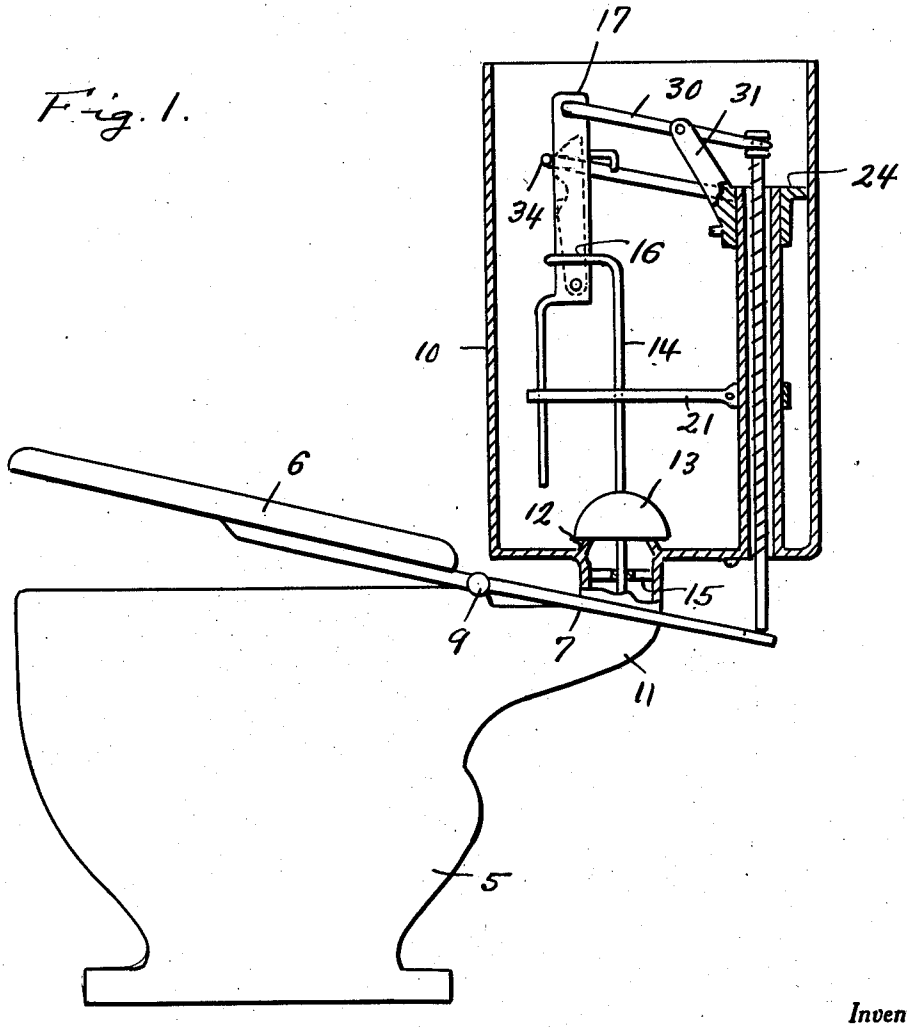
July 4, 1939. N. J. DESROCHE 2,164,503

WATER CLOSET FLUSHING APPARATUS

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Fig. 1.



