(No Model.)

J. WICKS.

CISTERN VALVE FOR WATER CLOSETS.

No. 400,982. Patented Apr. 9, 1889.

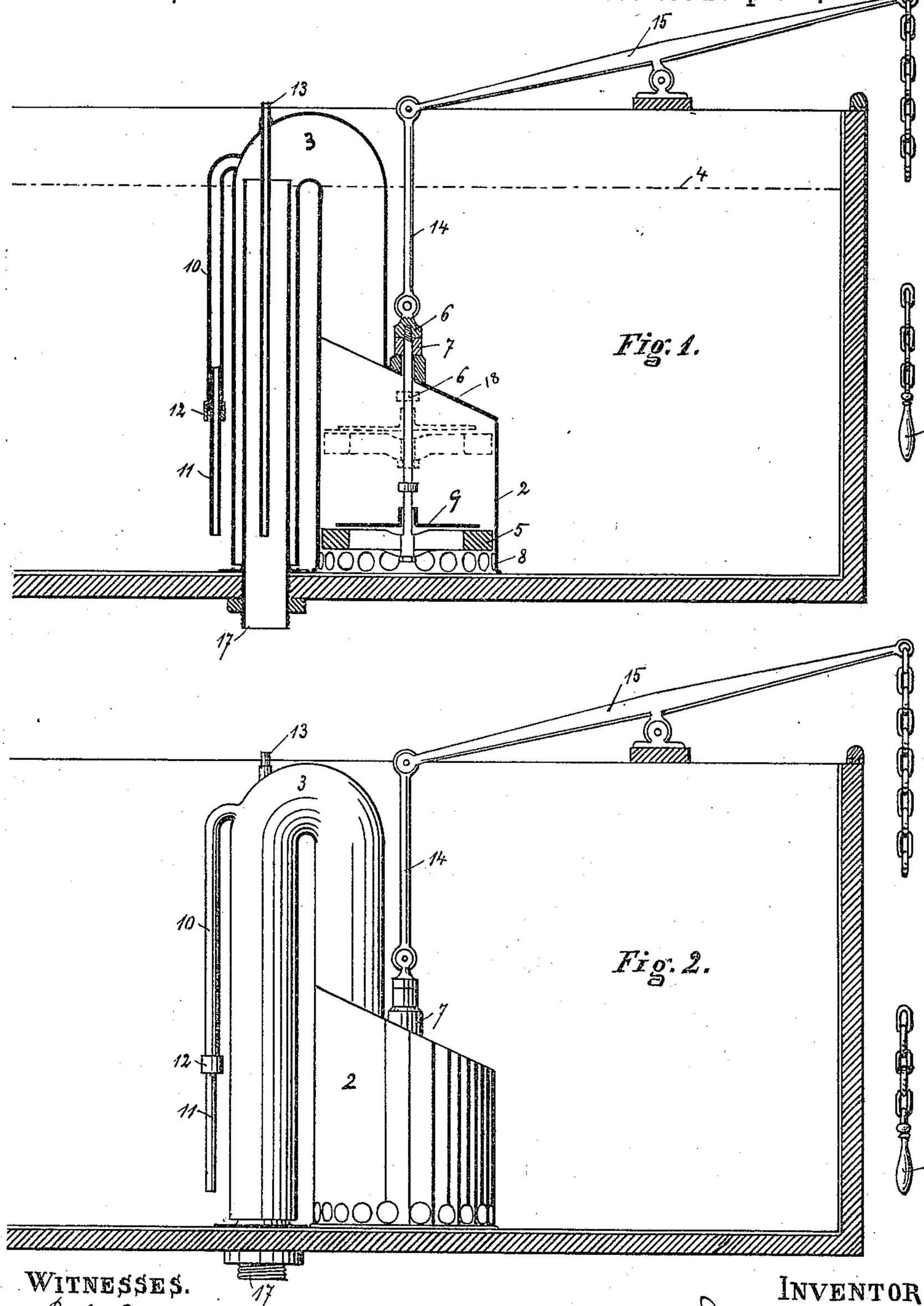

Fig. 1.

Fig. 2.

WITNESSES.
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JOSEPH WICKS, OF UTICA, NEW YORK, ASSIGNOR OF TWO-THIRDS TO GEORGE H. HUGHES AND WILLARD C. HUGHES, BOTH OF SAME PLACE.

CISTERN-VALVE FOR WATER-CLOSETS.

SPECIFICATION forming part of Letters Patent No. 400,982, dated April 9, 1889.

