No. 732,095. PATENTED JUNE 30, 1903.

C. N. MARCELLUS.

FLUSHING APPARATUS.

APPLICATION FILED JAN. 12, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

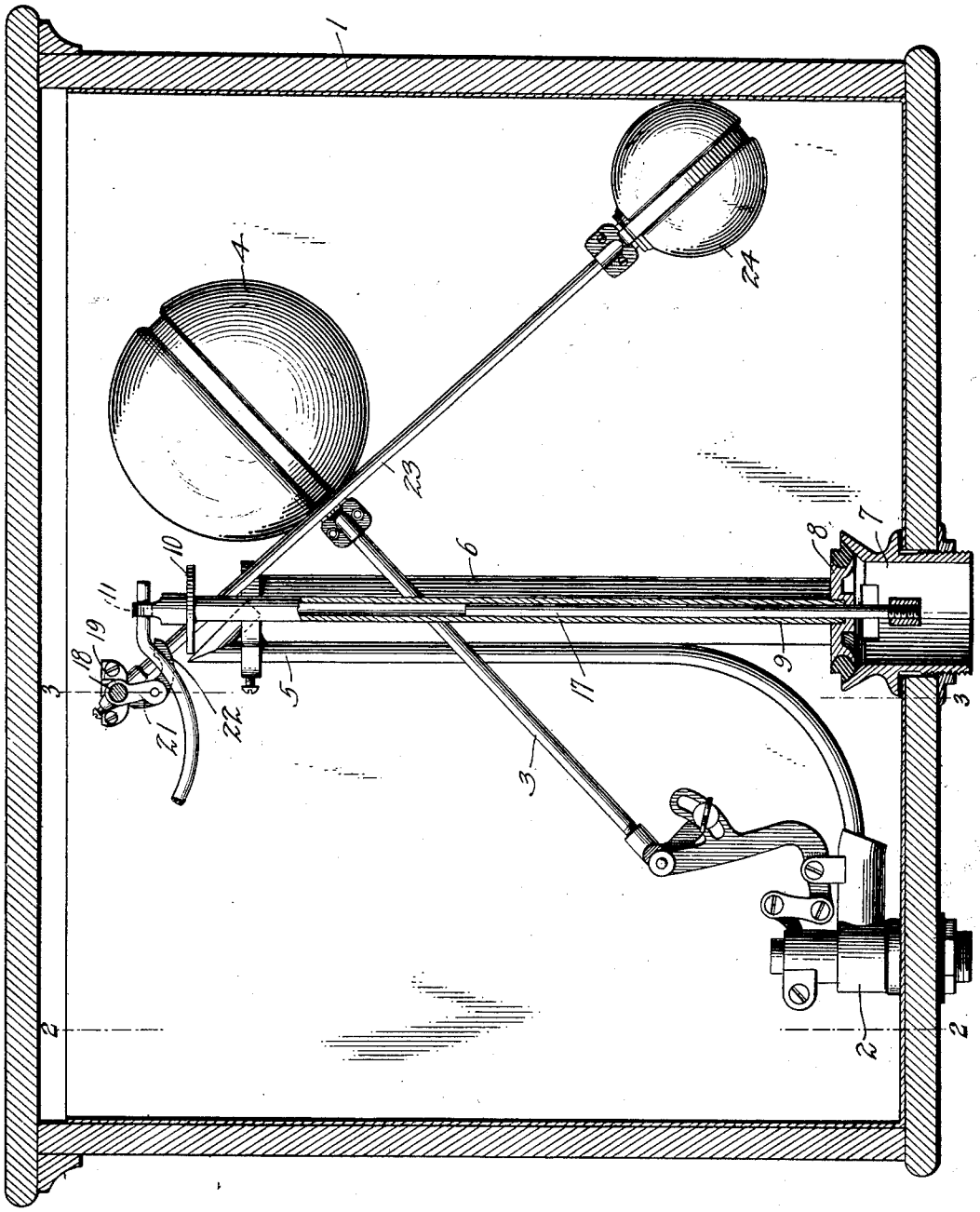


Fig. 1.

Witnesses
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 2 SHEETS—SHEET 2.

