, the invention consists of the novel construction, combination and arrangement of parts, hereinafter fully described and claimed, and illustrated in the accompanying drawings in which:—

Figure 1 is a sectional view through a flush tank showing my improved valve arranged therein; and Fig. 2 is a detail sectional view through the valve. Fig. 3 is a detail sectional view of the forked guide, taken on the plane indicated by the line 3—3 of Fig. 2.

Referring more particularly to the drawings 1 denotes a tank which may be a flush tank or box of a water closet, or any other tank or container used for flushing purposes.

2 denotes the flush pipe which is arranged vertically in the bottom of the tank and is adapted to have its upper edge 3 serve as a valve seat. The valve 4 comprises an inverted cup-shaped casing which is preferably of cylindrical form and provided with an open bottom so that it telescopes the upper portion of the pipe 2. The closed top 5 of this cylindrical casing forms the valve proper, and arranged upon its bottom face is a packing member 6 adapted to engage the valve seat 3 when the valve is lowered or in its closed position. The packing member 6 is in the form of a ring and is arranged on a reduced end or shank 7 of a forked guide 8 which slides within the pipe 2 and guides the cylindrical valve 4 in its vertical movement. The stem or shank

7 passes through a central opening in the top 5 of the valve and is screwed or otherwise secured in a head or block 9, which latter may serve as a weight.

The valve may be actuated by any suitable means but I preferably employ a lever 10 fulcrumed intermediate its ends at 11 on a suitable support and having at its outer end a suitable handle and its inner end connected by a link 12 to the top of the valve. If desired, I may employ in connection with the valve and its lever a checking device for retaining the valve in its raised or opened position until the tank is empty, such device consisting preferably of an angular lever or bell crank 13 fulcrumed at its angle, as shown at 14, and having a long arm carrying a float 15 and a short arm or head 16 which serves as a cam and adjusts itself under the stop lug 18 provided on the inner end of the lever 10, which stop lug keeps the valve open.

19 denotes an overflow tube or pipe of an inverted U-shape having one of its legs in communication with a horizontal branch tube or pipe 20 projecting laterally from the lower portion of the flushing pipe 2, the other leg of the tube or pipe 19 being open and terminating close to the bottom of the tank.

In operation it will be seen that when the lever 10 is actuated, the valve 4 will be raised allowing the water within the tank to flow downwardly through the flush pipe 2, forcing the air before it, thereby creating a vacuum. The siphoning action thus started continues until the tank is empty and the vacuum is broken by air entering through the open bottom of the valve 4 providing the valve is held elevated. The flow of water will cease when the valve drops on the seat regardless of the siphonic action, as the closing of the valve closes the opening to the bowl. In this respect it is different from siphon valves. This valve does not depend on having air enter the vacuum in order to break the siphon or stop the flow of water to the bowl.

When no checking device is employed the valve must be held elevated by hand, but when the checking device shown in Fig. 1 is used in connection with the lever 1 it will be seen that the lever when actuated will have its inner end held up by the float-controlled cam member 16, and consequently the valve will be held elevated and open.

From the foregoing it will be seen that this valve is the combination of a slow closing and siphoning valve and is especially adapted for low tanks used for flushing
5 water closets and the like.

Various changes in the form, proportion and arrangement of parts may be made within the spirit and scope of the invention.

Having thus described the invention,
10 what is claimed is:

The herein described flushing apparatus comprising a tank, an upright flushing pipe extending through the bottom thereof, the said flushing pipe being provided with an
15 overflow pipe connected thereto, an inverted cup-shaped valve arranged over the upper portion of said flushing pipe, a forked guide vertically movable in the upper portion of the said flushing pipe and provided at its

upper end with a threaded stud extending 20 upwardly through the top of said valve, a washer between the top of the valve and the upper end of the said forked guide, and a weight on the top of the said valve and provided with a threaded opening engaged 25 by the said stud, the said weight, guide, and valve being provided with means for the attachment thereto of a rod to operate the said valve, the said weight serving to normally close the valve on the upper end of 30 the said flushing pipe.

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

JAMES H. MAHONEY.

Witnesses:

JOHN LUBY,
MARY LUBY.

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