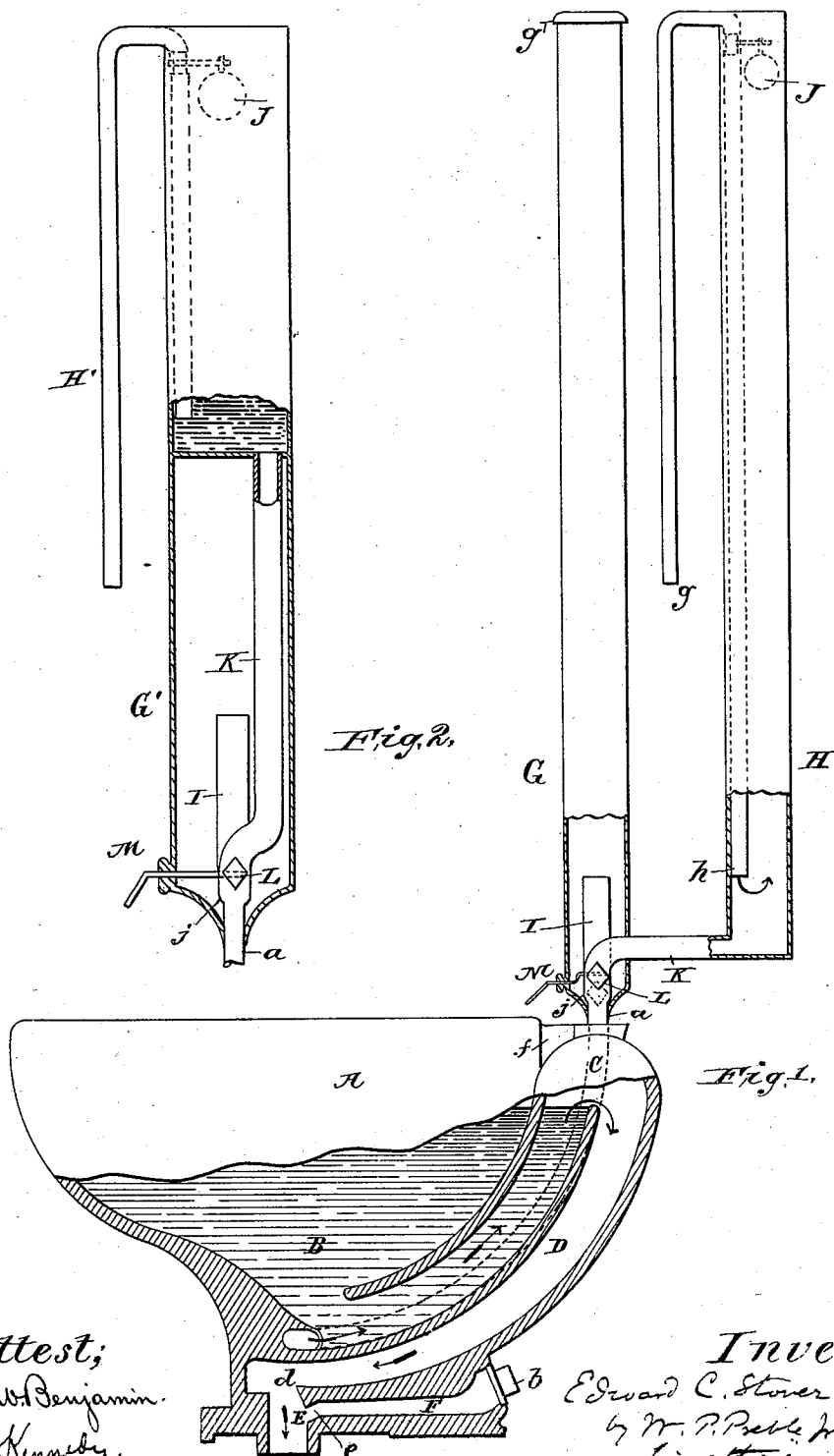


(No Model.)

E. C. STOVER.  
SIPHON WATER CLOSET.

No. 571,026.

Patented Nov. 10, 1896.



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# UNITED STATES PATENT OFFICE

EDWARD C. STOVER, OF TRENTON, NEW JERSEY.

## SIPHON WATER-CLOSET.

SPECIFICATION forming part of Letters Patent No. 571,026, dated November 10, 1896.

Application filed October 21, 1891. Serial No. 409,372. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD C. STOVER, a citizen of the United States, and a resident of the city of Trenton, county of Mercer, and State of New Jersey, have invented certain new and useful Improvements in Siphon Water-Closets, of which the following is a specification.

The object of my invention is to provide an all-earthenware water-closet bowl and trap of the character known as a "siphon" closet, in which the priming of the siphon is accomplished in a novel manner and by a novel system of flushing so effectually that the vent of the discharge-pipe is protected from any back-flow from said pipe.

My invention therefore consists in the feature of an all-earthenware water-closet bowl and trap and means for flushing the same, namely: In placing the vent of the discharge-pipe underneath the bowl and trap and making a downward bend therein, so situated with regard to the top of said pipe that the attraction of gravity effectually prevents any back-flow from said pipe into the vent.

One form of my invention is shown in the accompanying drawings, in which—

Figure 1 is a vertical section. Fig. 2 is a modification of the flushing pipes or compartments.

Same letters indicate similar parts in the different figures.