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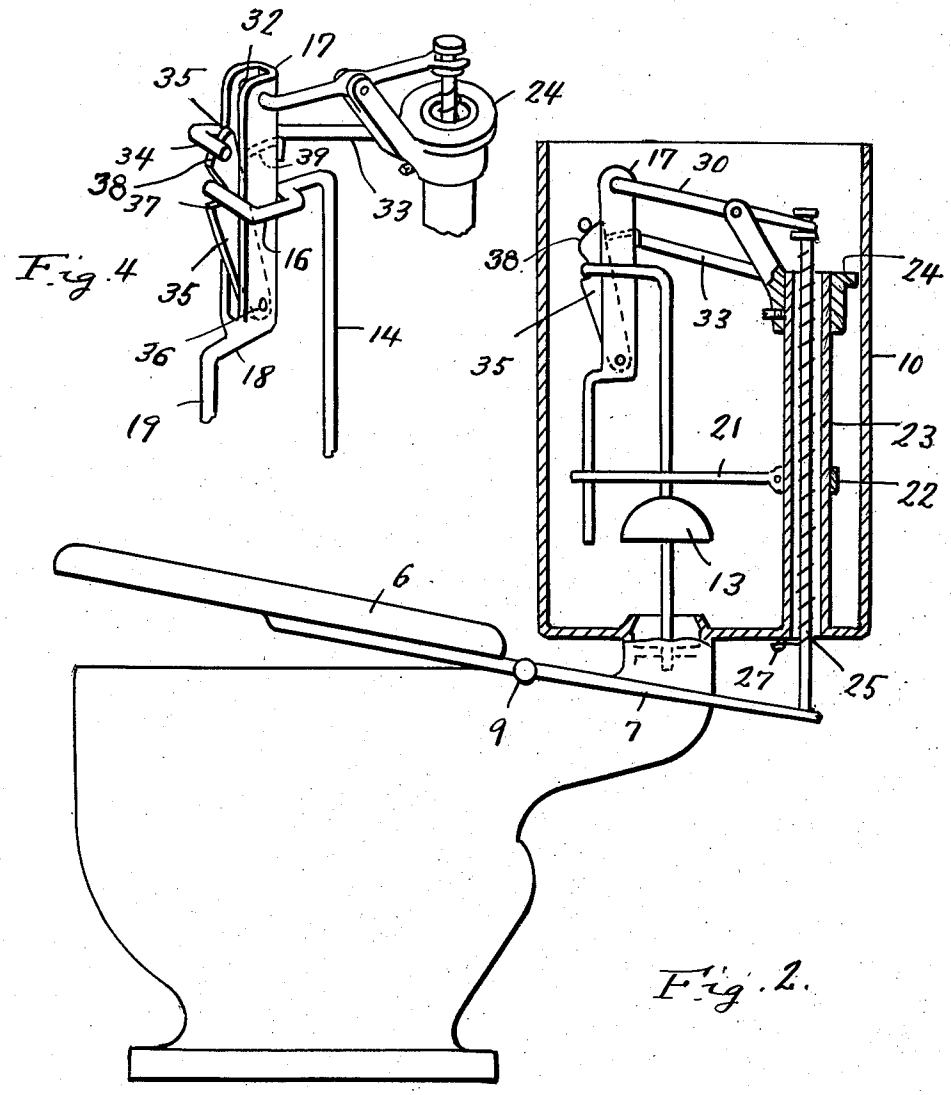


Fig. 4.

Fig. 2.

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Fig. 5.

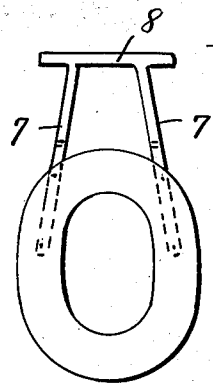


Fig. 3.

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UNITED STATES PATENT OFFICE

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WATER CLOSET FLUSHING APPARATUS

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Application April 12, 1938, Serial No. 201,627

4 Claims. (Cl. 4—59)

This invention appertains to new and useful improvements in flushing apparatus for water closets.

The principal object of the present invention is to provide a flushing apparatus of the character stated which is set for operation by an occupant-used seat.

Another important object of the invention is to provide a water closet flushing apparatus which is substantially automatic in operation.

These and other important objects and advantages of the invention will become apparent to the reader of the following specification:—

In the drawings:—

Figure 1 represents a side elevational view of a bowl showing the apparatus in vertical section.

Figure 2 is a view similar to that shown in Figure 1 but showing the valve in opened position.

Figure 3 is a third view similar to Figure 1 showing the valve in closed position and the seat being utilized.

Figure 4 is a fragmentary perspective view of the trip means.

Figure 5 is a top plan view of the seat.

Referring to the drawings wherein like numerals designate like parts, it can be seen in the drawings that numeral 5 represents a bowl, while numeral 6 represents the seat from which the arms 7—7 extend rearwardly and are equipped with the cross connecting member 8. These arms are apertured and suitable means are disposed through these apertured portions as at 9 to swingably mount the seat and arm structures.

The flushing apparatus consists of the tank 10 to which connects the flushing neck 11. Rising from the bottom of the tank 10 above the inlet to the neck 11 is the valve seat rib 12 against which the valve element 13 is seatable, this valve element 13 being carried by the lower portion of the stem 14. The stem 14 extends downwardly into the throat 11 and is guided by the guide spider 15.

The upper end of the stem 14 is provided with the horizontally disposed U-shaped formation 16 slidably disposed against the channeled member 17 and this channeled member is provided with a laterally disposed lower portion 18 merging with the depending guide leg 19 which extends downwardly through the eye end 20 of the arm 21 which is clamped as at 22 to the barrel 23, this barrel rising from the bottom of the tank 10 and terminating within the collar 24 which is suitably secured to the back wall of the tank 10.

