

H. T. CRONK.
RAILWAY TOILET FLUSH.
APPLICATION FILED MAY 22, 1911.

1,036,193.

Patented Aug. 20, 1912.

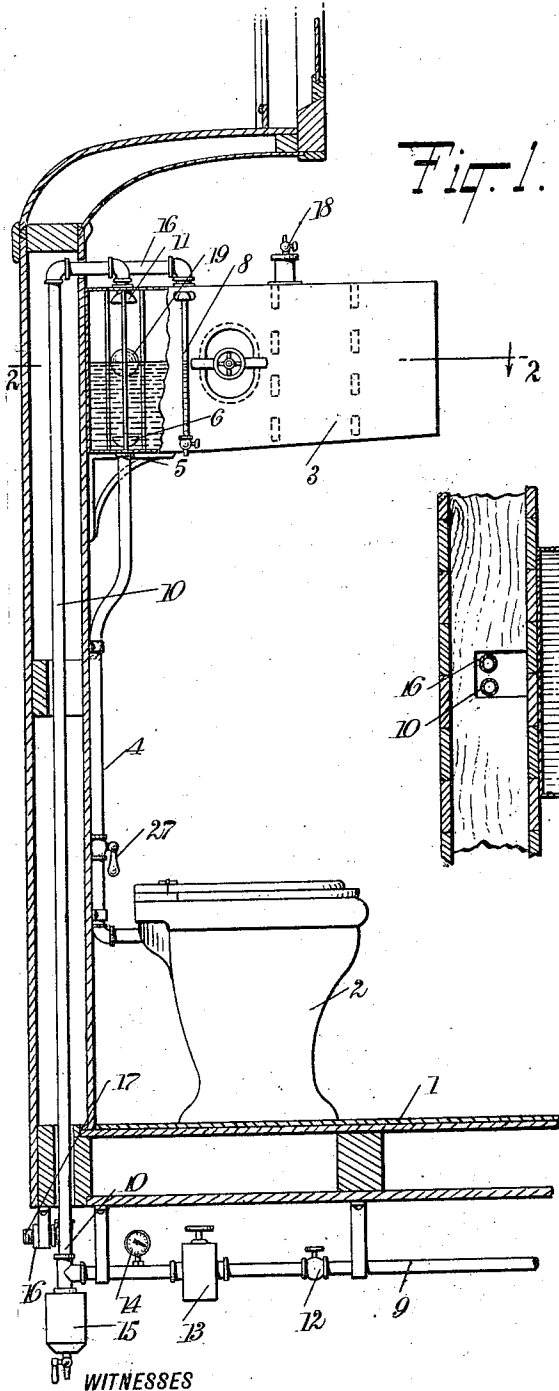


Fig. 1.

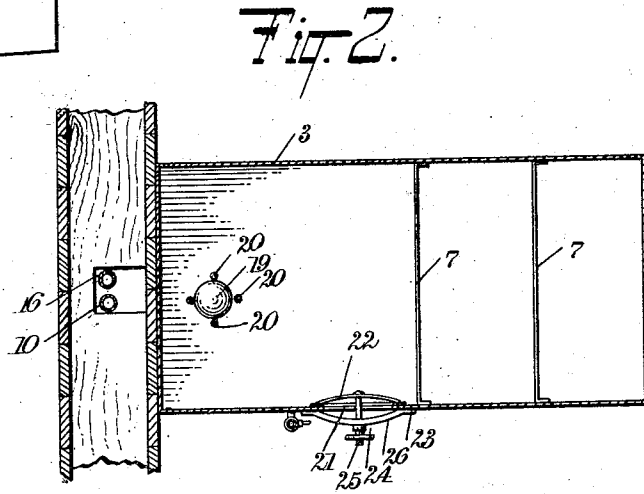


Fig. 2.

WITNESSES
George Rambo.
H. Whiting.

INVENTOR
Harrison Taylor Cronk
BY *Mumford & Co.*
ATTORNEYS

UNITED STATES PATENT OFFICE.

HARRISON TAYLOR CRONK, OF NEW YORK, N. Y.

