

(No Model.)

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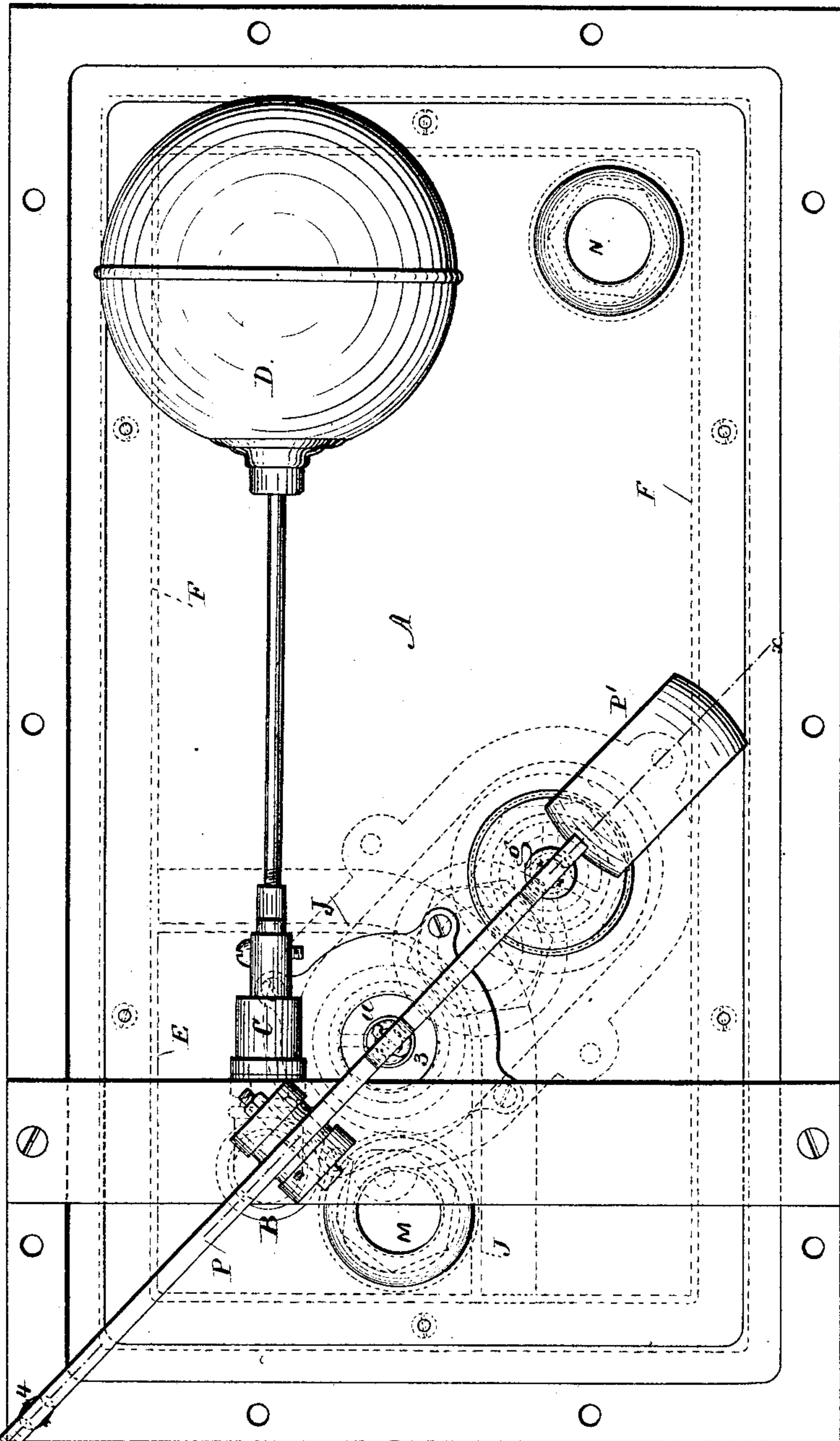
J. REID.

CISTERN FOR WATER CLOSETS.

No. 280,243.

Patented June 26, 1883.

Fig. 1.



