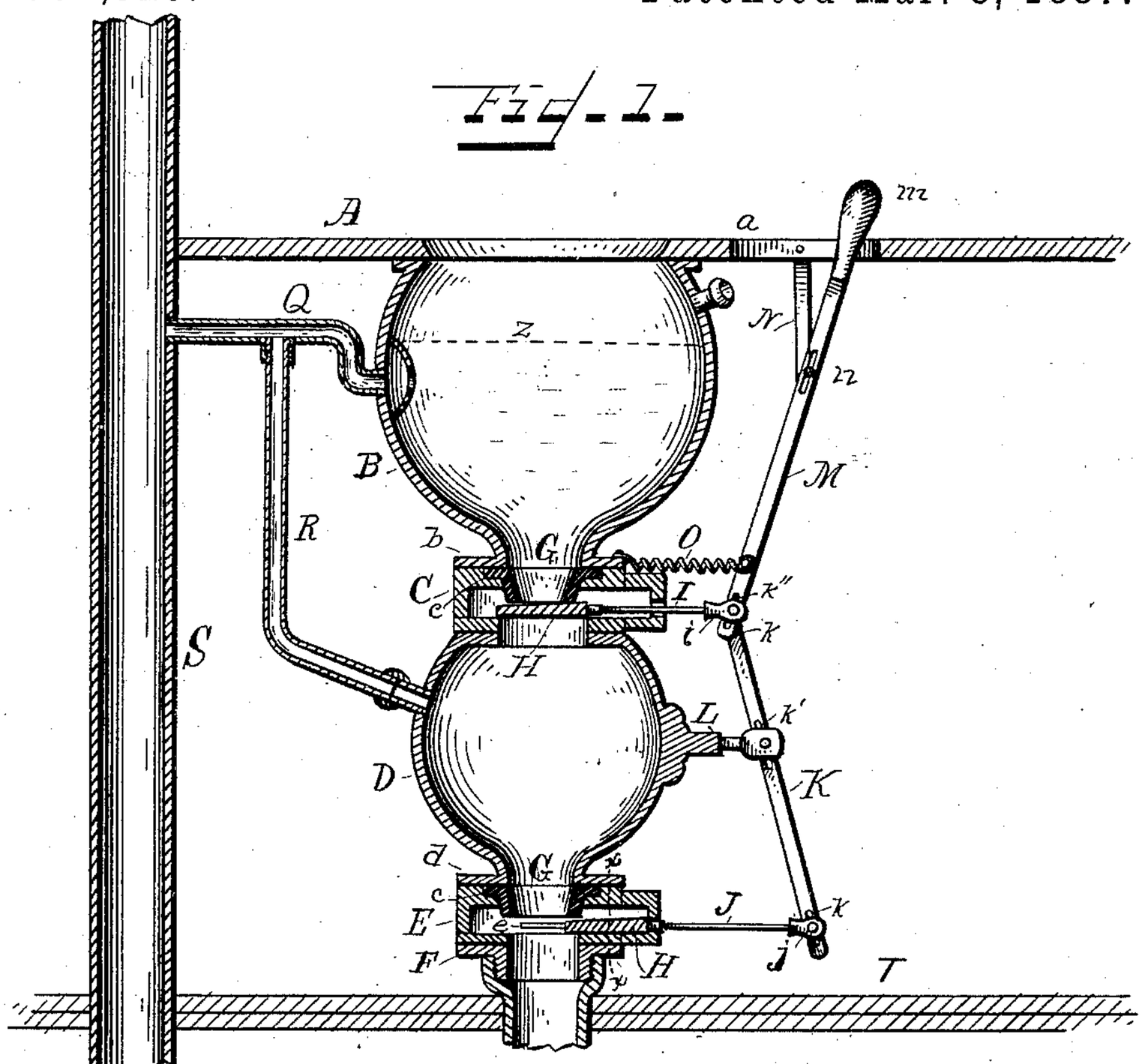
(No Model.)

R. A. & R. C. HILL.

WATER CLOSET.

No. 358,929. Patented Mar. 8, 1887.

Fig. 1.



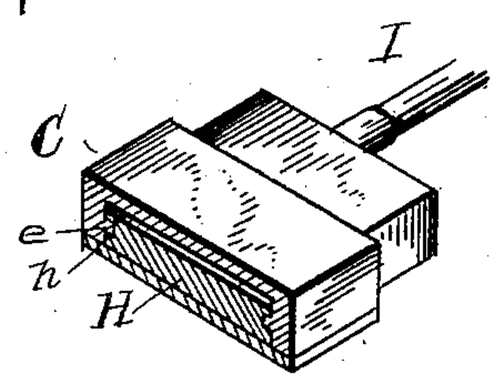


Fig. 2.

