

(No Model.)

W. SMITH.
WATER CLOSET.

No. 510,997.

Patented Dec. 19, 1893.

Fig. 3.

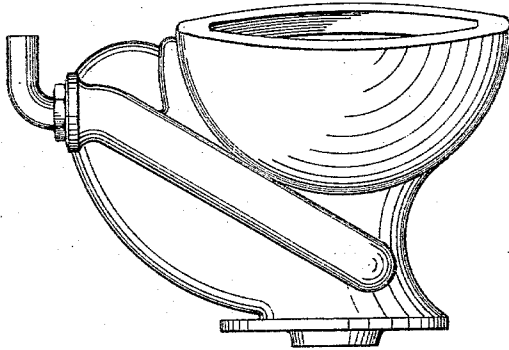


Fig. 1

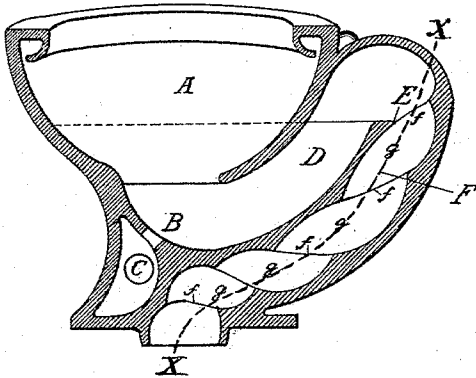


Fig. 2.



WITNESSES:

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WATER-CLOSET.

SPECIFICATION forming part of Letters Patent No. 510,997, dated December 19, 1893.

Application filed June 2, 1892. Serial No. 435,250. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SMITH, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Water-Closets; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form part of this specification.

My invention has relation to water closets and relates in particular to that class of water closets in which the contents of the bowl are discharged partially or wholly by siphonic action.

In water closets in which the discharging of the contents of the bowl are dependent upon siphonic action it is found that if the descent of the water in the down limb of the exit passage be too rapid the water will become commingled with air and lacking the required density will fail to produce perfect siphonic action and the contents of the bowl will be only partially discharged.

My invention has for its object the provision of means for retarding the passage of the water in the down limb of the exit passage of a water closet operating by siphonic action and my invention consists in forming in the down limb of the exit passage projections arranged to obstruct the passage of the water to some extent so as to produce the required retardation. In order to effect the required retardation of the water without interfering with the proper siphonic action of the closet and without affording any place for lodgment of matter from the bowl I construct the down limb of the exit passage in such manner that the water passing therethrough will be given a rotary motion which results in preserving the requisite density by preventing the water from flowing too rapidly through the exit passage, but I do not wish to be understood as limiting my invention to the precise construction which I have shown in the drawings, and by means of which I produce this rotary motion of the water, as I conceive it possible to produce the requisite retardation of the water in the exit passage, though in a

less perfect manner, by other means than those shown.

In the accompanying drawings I have shown my invention applied to a siphon jet closet of the type known as "all porcelain" the bowl and exit passage in this type of closet being constructed of one integral piece of porcelain or earthenware, Figure 1, being a vertical sectional view and Fig. 2, a sectional view of the down limb of the exit passage taken on the dotted line $x-x$ in Fig. 1; and Fig. 3 is a perspective view of a water closet containing my invention.

A, designates the bowl of the closet, B, the jet situated at the beginning of the up limb of the exit passage and so arranged as to direct a stream of water up through the center of such limb, and C, the passage through which water is conveyed from a suitable source of supply to said jet; these parts being all of the usual construction and their mode of operation being well understood by those conversant with the class of apparatus to which my invention appertains.

D, designates the up limb of the exit passage and E, the lip of the bend over which the water flows in the down limb F, of the same.

The interior surface of the down limb of the exit passage is formed with spiral ribs or projections f, f , of increasing pitch from the upper to the lower end of the passage the space between the ribs or projections being concaved as shown so as to avoid the formation of acute angles. The spaces between the ribs form concave grooves or rifflings g, g , which are of course of increased pitch from the upper to the lower end of the down limb F, of the exit passage and said grooves serve to give the water while passing through the down limb of the passage a rotary or twisting motion which, owing to the increasing pitch of the grooves, grows more acute as the water approaches the end of the exit passage and results in a considerable retardation of its flow, sufficient to prevent it from disintegrating or becoming commingled with the air.

Having described my invention, I claim—

1. A water closet having a siphon exit passage formed with spiral ribs to retard the

passage of water through its down limb, substantially as described.

5 2. A water closet having a siphon shaped exit passage formed with spiral ribs of increased pitch in the down limb of said passage for the purpose of retarding the flow of water in said down limb, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 27th day of 10 February, 1892.

WILLIAM SMITH.

Witnesses:

GEO. SCHRADER,

EDWARD F. SCHUMAN.