Witnesses
J. Haib
Chas. H. Smith

Inventor
John Reid
per Lemuel W. Serrell atty

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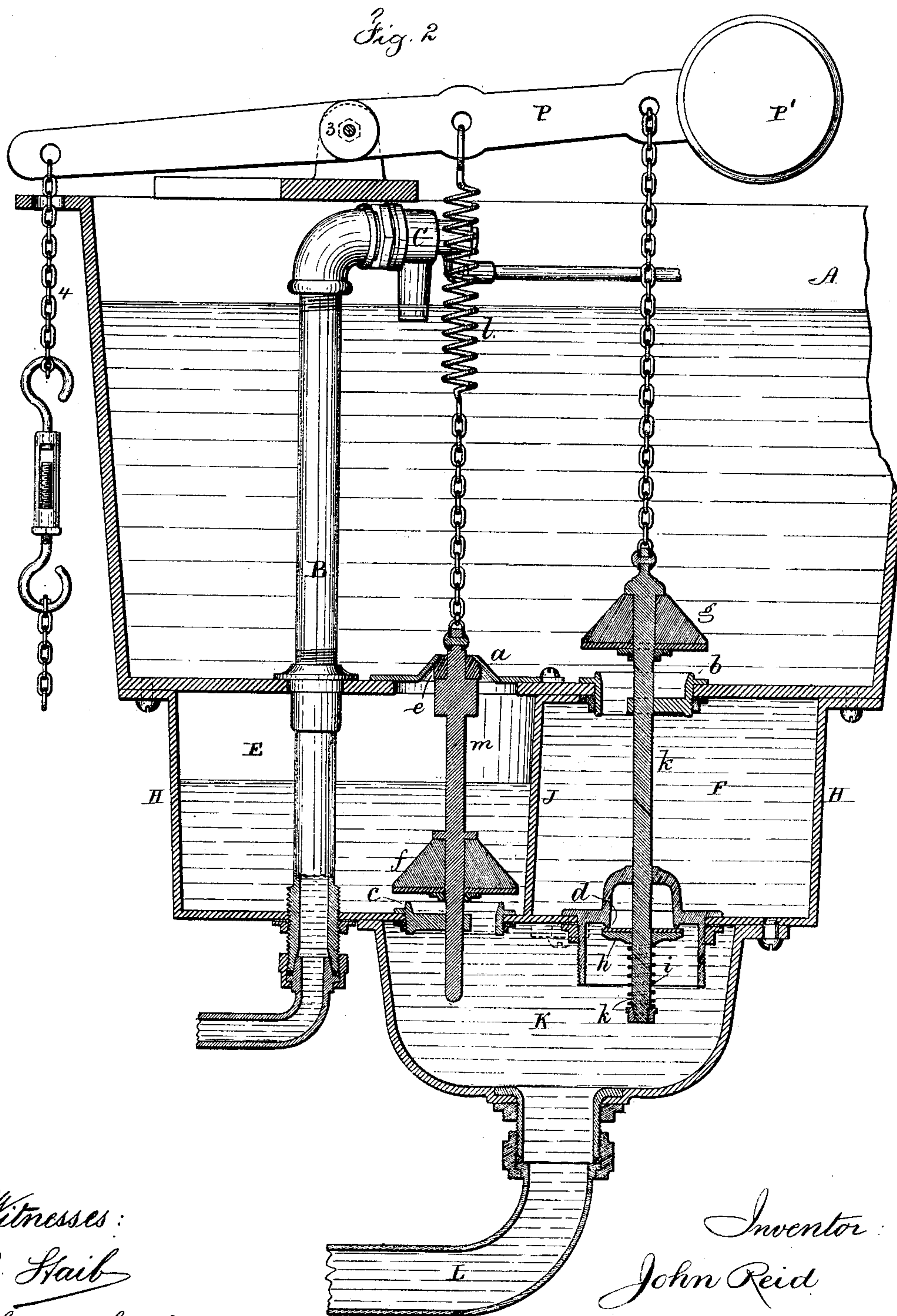
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UNITED STATES PATENT OFFICE.

JOHN REID, OF BROOKLYN, ASSIGNOR TO THE J. L. MOTT IRON WORKS,
OF NEW YORK, N. Y.

CISTERN FOR WATER-CLOSETS.

SPECIFICATION forming part of Letters Patent No. 280,243, dated June 26, 1883.

Application filed December 15, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN REID, of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Cisterns for Water-Closets, of which the following is a specification.

The object of this invention is to supply to the closet a preliminary wash before the closet is used, and an after-wash when the person leaves the closets. Devices have been made with this object in view. My invention is for avoiding unnecessary consumption of water, and for rendering the mechanism reliable. I employ two pairs of double-acting valves, with water-ways and valve-seats, a main-supply water-cistern, and two flushing boxes or cisterns below the main cistern. The pairs of valves act in opposite directions, so that when raised the supply-opening to the preliminary-flushing box is closed, and the escape to the closet opened. At the same time the supply-opening to the after-flushing box is opened and the discharge-opening closed. As the valves descend, the reverse movement takes place, so that the after-flushing discharges into the closet, to thoroughly wash the same when the person rises from the seat or leaves the closet; the preliminary wash having been given when the person entered the closet, or depressed the seat by sitting on the same.

In the drawings, Figure 1 is a general plan of the cistern, and Fig. 2 is a vertical section at the line *x x*.

The cistern A is of a suitable size, and preferably of cast-iron. The inlet water-pipe B passes up through the bottom, or in through the side, in any desired manner. There is a valve or cock at C and a float, D. These parts are of ordinary construction, and serve to supply water from a suitable head, and shut off the supply at a given level.

