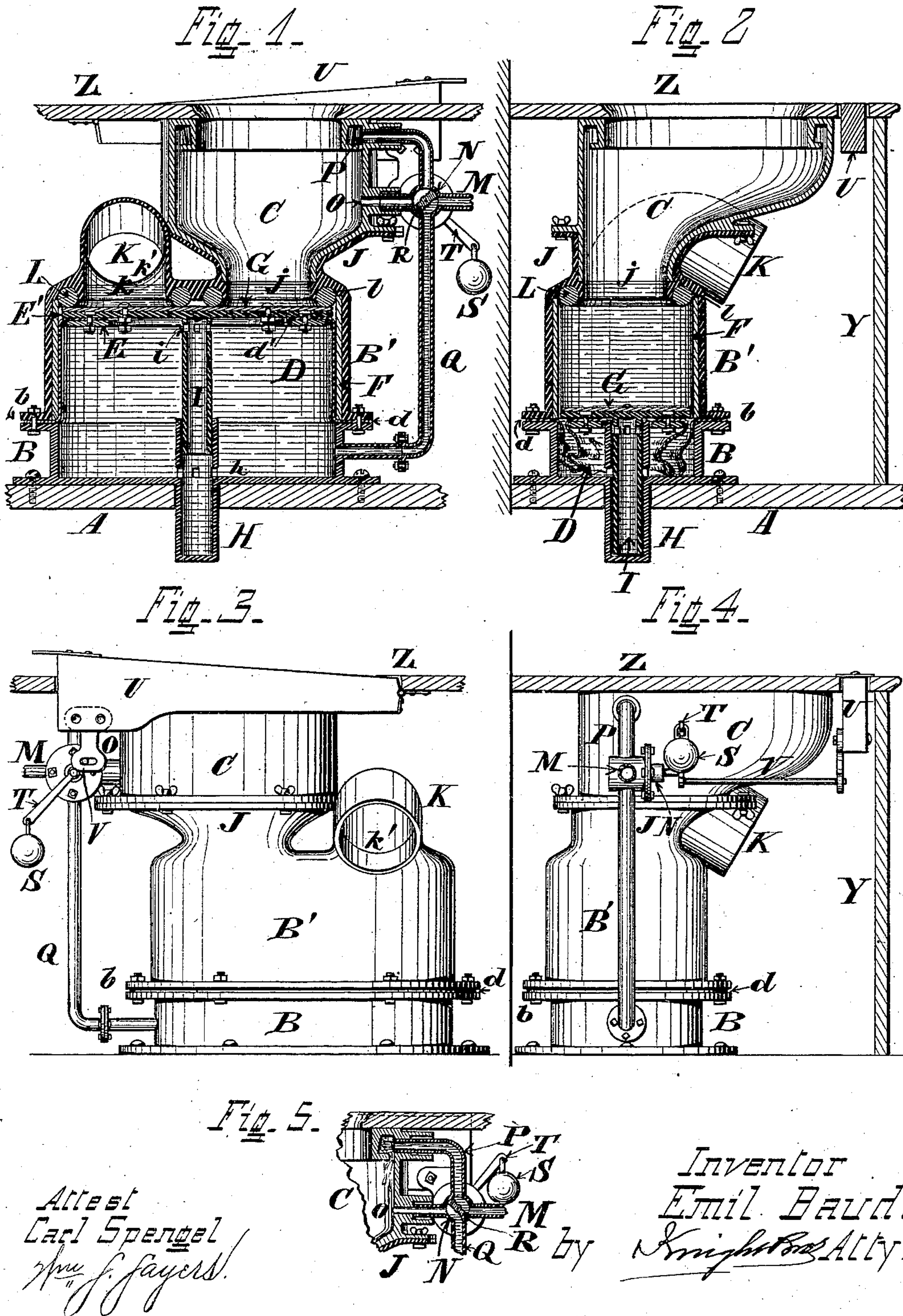


E. BAUDE.  
WATER CLOSET.

No. 294,185.