RAILWAY-TOILET FLUSH.

1,036,193.

Specification of Letters Patent.

Patented Aug. 20, 1912.

Application filed May 22, 1911. Serial No. 628,676.

To all whom it may concern:

Be it known that I, HARRISON TAYLOR CRONK, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Railway-Toilet Flush, of which the following is a full, clear, and exact description.

This invention relates to a new and improved apparatus to be used on railway trains to supply a sufficient quantity of water for sudden cleaning purposes, and is adapted to be used in connection with my invention described and claimed in my application filed December 3, 1910, Serial No. 595,371.

An object of this invention is to provide means whereby the water can be stored in a suitable tank or receptacle until it is desired to use the same, when the air pressure from the train-pipe system can be utilized to engender the necessary pressure to force the water out with a sudden gush, necessary for the purpose desired.

A further object of this invention is to provide a flush tank with a valve for controlling the inlet for the air and the outlet for the tank, whereby, when the tank becomes full of water, the water cannot pass over into the air-pipe, and further, when the tank becomes empty of water, the air cannot pass out into the outlet pipe.

These and further objects, together with the construction and combination of parts, will be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in both views, and in which—

Figure 1 is a vertical section through a train, with parts broken away to show the underlying structure; and Fig. 2 is a horizontal section on the line 2—2 of Fig. 1.

Referring more particularly to the separate parts of this invention as embodied in the form shown in the drawings, I indicate the floor of a railroad car, in which is located a hopper 2, which may be of any suitable character, but preferably is of the type disclosed and claimed in my co-pending application, above mentioned.

For the purpose of storing water to flush the hopper 2, there is provided a tank 3, which is connected to the hopper by means of a pipe 4, the outlet for the tank 3 being located at 5, at which a valve seat 6 is provided, for a purpose to be described. The tank 3 is preferably provided with a plurality of spaced partitions 7, whereby the force of water, in passing to and fro in the tank, due to the jarring of the car in running over the road, will be broken up and minimized. These baffle partitions will also have the further use of stirring up the water and mixing therewith any antiseptic solution or material which may be placed in the tank. The height of water in the tank may be indicated, if desired, by a water-glass 8, connected to the tank and having communicating openings therewith adjacent the top and bottom.

The tank is preferably air-tight, and the pressure necessary to force out the water into the tank, in flushing the hopper 2, is obtained from the air train-pipe, indicated at 9, through the intermediary of a pipe 10, which lets into the tank 3 at a point 11, where is located a valve seat for a purpose to be described. Air passing to the pipe 10 and thus to the tank 3 may be controlled by a valve 12, and also by a pressure regulator 13, which may be of any suitable character. The pressure beyond the regulator 13 may be ascertained by means of a pressure gage 14.

At the junction of the pipe 9 with the pipe 10, and extending below the same, there may be provided a moisture collector or trap 15, which will prevent any moisture in the pipe 10, either collecting from the air or coming over from the tank 3, from passing into the train-pipe 9. The water can be supplied to the tank 3 by means of a pipe 16, which is provided at its lower end with a joint 17, whereby a supply pipe can readily be attached thereto and water supplied to the tank from any suitable source. In passing, it may be noted that the pipes 10 and 16 may pass up between the partitions of the wall of the car, so as to be concealed from view.

In supplying the water to the tank, it is necessary to permit the air having collected in the tank to pass out. For this purpose, there is provided a pet-cock, indicated at 18, which may be manipulated as desired. In

order to prevent the water in the tank 3, when the latter has become full, from passing over into the air-pipe 10 and thus into the train-pipe 9, there is provided a valve 19, which in this instance is shown in the form of a float-valve, which will engage the seat 11 and shut off communication between the tank 3 and the air-pipe 10, when the water in the tank 3 comes up to a sufficient level. The valve 19 also is utilized to engage the valve-seat 6 when the water in the tank 3 reaches a low level, so as to prevent the air from the train-pipe 9 and the air-pipe 10 from blowing out through the outlet or flushing pipe 4.

In order to form guides for the float valve 19 and keep it in proper alinement with the seats 6 and 11, there may be provided a plurality of vertically-extending rods 20, which engage the float valve 19 on several sides and constrain it to move in a predetermined vertical path.

