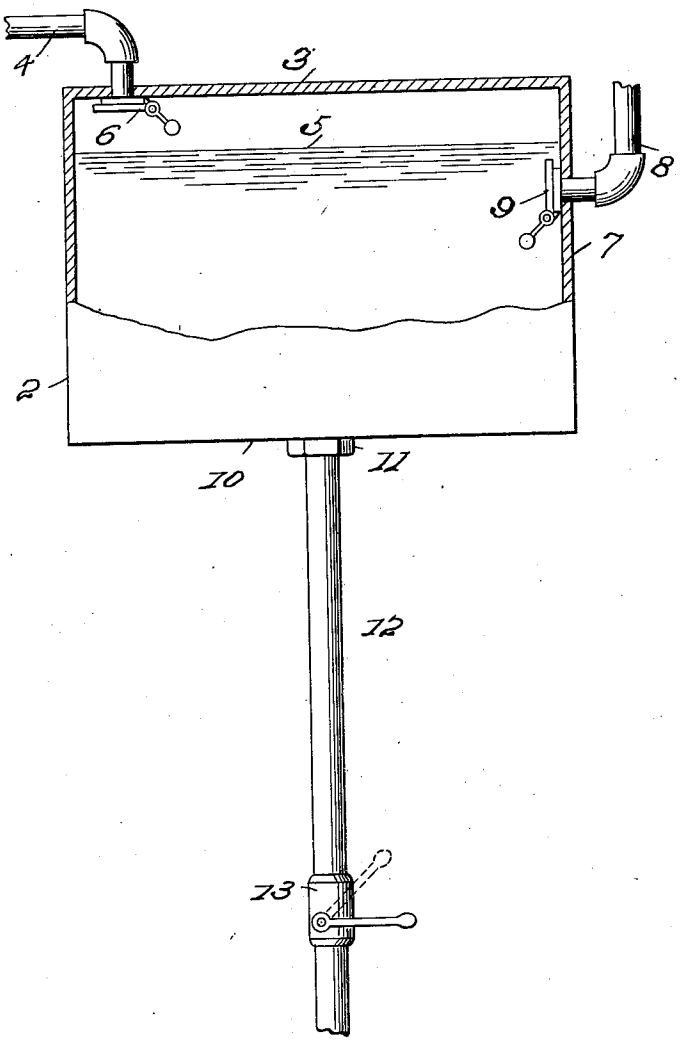
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FLUSHING SYSTEM

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FLUSHING SYSTEM

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2 Claims. (Cl. 4—26)

This invention is directed to an improvement in flushing systems, and more particularly directed to a tank for use in toilets or other sanitary equipment.

The primary object of the invention is the provision of a tank through which the water for flushing is automatically provided in adequate quantity for flushing purposes and is constructed of a materially reduced number of movable parts as compared with the conventional flushing tank, with a view to avoiding difficulty in operation incident to the number of conventional parts without sacrificing any of the advantages or functions desirable or necessary in the operation of such an apparatus.

The improved flushing tank involves a valve control air inlet and an air admission pipe arranged to admit air to compensate for the free flow of water, with such air admission pipe to be cut off by the accumulation of water in the tank from the water inlet at a sufficient height to create within the tank a body of air under pressure sufficient to close the water inlet, and create in the tank a static body of water ready for flushing.

The invention is illustrated in the accompanying drawing in which

The figure is a view in elevation partly in section of the improved flushing system.

The improvement includes a tank 2 of appropriate size and of any conventional or serviceable material, in the top wall 2 of which is arranged a water pipe leading from a suitable source of supply of water under pressure, the said pipe opening into the tank and controlled by a valve 6, weight influenced in the closing direction. At one side wall of the tank, and at an appropriate height below the top wall 3, there is provided in such side wall 7 the inlet end of a pipe 8, open to the atmosphere, and controlled by a valve 9, weight influenced in the opening direction.

A flushing service or outlet pipe 12 is in open communication with the bottom of the tank 10 and removably secured by a gland 11. This pipe 12 leads to the point of use and is controlled by a valve 13 which may be constructed, for example, in accordance with the valve disclosed in Patent No. 2,190,255, issued February 13, 1940, or may be of automatic or other preferred type. The requisite in connection with the outlet pipe 12 is that its diameter shall be such and the flow permitted by the valve 13 sufficient to permit the water 5 of the tank to flow from the tank at a rate in excess of its possible admission through the inlet pipe 4. This will preclude the inlet flow of water being sufficient to maintain the delivery valve 13 open after the reservoir is emptied. In the use of an automatic valve, however, this requisite is not so essential.

Assuming the flushing system completely empty, and the valve 13 closed, valves 6 and 9 are open, the first admitting a supply of water through the inlet pipe 4 to the tank 5 and the latter permitting the escape of air from the tank through the pipe 8 to compensate for the accumulating water. At an appropriate height of the water in the tank, such water reaches the valve 9 and acts to close the same, cutting off the escape of air through the pipe 8 and permitting the air thus trapped in the tank above the level of the water 5 to be subjected to a gradually increasing pressure which will, according to the form and size of the details, gradually and finally completely close the inlet valve 6 before the water 5 has reached the top of the tank.

The tank is thus charged with an appropriate body of water, which, on the opening of the valve 13, regardless of the type of such valve, will be discharged through the pipe 12 for flushing functions. As the air pressure above the normal level of the water in the tank is reduced by the flow of water through the pipe 12, the inlet valve 6 will open, with the previously opened valve 9, to permit flow of water in the tank through the pipe 4. As the volume of this flow is less than the volume of the escape, there is no possibility of maintaining the valve 13 open after the normal discharge of the static body of water in the tank.

The tank 2 may be constructed in any size or of any appropriate material, and the inlet pipe 4, air pipe 8, and outlet pipe 12 will, of course, be formed in correspondence with the size and purposes for which the tank is designed.

What is claimed as new is:

1. A flushing system including a tank having a water inlet in its upper wall, a weight influenced valve controlling the inlet into and arranged wholly within the tank, an air outlet pipe leading into the side wall below the upper end of the tank, a valve controlling the escape of air from the tank through said pipe, said last named valve being arranged wholly within the tank and subjected to the influence of the water rising in the tank, and a discharge pipe communicating with the bottom of the tank, and a discharge control valve in said discharge pipe.

2. A construction as defined in claim 1 wherein the air escape pipe opens into the side wall of the tank at a point below a contemplated final level of the water in the tank.

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