

(No Model.)

# T. WALSH & D. KEOGH. FLUSH TANK.

No. 529,512.

Patented Nov. 20, 1894.

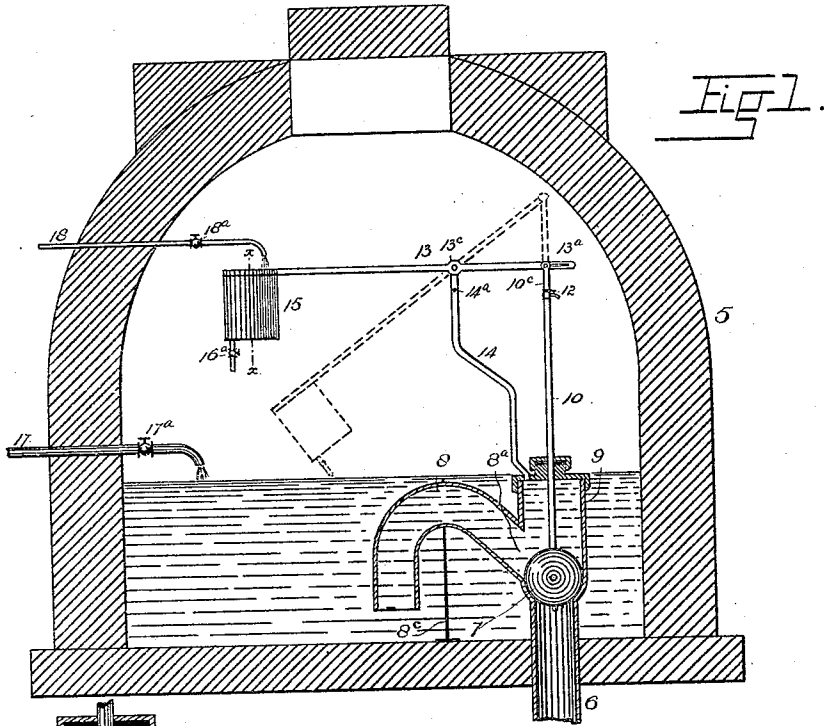


Fig. 1.

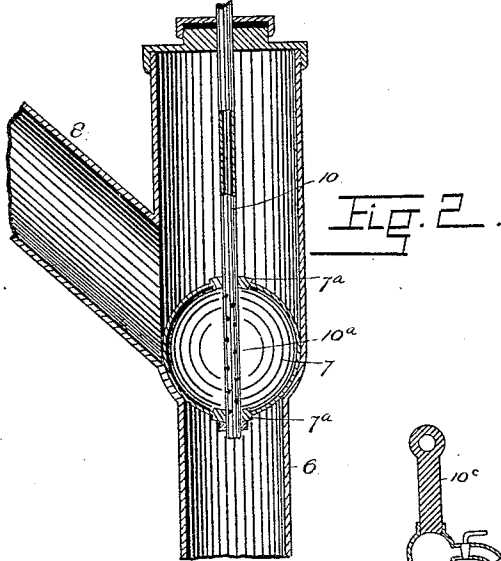


Fig. 2.

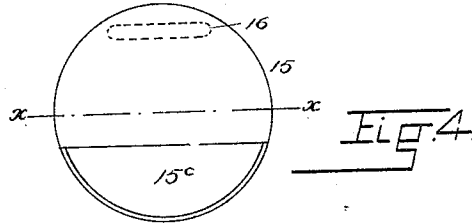


Fig. 4.

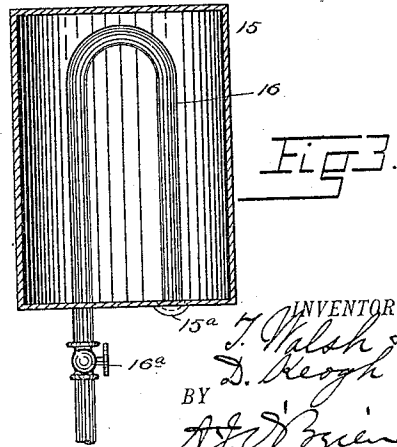


Fig. 3.

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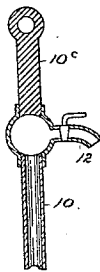


Fig. 5.

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# UNITED STATES PATENT OFFICE.

TIMOTHY WALSH AND DENNIS KEOGH, OF HIGHLANDS, COLORADO.

## FLUSH-TANK.

SPECIFICATION forming part of Letters Patent No. 529,512, dated November 20, 1894.

Application filed January 17, 1894. Serial No. 497,211. (No model.)

*To all whom it may concern:*

Be it known that we, TIMOTHY WALSH and DENNIS KEOGH, citizens of the United States of America, residing at Highlands, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Flush-Tanks; and we do 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.

Our invention relates to improvements in flush tanks, and consists of the features hereinafter described and claimed, all of which will be fully understood by reference to the accompanying drawings in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a vertical section taken through the man-hole casing. Fig. 2 is a section taken through the discharge siphon and valve mechanism. Fig. 3 is a section taken through the receptacle, attached to the lever, and which acts as a weight in opening the valve. This section is taken on the line  $x-x$ , Figs. 1 and 4. Fig. 4 is a plan view of the same. Fig. 5 is a section taken through the upper part of the valve stem.

