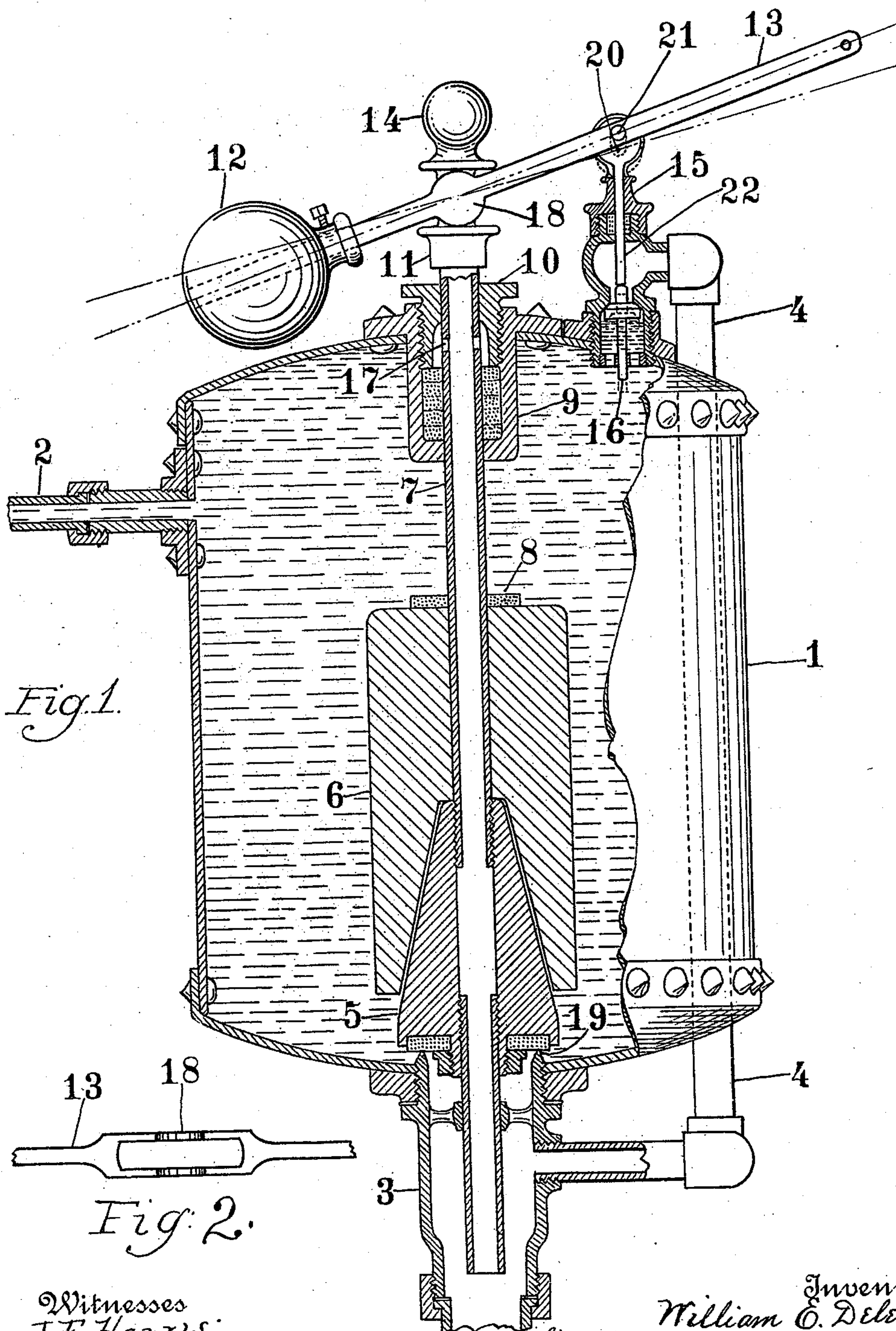


(No Model.)

W. E. DELEHANTY.
FLUSHING TANK.

No. 532,539.

Patented Jan. 15, 1895.



Witnesses
J. F. Harris:
A. M. Turner.

Inventor
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By his Attorney W. M. Brown.

UNITED STATES PATENT OFFICE.

WILLIAM E. DELEHANTY, OF ALBANY, NEW YORK.

FLUSHING-TANK.

SPECIFICATION forming part of Letters Patent No. 532,539, dated January 15, 1895.

Application filed February 17, 1894. Serial No. 500,547. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. DELEHANTY, a citizen of the United States, residing at Albany, Albany county, New York, have invented certain new and useful Improvements in Flushing-Tanks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

The object of my invention is to provide a new and improved flushing tank for water closets and other purposes.

In the drawings Figure 1 shows a partial vertical sectional view of my tank in operative construction; Fig. 2, a top view of the yoke portion of the lever which operates the tank.

