

(No Model.)

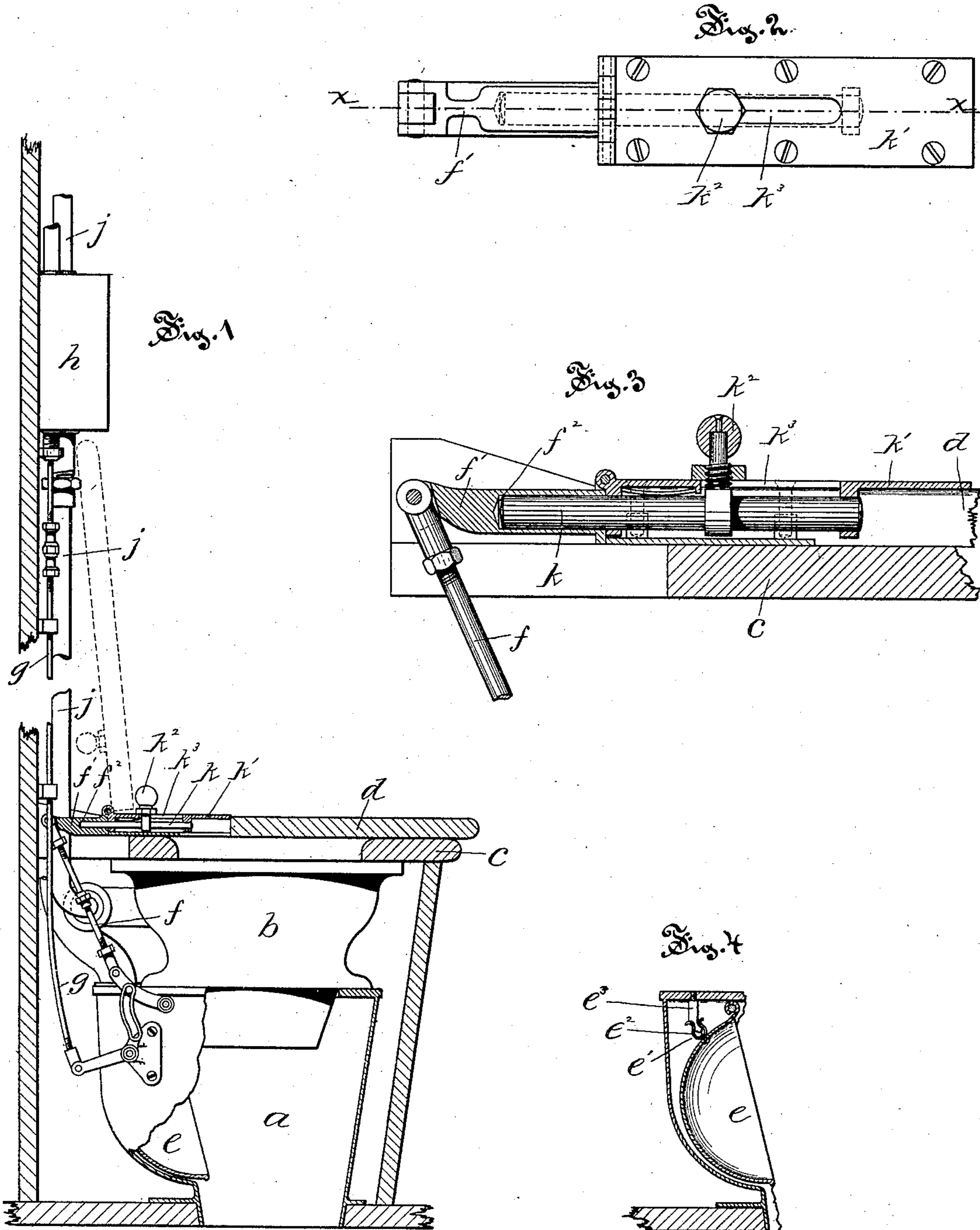
J. L. & C. P. HOWARD.

2 Sheets—Sheet 1.

WATER CLOSET.

No. 322,101.

Patented July 14, 1885.