Similar reference characters indicate corresponding parts or elements of the mechanism in the several views.

Let the numeral 5 designate the casing of the man-hole, connected with the sewer by the discharge pipe 6. The inner extremity of the pipe 6 is normally closed by a valve 7, and is connected with a siphon 8 having an auxiliary support 8<sup>c</sup> resting upon the bottom of the casing. The valve chamber 9 extends sufficiently above the opening 8<sup>a</sup> communicating with the siphon to allow the valve to pass above said opening which must be unobstructed during the operation of flushing. The valve 7 is hollow and preferably composed of rubber. It is apertured to receive the stem 10, and its shell is formed thicker around these apertures, as shown at 7<sup>a</sup>, to form a better bearing for the stem. This stem is hollow and perforated within the valve as shown at 10<sup>a</sup>, whereby shot may be introduced for the purpose of increasing the

gravity of the valve. The upper extremity of the chamber 9 is provided with a stuffing box 9<sup>a</sup> through which the hollow stem passes. The lower extremity of the stem is open while the upper portion is provided with a pet-cock 12 which may be opened to allow air to enter the sewer conduit, and thus destroy the partial vacuum therein, in case the suction shall be so great as to require too much power to open or raise the valve 7. The portion 10<sup>c</sup> of the stem located above the pet-cock is solid and screwed into the casing of the cock. The upper extremity of this part 10 is apertured and connected with the lever 13 by a pin passed through its aperture and a slot 13<sup>a</sup> formed in one arm of the lever.

By disconnecting the part 10<sup>c</sup> of the stem from the lever, and unscrewing it from the casing of the pet-cock, the shot may be introduced to the valve 7 by dropping them into the upper extremity of the hollow stem.

The lever 13 is fulcrumed at 13<sup>c</sup> upon the upper extremity of an air pipe 14 communicating with the upper extremity of chamber 9, and provided with a small opening 14<sup>a</sup> for the escape of air from the valve chamber, whereby water is allowed to enter this chamber freely as it rises in the casing of the man-hole.

To the extremity of the lever 13 opposite that to which the valve stem is attached, is secured a receptacle 15, of such size that when filled with water, it will possess sufficient gravity to open the valve 7. When the valve is open, the lever and the receptacle 15 are in the position shown by dotted lines in Fig. 1.

The receptacle 15 is provided with a siphon 16 to allow the water to escape from the receptacle simultaneously with the discharge into the sewer of the contents of the casing 5. The bottom of the receptacle is depressed as shown at 15<sup>a</sup> below the intaking limb of the siphon, to allow the siphon to remove the entire contents of the receptacle. The latter is open as shown at 15<sup>c</sup> to allow the water to enter from pipe 18.

The man-hole casing receives its supply of water from a feed pipe 17, while the receptacle 15 receives its supply from a pipe 18. These pipes are provided with suitable valves 17<sup>a</sup> and 18<sup>a</sup> respectively, whereby the supply of water may be so regulated, that the re-

ceptacle 15 will be filled at the same time that the casing of the man-hole contains sufficient water for flushing purposes. Hence as soon as the receptacle 15 is filled, the valve 5 7 is opened and the contents of the casing 5 discharged into the sewer, or other conduit which it is desired to flush. As soon as the receptacle 15 is full, its contents begin to escape through the siphon 16 whose discharge 10 is controlled by a valve 16<sup>a</sup>. Hence the escape of water may be so regulated that the contents of the receptacle 15 and the casing 5 are simultaneously emptied. The mechanism is so regulated that as soon as the recep- 15 tacle 15 is empty, the lever will again assume the horizontal position, and the valve 7 seat itself in the upper extremity of pipe 6. After each flushing act, the chamber of the casing 5 and the receptacle 15 again begin to fill, 20 the feed pipes being so regulated that the flushing of the conduit may occur at any desired intervals, or as often as necessary.

Our improved mechanism is shown and described in this application as applied to a 25 sewer man-hole, and its use has been set forth with special reference to sewer flushing. It is obvious, however, that the invention may be used in flushing any conduit, be

it great or small. Hence it may be used as a flush tank for water closets, as well as sewers. 30

Having thus described our invention, what we claim is—

1. In a flush tank, the combination with the casing provided with the discharge siphon, a valve located in a suitable casing connected 35 with the siphon, a vented air pipe leading from said chamber, a stuffing box attached to the top of the valve chamber, the valve stem passing through said stuffing box, the lever 40 attached to said stem, and the siphoning receptacle attached to the lever, substantially as described.

2. In a flushing tank, the combination with the casing having a suitable discharge opening, the hollow valve, the hollow perforated 45 stem having the pet-cock, the lever connected with the stem, and the receptacle attached to the lever, substantially as described.

In testimony whereof we affix our signatures in the presence of two witnesses.

TIMOTHY WALSH.  
DENNIS KEOGH.

Witnesses:

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CHAS. E. DAWSON.