

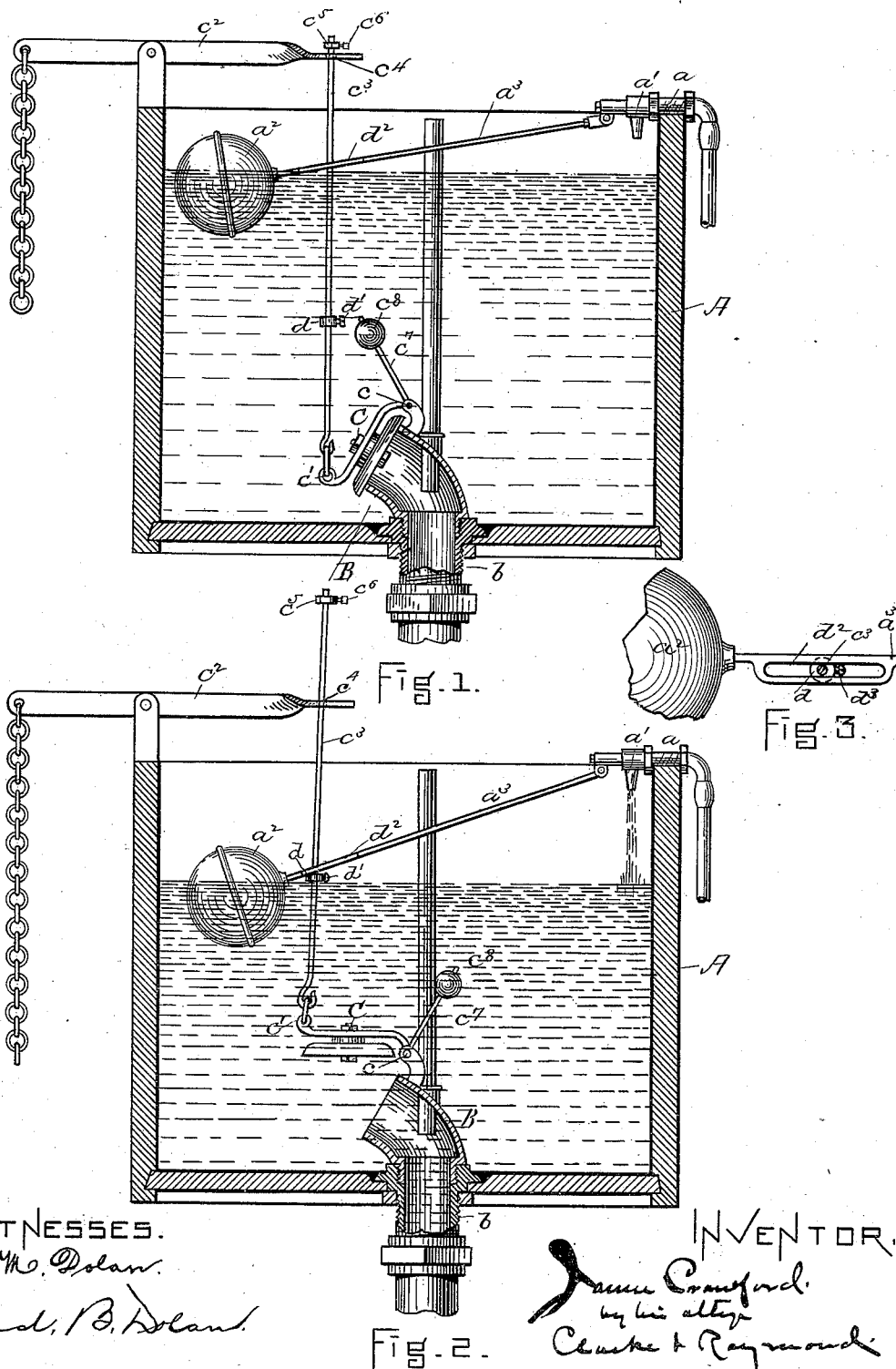
(No Model.)

J. CRAWFORD.

SERVICE BOX FOR WATER CLOSETS.

No. 381,911.

Patented May 1, 1888.



WITNESSES.

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UNITED STATES PATENT OFFICE.

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SERVICE-BOX FOR WATER-CLOSETS.

SPECIFICATION forming part of Letters Patent No. 381,911, dated May 1, 1888.

Application filed April 28, 1887. Serial No. 236,429. (No model.)

