W. SMITH.

Tank and Flushing Connections for Water Closets.

No. 231,687. Patented Aug. 31, 1880.

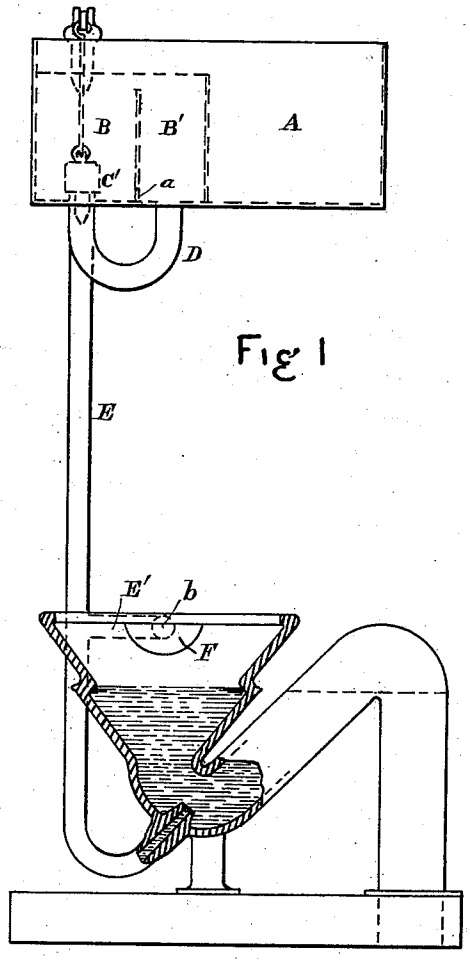


Fig 1

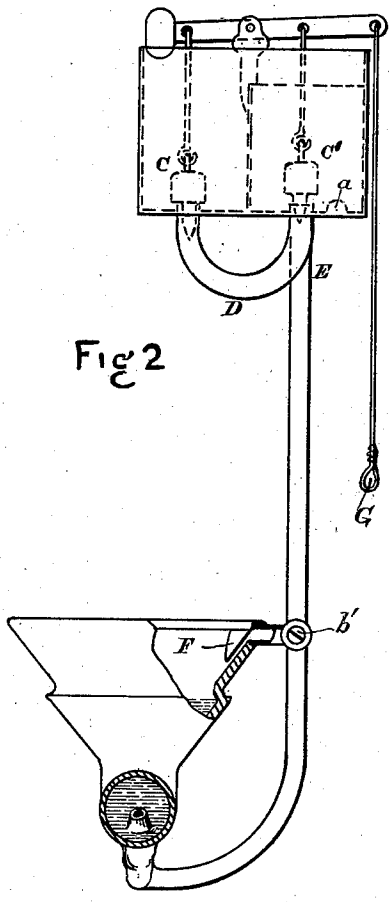


Fig 2

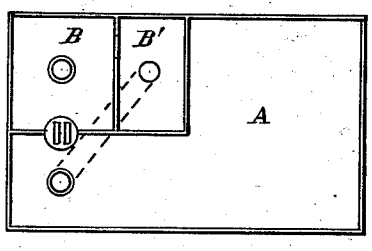


Fig 3

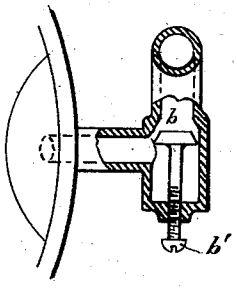


Fig 4

Witnesses

F. C. Monteverde.

Wilmer Bradford

Inventor

William Smith

By C. W. M. Smith

attorney

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM SMITH, OF SAN FRANCISCO, CALIFORNIA.

TANK AND FLUSHING CONNECTION FOR WATER-CLOSETS.

SPECIFICATION forming part of Letters Patent No. 231,687, dated August 31, 1880.

Application filed October 22, 1879.

To all whom it may concern:

Be it known that I, WILLIAM SMITH, of San Francisco, in the county of San Francisco and State of California, have invented a certain new and useful Invention or Improvement in Tanks and Flushing Connections for Water-Closets, which invention is fully described in the following specification and accompanying drawings, in which—

Figure 1 represents a front elevation, part in section; Fig. 2, a side elevation, also partly in section; Fig. 3, a plan of tank; Fig. 4, a section of cock.