Vertically slidable through this barrel 23 is the rod 25 and around this is a convolutely coiled spring 26 one end of which is attached as at 27 to the bottom side of the tank bottom while its upper end is connected to the rod. The upper end of the rod 25 is provided with a pair of closely spaced collar members 28 between which the fork end 29 of the rocker 30 engages. This rocker 30 is mounted on the arm 31 which rises inclinedly from the collar 24. The forward end of the rocker is provided with a laterally disposed end portion 32 which is disposed through openings in the upper portion of the channeled member 17.

An arm 33 extends forwardly from the collar 24 and is provided with the lug 34 at its forward end passing in front of the channeled member 17 and in the path of the latch member 35. This latch member 35 is pivotally secured as at 36 to the lower portion of the channeled member 17 and operates in the channeled member. The upper portion of this trip 35 is provided with the notch 37 and its upper portion provided with the bevelled terminus 38.

The latch member 35 is provided with the rearwardly extending finger 39 which extends through an opening in the back of the channeled member 17 and a lug on this finger limits outward movement of the latch member 35.

It can be seen, that when a person sits on the seat 6 the rod 25 is forced upwardly and the rocker 30 at its forward end is moved downwardly causing the channeled member 17 to move downwardly until the free leg of the U-shaped member 16 catches the latch member 35. In this manner, the valve 13 is held downwardly against the seat 12.

When the occupant leaves the seat 6, the spring 26 pulls the rear end of the rocker 30 downwardly, causing the forward end to lift the channeled member 17. In this action, the valve stem 14 is lifted, causing displacement of the valve and the flushing operation of the bowl takes place.

When the channeled member has risen to a certain position, that is where the bevelled end portion 38 of the latch member 35 rides against the lug 34, the latch member will be forced into the channeled member 17, thus disengaging the latch member from the U-shaped end portion 16 of the valve stem 14. This results in the releasement of the valve so that the valve descends to a closed position, but in descending is of course retarded by the violent flow of water from the tank 10.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing

from the spirit and scope of the invention as claimed hereinafter.

Having described the invention what is claimed as new is:

1. In a device of the class described, a flush tank, means connecting said tank to a bowl and including a valve means having a stem located in the tank and provided with a latch engaging end, a tube in the tank and extending through one wall thereof, a spring influenced rod in the tube and operated by movements of a seat on the bowl, a channel member slidable in the tank and engaged by said end of the stem, means connecting said member to said rod for movement thereby, a pivoted latch carried by said member engaged by said end of the stem to cause movement thereof with the member during sliding movement of the latter in one direction, and means for freeing said latch from said end of the stem after a predetermined movement of the channel member.

2. In a device of the class described, a flush tank, means for connecting said tank to a bowl and including a valve having a stem located in the tank and provided with a substantially U-shaped end, a tube in the tank and extending through one wall thereof, a spring influenced rod in the tube and operated by movement of a seat of the bowl, a channel member slidable in the tank and embraced by the substantially U-shaped end of the stem, means connecting said member to said rod for movement thereby, a pivoted latch mounted in said member for a limited movement outwardly of the latter to engage said end of the stem to cause movement of the latter with the channel member during sliding movement of said channel member in one direction, and a stop for freeing said latch from said substantially U-shaped end of the stem after a predetermined movement of the channel member has been completed.

3. In a device of the class described, a flush tank, means for connecting said tank to a bowl and including a valve having a stem provided with a substantially U-shaped end, a tube in the tank and extending through a wall thereof, a spring influenced rod in the tube and operated by movement of a seat of the bowl, a channel member slidably embraced by the substantially U-shaped end of the stem, a guide means for guiding the vertical movement of the channel member, an arm pivotally mounted on the tube and connected with said rod and with the channel member, a latch pivoted in the channel member and movable outwardly thereof and having a notch to receive the substantially U-shaped end of the stem, and a stop carried by the tube for disengaging the latch from the substantially U-shaped end of the stem after a predetermined movement of the channel member.

4. In a device of the class described, a flush tank, means for connecting said tank to a bowl and including a valve having a stem provided with a substantially U-shaped end, a tube in the tank and extending through a wall thereof, a spring influenced rod in the tube and operated by movement of a seat of the bowl, a channel member slidably embraced by the substantially U-shaped end of the stem, a guide means for guiding the vertical movement of the channel member, an arm pivotally mounted on the tube and connected with said rod and with the channel member, a latch pivoted in the channel member and movable outwardly thereof and having a notch to receive the substantially U-shaped end of the stem, a stop carried by the tube for disengaging the latch from the substantially U-shaped end of the stem after a predetermined movement of the channel member, and an extension formed on the latch and slidable through a wall of the channel member and having an offset end to contact the channel member for limiting the outward pivotal movement of the latch member with respect to the channel member.

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