Patented Feb. 26, 1884.



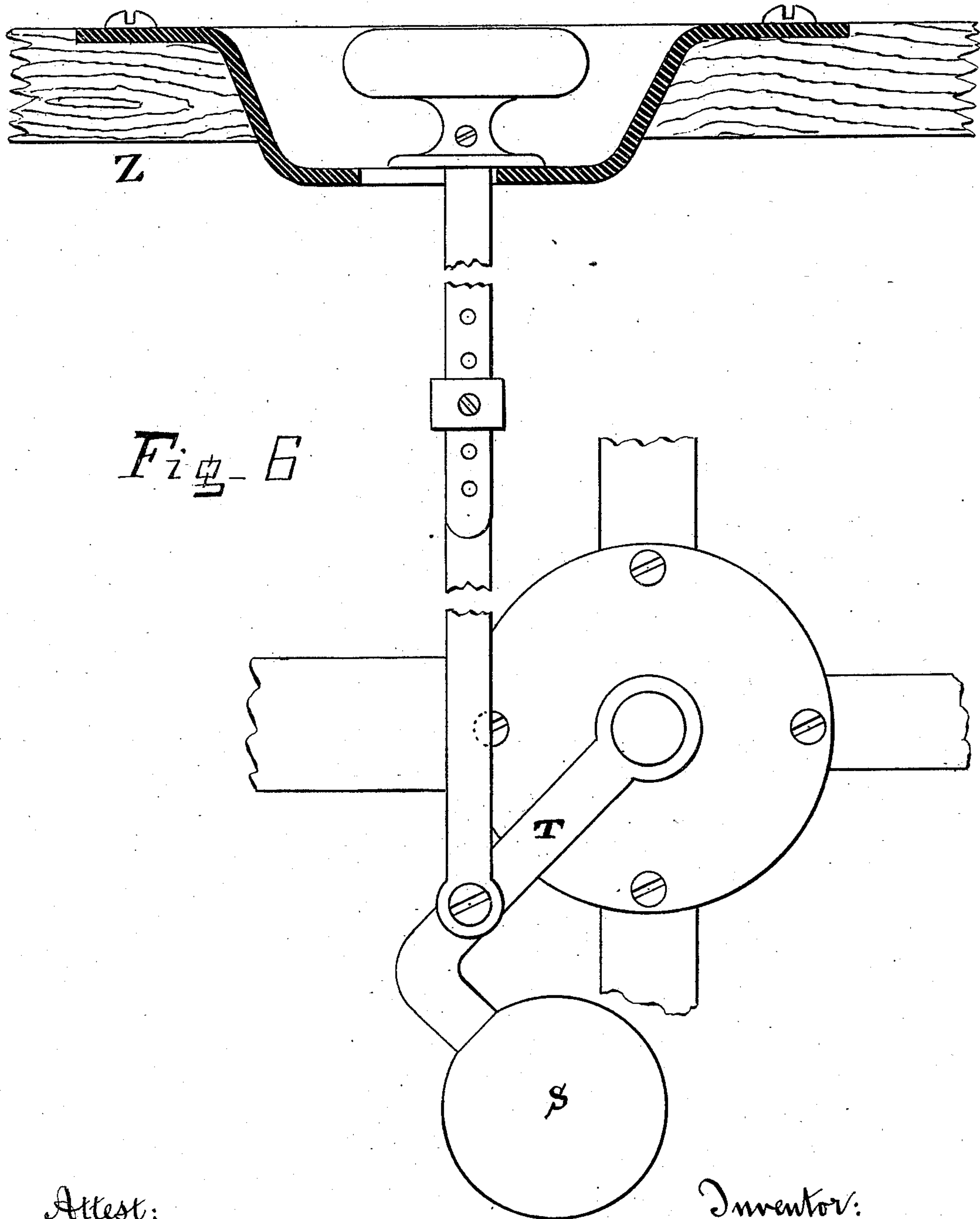
(No Model.)