Witnesses  
Wm. J. Parkman.  
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Inventors:  
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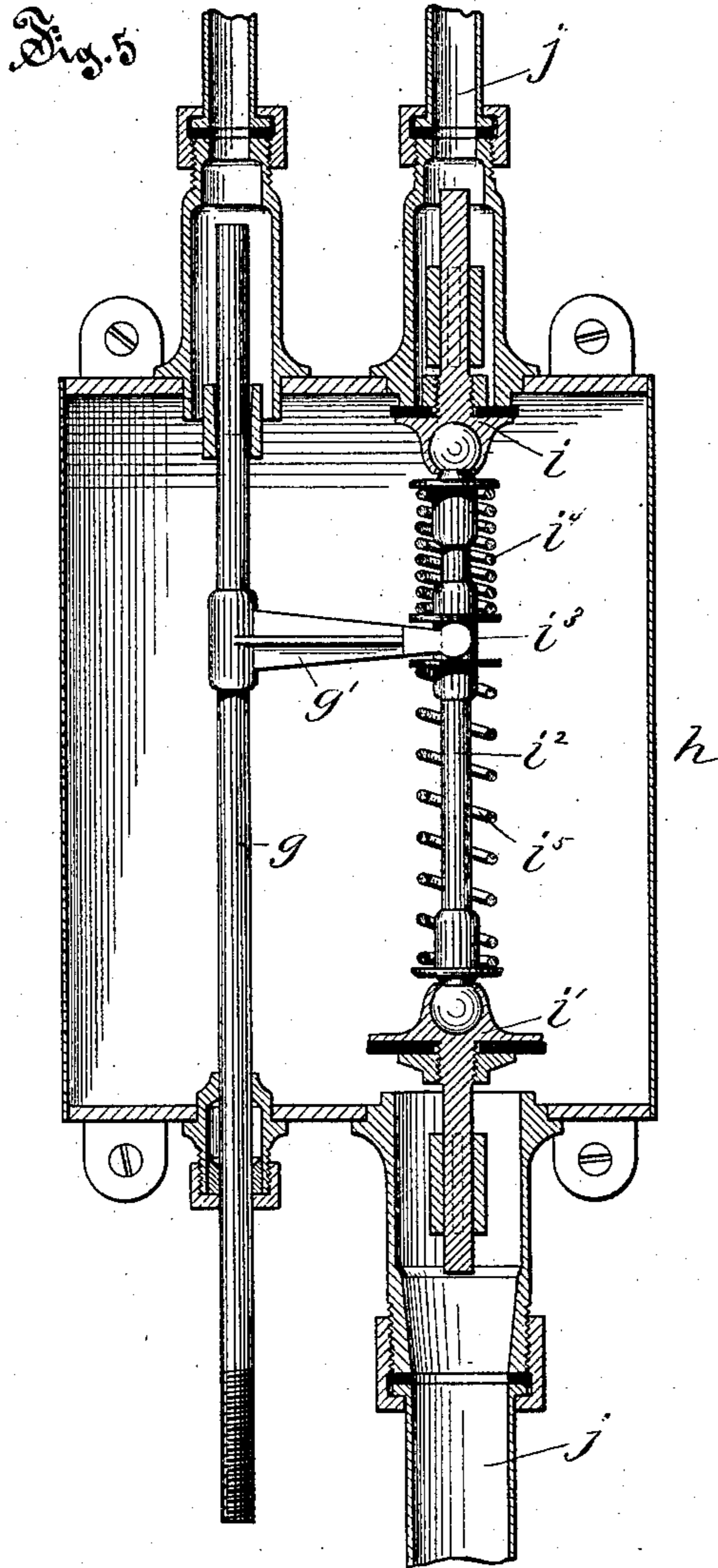
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WATER CLOSET.

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Witnesses  
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# UNITED STATES PATENT OFFICE.

JAMES L. HOWARD AND CHARLES P. HOWARD, OF HARTFORD, CONN.

## WATER-CLOSET.

SPECIFICATION forming part of Letters Patent No. 322,101, dated July 14, 1885.

Application filed July 19, 1884. (No model.)

*To all whom it may concern:*

Be it known that we, JAMES L. HOWARD and CHARLES P. HOWARD, both of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Water-Closets; and we do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 is a view in elevation of our improved closet, with parts shown in section. Fig. 2 is a detail top view on enlarged scale of the bolt. Fig. 3 is a detail view in vertical central section on plane denoted by line *xx* of Fig. 2. Fig. 4 is a detail sectional view of the pan, showing the frictional catch for holding back the pan.

Our invention relates particularly to the class of water-closets designed for use in railway-cars and the like; and it consists in certain modifications of and improvements in the closet shown and described in United States Letters Patent granted to us August 28, 1883, No. 284,016.

Our present improvement consists in the combination of parts which enables the closet to be used as a water-closet or as a dry-closet, and in the valve mechanism connected to the service-measure through which water is supplied to the closet.

In the accompanying drawings, the letter *a* denotes the discharge-chamber, supported on the floor by the usual flange; *b*, a bowl, preferably of earthenware or porcelain, attached to the top of the discharge-chamber; *c*, the closet-seat; *d*, the lid hinged to the seat in the usual manner; *e*, a swinging pan pivoted within the discharge-chamber, and so arranged as to be swung forward into a horizontal position below the bowl by means of connected mechanism *f*, similar to that described in our above-mentioned patent; *g*, a rod pivotally connected to the bolt, and extending upward to a point below the service-measure *h*, and bearing an arm, *g'*, that engages with and operates the double valve *i*. The water-supply pipe *j* extends from a reservoir, secured in any convenient place above the service-measure, to the measure into which it opens, and

from the measure on the lower side to a point within the bowl of the closet, into which the water from the measure is discharged when the lower valve is open, as shown in Fig. 5.

