(No Model.)

G. F. BROWN.

WATER CLOSET.

No. 508,203. Patented Nov. 7, 1893.

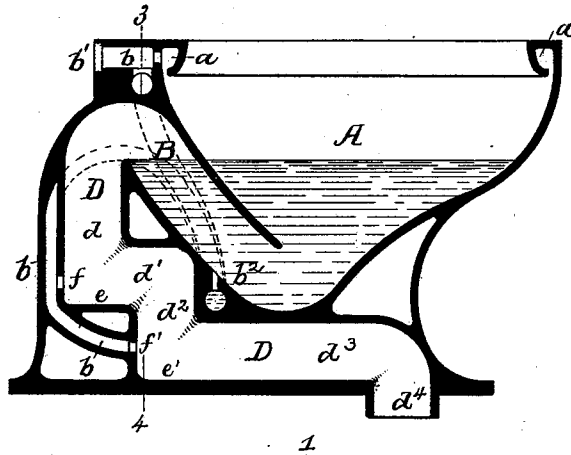


FIG. 1.

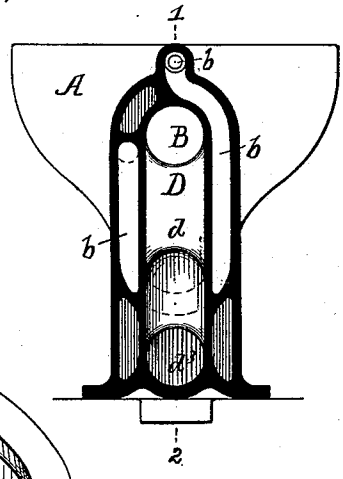


FIG. 2.

FIG. 3.

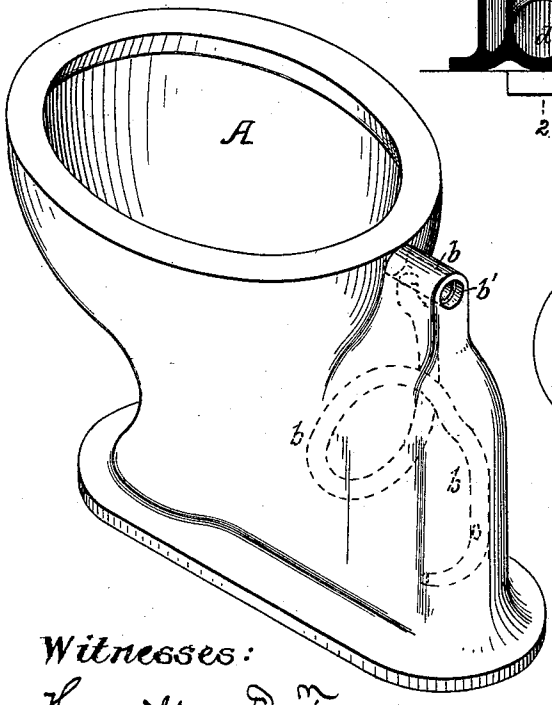
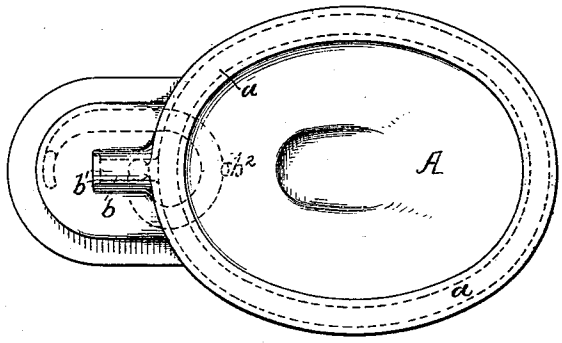


FIG. 4.



Witnesses:
Hamilton D. Turner.
Alex. Barkoff

Inventor:
George F. Brown
by his Attorneys
Howson & Howson

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE F. BROWN, OF PHILADELPHIA, PENNSYLVANIA.

WATER-CLOSET.

SPECIFICATION forming part of Letters Patent No. 508,203, dated November 7, 1893.

Application filed July 1, 1891. Serial No. 398,100. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. BROWN, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Water-Closets, of which the following is a specification.

The object of my invention is to so construct a siphon water closet that siphon action will be readily started by the action of the discharging jets, and in which the siphon will not be broken by the suction action at the waste, a further object of my invention being to trap the service pipe between the nozzles in the long leg of the siphon and the flushing rim and service box.

In the accompanying drawings:—Figure 1, is a longitudinal section on the line 1—2, Fig. 2, of my improved water closet. Fig. 2, is a section on the line 3—4, Fig. 1. Fig. 3, is a perspective view of the water closet from the rear; and Fig. 4, is a plan view.

