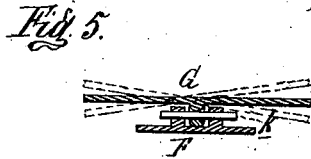
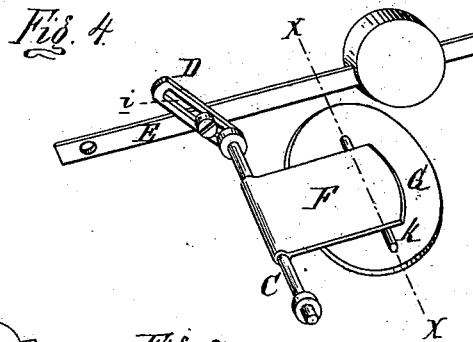
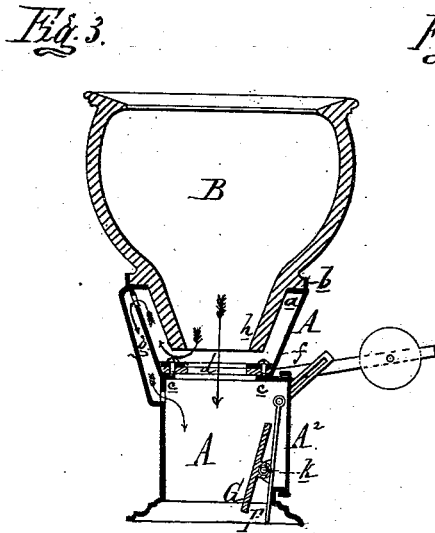
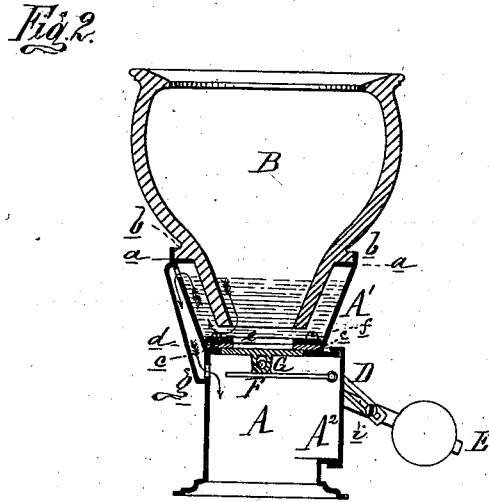
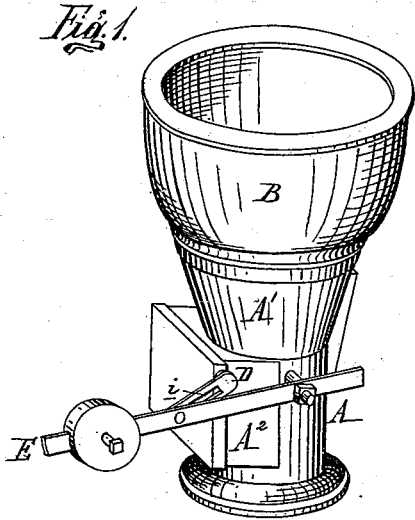


W. BLACKWOOD, Jr.
WATER-CLOSET.

No. 187,089.

Patented Feb. 6, 1877.



Attest:
Edward Parthel.
Wm. J. Baldwin

Inventor:
W. Blackwood Jr.
By atty
Thos. S. Sprague

UNITED STATES PATENT OFFICE.

WILLIAM BLACKWOOD, JR., OF DETROIT, MICHIGAN.

IMPROVEMENT IN WATER-CLOSETS.

Specification forming part of Letters Patent No. 187,089, dated February 6, 1877; application filed August 25, 1876.

To all whom it may concern:

Be it known that I, WILLIAM BLACKWOOD, Jr., of Detroit, in the county of Wayne and State of Michigan, have invented an Improved Water-Closet, of which the following is a specification:

The object I have in view is to construct a water-closet adapted to receive the common or "trade" bowl, that will be cheaper to make, more certain in operation, and easier to repair than closets heretofore used.