A represents an earthenware bowl and trap, preferably cast entirely of earthenware, and shown partly in elevation and partly in section. This structure is adapted to receive the supply-pipe *a* and the vent-pipe *b*, which are generally of metal and coupled on in any well-known and usual manner. The bowl consists of the hopper B, which is of usual and ordinary construction, except there is cast in one side thereof the inclosed channel or pipe C, (shown in the dotted lines,) to the upper end of which the pipe *a* is coupled and the lower end of which opens at or near the bottom of that part of the hopper which constitutes the shorter leg of the siphon, so that the water coming in through the pipe *a*, in addition to flushing the bowl in the ordinary manner through the opening at *f* in the flushing-rim, also sends a separate jet through the pipe C to the bottom of the bowl, whence it forces its

way upward through the shorter leg of the siphon, as shown by the arrows.

The rest of the bowl consists of the longer leg of the siphon D, the opening into the discharge-pipe E, and the vent-opening F. The longer leg of the siphon, instead of being made vertical or zigzag in the form of a trap, consists of a continuous run or sweep following the line of the under side of the hopper, and its vertical diameter is preferably diminished or flattened toward the bottom of the bowl, as shown, so that the water becomes spread out in the form of a sheet, and thus flattened the sweep extends over and preferably beyond the opening E against the wall *c* of the bowl. This wall, whether beyond the opening E or flush with it, acts as a cushion to throw the water back upon itself and thus produces a sort of swirl or whirlpool at the mouth of the opening E, one diameter of which is preferably contracted, as shown at *d*. This foaming or swirling action renders it practically impossible for any deposit to take place at the lower end of the sweep, everything being kept in such rapid motion that a speedy passage into the discharge-pipe is necessarily accomplished.

The special features of the vent or aperture F are its situation underneath the hopper and trap and the bend *e*, which is made of sufficient incline to avoid any tendency on the part of the water coming down through the run D and into the discharge-pipe from backing up into the vent.

Although it is preferable to have the sweep or run D flattened out as described it would act as a good siphon for the bowl even if it were left of the same diameter throughout.

The novel means of flushing the bowl, as shown in Fig. 1, consists of the two pipes G and H, one of which, G, is in direct communication with the pipe *a* and is permanently closed at the top at *g'* to prevent the escape of air in said pipe when the water rises and compresses the same therein.

The connection with the pipe *i* is made by the pipe I, which rises at a suitable and convenient distance in the pipe or tube G to provide for an afterflow, as hereinafter described. The other pipe or tube H is open at the top and takes the place of a flushing-tank, being entered by the supply-pipe *g*, which dis-

charges in the tube H near the bottom at *h* and which is opened and closed by the ball-cock and float J in the usual manner. This tube or pipe H connects with the other tube  
5 or pipe by the pipe K.

The opening and closing of the pipes I and K is controlled by the two-point valve L, shown in two positions, (the lower being in dotted lines,) which valve is raised and depressed by the lever M, operated by the pressure of the seat in the ordinary manner.  
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When the valve L is pressed downward by pressure on the lever M, it closes the pipe L, which is normally open, and opens the pipe  
15 K, through which water flows from the tube H into the tube G to fill the same and compress the air in the upper part thereof. When the pressure on the lever M is removed, the valve L rises and closes the pipe K, opening the pipe I, through which water is forced  
20 by the expansive force of the compressed air in the upper part of the tube G, thus flushing the bowl and priming the same. This continues till the water in the tube G has fallen to the top of the pipe I, when the flushing  
25 ceases and the afterflow begins through small perforations *j j* through the pipe I near the bottom of the tube G. The same principle is involved in the arrangement shown  
30 in Fig. 2, where a single tank or pipe is used, separated into two compartments H' and G', the upper one answering to pipe H and the lower one to pipe G, the connecting devices, valves, &c., being the same.

I make no claim, broadly, to rear-venting closets, which lack the elements and features of my claims, but, on the contrary, I disclaim the following: In combination in a one-piece closet, the hopper and bowl, the overflow or  
40 siphon formed with the wall of said hopper or bowl, the discharge leading therefrom, and the rear vent-channel extending rearward and lying against or formed with the said

wall; also, in combination in a closet the hopper or bowl thereof, the overflow or siphon,  
45 the discharge, the descending passage or leg extending downward from the said overflow or siphon into the said discharge, and the rear vent extending rearward from a point adjacent to the junction of the said passage and  
50 the said discharge beneath the said hopper or bowl.

I claim—

1. In combination in a one-piece siphon-closet, the long leg of the siphon consisting  
55 of a continuous run or sweep extending downward parallel with and adjoining the surface of the hopper, the discharge-pipe leading therefrom, and the rear vent leading from the said discharge-pipe, the said long leg of the  
60 siphon being flattened or reduced at its junction with the said discharge-pipe to throw the water in a horizontal sheet into and across the mouth of the said discharge-pipe, substantially as set forth.  
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2. In combination in a one-piece closet, the hopper, the overflow or siphon formed with the wall of said hopper, the discharge leading therefrom, and the rear vent-channel extending  
70 rearward and lying against and formed with the said wall and turning downward where it enters the said discharge, substantially as shown and described.

3. In combination in a one-piece closet, the overflow or siphon of said closet, the discharge leading therefrom, and the rear vent-channel extending backward and upward  
75 from below the junction of the said overflow or siphon and said discharge and forming an integral part of the wall of the bowl of the  
80 said closet, substantially as set forth.

EDWARD C. STOVER.

Witnesses:

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