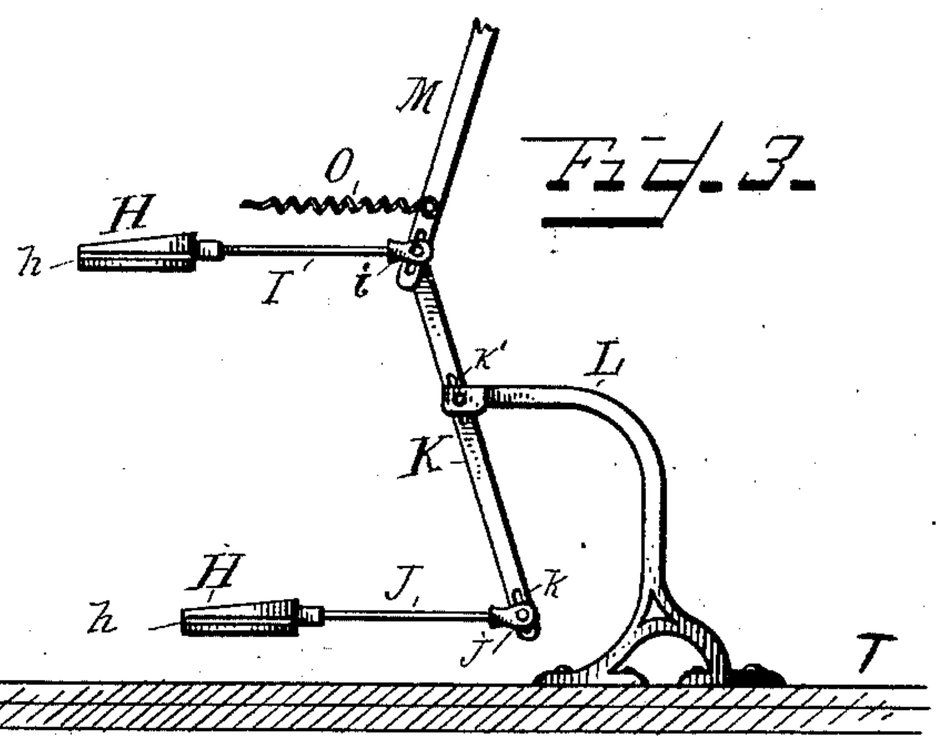


Fig. 3.

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UNITED STATES PATENT OFFICE.

RICHARD A. HILL AND ROZIER C. HILL, OF WASHINGTON, D. C.

WATER-CLOSET.

SPECIFICATION forming part of Letters Patent No. 358,929, dated March 8, 1887.

Application filed April 1, 1886. Serial No. 197,422. (No model.)

To all whom it may concern:

Be it known that we, RICHARD A. HILL and ROZIER C. HILL, citizens of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Water-Closets; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

The object of our invention is to provide a closet with two bowls, one above the other, with a sliding valve underneath each bowl, and so connected with each other by a pivoted lever as to be interchangeably operated in reverse directions to each other by a hand-lever, the one being opened while the other is closed to prevent the escape of effluvia and sewer-gas from the trap or sewer into the room in which the closet is located; and it consists in the construction hereinafter described, and more particularly pointed out in the claims.

Referring to the drawings, Figure 1 represents a vertical sectional view through the bowls and valves of the closet to the pipe leading to the sewer, showing the lever-connections and the vent-pipes. Fig. 2 shows a cross-sectional view through one of the valves and casing in which it is made to slide. Fig. 3 is a view of a modified form of attachment for the pivoted lever which carries the sliding valves.

Similar letters of reference indicate corresponding parts.

A represents the seat of an ordinary water-closet, resting on a bowl, B, having a lateral flange, *b*, on its lower open end, so constructed as to rest on the upper side of a casing-box, C, containing a slide-valve, and having a hole through the center of the box to register with the open end of a supplemental bowl below.

The casing-box C is made to rest upon a supplemental or lower bowl, D, of nearly the same size and directly underneath the main bowl B. The supplemental bowl is provided with a lateral flange, *d*, around its lower open end, in the same manner as that of bowl B, which is made to rest on a supplemental casing-box, E, containing a slide-valve, and which also is provided with a hole through its center to register with the open end of the bowl above and with a flanged screw-nut, F, below, which works into a female screw in a pipe communicating with the sewer.

The casing-boxes C and E are recessed around their central holes in their upper sides at *c*, and are adapted to receive and hold a lateral flanged packing, G, of rubber or other flexible material, having a downwardly-conical-shaped projection extending into the chamber of the casing-boxes. The packing of the boxes is securely held on its seat by means of the lateral flanges *b* and *d* on the under side of the bowls, which rest upon and hold it in place. The casing-boxes are of rectangular form, and the under side is secured to the upper with screws or by other means, and is adapted to be removed for the insertion of the valves H, which are beveled or wedge-shaped on their upper side and grooved on their edges, as shown at *h*, Figs. 2 and 3, to slide on tongues or ways *e* on the inner side of the casing-boxes. These tongues are made to extend only about two-thirds the length of the box, so that in the movement of the valve any accumulation of matter on them will be crowded off the ends and fall into the chamber below.

