(No Model.)

J. A. MORRISON.

FLUSHING TANK.

No. 422,961. Patented Mar. 11, 1890.

Fig. 1.

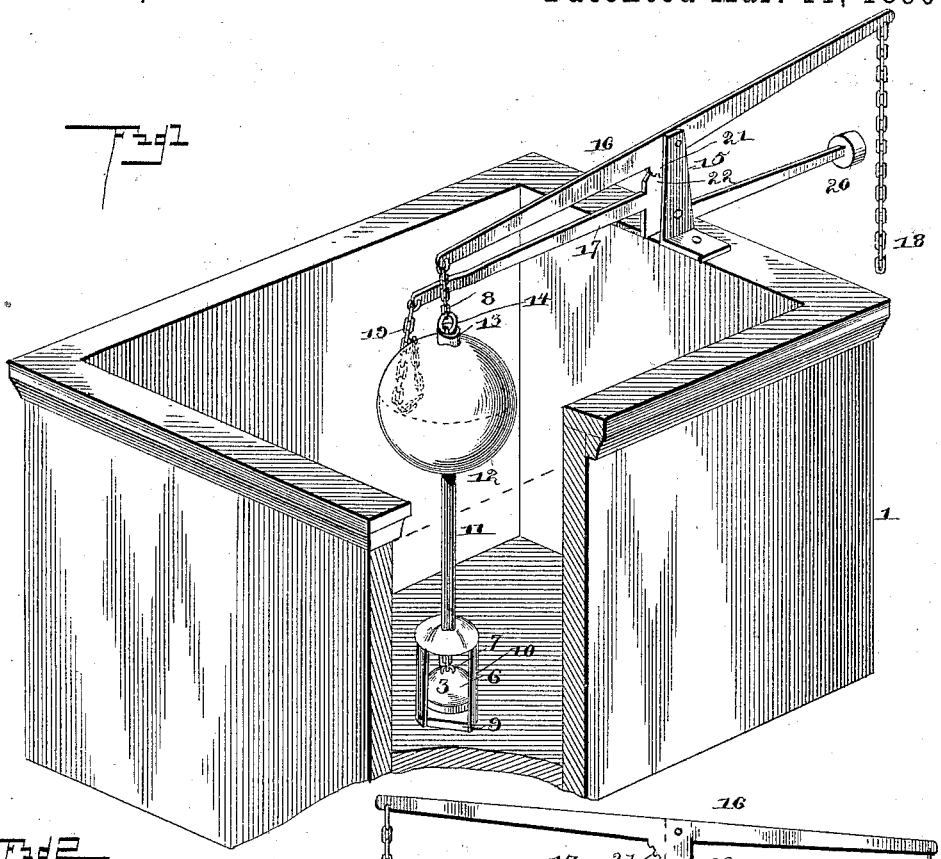
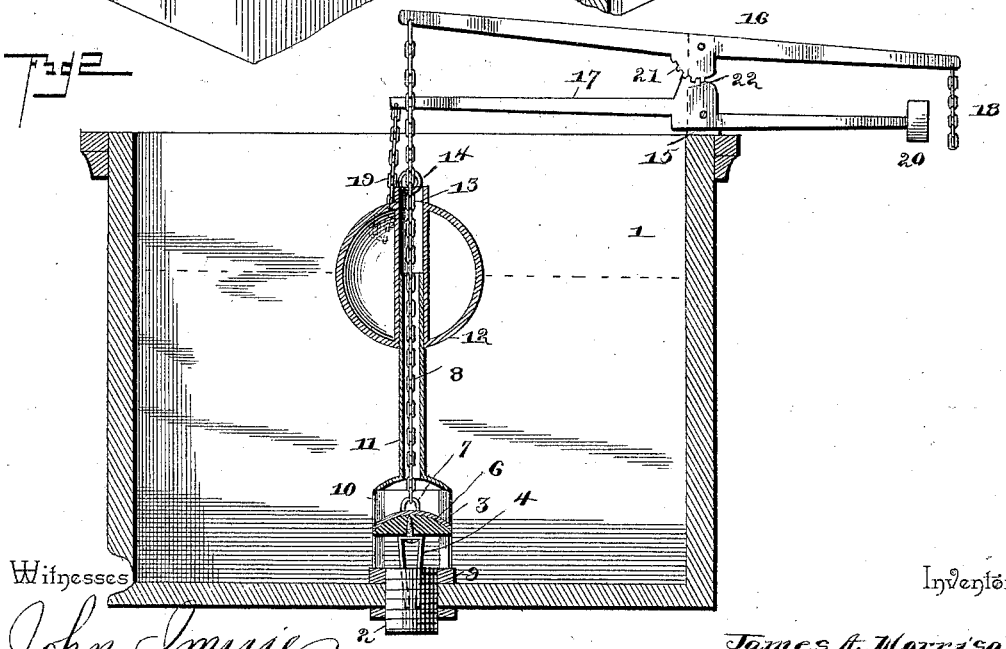


Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES ARTHUR MORRISON, OF SPENCER, MASSACHUSETTS.

FLUSHING-TANK.

SPECIFICATION forming part of Letters Patent No. 422,961, dated March 11, 1890.

Application filed September 25, 1889. Serial No. 324,990. (No model.)

