E. KERSEY.

FLUSHING APPARATUS.

APPLICATION FILED APR. 8, 1912.

1,052,593. Patented Feb. 11, 1913.

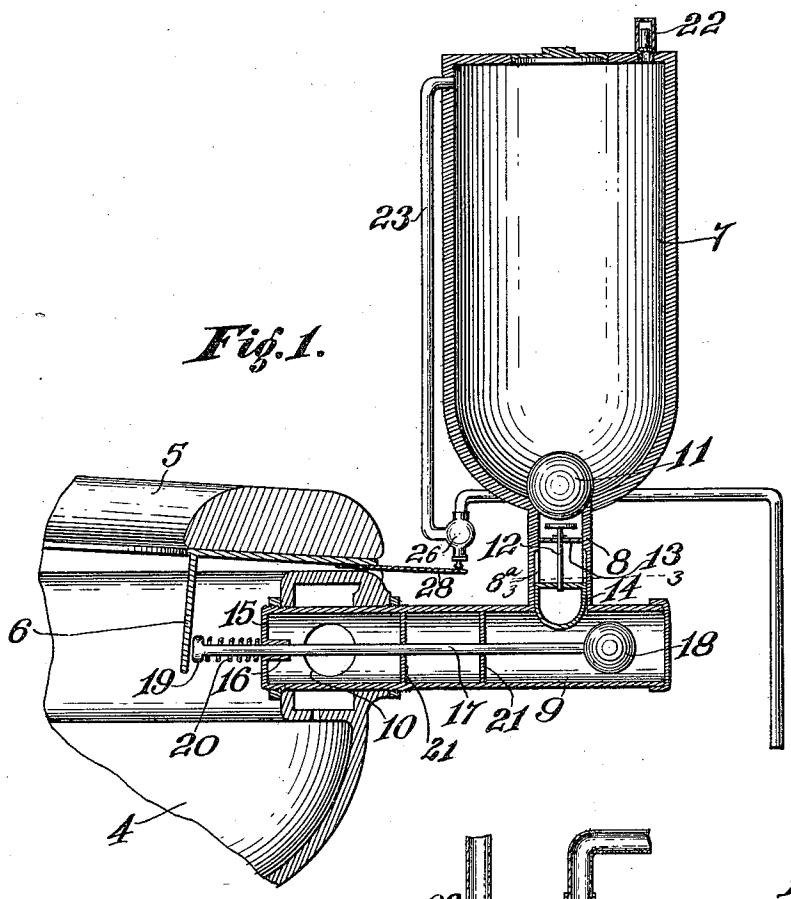

Fig. 1.

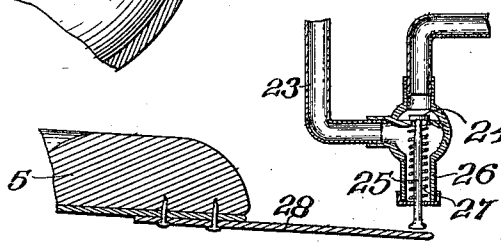

Fig. 2.

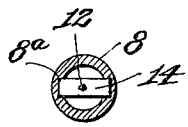

Fig. 3.

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FLUSHING APPARATUS.

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To all whom it may concern:

Be it known that I, EDWARD KERSEY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Flushing Apparatus, of which the following is a specification.

This invention relates to that class of flushing apparatus for water-closets which is automatically operated by the seat, and it is the object of the invention to provide a simple and efficient mechanism for this purpose.

The invention also has for its object to provide a seat-operated valve which controls the water supply of the tank.

In the accompanying drawing forming a part of this specification, Figure 1 is a vertical section of the apparatus. Fig. 2 is a sectional view of the supply valve and the operating means therefor. Fig. 3 is a section on the line 3—3 of Fig. 1.

Referring specifically to the drawing, 4 denotes a fragment of the closet bowl to which the invention is applied. The seat 5 is hinged to the bowl in any ordinary manner and carries a depending finger 6 which is for the purpose to be presently described.