Rods I and J are attached to the thickened ends of the valves H and extend out through one end of the casing-boxes C and E, and are provided with slotted pivot-heads *i* and *j*, which receive and hold the slotted ends *k k* of a vertical bar, K, which has a slot, *k'*, in its center, through which it is pivotally connected to a stationary supporting-arm, L, extending from about the center of the side of the supplemental bowl D, to which it is secured by any suitable means.

The pivot-head *i* on the outer end of the rod I, which holds through the slot *k* in the upper end of the vertical bar K, also passes through a slot, *k''*, on the lower end of an operating lever-arm, M, which is pivotally connected at *n* to a brace, N, that is rigidly fastened to the seat-board A, and extends up through the slot *a* in the seat-board to form a handle, *m*, by means of which the levers are operated.

The slotted pivotal connections in the lever-arm and bar K permit of a free rising or lowering movement of the joints, so as to enable

the rods carrying the valves to be drawn out and pushed in on the same horizontal plane.

A traction-spring, O, is fastened to the lower portion of the lever-arm M and to the flange *b* of the bowl, which holds the pivotal connection of the lever-arm, vertical bar, and rod I drawn toward the casing-box C, holding the upper valve H to its seat under the elastic packing G.

When the supplemental bowl D is not made of material of sufficient strength to hold the supporting-arm L, this arm may be made in the form of a bracket and secured to the floor T, as shown in Fig. 3, and be so adjusted in height as to hold the vertical pivoted bar K in the desired position for the operation of the valves in the casing-boxes.

Any ordinary device may be used to control the supply of water to the bowl through the opening P, so that it shall be cut off when it reaches the water-mark *z* shown in bowl B. Should the water be raised above this point in the bowl, there is provided vent-pipes Q and R, through which the overflow can pass from bowl B into the supplemental bowl D without materially interfering with the escape of any gases through these pipes into the main vent-pipe S that might at any time arise from leakage of the valves.

The upper bowl is made slightly larger than the lower or supplemental bowl, so that the quantity of water required to fill the upper bowl to the water-mark *z* will nearly fill the lower bowl.

In operation the traction-spring O holds the upper end of the bar K and lower end of lever-arm M drawn in toward the casing-box, carrying the rod I inward and closely crowding the upper valve H under the packing G, to form a gas and water tight joint. By this movement of the bar K the lower valve H is drawn outward on the ways *e*, leaving the exit clear from the supplemental or lower bowl, D, into the pipe leading into the sewer. Any gas that may escape into the lower bowl from the pipes below while the valves are in this position is readily drawn through the vent-pipe R in the side of the bowl and carried off in the main vent-pipe S above. With this construction, when the upper part of the pivoted lever-arm is drawn in the slot *a* of the seat-board, the sliding valves are interchangeable in their action, operating in reverse directions and alternately under the bowls, the upper one being drawn out from under the packing in casing-box C, permitting the contents of the upper bowl to quickly fill the opening below in passing into the supplemental bowl beneath, thereby preventing the escape of gas while the lower valve is being pushed in under the packing in the casing-box E. On releasing the handle *m* of the lever-arm the traction-spring O quickly reverses the levers, sliding the upper one under the packing and withdrawing the lower one from under the packing, permitting the contents of the supplemental or lower bowl, D, to fall through the opening beneath into the pipe leading to the sewer. It will be observed that in interchanging these duplicate valves the passage-way between the sewer-pipe and the upper bowl is kept constantly closed, thereby preventing the escape of effluvia and sewer-gas into the apartment where the closet is located.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A water-closet having two bowls, one above the other, with a casing-box under each bowl, recessed in their upper side to hold a packing having a downwardly-conical projection extending into the chamber of the boxes, said casing-boxes containing wedge-shaped valves grooved on their edges and adapted to slide in reverse directions to each other on ways on the side of the boxes, extending only part of the length of the chamber, as set forth.

2. In a closet, a vertical bar pivoted in its central slot to a stationary arm and through its end slots to rods connected with valves in casing-boxes, alternately sliding under bowls one above the other, in combination with an operating lever-arm slotted at its lower end and pivoted therein to the rod and to the upper end of the slotted bar and to a depending brace from the seat, the upper valve being held under the bowl by a tension-spring secured to the lever-arm, substantially as and for the purpose set forth.

3. The combination, with a main bowl and supplemental bowl underneath thereof, each bowl having a vent-pipe leading into a main vent, each bowl resting on a casing-box provided with a packing in a recess in its upper side, held in place by the flange of the bowl, and a wedge-shaped valve therein grooved in its sides to slide on ways on the sides of the boxes, of a vertical bar pivoted in its center to a supporting-arm on the side of the lower bowl, said bar having slotted pivotal connections at its ends with the sliding valves and at the upper end with an operating lever-arm pivoted to a brace depending from the seat, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

RICHARD A. HILL.
ROZIER C. HILL.

Witnesses:
WM. HELMICK,
C. B. CAYWOOD.