To all whom it may concern:

Be it known that I, JAMES ARTHUR MORRISON, a citizen of the United States, residing at Spencer, in the county of Worcester and State of Massachusetts, have invented a new and useful Flushing-Tank, of which the following is a specification.

This invention relates to flushing-tanks, and it has for its object to provide a device of this class in which an overflow shall be dispensed with, surplus water accumulating in consequence of a leaky inlet being allowed to escape through the flushing-valve operated by a float.

A further object of the invention is to so construct a device as to regulate the quantity of water discharged at each flush, the same quantity of water being allowed to escape each time the flushing-valve is operated.

With these ends in view the invention consists in the improved construction, arrangement, and combination of parts which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a perspective view, one side of the flushing-tank having been broken away for the purpose of showing the construction more clearly. Fig. 2 is a vertical sectional view.

Like numerals of reference indicate like parts in both figures.

1 designates the flushing-tank, which is of ordinary construction and provided with the escape-pipe 2, the upper end of which forms a seat for the flushing-valve 3, which may consist of an ordinary elastic disk having a downwardly-extending stem 4, forming a guide and attached to the under side of a cap 6, the upper end of which has an eye 7 for the attachment of an operating-chain 8.

9 designates a cap, which is screwed upon the upper end of the escape-pipe 2, and to which is secured a valve-cage 10, having an upwardly-extending guide-tube 11, through which the chain 8 extends. Mounted upon the tube 11 is a spherical or other suitably-shaped float 12, having a central vertical tube 13 to enable it to slide upon the guide-tube 11.

To the chain 8 is attached a ring or stop 14 at a point directly above the upper end of the guide-tube 11, where it shall not interfere with the perfect closing of the valve 3. When the float 12 rises upon the guide-tube 11 and reaches the upper end of said tube, it will engage the stop 14, and thus raise the valve 3 from its seat and cause a portion of the contents of the tank to escape.

To an upright 15, mounted upon the upper edge of the tank, are pivoted two levers 16 and 17. The upper lever 16 has its inner end connected with the operating-chain 8, and it is provided at its outer end with an operating-cord 18. The lever 17 has its inner end connected by a chain 19 with the float 12, and the outer end of said lever 17 is provided with a counter-weight 20. The operating-lever 16 is provided on its under side with a segmental toothed bracket 21, which is concentric with its fulcrum, and which is adapted to be engaged by a toothed arm or catch 22, extending upwardly from the lever 17.

In operation the admission of water into the tank may be regulated by means of the float 12 in the well-known manner. When the float rises to a point at which it engages the stop 14 upon the chain 8, it lifts the flushing-valve, and the surplus water escapes. When for the purpose of flushing the tank the lever 16 is operated, the toothed arm or catch 22 will engage the toothed segment 21 of the lever 16, and the latter will thus be retained, holding the flushing-valve in a raised position until the float 12 sinks to a point at which the chain 19, connecting it with lever 17, is stretched. The inner end of lever 17 will then be depressed, throwing the toothed arm or pawl 22 out of engagement with the toothed segment 21, and the flushing-valve will then be allowed to descend and close the outlet.

It will be seen from the foregoing that the duration of the flush may be regulated by regulating the length of the chain 19 and the point at which the stop 14 is adjusted upon the chain 8.

The general construction of the device is simple and inexpensive, and it is not liable to get out of order.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination of the flushing-tank, the escape-pipe, the valve, the valve-cage having the upwardly-extending guide-tube, the

operating-chain extending from the valve through said tube and having a stop, and a float adapted to engage the said stop to raise the valve, substantially as set forth.

2. The combination, with the flushing-tank, of the escape-pipe, the valve, the valve-cage having an upwardly-extending guide-tube, the operating-chain extending from the valve through said tube and having a stop, and a float having a vertical tube, whereby it is mounted to slide vertically upon the said guide-tube, substantially as and for the purpose set forth.

3. The combination, with the flushing-tank, of the escape-tube, the valve seated upon the latter, an operating-lever having its inner end connected by a chain with said valve, and provided with a toothed segment adapted to be engaged by a toothed arm or catch extending from a weighted lever, substantially as and for the purpose set forth.

4. The combination, with the flushing-tank, of the escape-tube, the valve seated upon the latter, an operating-lever having its inner end connected by a chain with said valve and provided with a toothed segment adapted to be engaged by a toothed arm or catch extending from a lever weighted at its outer end, and a float connected by a chain with the inner end of said weighted lever, substantially as and for the purpose set forth.

5. The combination of the flushing-tank, the escape-pipe, the valve, the valve-cage having the upwardly-extending guide-tube, an operating-chain extending from the valve through said tube and having a stop, an operating-lever having its inner end connected with said operating-chain and provided with a toothed segment, a lever weighted at its outer end and having a toothed arm or catch engaging the said toothed segment, and a float sliding upon the guide-tube, adapted to engage the stop upon the operating-chain and connected with the inner end of the weight-lever, substantially as and for the purpose herein set forth.

6. The levers 16 and 17, geared together, the lever 16 having a chain-connection 18, the valve for the escape-outlet connected with the lever 16, the float 12, connected with the lever 17, and the guide-tube 11, inclosing the chain for the escape-valve, and also having the float sliding thereon, as set forth.

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

JAMES ARTHUR MORRISON.

Witnesses:
GEO. A. CRAIG,
CHAS. L. DUFAULT.