The invention consists, first, in the peculiar conformation of the trunk and its flanges, one of which is adapted to receive an annular rubber valve-seat, and be secured thereon by a removable ring-plate, access to which is had by simply removing the bowl; secondly, the combination, with said seat, of an upwardly-closing valve, mounted on a swinging arm at the end of a rock-shaft actuated by the closet-pull; thirdly, in extending upwardly the mouth of the trunk to receive the mouth or neck of the bowl, thus forming a trap-chamber above the valve, which is sealed by water to exclude the sewer-gases; fourthly, in combination with said trap-chamber, an overflow cast or formed in the trunk, extending from a point under the bowl-flange to a point below the valve, to carry off the surplus of flushing-water or any leakage from the water-valve, and in the arrangement of the various parts, as more fully hereinafter set forth.

Figure 1 is a perspective view of the closet and bowl. Fig. 2 is a vertical section of the same, showing the closet-valve closed. Fig. 3 is a similar section, showing the closet-valve opened. Fig. 4 is a bottom perspective view of the closet-valve and arm. Fig. 5 is a cross-section of said valve at *x x*.

In the drawing, A represents the body of the trunk, with a flaring upper part, A¹, having an internal flange, *a*, near the top, for the flange *b* of the ordinary trade-bowl B to rest upon, whereby the latter is supported in position. Access is had to the interior of the lower part of the trunk through a square flanged opening, A², on one side, which opening is closed by a suitable cover. The part A is cast with an internal flange, *c*, at its top, on which is laid a flat rubber ring, *d*, of the same diameter over all, but whose central opening

is less in diameter than that of said flange *c*. The ring *d* serves as a valve-seat, and is held in place by a flat metal ring, *e*, of the same diameter, laid thereon, and secured by two screw-bolts, *f*, tapped through into the flange *c*. The entire trunk A A¹ A² and its flanges is molded in one piece, whether in metal or earthenware, and at the same time I prefer to cast in an overflow-passage, *g*, extending from a point just under the flange *a* to a point below the flange *c*.

The neck *h* of the bowl extends down nearly to the ring *e*, so that when the opening in the valve-seat is closed the sealing-water flowing down the bowl will fill the chamber above the valve to a level with the top of the overflow-passage *g*, thereby forming a trap to exclude gases rising from the soil-pipe, independent of the trap in the latter.

C is a rock-shaft, journaled in bearings "halved" in the upper part of the trunk-flange A² and its cover, and is provided with an arm, D, having a slot, *i*, longitudinally cut therein. E is the pull-up lever, pivoted on a stud at the side of the trunk, its long arm being weighted to keep it down. The short arm, when depressed, actuates the water-valve (not shown) in the usual manner, while a pin, working in the slot *i* of the arm D, actuates the rock-shaft, on which there is secured an arm, F, to which a brass disk-valve, G, is pivoted by a pin, *k*, as seen in Fig. 4, and in such a manner that it has a slight oscillation, so as to adjust itself to the valve-seat, which is an essential feature, as it avoids the expense of making an accurate fit in the first instance; and subsequently, if the seat wears or compresses unequally, it will (the valve) accommodate itself thereto.

When the seat requires renewal, all that is necessary to do is to lift off the bowl, remove the bolts *f*, and lift off the ring *e*, when the new seat-ring may be put in and secured, as hereinbefore described.

I am aware of the patent granted April 7, 1868, to William S. Carr, and disclaim the devices shown and described therein as making any part of my invention; but

What I claim as my invention is—

1. The trunk A A¹ A², provided with the overflow *g*, the flange *a* to support the bowl B, and the flange *c* to support an annular

elastic valve-seat, in combination with an upwardly-closing valve, substantially as described.

2. In a water-closet, the combination, with the trunk A A¹ A² and upwardly-closing valve G, of the bowl B, extending down into the trunk, so as to form a sealing-chamber, and the overflow-passage *g*, extending from above the valve-seat to below the same, constructed and arranged substantially as described and shown.

3. The elastic annular valve-seat *d*, secured to the flange *c* of the trunk by the ring *e* and bolts *ff*, substantially as described.

4. The valve G, loosely pivoted to the arm F of the rock-shaft C, the same being actuated by the lever E, substantially as described.

WILLIAM BLACKWOOD, JR.

Witnesses:

H. F. EBERTS,
H. S. SPRAGUE.