For the purpose of having access to the interior of the tank 3, so as to clean the same or to adjust the valve 19, in case of its becoming out of order, there is provided a hand-hole 21, which is closed by a cover 22, having a rubber gasket 23, and secured in position by a hand-wheel nut 24, engaging a screw-threaded bolt 25 on the cover 22, and abutting against an arched brace 26, which engages the tank on opposite sides of the hand-hole 21. This hand-hole 21 may be somewhat elliptical in shape, so that the cover can be removed from the interior of the tank without any trouble.

The operation of the device will be readily understood when taken in connection with the above description. Before starting on a run, a hose or other connection from a source of water supply is connected at the joint 17 to the water-pipe 16 and the pet-cock 18 opened, so that the water can flow into the tank 3 and displace the air therein. When the level in the tank reaches a sufficient height, the float valve 19 will press against the valve-seat 11, shutting off communication between the tank 3 and the air-pipe 10, so that no water can pass over into the pipe 10 and the train-pipe 9. The level of the tank may be ascertained by the gage 8, and further supply cut off when enough is in the tank.

When it is desired to use the system, a valve 27 in the outlet or flush pipe 4, is opened, and the air from the train-pipe 9 coming through the regulator 13 will enter the tank 3 at the top, and force the desired quantity of water into the hopper 2. The valve 27 may be automatic in its action, permitting a predetermined quantity of water to pass through the flush pipe 4 at each operation, or it may be desired to have it so that it is to be manually thrown off after the desired quantity of water has passed. If,

through an excessive use of the water in the tank, all of the water should become used up before the end of the trip, the valve 19 will fall onto the seat 6, preventing the air from the train-pipe and the pipe 10 from passing out through the flush pipe 4. If the valve should become deranged, or it would be desired to clean the interior of the tank, access may be had thereto through the hand-hole 21, by removing the cover 22.

While I have shown one embodiment of my invention, I do not wish to be limited to the specific details thereof, but desire to be protected in various changes, alterations and modifications which may come within the scope of the appended claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. The combination with a sealed flush-tank, of an outlet for said flush-tank, a water inlet for said flush-tank for filling the same, an air inlet for said flush-tank, for expelling water in said flush tank through said outlet, and a floating valve for oscillating between said air inlet and said outlet, for controlling said outlet and said inlet.

2. The combination with a flushing tank, of a water-inlet at the top of said tank for supplying water to the same, an outlet at the bottom of the tank for taking the water from the same, an air-inlet at the top of the tank for supplying air to said flushing tank for forcing the water out through said outlet, and a valve floating on the water cutting off communication between said tank and said outlet when the tank is emptied of the water, so as to prevent air in said tank from passing into said outlet, said valve closing said air inlet when the tank is filled with water.

3. The combination with a flushing tank, of a water-pipe for supplying water to said flushing tank, an outlet pipe for taking the water from said flushing tank, an air-pipe for supplying air to said flushing tank for forcing the water out through said outlet pipe, a float-valve for cutting off communication between said tank and said outlet pipe and between said tank and said air-pipe, so as to prevent air in said tank from passing into said outlet pipe, and further so as to prevent water in said tank from passing into said air-pipe, and a guide for controlling the direction of said float-valve.

4. The combination with a sealed flushing tank, of a water-pipe for said flushing tank, an air-pipe for said flushing tank, an outlet pipe for said flushing tank, a single valve for controlling the communication between said tank and said air-pipe and said outlet pipe, and means for guiding the direction of movement of said valve.

5. The combination of a flushing tank for use on railroad cars and other movable ve-

hicles, valves controlling the influx and
efflux of water to and from said tank, and
baffle plates disposed in said tank adapted
to break the force of the water agitation,
5 thereby to prevent the automatic actuation
of the valves due to the jarring of the car.

In testimony whereof I have signed my

name to this specification in the presence of
two subscribing witnesses.

HARRISON TAYLOR CRONK.

Witnesses:

ANNA P. CRONK,
JOS. ISAACS.

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