No. 887,600. PATENTED MAY 12, 1908.

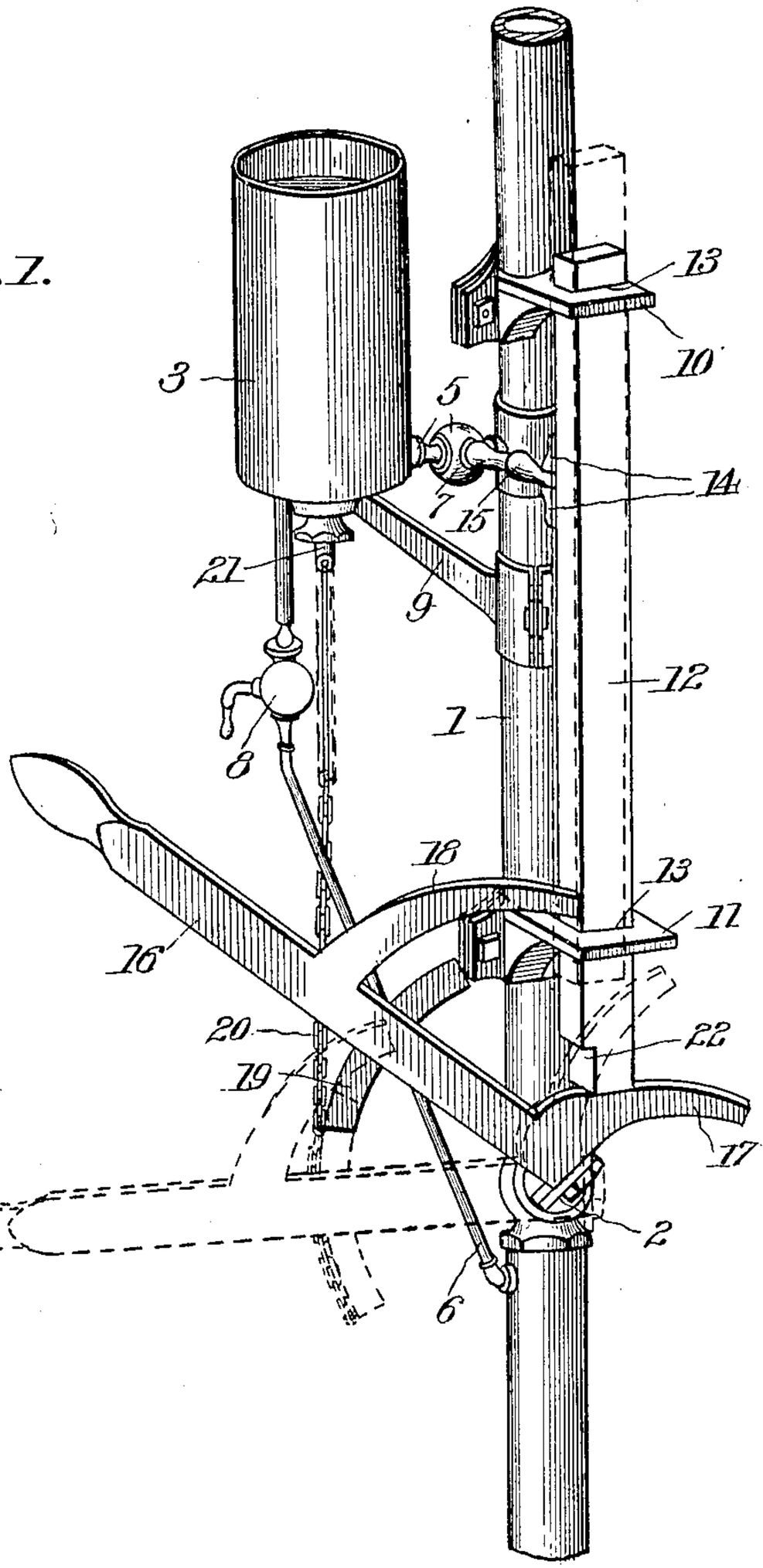
E. E. DICKSON.

FLUSHING APPARATUS.