A is the bowl preferably made in the form shown in Fig. 1, and having the usual flushing rim *a* communicating with the inlet passage *b*, which in the present instance is formed in the bowl, and is provided with an enlarged end *b'* so that it can be readily connected to the supply pipe.

B is the short leg of the siphon communicating at its upper end with the long leg D, and at its lower end with the bowl A. The portion *d* of the long leg of the siphon is preferably vertical, and a short distance below the junction of the long leg with the short leg, it is turned at an angle forming a horizontal portion *d'*, and is then turned down forming a vertical portion d^2, and then turned a second time forming a second horizontal portion d^3 finally terminating in a vertical portion d^4 which is coupled to the waste pipe in the ordinary manner. Thus the long leg of the siphon forms a circuitous passage, and the water as it flows through this passage from the bowl strikes the portions *e*, *e'*, splashing at these points and forming a check for the air which might otherwise pass up the long leg, in sufficient volume, in many instances, to break the siphon action. As the water passes laterally from the first bend, it strikes the wall in front of the splashing surface *e*, and is thereby further broken up and directed downward onto the second splashing surface *e'*, this wall thereby materially aiding in the breaking up or scattering of the water, with the view of causing it to fill the pipe and drive the air before it and prevent any back flow of air. In the back of the long leg D of the siphon, in line with the portion *d'*, is a jet opening or nozzle *f*, and opposite the portion d^3 is a similar nozzle *f'* both communicating with the inlet through a jet pipe *b*. The water from these two jets starts the siphon action by creating a partial vacuum so as to induce the water to flow from the short leg into the long leg, such action continuing until the bowl is emptied in a manner common to siphon water closets.

As shown in Fig. 2, the jet tube *b* extends down under the short leg of the siphon and up on the opposite side to a point in line with or above the water line of the bowl, and then passes down at the back of the long leg of the siphon terminating in the nozzle *f'*. Thus the tube is trapped between the nozzles *f*, *f'* and the flushing rim, and in order to keep the trap always supplied with water, I connect it with the short leg of the siphon or with the bowl below the water line by a passage b^2. This passage also acts as a jet when the service water is turned into the tube *b*, the jet escaping upwardly into the short leg of the siphon.

I have shown the tube *b* passing under the short leg of the siphon in order to make the bowl as symmetrical in appearance as possible, but in some instances the loop may be formed on one side of the structure without departing from my invention, and it may also be made of tubing independent of the bowl.

In some instances I may make only one bend in the long leg of the siphon and o-vide one jet discharging into said bend, or in other cases more than two bends may be used.

By the improvements set forth above I am enabled to make a water closet in which siphon action is readily started, and which is proof against siphoning by the flow from a closet on the same coil pipe, for the creation of a partial vacuum in the long leg D from this cause, will break the trap in the jet pipe *b* rather than that in the bowl, and air will then flow in through said pipe *b*, the trap of the latter being subsequently filled by water entering the same through the opening b^2.

In some instances I may dispense with the two nozzles *f*, *f'* and depend upon the sudden flushing of the bowl in order to start the siphon action, as the water will strike the parts *e*, *e'* and splash so as to prevent the air from breaking the siphon, and I find that my improved bowl requires less water to start the siphon action than other siphon water closets made prior to my invention.

I claim as my invention—

1. The combination of the bowl, the short leg of the siphon, communicating with said bowl, and the long leg having two angular bends forming double splashing surfaces and provided on the under side of the upper splashing surface with a siphon inducing jet, substantially as set forth.

2. The combination in a siphon water closet, of the bowl, the short leg and the long leg of the siphon having an abrupt splashing surface at its base, and a jet pipe communicating with the long leg of the siphon at a point directly above said splashing surface, substantially as described.

3. The combination of the bowl with its flushing rim, the short leg of the siphon, the long leg bent substantially as described to form splashing surfaces *e*, *e'*, and a jet pipe communicating with the flushing rim and with the long leg of the siphon at or near the splashing surfaces, substantially as described.

4. The combination of the bowl with its flushing rim, the short leg and the long leg of the siphon, a jet pipe bent to form a trap and communicating with the flushing rim and with the long leg of the siphon, and communicating with the bowl at the trap so that said pipe will receive water from the bowl to form the seal, substantially as described.

5. The combination of the bowl, the short leg of the siphon, the long leg having a series of sections arranged at right angles substantially as described, the flushing rim for the bowl, a jet pipe communicating with said flushing rim and with the long leg of the siphon at the bends, said pipe being bent to form a trap and communicating with the bowl, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE F. BROWN.

Witnesses:
EUGENE ELTERICH,
HENRY HOWSON.