2 Sheets—Sheet 2.

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Attest:

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Inventor:  
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# UNITED STATES PATENT OFFICE.

EMIL BAUDE, OF CINCINNATI, OHIO.

## WATER-CLOSET.

SPECIFICATION forming part of Letters Patent No. 294,185, dated February 26, 1884.

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

*To all whom it may concern.*

Be it known that I, EMIL BAUDE, 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 to an improved construction of a water-closet acting by hydrostatic pressure, and, in its preferred form, wholly automatic.

In the accompanying drawings, Figure 1 is a vertical section in the plane of the flush-cock and in the normal or inactive condition of the apparatus. Fig. 2 shows by a section at right-angles to Fig. 1 the parts in the condition they assume during use. Fig. 3 is a rear, and Fig. 4 a side, elevation of the apparatus in the unused and the used conditions, respectively. Fig. 5 is a section showing the condition of my flush-cock during use of the closet. Fig. 6 is a modification.

A may represent a portion of the floor of a water-closet.

Y and Z may represent the customary box and seat.

Bolted to the floor is an oblong tank, composed of two parts, B B', of the supporting-pedestal of the bowl or hopper C. The said pedestal, called by me "the temporary receiver," besides its duty of upholding the bowl, discharges important functions of my device, which are explained in the sequel.

Secured between the bolted flanges *b* of the parts B B' is the outer rim or margin, *d*, of a hat-shaped diaphragm, D, of india-rubber or leather or other highly-flexible impervious fabric, whose inner edge, *d'*, is tightly held between two oval plates, E E', of corresponding exterior shape to, but of slightly smaller dimensions than, the interior of the receiving tank or chamber B B' in its horizontal section, the lower plate, E, being preferably annular. The upper portion, B', of the temporary receiver is preferably lined with a cylinder, F, of glass or porcelain. There is, for a like purpose, preferably fastened to the top of plate E', a plate, G, of some non-corrosive material—such as glass or porcelain.

Cast in one piece with and projecting below and above the bottom of the part B is a tube, H, which receives and guides to a vertical path the slightly smaller tubular projection

I from the plate E'. Holes *h* and *i* in the tubes H and I permit free passage of water between their interior and that portion of the receiving-chamber that is for the time being below the diaphragm.

Cast solidly with the part B', and communicating with it by ports *j k*, are the bowl-rest or bearing J and the soil-pipe elbow K. Surrounding these ports, on the under side of the crown-plate of part B, are annular grooves *l*, for rubber seat rings or gaskets L, which, when the glass plate or valve G is pushed to its upward limit by the hydrostatic pressure from below, coact with said plate and with the superincumbent bodies of water to completely seal the apparatus against the leakage into the closet of sewer-gases. The height of these superincumbent bodies of water depends on the location of the overflow *k'* of the sewer-elbow in vertical elevation above the crown of the temporary receiver.

The service-pipe M, which connects with a water-supply pipe or elevated tank, (not shown,) enters one side of a four-way cock, N, whose opposite and upper sides communicate by passages O and P with the hopper, and from whose lower side a passage, Q, conducts to the part B of the temporary receiver which is below the diaphragm. The valve R has a stroke of ninety degrees, and, in one of its two positions, corresponding to the inactive condition of the apparatus, (see Fig. 1,) shuts off the water-supply from the hopper, but opens it to that part of the receiving-chamber which is beneath the diaphragm. In the other of its two positions, corresponding to the active condition of the apparatus, (see Fig. 5,) communication is opened from the service-pipe through the flush-pipe P with the upper part of the bowl or hopper, and from part B of the receiving-chamber with the hopper by way of the passage Q.

The valve R is preferably operated automatically by the weight of the user through the following instrumentality: The said valve is held normally to position shown in Figs. 1 and 3 by means of a counter-weight, S, at the extremity of an arm, T. From this position said valve is shifted to its other position by pressure of a hinged beam, U, upon wrist V upon said cock or valve.