APPLICATION FILED APR. 22, 1907.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

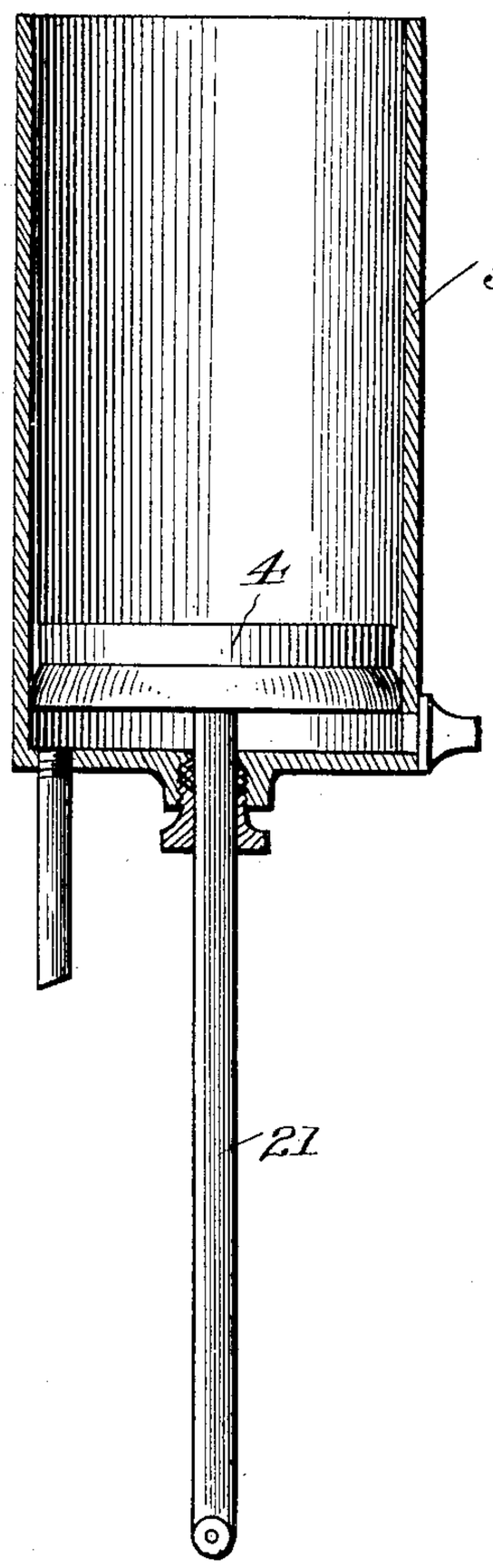


Fig. 3.

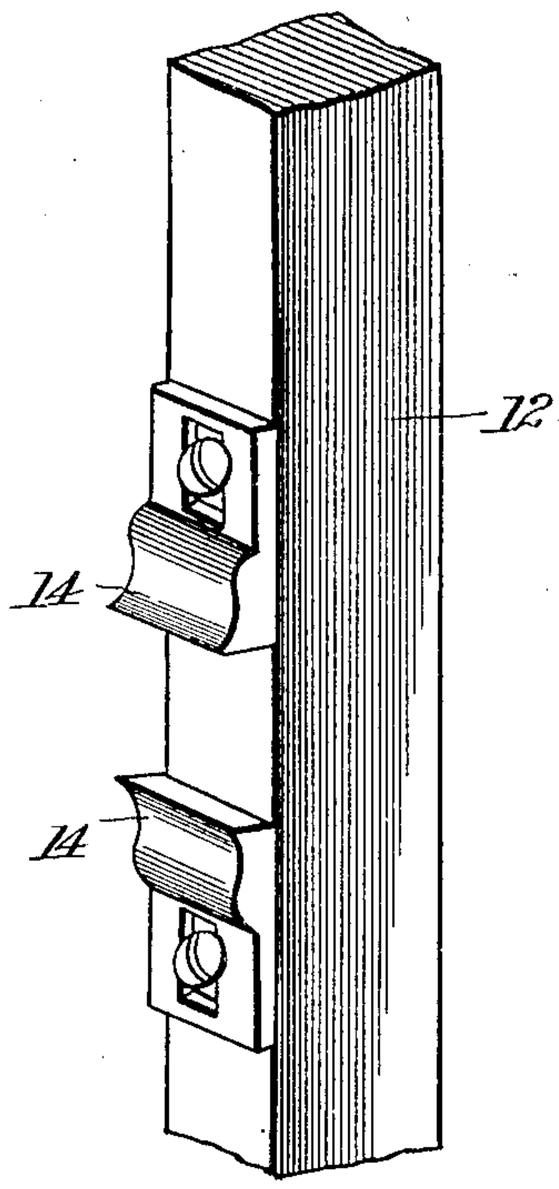
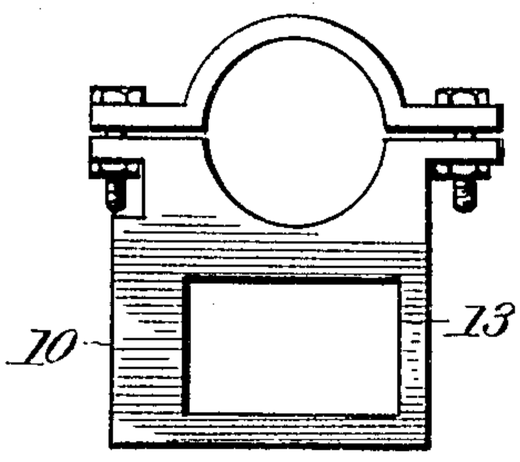


Fig. 4.