Beneath the cistern A are two water boxes or cisterns—the portion E containing the water for the preliminary flushing, and the portion F the water for the after-wash. These boxes will usually be formed of one casting, H, with a partition, J, that separates one box from the other. The position of this partition is indicated by dotted lines, Fig. 1. The box E, for

the preliminary wash, is much the smallest. The casting H is preferably bolted to the under side of the cistern A, the joint being made water-tight by putty or cement.

Below the boxes E F there is the water-way K and a pipe, L, leading to the water-closet.

At M and N there are two vertical pipes rising as high as the water-level, and opening through the bottom of the cistern A into the boxes E F, so as to admit air and to form overflow-pipes to the cistern A—the same as usually provided in water-closet cisterns and service-boxes.

There are four valve-seats. Those marked *a* and *b* are in the bottom of the cistern A. Those marked *c* and *d* are in the bottom of the boxes E F, respectively, and open into the water-way K. The seat *a* is directly over *c*, and *b* directly over *d*. The valves *e* and *f* are on one spindle, and the valves *g* and *h* are on the other spindle, and both spindles are connected by chains to the lever P. The fulcrum 3 of this lever P is above the cistern, and there is a chain or wire, 4, passing from the end of the lever P to the water-closet door, seat, platform, or pull, there being suitable intervening levers, so that the lever will be operated in the desired manner to raise the weighted end P', and lift the valves when the person commences to use the closet, and the lever will fall when the person leaves the closet.

In the normal condition, when the closet is not being used, the valve *g* will rest on its seat *b*, and the valve *f* will be on its seat *c*; hence the valves *h* and *e* will be open. Water can therefore flow by the seat *a* into the box E and fill the same, but the box F will be empty. If, now, the lever P is moved, the conditions are reversed; the valve *e* is closed, shutting off the inlet to E, and the valve *f* is raised, so that the water from E rushes to the closet, giving the preliminary wash. By the same motion of the lever P the valve *h* is closed and the valve *g* opened, so that water runs into the after-flushing box F; but it does not escape from the same until the lever P is allowed to return to its normal position, and the valve *g* closes, and the valve *h* opens and allows the contents of F to flush the water-closet, thoroughly cleansing

the same. The valves *f* and *g* are ordinary weighted valves, with elastic faces closing upon circular raised seats; the valve *h* is shown as a disk with a leather face closing up against the seat *d*, with a spring, *i*, to press it to place, the valve itself sliding on its stem *k*. This allows for holding the valve to its seat by the spring, even if the lever *P* does not receive its full movement, or there is any inaccuracy of adjustment. With the same object in view, the spring *l* is applied between the stem *m* of the valves *e f* and the lever *P*, so that it may yield, but also hold the valve *e* to its seat when the closet is in use.

I prefer to make the valve *e* as a segment of cylindrical rubber, and to make the seat *a* small and conical, so that the valve *e* acts as an elastic plug to the seat *a*. This seat may be small, as there is always time for the box *E* to fill with water while the closet is not in use.

The usual guides or bridges should be provided for the valve-stems, and it is preferable to employ brass valve-seats secured to the iron, as usual.

I claim as my invention—

1. The combination, with the water-closet cistern *A* and the water-boxes *E F*, of the lever *P*, the valve *g*, above the seat *b* and closing downwardly, the valve *h*, on the same stem and closing upwardly against the seat *d*, the valve *f* closing downwardly upon the seat *c*, the valve *e*, upon the same stem as the valve *f*, closing upwardly against the seat *a*, and the connections between the respective valve-stems and the lever *P*, substantially as set forth.

2. The combination, with the water-closet

cistern *A* and preliminary-flushing box *E*, of the valve *f* and valve *e*, upon the same stem and within the box *E*, the valve *f* closing downwardly upon the seat *c*, and the valve *e* closing upwardly against the seat *a*, and the connection from said valves to the operating-lever *P*, as and for the purposes set forth.

3. The combination, with the water-closet cistern *A*, after-flushing box *F*, and water-way *K*, of the valves *g* and *h*, upon the same stem, the valve *g* being within the cistern *A*, and closing downwardly upon its seat *b*, and the valve *h* within the water-way *K*, and closing upwardly against its seat *d*, a spring, *i*, below said valve *h*, and connection to the operating-lever *P*, as and for the purposes set forth.

4. The combination, with the cistern *A* and water-boxes *E F*, of the valves *e f*, within the box *E*, and at the inlet and discharge openings of the same, the valve *g*, above the inlet, and the valve *h*, below the discharge-opening of the box *F*, and the lever *P* and connections to the respective parts, substantially as set forth.

5. The combination, with the cistern *A* and water-box *F*, of the valve-seats *b d*, valves *g* and *h*, above and below the respective seats, the valve-stem *k*, the spring *i* to the valve *h*, the lever *P*, and connection from the same to the valve-stem, substantially as set forth.

Signed by me this 11th day of December, A. D. 1882.

JOHN REID.

Witnesses:

JAS. E. PALMER,
MAX GOEBEL.