The numeral 1 shows the tank, which may be of any configuration and of any material desired, having an inlet pipe 2 arranged to be connected to a water supply under pressure. The outlet pipe 3 is preferably provided with screw threads at its upper end and these threads mesh with threads in a boss attached to the bottom of the tank. The valve 5 is preferably cone-shaped and the weight 6 is set upon it preferably as shown, and on top of the weight 6 is the buffer 8 consisting of any soft material desired, its office being to deaden the sound when the valve 5 is lifted and cause weight 8 to strike against stuffing box 9. The valve 5 has an opening through it vertically and into the upper end of the opening is screwed the tubular valve stem 7 and in the lower end is screwed a tube which passes into and partly down the outlet pipe 3 and through a guide plate which guides the valve to its seat. The valve stem 7 passes through a stuffing box 9 and the packing therein is compressed by the gland 10. In this gland is a chamber through which valve stem 7 passes, and in that portion of the valve stem lying in this chamber are openings 17 in order that if any water should pass the packing it would enter this chamber and pass off through openings 17 and down through tubular valve stem 7 into the discharge pipe 3.

On the tank is a relief valve 15, consisting of an upper and a lower chamber, the lower

chamber having a valve seat at its upper end and a downwardly opening valve with a depending stem 16, the stem passing through a guide plate at the bottom of this chamber. In the upper chamber is a pintle or plunger 22, passing through a stuffing box, its lower end resting on but not connected to valve and its stem 16. The upper end of pintle or plunger 22 consists of a plate circular in form preferably, having a pin 21 passing through it and through the lever 13 and this plate rests between circular ears which are an extension of the upper part of the relief valve casing, the said ears having vertical slots 20 in which the ends of the pin 21 move vertically from top to bottom when the lever 13 is operated.

From the upper chamber of the relief valve passes an overflow pipe 4 designed to carry any water that may enter that chamber into discharge pipe 3. On the upper or outer end of valve stem 7 is a collar or flange 11 and the removable ornamental ball 14, its lower surface formed into a flange similar to 11. The lever 13 has a yoke 18 which embraces the valve stem 7 between the lower flange 11 and the upper flange, and its surface is spread and the edges of the spread portion rounded or curved in order to reduce friction as they pass over the surface of the flanges 11 and the flange on ball 14. On the end of the lever 13 is the adjustable weight 12.

The operation is as follows:—When the tank is filled with water under pressure and it is desired to empty the tank, the long arm of the lever 13 is forced downward. This causes the pintle or plunger 22 to force relief valve 16 open, when a quantity of water will escape into pipe 4 and in doing so the pressure in the tank is relieved. Immediately on the pressure being relieved the lever raises valve 5, when the water will pass out of escape pipe 3. When the lever 13 is released, weights 12 and 6 force the valve 5 to close and the water enters the tank through intake pipe 2. As the tank fills, the water enters the lower chamber of the relief valve 15 and forces valve 16 to its seat, thus closing this valve by the pressure of the water against its under side. The tank is then ready for flushing again.

Having described my invention, what I claim is—

1. A closed flushing tank having an outlet

valve arranged to close automatically and a tubular valve stem passing through the tank and a stuffing box and through the valve and having a chamber in the stuffing box through
5 which the valve stem also passes and openings in that portion of the tubular valve stem lying within the chamber in order that any liquid that may pass into said chamber may be drained off through the valve stem, substantially as described.
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2. A flushing tank arranged to hold a charge of water under pressure having an automatic closing outlet valve and a stem therefor, the stem passing through a stuffing box, and a
15 lever attached to the outer end of the outlet valve stem and having a relief valve consisting of a chamber, a valve seat therein and a valve, and a pintle disconnected from the valve and its stem, said pintle passing through
20 a stuffing box and arranged to move in and out of the same, said lever being attached to the pintle operating the outlet valve the inner end of the pintle resting on the relief valve, the head of the pintle being supported
25 by a slotted support, said pintle head having a projection entering and moving in said slot and arranged so that when the lever is drawn there will be lost motion between the support and pintle head, substantially as described.

30 3. A relief valve for closed flushing tanks, &c., consisting of an upper and lower chamber, the lower chamber having a valve seat at its upper end and a valve having a depending stem and a guide way for said stem, said

valve being arranged to open downwardly, 35 said lower chamber being arranged to fill with water under pressure when the tank is filled, the upper chamber having a pintle passing through it and into and through a stuffing box, its inner end resting against said 40 valve but unconnected therewith, and its outer end arranged to be connected to an actuating lever, the upper chamber having a discharge opening and a waste pipe leading therefrom, substantially as described. 45

4. A flushing tank arranged to hold water under pressure having an automatic closing outlet valve and a stem therefor passing through the shell of the tank and having an actuating lever attached to the outer portion 50 of said stem and having a relief valve and plunger therefor and a support for the plunger, and an overflow pipe leading from said valve, the relief valve having the plunger attached to the operating lever of the outlet 55 valve and arranged so that when the lever is operated there will be lost motion between the plunger head and the support therefor, and arranged so that when the lever is operated the plunger will first open the relief 60 valve and afterward open the outlet valve, substantially as described.

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

WILLIAM E. DELEHANTY.

Witnesses:

J. F. HARRIS,

W. M. BROWN.