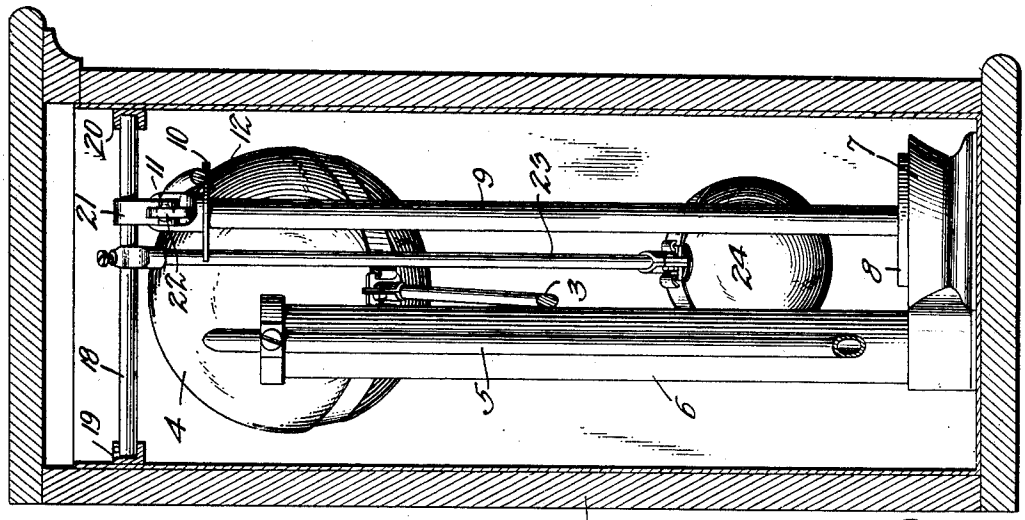

Fig. 3.

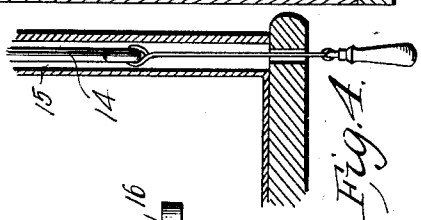

Fig. 4.

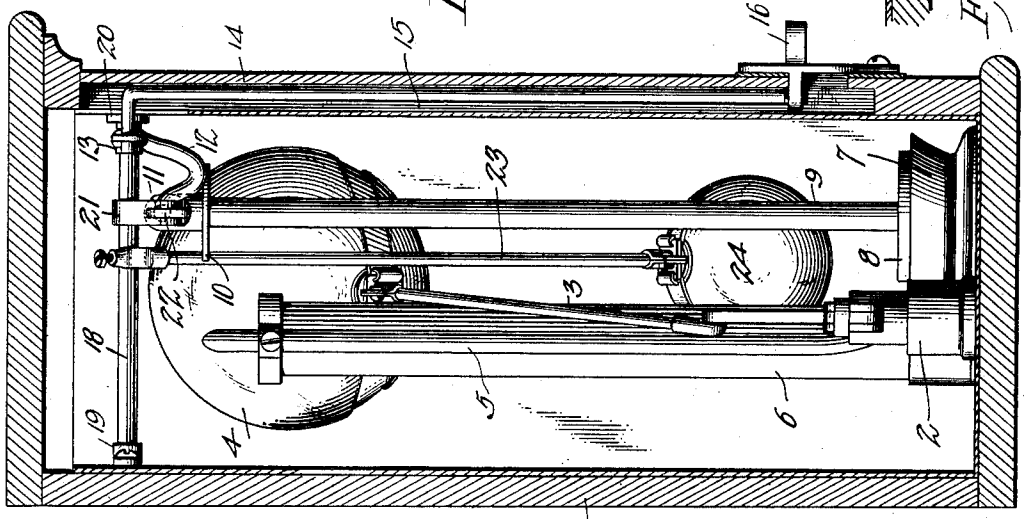

Fig. 2.

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No. 732,095. Patented June 30, 1903.

# UNITED STATES PATENT OFFICE.

CHARLES N. MARCELLUS, OF GRAND RAPIDS, MICHIGAN.

## FLUSHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 732,095, dated June 30, 1903.

Application filed January 12, 1903. Serial No. 138,711. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES N. MARCELLUS, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented a new and useful Flushing Apparatus, of which the following is a specification.

My invention relates to flushing apparatus, and has for its objects to produce a device of this nature which in its general organization will be simple of construction, efficient in operation, and one in which the operative parts of the mechanism will be protected from contact with the water.

To these ends the invention comprises the novel and detailed features of construction and combination of parts more fully hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a vertical longitudinal sectional elevation of the device. Fig. 2 is a vertical transverse sectional elevation of the same on the line 2 2. Fig. 3 is a similar view on the line 3 3. Fig. 4 is a modified form of pull device.

Referring to the drawings, 1 indicates the box or tank of my improved flushing apparatus, composed, preferably, of wood and lined with copper or other suitable material.

2 is an inlet-valve located at the upper end of the water-main for controlling the admission of water to the tank. This valve is maintained in a normally closed position by means of a rod 3 and float 4, actuated in the usual manner for controlling the opening or closing of the valve. 5 is an afterfill-pipe extending from the inlet-valve and adapted to discharge at its upper end into the upper end of the usual vertical stand or overflow pipe 6, which in turn discharges at its lower end into the discharge or flushing pipe of the apparatus.

7 indicates the discharge or flushing pipe, normally closed at its upper end by a flushing-valve 8, provided with a vertical stem 9, having at its upper end a disk-like head 10 and provided above the disk with a hole or eye 11.

