(No Model.)

J. SEMPLE.

WATER CLOSET.

No. 300,905. Patented June 24, 1884.

Fig. 1.

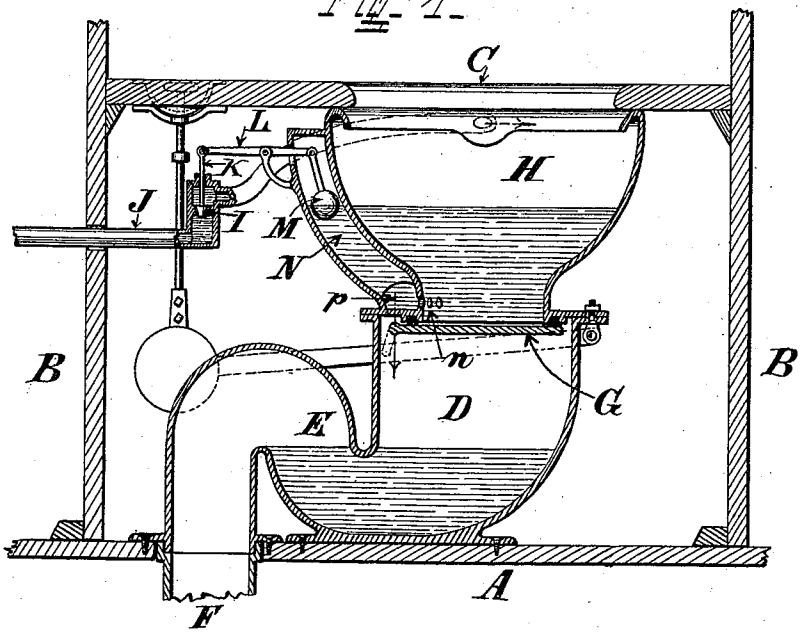


Fig. 2.

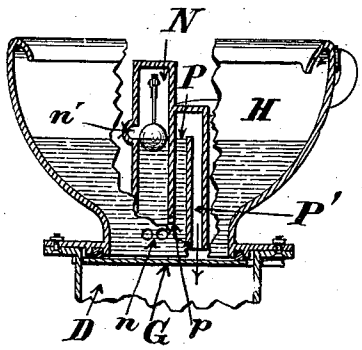
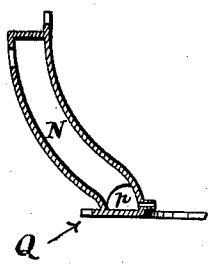


Fig. 3.



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UNITED STATES PATENT OFFICE.

JAMES SEMPLE, OF CINCINNATI, OHIO.

WATER-CLOSET.

SPECIFICATION forming part of Letters Patent No. 300,905, dated June 24, 1884.

Application filed June 18, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES SEMPLE, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Improvement in Water-Closets, of which the following is a specification.

My invention relates more particularly to that type of water-closet known and distinguished as "valve water-closets," in which the flushing-spout is operated by a cock or valve under control of a float; and my invention comprises means whereby absolute safety is secured both from any surplusage of water and also from emanations of sewer-gas, and whereby should either the bowl or the stench-trap become dry or insufficiently supplied with water from any of the various causes constantly occurring—such as siphonage, evaporation, or leakage—the parts thus depleted will be promptly flushed and emanations of noxious gases into the closet prevented without resort to or necessity of the ventilating-tubes or upward extensions of soil-pipe now commonly employed, and without liability to befoul the operating-valve by contact of soil therewith.

In the accompanying drawings, Figure 1 is a section in the plane of the flush-valve of a water-closet embodying my invention, and Fig. 2 a section at right angles to that plane. Fig. 3 represents by vertical section a form of my float-chamber for use with an earthen bowl.

In said drawings, A may represent the floor, and B C any customary or suitable box and seat, of a water-closet.

D may represent any suitable hopper, communicating by stench-trap E with discharge-pipe F.

G may represent the usual gate or flap which normally closes the ventage of the bowl H.

I is customary valve in the service-pipe J, said valve having the usual rod-and-lever connection, K L, with float M.

The float-chamber N is preferably so formed as to follow the exterior curve of the bowl, in the manner shown, and the orifices *n*, by which it communicates with the bowl, instead of being located at the water-level, as in accustomed forms, are placed near the bottom of the bowl, as shown. The float-chamber N also communicates at bottom by port *p* with a small deep auxiliary stench-trap, P P′, whose descending passage P′ discharges into the hopper D, and whose upper portion is hermetically closed.

In the normal condition of the apparatus, the auxiliary trap remains charged with water up to the level of its overflow, the place of which is hidden by the trap-walls; but the level for the time being occupied by the float affords an indication of the height of water in the trap. A groove or recess, *n′*, in valve-chamber N at the level of the overflow of the auxiliary trap enables the plumber to determine whether the float is at the proper level, (so as to discharge its functions,) and to rectify any insufficiency.

The drawings, Figs. 1 and 2, show my device applied to a metallic bowl; but the device is equally applicable to water-closets employing earthen bowls. For such closets the passages N P P′ are closed on the side next the bowl with a metallic wall whose lower part opposite the orifices *n* has short tubes that connect with said orifices, as shown in Fig. 3, such passages constituting a cast projection of the annular plate Q that the bowl sits down into; or such chamber and trap may be formed by a cast projection of an iron shell surrounding the earthen bowl.

The above-described arrangement possesses several important advantages. For example, communication between the bowl and the float-chamber, being at or near the bottom of those vessels, instead of at the water-level, is comparatively exempt from the usual very objectionable passage of "soil," whereby such float-chambers are ordinarily befouled. The auxiliary trap P P′, being deep and being quite closed at top, operates as an effectual seal against escaping effluvia from the hopper. The construction is such that whenever water is drawn out of the float-chamber in sufficient quantity to allow the float to descend, whether from "siphonage," evaporation, leakage, or other cause, the flush is opened and is kept open until all of the passages above the soil-pipe trap, including the pan or bowl, are flooded, and noxious gases thereby shut in.

The utility of my said invention is very markedly apparent where two or more closets or sets of closets at different levels are connected on the same line of soil-pipe. Take, for example, a four-story building, with one or two closets on each floor. In such arrangements of closets, as usually constructed, notwithstanding that precaution is taken to ex-

tend the soil-pipe clear above the roof, practical tests with every known variety of trap have demonstrated the fact that when the first-story closet is dumped the partial vacuum created by the dump causes more or less siphonage out of every trap above; and on the dumping of any of the upper closets these baneful results are still more manifest, because of the greater velocity of the descending soil.

I claim as new and of my invention—

1. The combination of a bowl, H, float-chamber N, and auxiliary trap P P′, the bowl communicating at or near its bottom with the lower end of the float-chamber, the lower end of the float-chamber communicating with the auxiliary trap, and the auxiliary trap being closed at top and constructed to discharge into the hopper, as set forth.

2. The combination of a bowl, a float-chamber having a groove, *n′*, and an auxiliary trap, the float-chamber communicating at its lower end with the bowl and auxiliary trap, and its groove located in a position to indicate the height of the overflow of the auxiliary trap, as set forth.

In testimony of which invention I hereunto set my hand.

JAMES SEMPLE.

Attest:

GEO. H. KNIGHT,

SAML. S. CARPENTER.