Application filed January 30, 1888. Serial No. 262,438. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH WICKS, a citizen of the United States, and a resident of the city of Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Cistern-Valves for Water-Closets; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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 letters of reference marked thereon, which form part of this specification.

My invention relates to an improved cistern-valve for water-closets, or a valve adapted to similar use.

In the drawings, Figure 2 shows my device located in a cistern, and Fig. 1 shows a section of the same substantially on a central line, showing the working mechanism thereof.

In the drawings similar letters and figures of reference refer to like or similar parts in both figures of the drawings.

In constructing my device I provide in a suitable cistern, as 1, a cylinder, 2, preferably provided with a sloping top, 18, and having a siphon-shaped pipe, 3, connected therewith, so as to receive a flow of water from the cylinder, carry it above the water-line (indicated by dotted line 4) of the cistern, and discharge it below the lowest level of the water in the cistern, or into a pipe projecting up the longer arm of the siphon. In cylinder 2 is provided a plunger, 5, moved by stem 6, acting through an air-tight packing, 7, on the head of the cylinder. Water is admitted to the cylinder from the cistern through a series of holes (shown at 8,) near the bottom thereof, although the cylinder may be set up on legs in lieu of the holes. In plunger 5 is provided a valve, 9, opening upward. This valve I prefer to construct as light as practicable, so that it will not impede the flow of the water when established very materially. A tube, 10, is provided opening into the siphon-pipe 3, near the highest point thereof, and extending downward toward the bottom of the cistern. An extension portion, 11, of tube 10 is provided, being connected through an air-tight packing, 12, therewith. I also prefer to provide a vent or air tube, 13, extending down the discharge-arm of the siphon-pipe 3 to a point below the lowest water-level of the cistern. Means for operating the plunger are provided in connecting-rod 14, lever 15, and handle 16. I prefer to construct plunger 5 heavy or weighted and not fitting very tightly in the cylinder, so that it will be sure to descend. Stem 6 of plunger 5 need not work air-tight through the cylinder-head; but it must be air-tight when the plunger has descended.

17 is a discharge or overflow pipe extending into the cistern, over which the longer arm of the siphon is placed, which admits of the device being easily removed from the cistern.

The operation of my device is as follows: The cistern 1 being full of water, substantially up to the water-line 4, which also fills cylinder 2 and a short arm of the siphon-pipe 3 to the same level, the water passing into the same through holes 8, and it being desired to cause a flow of water from the cistern 1, plunger 5 is caused to ascend, and the valve 9 being closed the water in the short arm of the pipe 3 and in the cylinder is forced over the turn in the siphon-pipe 3 and down the longer arm thereof or the discharge-pipe 17 in the arm below the water-line of the cistern. A siphon action is thus established and water continues to pass from the cistern through holes 8, valve 9, and pipe 3, until the water-level of the cistern has fallen below the lower end of tube 10 as adjusted by extension 11, when air is admitted to pipe 3 through tube 10 and breaks the siphon action and stops the flow of water from cistern 1. As soon as the plunger has made its upward movement and established the siphon action of the device it is allowed to descend into its lower position, in readiness for a repetition of its movement. The siphon action of the device is sufficiently strong to open the valve 9 and keep it open while the flow continues; but it falls into its closed position as soon as the flow ceases. Sometimes when the lower ends of

the long arm of siphon-pipe 3 or discharge-pipe 17 inside the arm, or an extension thereof, is water-trapped and the inflow into the cistern 1 is large in proportion to the device, the siphon action will not be entirely broken. To overcome this, I provide tube 13 to admit air to the long arm of the siphon-shaped pipe at a point below the low water-line of the cistern, which will cause all flow to surely cease.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a cistern, a cylinder having a plunger adapted to move therein, said plunger having a valve, a siphon connected with the cylinder, and a vent or air tube extending down the longer arm of the siphon to a point above the bottom of the cistern, substantially as set forth.

2. A cylinder having an inclined top, in combination with a siphon provided with an air-vent, 13, extending to a point above the bottom of the cistern, and having a pipe, 17, extending up into it, substantially as described.

3. A cylinder with an inclined top, in combination with a siphon provided with a vent-pipe, 13, extending to a point above the bottom of the cistern, a downwardly-extending pipe, 10, entering said siphon near its highest point, and a pipe, 17, extending up into said siphon, substantially as described.

In witness whereof I have affixed my signature in presence of two witnesses.

JOSEPH WICKS.

Witnesses:

JOSIAH PERRY,

MILTON E. ROBINSON.