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UNITED STATES PATENT OFFICE.

EDWARD E. DICKSON, OF MANSFIELD, OHIO.

FLUSHING APPARATUS.

No. 887,600. Specification of Letters Patent. Patented May 12, 1908.

Application filed April 22, 1907. Serial No. 369,596.

To all whom it may concern:

Be it known that I, EDWARD E. DICKSON, a citizen of the United States, residing at Mansfield, in the county of Richland and State of Ohio, have invented certain new and useful Improvements in Flushing Apparatus; and I do hereby 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.

My invention relates to flushing apparatus.

It has for its object to provide mechanism to operate a valve whereby said valve, when opened, will discharge a quantity of fluid and then be automatically closed. This apparatus renders the usual storage tank unnecessary.

The invention consists in the features of construction and combinations of parts hereinafter described and specified in the claims.

In the accompanying drawings, illustrating the preferred embodiment of my invention: Figure 1 is a perspective view of the mechanism, the positions of the parts when the flush valve is open being shown in dotted lines. Fig. 2 is a central longitudinal sectional view of the piston cylinder. Fig. 3 is a detailed perspective view of a portion of the weight bar showing the adjustable lugs for holding the handle of the inlet valve to the cylinder, and Fig. 4 is a detailed view of one of the brackets secured to the main pipe for guiding the weight bar.

Referring more particularly to the drawings, 1 designates the main pipe having the flush valve 2. Two branch pipes lead from said main pipe to the cylinder 3 containing a piston 4. One of said branch pipes 5 enters said main pipe above the valve 2 while the other branch pipe 6 enters below said valve. The branch pipe 5 is the inlet to the cylinder and feeds fluid by means of the valve 7 to said cylinder below the piston 4. The outlet pipe 6 also contains a valve 8 which is always open. Said cylinder is supported in position by a bracket 9 on the main pipe. Other brackets 10 and 11 on said main pipe constitute guides for a weight bar 12 fitting in slots 13 in said brackets. Said weight bar carries adjustable lugs 14 on its inner face between which is arranged the handle 15 of the valve 7 in the inlet pipe to the cylinder. By means of this arrangement the longitudinal movement of said weight bar will operate said valve.

The flush valve is actuated by a hand-lever 16 having a curved arm 17 at its end upon which the weight bar normally rests as when said valve is closed. Said hand-lever is also provided with a kicker arm 18 and a segment 19. To the lower end of the latter is secured a chain 20 or other suitable flexible connection fastened at its other end to the piston rod 21. The function of said segment is to keep the chain in position so that it will pull directly in line with said piston rod. The weight bar is provided with a notch 22 in its lower end which is adapted to engage the bracket 11 when said bar is raised upon the arm 17 as the hand lever 16 is pulled down.

The operation of the device is as follows. As the hand lever is moved from the position shown in solid lines in Fig. 1 to the position shown in dotted lines, the flush valve is opened and the weight bar is raised by the arm 17 until the notch 22 engages the bracket 11 and supports said bar in a raised position. The raising of the weight bar opens the inlet valve 7 to the cylinder by means of the lugs 14 engaging the handle of said valve. It will thus be seen that immediately the flush valve is turned on, fluid enters the cylinder through the pipe 5 and begins to raise the piston 4 in said cylinder. As said piston rises it raises the hand lever by means of the chain 20 secured to the piston rod 21 and by the time the piston reaches the upper limit of its stroke the flush valve is turned off and the kicker arm 18 disengages the notch 22 in the weight bar from the bracket 11 whereupon said bar drops and turns off the valve 7. The fluid in the cylinder then escapes through the pipe 6 allowing the piston to fall into position to be operated again to raise the hand lever the next time it is depressed.

I claim:

1. In apparatus of the character described, the combination, with a main pipe having a valve therein, of a cylinder, a piston in said cylinder, an inlet pipe to said cylinder having a separate valve therein, means for operating the valve in said main pipe, means for simultaneously opening said inlet valve to the cylinder and said main valve, means of connection between said piston and said main valve operating means

whereby the latter is actuated to gradually close the main valve as said piston is operated, and means to close the inlet valve to said cylinder after said main valve has been closed.

2. In apparatus of the character described, the combination, with a main pipe having a valve therein, of a cylinder, a piston in said cylinder, an inlet pipe to said cylinder having a separate valve therein, means for operating the valve in said main pipe, means for simultaneously opening said inlet valve to the cylinder and said main valve, means of connection between said piston and said main valve operating means whereby the latter is actuated to gradually close the main valve as said piston is operated, means to close the inlet valve to said cylinder after said main valve has been closed, and an outlet pipe from said cylinder to permit the piston to return to its normal position.