The arm *f'* of the pan-operating mechanism, instead of being rigidly secured to the seat, is hinged thereto, and is provided with a bolt-socket, *f''*, to receive a sliding bolt, *k*, which is borne in a bolt-case, *k'*, which is secured to the lid. This bolt may be operated by means of a handle, *k''*, which projects through the slot *k'''* in the upper part of the bolt-case. When the lid is connected to the arm by means of this bolt *k*, as is shown in Figs. 1, 2, and 3, the lifting of the lid will throw the service-pan forward and upward in position to receive a supply of water from the service-chamber, the outlet-valve in which is operated by rod *g* and connected mechanism, as shown. In the event, however, that the supply of water in the reservoir has become exhausted, it is an objection rather than an advantage to have the service-pan thrown forward to close the bottom of the bowl, and the throwing forward of the pan is prevented by sliding back the bolt *k*, and thus preventing the arm *f* from being moved when the lid is raised. When the bolt is slid back and disengaged from the arm *f*, the lid is raised to the position indicated in dotted lines in Fig. 1 without disturbing the pan or water-supply mechanism, and the closet used like the ordinary railway-closet.

In order to hold the pan *e* in its lower position, as shown in Figs. 1 and 4, a frictional clamp, *e'*, is provided, that consists of a U-shaped spring, *e''*, fast to the under side of the bowl, the arms of which grasp the spear-shaped head of a stud, *e'''*, fast to the wall of the discharge-chamber *a*. This spring holds with sufficient force to prevent accidental play of the pan, but allows the pan to be swung forward when force is applied, as by lifting the lid of the seat when the lid is connected to the pan-operating mechanism by the bolt *k*.

Within the service-measure *h* the valves *i* *i'* are secured by a ball-and-socket joint to opposite ends of a valve-rod, *i''*, which is of such length that when one of the valves, as *i*, is in contact with its seat the other, *i'*, will be raised from its seat. The ball-and-socket connection of the parts provides for any irregularity in

placing the pipes directly opposite and in a line with each other.

About the rod  $i^2$  is fitted a sleeve,  $i^3$ , with flanges, forming between them a socket for the forked ends of the arm  $g'$ , and also a bearing for the spiral springs  $i^4$   $i^5$ , arranged upon the rod and thrusting upon the flanges of the sleeve, and with their opposite ends upon the flanges fixed to the rod near its end. When the rod  $g$  is in the raised position illustrated in Fig. 5, the arm  $g'$  raises the sleeve  $i^3$  in such manner as to close the valve  $i$  with a force depending upon the degree of compression of the spring  $i^4$ , and the lower or discharge outlet-valve,  $i'$ , is raised from its seat. When the rod  $g$  is drawn downward, the valve  $i'$  is closed by the compression of the spring  $i^5$ , and this alternate opening and closing the inlet and outlet valves of the discharge-chamber is effected by the sliding of the rod  $g$  by means of the connected mechanism when the closet-lid is opened and closed.

We claim as our invention—

1. In a water-closet, in combination, the bowl  $b$ , the swinging service-pan  $e$ , and the pan-operating mechanism  $f$ , having the arm  $f'$ , bearing a bolt-socket and pivotally connected to the lid  $d$ , bearing a bolt,  $k$ , all substantially as described.

2. In a water-closet, in combination, a bowl, a swinging service-pan, a lid covering the

bowl, the pan-operating mechanism connecting the lid and the pan, and a catch for detachably connecting the lid with the arm  $f'$  of said mechanism, all substantially as described. 35

3. In a water-closet, in combination, a bowl,  $b$ , swinging pan  $e$ , lid  $d$ , service-measure  $h$ , mechanism, substantially as described, connecting the lid with the valves in the service-chamber, and the valves  $i$  and  $i'$ , rod  $i^2$ , sleeve  $i^3$ , springs  $i^4$  and  $i^5$ , and arm  $g'$ , fast to the sliding rod  $g$ , all substantially as described. 40

4. In a water-closet, in combination, the service-measure  $h$ , sliding rod  $g$ , with arm  $g'$ , having a forked end engaging the sleeve  $i^3$ , held between the spiral springs  $i^4$   $i^5$  on the rod  $i^2$ , bearing the loosely-attached valves  $i$  and  $i'$ , and the valve-seats on the inlet and outlet pipes of the service-chamber, all substantially as described. 45

5. In a service-measure, the inlet and outlet valve seats and the rod  $i^2$ , bearing the loosely-connected valves  $i$  and  $i'$ , and the sleeve  $i^3$ , movable on the rod and held between the springs  $i^4$  and  $i^5$ , with means for moving the sleeve, all substantially as described. 50

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