J. H. STEVENS.
Water-Closet.

No. 199,326. Patented Jan. 15, 1878.

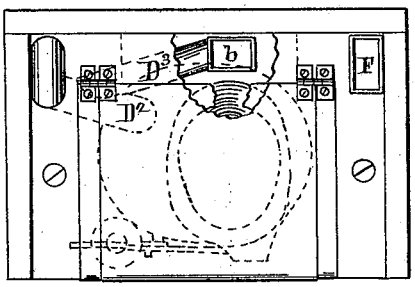


Fig. 1

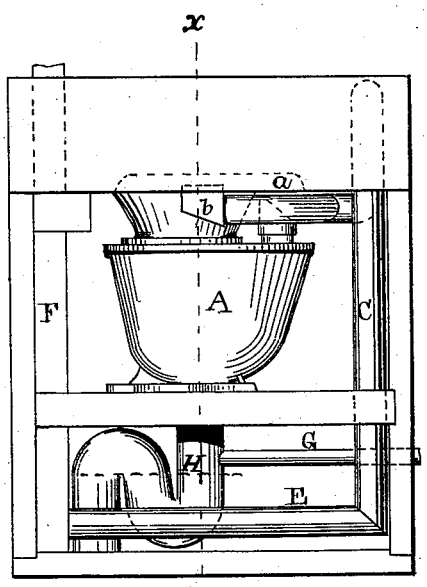


Fig. 2.

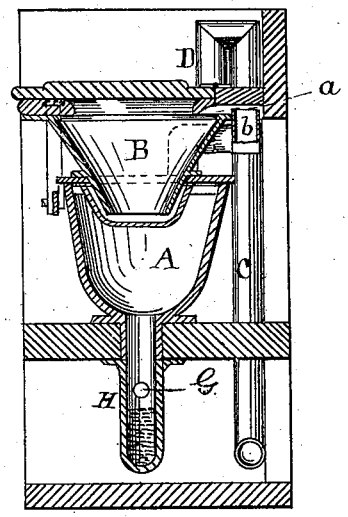


Fig. 3.

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## IMPROVEMENT IN WATER-CLOSETS.

Specification forming part of Letters Patent No. **199,326,** dated January 15, 1878; application filed November 12, 1877.

*To all whom it may concern:*

Be it known that I, JOHN H. STEVENS, of Cambridge, in the county of Middlesex, in the State of Massachusetts, have invented an Improvement in Water-Closets, of which the following is a specification:

This invention relates particularly to the ventilation of water-closets, and the conducting of offensive odors from the bowl or receiver, or from both, to the hot-flue of a chimney, or some other convenient exit to the open air, by means of the following-described arrangement of pipes or passages, by which a continual circulation of air is maintained in the bowl, and the danger from an overflow of water into the escape pipes or passages from the bowl or receiver averted.

Reference is made to the accompanying drawing, forming a part of the specification in explaining the nature of my invention, in which—

Figure 1 is a plan of a water-closet, showing, in dotted lines and in plan, where the top of the boxing of the closet is broken away, my invention. Fig. 2 is a side elevation of the same, also showing my invention in dotted outline and elevation; and Fig. 3 is a vertical section thereof on the line *x x* of Fig. 2.

I am aware that it is common to connect the receiver A under the bowl with the hot-flue of a chimney, or some other passage discharging without the building, by a direct pipe opening from the receiver, and carried under the floor to the passage, into which it enters; but, as this pipe is never carried above the top of the bowl, there is constant danger of an overflow of water from the receiver or bowl into the discharge-pipe, consequent upon some obstruction in the waste-pipe of the closet or derangement of the apparatus regulating the supply of water to the bowl, which, as these pipes are not often water-tight, might result in serious damage by its leakage therefrom and its escape into the flue of the chimney.

To obviate this danger, and to provide a more efficient circulation of pure air, I connect the receiver A and the bowl B with the vertical pipe or air-passage C at a point above the level of the top of the bowl by the pipe or passage D, provided with the branches $D^2$ $D^3$, the former of which opens into the receiver and the latter into the bowl. The vertical pipe or air-passage C opens into the horizontal pipe E, generally laid under the floor, leading to the hot-flue or other passage, F.

The lower portion of the cover and seat of the bowl is cut away, as shown at *a* in Figs. 2 and 3, to furnish an opening into pipe $D^3$ from the bowl.

A pipe, G, connects the waste-pipe H of the water-closet, above the stench-trap preferably, with the waste-pipe of a bath-tub or set-bowl, or other waste-pipe, although it may extend to the exterior of the building.

By the first system of pipes—namely, the pipes D, $D^2$, $D^3$, C, and F—all impure air in the bowl and receiver is conducted to the outer air without the possibility of an overflow of water into the pipe C.

Of course, I may dispense with one of the two pipes $D^2$ $D^3$ where one will do as well, and that one may conduct the impure air either from the receiver or the bowl.

By the addition of the pipe G a continual circulation of air is provided from the waste-pipe of the bath-tub, set-bowl, or other waste-pipe, or the outer air through the waste-pipe H, the receiver A, and the escape system $D^2$ C F to the outer air.

It will be observed that the pipe $D^3$ is surrounded by a rim, *b*, to prevent the escape of water into the pipe while the seat is being washed; or said rim may be formed by the extension of pipe $D^2$ above the level of the recess *a*.

When the ventilating supply-pipe G enters the soil-pipe H at the level of the water-seal, the water in the trap will be somewhat agitated by the current of air.

The impure air and foul odor and gases in the closet, by the described system of circulation and ventilation, are effectually prevented from escaping into the room during the use and immediately after the use of the closet, as well as at all other times.

I claim—

1. The combination, in a water-closet, of the pipes $D^2$ $D^3$, opening, respectively, from the receiver and the bowl, or either of said pipes, arranged to open into the vertical pipe C above the top of the bowl, the vertical pipe C, and the pipe E, leading to the hot-flue of a chimney, or some other passage to the outer air,

all arranged substantially as and for the purpose described.

2. The combination of the ventilating supply-pipe G, opening into the waste-pipe H above or at its water-seal, and the receiver A, and the ventilating delivery-pipe $D^2$, all arranged substantially as described, for the purpose set forth.

3. A water-closet provided with a ventilating-conduit, *a*, above the edge of the bowl and below the upper surface of the seat, leading to the ventilating-flue $D^3$, in combination with an upwardly-projecting rim, *b*, around the orifice of the ventilating-flue, substantially as described, and for the purpose set forth.

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Witnesses:
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