

No. 772,434.

PATENTED OCT. 18, 1904.

C. W. SCHULTZ.
DISCHARGE VALVE FOR TANKS.
APPLICATION FILED JAN. 9, 1904.

NO MODEL.

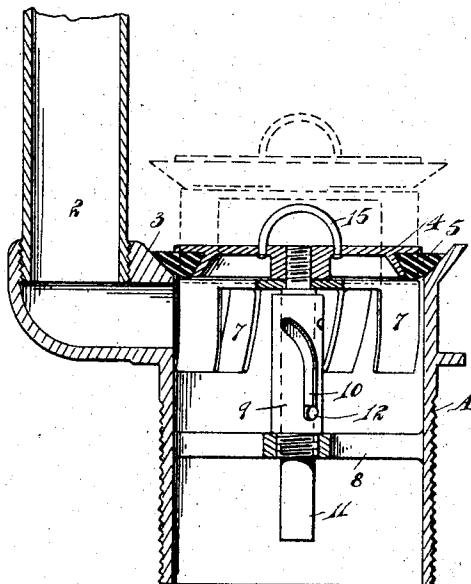


Fig. 1.

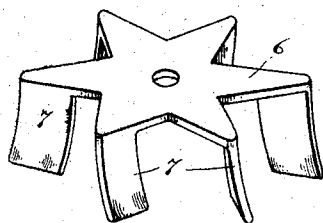


Fig. 2.

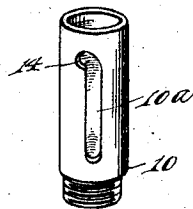


Fig. 3.

WITNESSES

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CHARLES W. SCHULTZ, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-FOURTH TO WALTER E. TIFFIN, OF DETROIT, MICHIGAN.

DISCHARGE-VALVE FOR TANKS.

SPECIFICATION forming part of Letters Patent No. 772,434, dated October 18, 1904.

Application filed January 9, 1904. Serial No. 188,322. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. SCHULTZ, a subject of the King of Great Britain, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Discharge-Valves for Tanks; and I 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to discharge-valves for flushing tanks, and has for its object an improved valve which after it has been once lifted or partially lifted will open to its full extent and remain open so long as water is flowing through the outlet and which will drop and close the outlet-opening as soon as the tank has been emptied.

In the drawings, Figure 1 is a sectional elevation showing the outlet-spud from a tank, the valve which closes the opening through it, and the attachment to the valve which embodies the invention. Fig. 2 is a detail of the attachment to the valve. Fig. 3 is a detail of an attachment to the spud, which coacts with the attachment to the valve.

A indicates a spud, such as is commonly used for the outlet of tanks, provided with an overflow-pipe 2 and with a circular valve-seat 3.

4 indicates a valve adapted to engage with the seat 3 and close the outlet from the tank. Preferably the valve-seat 3 is made as a flaring mouth to the spud A. The valve 4 is a disk to the under side of which is secured an annular packing-gasket 5, of rubber. To the under side of the disk 4, which holds the rubber gasket, is secured an attachment having a number of depending curved wings. The attachment may be made in any form—as, for example, the stellar form shown at 6 in Fig. 2, with a number of depending wings 7. Each of the depending wings is bent and warped to present some resistance to the downward flow of the water through the pipe and to produce a twisting reaction on the valve

itself, due to the impinging force of the water against the wing.

8 indicates a cross-bar which crosses the spud below the valve. The cross-bar is provided with a central aperture and supports a tubular post 9, that is provided on its opposite sides with curved slots 10, each of which may be considered as the thread of a screw of long pitch. From the center of the valve-disk depends a hanger 11, which engages through the opening in the tube 9 and is provided with a pin 12, that extends from each side of the hanger into the slots 10. Preferably the lower part of the slot 10 approaches a vertical, and the upper part for a short distance is more inclined. It may even take the form of a slot in which the main part 10^a, Fig. 3, is vertical for nearly its entire length and is provided at its extreme upper end with a notch 14.

The valve is primarily lifted from above by a chain or cord which engages with an eye 13 on the upper side of the valve. In action when a valve at the bottom of a tank filled or partly filled with water is lifted enough to allow the water to begin to run out through the spud the water impinging against the wings imparts a twisting strain to the valve and causes it to rise if the slot 10 is at all inclined. If the slot 10 be vertical, with a notch at its upper end, the strain will cause the valve to hold its elevated position after it has once been lifted to bring the pin and the notch into engagement. The valve retains its elevated position so long as the water is flowing; but as soon as the water ceases to flow and the outflow no longer impinges on the wings or vanes the valve drops by gravity and closes the outlet-opening and continues closed until it has been manually lifted again.

What I claim is—

1. In a valve for flushing tanks, in combination with a spud provided with means for holding a sustaining-post, a sustaining-post held by said spud, a valve provided with means for engaging with said sustaining-post and with depending vanes adapted to give to the valve a torsional stress, coacting means on the

valve and post to hold the valve in an elevated position during the period of torsional strain, substantially as described.

2. In a valve for flushing tanks, in combination with a spud provided with a valve-seat and with a central supporting-post, a valve provided with depending vanes and with a hanger engaging said post, and with interacting means on the hanger and on the post adapted to coact with the torsional stress due to the water on the vanes and sustain the valve, substantially as described.

3. In a valve for flushing tanks, in combination with a spud, provided with a centrally-supported hollow post, said post being pro-

vided with slots through the walls thereof which slots are in some part thereof inclined to the axis of said posts, a valve for closing the opening in said spud provided with depending warped vanes, and with a hanger engaging in the hollow post, the said hanger being provided with a cross-pin which engages in the slots in said post, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

CHARLES W. SCHULTZ.

Witnesses:

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CHARLES F. BURTON.