12 is a horizontally-extending rod or shaft pivoted between its ends on a finger 13, projecting from the wall of the tank. One end of this rod or lever is connected to a vertical operating-rod 14, mounted in a vertical conduit 15, formed in the wall of the tank and entirely inclosing the operating-rod to protect the same from contact with the water, the rod 14 being adapted for reciprocation by a thumb-piece 16, connected to the lower end of the rod. It is to be understood in this connection that the rod may be reciprocated by any other suitable means—such, for example, as a chain or the like. The opposite end of the lever 12 engages in the eye 11 of the vertical stem 9, and when the thumb-piece 16 is operated to pull down the vertical rod and swing the lever on its pivot the valve 8 will be raised from its seat to open the flushing-pipe and permit the water in the tank to be discharged therethrough in the usual manner. It is to be noted in this connection that my improved valve-stem 9 is in the form of a small cylinder slidingly mounted on a fixed vertical rod 17, which is secured at its lower end to a horizontal base-piece lying across the upper end of the discharge-pipe and secured to the walls thereof in any suitable manner. By this construction the stem will slide freely to permit the opening and closing of the flushing-valve and will be preserved, in so far as its active parts are concerned, from contact with the water in the tank. It will also be noted that by this construction the necessity for outside guides for the valve or its stem are entirely obviated, and the mechanism is in this particular rendered at once simple and effective.

18 indicates a horizontal shaft mounted transversely of the tank near its upper end at a point above the water-line. This shaft is journaled for rotation in suitable bearings 19 and 20, secured in any suitable manner to the interior walls of the tank, the bearing 19 open at one side to permit the ready removal of the shaft, which is held therein by means of a transverse pin or the like.

21 indicates a latch member fixed on the shaft 18 and provided with a pivoted finger 22, which normally lies in a horizontal position and is susceptible of swinging freely upward on its pivot, but is prevented from downward movement thereon beyond its normal position.

23 is a rod secured at one end to the shaft by a suitable screw or the like to permit its ready adjustment and provided at its free end with a float 24, which is acted upon by

the water in the tank to partially turn the rod 18 and maintain the finger 22 in its horizontal position; but when the water in the tank falls sufficiently low to permit the float 24 to drop the shaft will be rotated and the finger carried with it for the purpose to be presently described.

In the operation of the device, supposing the tank to be filled with water to its proper height, the float 4 will, through the medium of rod 3, maintain the inlet-valve closed. With the parts in this condition if the thumb-piece is moved to exert a downward pull on the rod 14 the lever 12 will be actuated to lift the flushing-valve from its seat, and as the valve rises the disk-like head at the upper end of its stem will move past the finger 22 and the latter will after the disk has passed drop by gravity to its normal position and engage beneath the disk, thus maintaining the valve open. After a sufficient quantity of water has been discharged from the tank the float 24 will drop in the usual manner, rotate the shaft 18, and move the finger out of engagement with the head on the stem of the flushing-valve, thus releasing the latter and permitting the valve to reseat and close the pipe. By this time the float 4 will have dropped and permitted the inlet-valve to open, and the water will again flow into the tank in the usual manner until it reaches a height sufficient to cause the float to move the inlet-valve to closed position. As the water enters through the inlet-pipe a portion of the same will flow upward through the afterfill-pipe and be discharged therefrom to the standpipe and thence through the flushing-pipe to form the usual water seal. Owing to the stem of the flushing-valve being in the form of a tube guided on a rod, as in accordance with my invention, the necessity for outside guides will be obviated, and the device when flushing will not be attended with the whistling noises which generally accompany the flushing operation in similar devices.

From the foregoing it will be seen that I produce a device which is simple of construction and operation, one in which the working parts are wholly protected from contact with the water and may be readily removed from the tank for the purposes of cleaning the same. In attaining these ends I do not limit myself to the precise details herein shown and described, as various minor changes may be made therein without departing from the spirit or scope of my invention.

Having thus described my invention, what I claim is—

1. In a flushing apparatus, the combination with a tank, of a discharge-valve having an operating-stem provided with a head, a shaft adapted to be rotated, means operable independently of the shaft for opening the valve, a latch member carried by the shaft and provided with a pivoted finger adapted to move independently of the rotation of the shaft to automatically engage the head on the valve-stem when the valve is opened, and means for automatically rotating the shaft to disengage the latch and release the valve.

2. In a flushing apparatus, the combination with a tank, of a discharge-valve having an operating-stem provided with a head, a shaft adapted to be rotated, means operable independently of the shaft for opening the valve, a latch member carried by the shaft and provided with a pivoted finger adapted to move independently of the rotation of the shaft to automatically engage the head on the valve-stem when the valve is open, and a float operatively connected with the shaft and adapted to rotate the same to disengage the latch and release the valve.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES N. MARCELLUS.

Witnesses:
T. C. FERGUSON,
WM. PUMA.