3. In apparatus of the character described, the combination, with a main pipe having a valve therein, of a cylinder, a piston in said cylinder, an inlet pipe to said cylinder having a separate valve therein, a hand lever for operating the valve in the main pipe, means for simultaneously opening said inlet valve to the cylinder and said main valve, means of connection between said piston and said hand lever whereby the latter is actuated to gradually close the main valve as said piston is operated, and means to close the inlet valve to said cylinder after said main valve has been closed.

4. In apparatus of the character described, the combination, with a main pipe having a valve therein, of a cylinder, a piston in said cylinder, inlet and outlet pipes to said cylinder opening into said main pipe at opposite sides of said valve, a separate valve in said inlet pipe, means for operating the valve in said main pipe, means for simultaneously opening said inlet valve to the cylinder and said main valve, means of connection between said piston and said main valve operating means whereby the latter is actuated to gradually close the main valve as said piston is operated, and means to close the inlet valve to said cylinder after said main valve has been closed.

5. In apparatus of the character described, the combination, with a main pipe having a valve therein, of a cylinder, a piston in said cylinder, an inlet pipe to said cylinder having a valve therein, a hand lever for operating the valve in the main pipe, means for simultaneously opening said inlet valve to the cylinder and said main valve, a segment on said hand lever, flexible connection between said segment and the piston whereby said hand lever is actuated to close the main valve as said piston is operated, and means to close the inlet valve to said cylinder after said main valve has been closed.

6. In apparatus of the character described, the combination, with a main pipe having a valve therein, of a cylinder, a piston in said cylinder, an inlet pipe to said cylinder having a valve therein, a hand lever for operating the valve in the main pipe, an arm on said lever, a longitudinally movable weight bar adapted to normally rest upon said arm, means carried by said bar for opening the inlet valve to the cylinder when the hand lever is actuated to open the main valve, means of connection between said piston and said hand lever whereby the latter is actuated to close the main valve as said piston is operated, and means to close the inlet valve to the cylinder after said main valve has been closed.

7. In apparatus of the character described, the combination, with a main pipe having a valve therein, of a cylinder, a piston in said cylinder, an inlet pipe to said cylinder having a valve therein, a hand lever for operating the valve in the main pipe, an arm on said lever, a longitudinally movable weight bar adapted to normally rest upon said arm, adjustable lugs on said bar to engage the handle of the inlet valve whereby said valve is opened when the hand lever is actuated to open the main valve, means of connection between said piston and said hand lever whereby the latter is actuated to close the main valve as said piston is operated, and means to close the inlet valve to the cylinder after said main valve has been closed.

8. In apparatus, of the character described, the combination, with a main pipe having a valve therein, of a cylinder, a piston in said cylinder, an inlet pipe to said cylinder having a valve therein, a hand lever for operating the valve in said main pipe, an arm on said lever, a longitudinally movable weight bar adapted to normally rest upon said arm, a bracket acting as a guide for said bar, the latter having a notch adapted to be engaged by said bracket when said bar is raised, means carried by said bar for opening said inlet valve to the cylinder when said hand lever is actuated to raise said bar and open the main valve, means of connection between said piston and said hand lever whereby the latter is actuated to close the main valve as said piston is operated, and a kicker arm on said hand lever adapted to disengage the notch in the weight bar from said bracket when said main valve is closed thereby permitting said bar to fall and close said inlet valve to the cylinder.

9. In apparatus of the character described, the combination, with a main pipe having a valve therein, of a cylinder supported on a bracket from said pipe, a piston in said cylinder, inlet and outlet pipes to the cylinder entering the main pipe above and below said valve respectively, a valve in said inlet pipe, a hand lever for operating the valve in said

main pipe, an arm on said lever, a longitudinally movable weight bar adapted to normally rest upon said arm, brackets on said main pipe to guide said bar, the latter having a notch adapted to be engaged by one of said brackets when said bar is raised, means carried by said bar for opening said inlet valve to the cylinder when said hand lever is actuated to raise said bar and open the main valve, means of connection between said piston and said hand lever whereby the latter is actuated to close the main valve as said piston is operated and a kicker arm on said hand lever adapted to disengage the notch in the weight bar from said bracket when said main valve is closed thereby permitting said bar to fall and close said inlet valve to the cylinder.

In testimony whereof, I affix my signature, in presence of two witnesses.

EDWARD E. DICKSON.

Witnesses:

WILLIAM HUBER,

LORENZO D. SHAMBAUGH.