My invention relates to that class of water-closets having elevated tanks, from which water is received to wash or flush the basin and soil-pipe.

The object of my invention is to provide a self-operating and self-emptying closet, and at the same time, after the basin has been flushed, a certain quantity of water will be received from the tank to fill the basin, where it will remain until use is made again of the closet.

It consists, mainly, of an elevated tank having water spaces or compartments to receive and convey to the basin a certain limited quantity of water governed by certain peculiar pipes, cocks, and valves, all of which will be hereinafter more fully described.

In the drawings, A represents the water-tank, which is subdivided into lesser compartments or water-spaces B B′, the two compartments being connected by a hole or opening, *a*, at the foot of the partition which divides the two, and this partition is less in height than that which surrounds the compartments, and both partitions are less in height than that of the sides of the tank A, so that water may flow over the top into these compartments, if desired; yet in operation the water will usually pass from the compartment B into B′ through the hole *a* at the bottom of the partition.

The partition which divides the compartments supports a split post, in which is placed a weighted lever, which carries two valves, C C′. That represented by C opens and closes the curved pipe D, which conducts the water from the tank A into the compartment B′ beneath the tank, and that at C′ opens and closes the pipe E in the compartment B, which leads down to the basin beneath.

From the pipe E extends a branch pipe, E′, having a valve, *b*, which is operated by a set-screw, *b′*. The branch pipe opens on a semi-circular water-spreader, F, of earthenware or metal, connected with the basin, so that the water coming from the branch pipe will be caused to spread out fan-like in a thin stream and wash all sides of the basin at once, sufficient space being left between it and the basin to permit a sheet to pass out, the force of the flow being always governed by the valve operated by the set-screw from the valve *b*. The pipe continues down to the emptying-jet, the office of which is to expel the contents of the basin over the siphon into the soil-pipe. The branch pipe E′ is also made use of as a vent for the air within the pipe E as the transfer is about to pass down. The valve *b* regulates the quantity of water to wash the basin without excess, liable to variations in the altitude of the tank, and reserving the major portion to expel the contents of the basin by means of the jet. The after-wash from the small compartment B′ then finds its way down to the siphon by the pipe E through the small aperture *a*, and, not being of sufficient volume to fill the area of the pipe, it does not act on the jet with sufficient force to go over into the soil-pipe, but remains and fills the basin and siphon to prevent the return of effluvia from the sewer.

The operation will be as follows, to wit: The compartments B and B′ being empty, and the weighted lever being raised by the pull G, or the seat of the closet when desired to be self-operating, will permit the water in the tank A to pass down the curved pipe D and up into the compartment B, and from thence through the hole or opening *a* into the compartment B′, thereby filling both compartments. Upon releasing the pull or seat the water passes from thence down the pipe E into the jet at the foot of the siphon and forces the contents over the siphon and into the sewer, and at the same time supplies the spreader F, to wash all of the upper portion of the basin. The air in the main pipe E will be forced down and pass through the spreader in advance of the stream or column of water. At the same time the jet at the bottom will empty the contents of the basin.

It should here be observed that the water

will continue to flow with force so long as the compartments B and B′ are full; but as the contents become lessened the force will be lessened, and the trickling or dripping down the main pipe by means of the reserve in the compartment B is gradual and fills the basin with water, as shown. Or, if the water be permitted to flow with its initial force, as in the case of its being taken directly from one compartment or reservoir in the ordinary way, it would be carried up or forced over the bend in the siphon to the soil-pipe, and if the supply be shut off suddenly there would be no water left in the basin, in which case gas from the sewer would be permitted to escape in the building. By this means I provide an automatic or self-operating and self-emptying water-closet of great utility.

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

1. In combination with a water-closet, the tank-flushing connection consisting of the compartments B B′, valves C C′, aperture *a*, and curved pipe D, substantially as and for the purpose herein set forth and specified.

2. In combination with a water-closet or tank connection, the main pipe E, with its jet entering the siphon beneath the basin, the branch pipe E′, acting alternately as an air-vent and supply-pipe, with its valve *b*, substantially as and for the purpose herein set forth and specified.

3. In combination with a water-closet, receiver-pipe E and branch pipe E′, with its valve *b* and water-spreader F, arranged and operating substantially as and for the purpose specified and shown.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 29th day of September, 1879.

WM. SMITH. [L. S.]

Witnesses:
C. W. M. SMITH,
JAMES C. WARD.