To all whom it may concern:

Be it known that I, JAMES CRAWFORD, of Cambridge, in the county of Middlesex and State of Massachusetts, a citizen of the United States, have invented a new and useful Improvement in Service-Boxes for Water-Closets, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The object of the invention is to provide a simple and efficient means for providing the closet with a copious supply of water, and one that shall continue after the opening of the valve and the release of the lever operating it.

The invention comprises a service-box having a discharge-outlet controlled by a valve operated in part by a weight or balance and in part by the float which governs the cock of the water feed-pipe.

In the drawings, Figure 1 is a view in vertical section of the service-box, showing the position of the parts when the valve is closed. Fig. 2 is a vertical section showing the position of the parts when the valve is open. Fig. 3 is a detail view of a part of the float-arm and valve-rod.

Referring to the drawings, A represents the service-box. *a* is the water-supply pipe; *a'*, a cock, which is of ordinary construction, and which is opened and closed in the ordinary way by the float *a''*, which is connected with the cock by the long arm *a'''*.

B is a casting forming the frame of the valve and also the passage through which the water escapes from the service-box. It extends through the bottom of the box and has a coupling end, *b*, upon the under side thereof. It has also an inclined opening, which is adapted to be controlled or closed by the clapper-valve C. This valve is pivoted at *c* to the casing B of the valve, and its arm *c'* is connected with the operating-lever *c''* by a rod, *c'''*, which passes through a hole, *c''''*, in the inner end of the lever. This rod is free to move in said hole to any degree or extent, limited only by the adjustable block or stop *c'''''*, which is fastened to the rod by a screw, *c''''''*. The clapper-valve C also has secured to it near the fulcrum or pivotal point *c* an arm or rod, *c''*, extending, when the valve is closed, upward sufficiently out of the perpendicular to cause

the weight *c''*, which it carries at its upper end, and which preferably is of lead, to keep the valve closed. The rod *c'''* also has a stop, *d*, which is adjustable thereon, and which is secured thereto at any place thereon by a screw, *d'*. The valve-rod is also connected with the arm *a'''* of the float *a''* by the loop or connection *d''*, so that the float-arm is free to move on the valve-rod, but is held thereto in a manner to bring it in contact with the stop *d*, as will hereinafter appear.

In operation, the lever *c''*, having been moved to open the clapper-valve C, is released in the ordinary way. The valve C, however, instead of closing immediately, remains open, being held open by the counterbalancing-weight *c''*, which then assumes the position represented in Fig. 2, and the lever *c''*, being free to move upon the valve-rod *c'''*, returns to its original position. The valve C remains open to permit the water to escape from the service-box until the float *a''* has fallen sufficiently to bring its rod into contact with the stop *d*, when the valve C is caused by the weight of the float as the water is gradually drawn off to be closed or partly closed, the weight *c''*, after it has passed a perpendicular position, serving to assist in closing the valve. The float-lever is then lifted in the usual way by the inflow of water into the service-box from the supply-pipe *a* and rides upward upon the valve stem or rod *c'''*, without, however, moving the same, and until it operates to close the inlet-cock *a'*. The downward movement of the clapper-valve to close the outlet of the box of course brings the stop *c'''''* upon the upper end of the valve-rod into operative position with the lever *c''*.

By making the stop *d* adjustable upon the valve-rod *c'''* the valve C may be set or caused to operate after the escape of any given quantity of water from the box.

I do not confine myself to the especial form of valve herein shown and described.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a service-box for water-closets, the combination, with the outlet-passage valve C, having the inclined upwardly-extending arm provided with the counterbalancing-weight arranged above the pivot of the valve to hold the latter open or closed, of the operating-le-

ver c^2 , a rod which connects the said lever with the said valve and which is provided with a stop, an arm which controls the inlet cock and which is arranged to engage the said stop, and
5 a float for operating said arm, whereby when the operating-lever is actuated the discharge-valve will be opened and held open by its counterbalancing-weight until the float-arm falls far enough to engage the stop on the connecting-rod, when the said valve will be auto-
10 matically closed, substantially as set forth.

2. In a service-box for water-closets, the combination, with the valve C, for controlling

the outlet-passage from the box, the said valve having the arm c^1 , provided with the counter- 15 balancing-weight c^3 , of the operating-lever c^2 , the connecting-rod c^3 , having a loose connection with the said lever c^2 and provided with the adjustable stop d , the arm a^3 for controlling the inlet-cock, having the loop d^2 to engage 20 said stop, and the float a^2 , attached to said arm, to operate substantially as set forth.

JAMES CRAWFORD.

In presence of—

F. F. RAYMOND, 2d,

J. M. DOLAN.