At 7 is indicated a tank which holds a supply of water for flushing the bowl. The tank is an upright cylinder having at its bottom a contracted neck portion 8 carrying a horizontal cylindrical casing 9 provided with side outlets 10 into the flushing rim of the bowl, said casing extending into the latter for this purpose. The neck 8 forms a seat for a ball valve 11 which is constructed so that it can float. The valve is operated by a stem 12 mounted in a guide 13 in the neck and carrying at its lower end an abutment 14 which extends partly into the casing 9. The stem 12 is free to slide up and down in the neck and its upper end is adapted to come in contact with the valve 11 to unseat the same when said stem is forced upward by the mechanism to be presently described. The abutment is a strip which is bowed into substantially semicircular form and made fast to the stem in any suitable manner. In the neck 8 are grooves 8^a in which the abutment slides and is guided. The width of the abutment is less than the diameter of the neck so that the water can flow past the same.

The casing 9 is closed at its ends, one end 15 being provided with a bearing 16 in which is slidably mounted a stem 17 extending into the casing and having its inner end fitted with a ball or spherical enlargement 18. The other end of the rod projects a suitable distance from the casing and has at its outer end an abutment 19 between which and the end 15 is interposed a spring 20, said spring being coiled around the stem. The stem is arranged co-axially with respect to the casing 9 and is slidable back and forth in the direction of its length. In the casing are guides 21 for the stem. The outer end of the stem is in the path of the finger 6 and it is adapted to be moved by the latter in one direction. The spring 20 moves the stem in the opposite direction.

The operation of the parts herein described is as follows: When the seat 5 is not occupied it is held slightly raised, and the ball is in the position shown in Fig. 1. The valve 11 is seated. Now when the seat is lowered, the arm 6 swings rearward and pushes the stem 17 rearward, the spring 20 being compressed by this movement of the stem. When the weight is removed from the seat, the spring 20 is permitted to expand and to push the stem 17 forward, whereby, through the arm 6, the seat is swung upward to its normal position. The sudden release of the spring tends to shoot the stem 17 forward a sufficient distance to carry the ball 18 into contact with the abutment 14, whereby the stem 12 is pushed upward and pushes the valve 11 off its seat. The water in the tank 7 is now discharged, and when the latter is empty, the valve 11 reseats. The valve rises in the water to the top thereof and floats back to the seat as the tank empties. In order that the valve may drop back to its seat, the bottom of the tank is made sloping toward the seat as shown. After the stem 17 is shot forward, it returns to its normal position, with the ball 18 to the rear of the ball 14, the stem 12 then dropping down and allowing the valve to reseat.

The tank 7 has an air-vent 22, and a supply-connection 23, the latter being provided with a valve 24. This valve is a reciprocating one and has a stem 25 which extends from the casing 26 of the valve. The valve also has a closing spring 27. The seat 5 has a finger 28 which is so located that it strikes the projecting end of the stem 25 when the seat is lowered and thus causes the valve to open. When the seat is ele-

vated, the finger 28 swings away from the stem 25 and permits the spring 27 to close the valve.

It will be evident from the foregoing that the tank 7 is permitted to fill when the closet is in use, and when the seat rises, the water supply to the tank is shut off, and at the same time the closet is flushed.

I claim:

1. The combination with a closet having a hinged seat; of a flushing apparatus comprising a supply tank, a casing connected to the tank and discharging into the closet, a valve controlling the flow from the tank, a reciprocatory stem working in the casing and projecting therefrom, valve operating means on the stem, a spring engageable with the stem for moving the stem in a direction to open the valve, and a finger on the seat engageable with the projecting end of the stem for moving the stem in a direction to compress the spring.

2. The combination with a closet having a hinged seat; of a flushing apparatus comprising a supply tank, a casing connected to the tank and discharging into the closet, a valve controlling the flow from the tank, a sliding valve operating stem having an abutment extending into the casing, a reciprocatory stem working in the casing and projecting therefrom, said stem having an abutment adapted to engage the first-mentioned abutment to actuate the valve operating stem, a spring engageable with the reciprocatory stem for moving said stem in a direction to engage the abutment thereof with the first mentioned abutment to open the valve, and a finger on the seat engageable with the projecting end of the reciprocatory stem for moving the same in a direction to compress the spring.

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

EDWARD KERSEY.

Witnesses:
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