

1,013,876.

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

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UNITED STATES PATENT OFFICE.

IRVING L. HAMMOND, OF LEWISTON, MAINE.

VALVELESS-TANK SIPHON.

1,013,876.

Specification of Letters Patent.

Patented Jan. 9, 1912.

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To all whom it may concern:

Be it known that I, IRVING L. HAMMOND, a citizen of the United States, residing at Lewiston, in the county of Androscoggin and State of Maine, have invented a new and useful Valveless-Tank Siphon, of which the following is a specification.

This invention relates to flushing tanks and more particularly to means whereby the contents of the tank may be conveyed into the hopper by a siphon.

One of the objects of the invention is to provide improved means for charging the siphon said means being so constructed and arranged as to be reset by that portion of the water remaining in the short leg of the siphon when the siphonic action is broken.

With the foregoing and other objects in view the invention consists in the arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings, the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a view partly in section and partly in elevation of a flushing tank having the present improvements applied thereto. Fig. 2 is a vertical section through the casing of the charging gate, said gate being shown raised to its uppermost position. Fig. 3 is a section on line 3—3 Fig. 1. Fig. 4 is a perspective view of the charging gate. Fig. 5 is an enlarged transverse section through a portion of the gate and showing the packing carried thereby.

Referring to the drawings, 1 designates a flushing tank, suitably lined, and in which is located a siphon 2, at the lower extremity of the short leg 3 of which is arranged a casing 4. The long leg of the siphon 2 is connected to a hopper, (not shown), by means of the pipe 5. The casing or housing 4 has a slot 7 in one side as shown in Fig. 3, and which under certain conditions permits the flow of the water into the casing 4. A charging gate 8 is fulcrumed as at 9, within the casing, and a crank 10 is connected to the end of the shaft constituting the gate fulcrum. Connected to this crank 10 is a pitman rod 11, the upper end of which is con-

nected to the arm 12 of a rock shaft 13. Said rock shaft is journaled in the flushing tank as shown at 14 and is provided with a crank arm 16 to which an operating bar 17 is pivoted, this bar having an offset 18, as shown in Fig. 1. An operating knob 19 or the like is carried by the offset. One edge, 21, of the gate 8 is provided with an up-standing flange 22, designed to close the opening 7 in the lower portion of the casing. Carried by the gate is a spring 23, sufficiently stiff to hold the gate properly spaced from the rear face 24 of the casing 6, when the gate is elevated as shown in Fig. 2.

Arranged within the flushing tank is the usual float valve mechanism 25, for controlling the flow of water into the flushing tank.

When it is desired to flush the hopper, the knob 19 is depressed and arm 12 operated to swing the gate 8 to the position shown in Fig. 2. As the gate is being moved to this position, it acts as a plunger or piston and forces the water lying thereabove, upward within the siphon and over the neck thereof, the space below the gate promptly filling with water entering through slot 7. As the gate passes the upper end of the arcuate wall 26 of the casing the water admitted to the housing below the gate is free to be drawn upward and discharged by siphonic action. As the gate 8 is held a slight distance from the rear face 24 of the casing, by spring 23, when the siphonic action is broken the water contained in the short leg 3 will flow down into the pocket formed back of the gate, the weight of the water thus accumulated being sufficient to over-balance the operating mechanism and close the gate. The gate is preferably provided at its edges with packing 28 to prevent leakage.

What is claimed is:—

In apparatus of the class described the combination with a tank having a valved inlet, of a siphon within the tank and having its long leg extending downwardly from the tank, a housing having an outlet opening into the short leg of the siphon, said housing constituting a portion of the short leg and having an arcuate and an inclined straight wall, said walls diverging downwardly from the outlet, the bottom of said housing being open to constitute an inlet, a charging gate fulcrumed within the housing at the lower end of the inclined wall, said

arcuate wall being concentric with the axis of the gate, means for swinging the gate within the housing to charge the siphon and open the inlet of the housing, said gate being
5 movable past the upper end of the arcuate wall, and a spring carried by the gate for holding said gate spaced from the inclined wall of the housing when the gate is elevated, to form a water receiving pocket be-
10 tween said wall and the gate and a water

passage between the gate and the upper end of the arcuate wall.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

IRVING L. HAMMOND.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