The operation is as follows: In disuse the parts occupy the positions shown in Figs. 1 and 3, the operating instrumentality U being elevated and the cock N being so disposed as to open connection between the service-pipe M and the bottom of the temporary receiver, and to hold the double-seated valve G shut by hydrostatic pressure. The represented slight elevation above the portage levels of the soil-pipe overflow *k'* causes retention of small bodies of water, as seen in Fig. 1, which, insuring a wet contact of valve G and rubber seats L, affords a quadruple gas-seal or hermetical protection. The action of the apparatus being to promptly float the masses of soil over direct into the soil-pipe by the capacious horizontal passage opened for it during use, the liquid residues in the hopper and the soil-pipe elbow consist of a fresh supply of, and therefore odorless, water. Occupation of the seat by depressing the instrumentality U instantly changes the above-described conditions by causing the cock N to assume the position shown in Figs. 4 and 5, which, closing communication between the service-pipe and the part B of the temporary receiver, opens separate communications from said part B and from the service-pipe to the hopper, as seen in Fig. 5. The valve G being thus relieved of upward water-pressure, sinks by its own gravity to position shown in Fig. 2, so as to open communication by short direct horizontal passage with the soil-pipe, the excrementitious matter (by reason of its comparative levity and the overflow incident to the constant influx of flush-water) being floated wholly away and precipitated over the bend *k'* of the soil-pipe. Vacation of the seat reverses the cock N, and while shutting the hopper off from both the water-main and the lower chamber of the temporary receiver, opens connection between said main and said chamber and causes the valve to rise by hydrostatic pressure, which action operates to expel through the soil-pipe overflow the entire contents of the chamber B', save the small residue shown in Fig. 1, sufficient to act as a water-seal.

It is apparent that in the above-described arrangement (instead of passing through the body of the water) the excrementitious and other waste matter is floated directly off on the surface of the water without contaminating it in the least. This arrangement is also manifestly free from closely-confined valve or piston chambers liable to become clogged and befouled with filth. During use the constant flow of water toward the soil-pipe, followed by the discharge of the contents of the chamber B' immediately after use, insures removal

of the entire waste matter, and consequently fresh water alone remains in the hopper on closure of the valve. Entrance of sewer-gas to the closet is rendered impossible, because the hydrostatic pressure beneath the valve is always more than the equivalent of any back-pressure, even under the most extreme atmospheric conditions. In case of detention of any fecal matter, it can be easily removed by a swab or mop, the valve G being temporarily held down for that purpose. The "siphonage" to which all soil-pipes that communicate with several distinct closets are subject does no harm, because of the effectual seal at the places of discharge. In this arrangement overflow into the room is impossible, because whenever the flush is open water-pressure is cut off from the under side of the valve G, which, remaining open, permits free escape of the contents.

The above-described preferred form of my improvement may be varied in non-essential particulars. For example, the cock N may be operated by a common hand-pull, as shown in Fig. 6, instead of by the user's weight.

I claim—

1. In a water-closet, the combination, with the soil-hopper and soil-pipe having downwardly-presented ports in the same horizontal plane, of the duplex valve, to seat upwardly and simultaneously against said ports by the pressure of water-supply.

2. In a water-closet, the combination, with hopper and soil-pipe having downwardly-presented ports in the same horizontal plane, of duplex valve, hat-formed diaphragm, and temporary receiver.

3. In a water-closet, the combination, with temporary receiver B B' and diaphragm D, of the doubly-seating valve G, whose tubular and perforate stem I occupies a tubular perforate guide, H, in the reservoir-floor, as and for the purpose set forth.

4. In a water-closet, the described organism, to wit: a soil hopper or bowl and a soil-pipe, both ported downward and at the same level, a valve whose gravity during use of the closet opens both ports simultaneously, and which on vacation of the closet closes both ports simultaneously by pressure of the water-supply, a four-way cock, N, and an operating instrumentality, substantially as set forth.

In testimony of which invention I hereunto set my hand.

EMIL BAUDE.

Attest:

GEO. H. KNIGHT,  
JOHN A. PENN.