(No Model.)

# R. R. COGGIN & J. A. SCOLLAY.

## PRESSURE RESERVOIR FOR SUPPLYING FLUSH WATER TO WATER CLOSETS.

No. 261,583. Patented July 25, 1882.

Fig. 1.

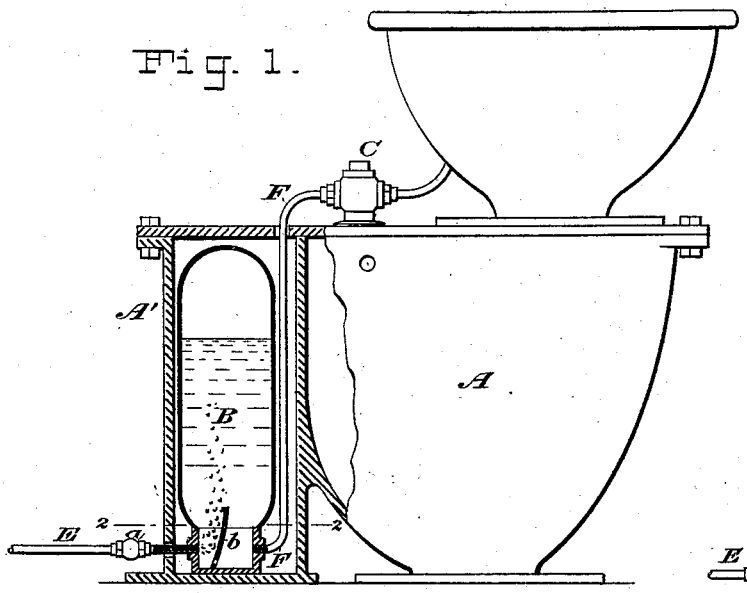



Fig. 2.

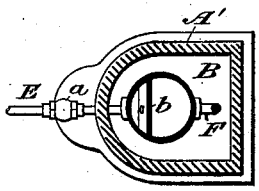



Fig. 3.

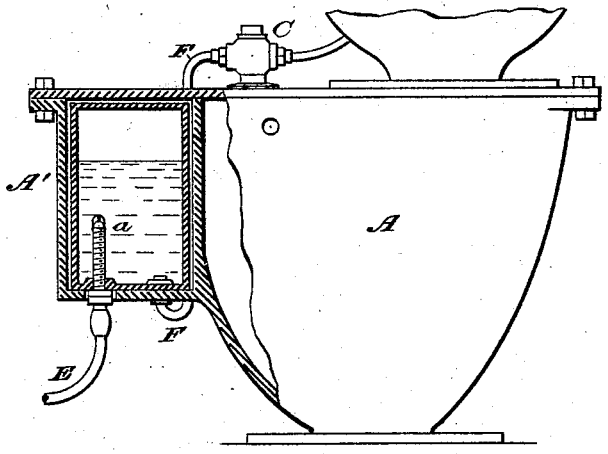
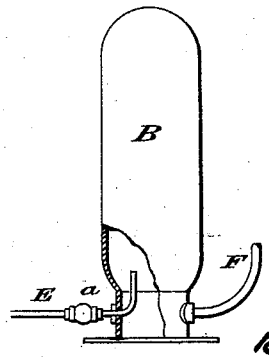



Fig. 4.

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# UNITED STATES PATENT OFFICE.

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## PRESSURE-RESERVOIR FOR SUPPLYING FLUSH-WATER TO WATER-CLOSETS.

SPECIFICATION forming part of Letters Patent No. 261,583, dated July 25, 1882.

Application filed April 17, 1882. (No model.)

*To all whom it may concern:*

Be it known that we, RICHARD R. COGGIN and JOHN A. SCOLLAY, both citizens of the United States, and residents of Brooklyn, Kings county, New York, have jointly invented certain Improvements in Pressure-Reservoirs for Supplying Flush-Water to Water-Closets, of which the following is a specification.

The principal purpose of our invention is to furnish a water-closet with a pressure-reservoir, whereby the same will be supplied with the proper amount of flush-water when the pipe from the service-pipe to the flush-valve is temporarily cut off—as, for example, by the opening of cocks between the closet and main.

The details of the invention relate in part to providing a closet with an extension in which to place the pressure-reservoir and in part to the construction of the said reservoir, all as will be more particularly hereinafter set forth.

In the drawings, which serve to illustrate our invention, Figure 1 is a sectional elevation of a water-closet provided with our improvements; and Fig. 2 is a horizontal section of the reservoir and a portion of the closet-trunk, taken on line 2 2 in Fig. 1. Fig. 3 is a sectional elevation similar to Fig. 1, but arranged to illustrate a somewhat different construction of the reservoir. Fig. 4 shows the reservoir detached from the closet and arranged to connect with the flush-valve by a pipe.

A represents a closet-trunk, which may be of the ordinary kind so far as the tilting pan, valve, &c., are concerned; and we have not shown any of the attachments except the valve. All of these parts may be of the usual kind and operated in the usual way. The trunk of the closet is provided with an exterior chamber, A′, arranged to receive a reservoir, B.

E is the water-service pipe, provided with a check-valve, *a*, and F is the service-pipe from the reservoir B to the flush-valve C. This arrangement will insure a proper amount of flush-water to the closet in any and all cases, as the water is supplied directly from reservoir B, and, owing to the proximity of the reservoir to the valve, and the consequent absence of friction in the pipes, the reservoir will supply under similar conditions nearly twice as much flush-water as would be supplied from the main. The water flows into the reservoir through pipe E and compresses the air therein to the tension due to the maximum pressure in the main, and it cannot flow back again when this pressure is decreased from any cause, owing to the interposition of the check-valve *a*. Consequently, if the flush-valve should be operated at the same time that cocks are open between the closet and the main, the flush will be supplied at full pressure from reservoir B. The amount of water used in flushing will of course depend on the pressure in the reservoir and the length of time the valve occupies in closing. When the cocks between the closet and main are again closed the reservoir will fill up, as before. It is necessary that the air should not escape from the reservoir B, or it will gradually fill with water and lose its effectiveness. Therefore we make it perfectly tight; but in cases where the supply-pipe enters its base at one side and the discharge takes place at the opposite side, or at any side, we find that an induced current is produced, and the air brought in by the incoming stream, as well as the air in the vessel, is gradually but surely abstracted. In cases therefore where it is expedient to arrange the inlet and discharge horizontally, we provide the device which will now be described.

Referring to Figs. 1 and 2, *b* is a breakwater or splash-plate arranged in front of the supply-pipe E, against which the current of water impinges as it enters, and whereby it is broken up and deflected upward. This in a measure pulverizes the water, and the particles of air mixed therewith are liberated and rise to the air-space in the reservoir to augment the quantity of air in the same and replace the portion carried off by the discharge. This breakwater is in the present case simply a metal plate fixed as a partition in the base of the reservoir between the inlet and outlet.

In Fig. 3 we have shown the inlet and discharge pipes arranged in the bottom of the reservoir, and the former projecting upward into the same for some distance. The check-valve *a* in this case is in the nature of a caged ball mounted on the top of the inlet-pipe. In this construction no appreciable induced current is produced, and the breakwater is not employed; but in most cases it is not convenient or possible to bring the pipes in at the bottom, as in cases where the reservoir is connected with closets of the ordinary construc-

tion. In such cases the reservoir is usually set on the floor, (generally under the closet-casing, as shown in Fig. 4,) and the pipes must be introduced at the sides. In this view we have shown the end of pipe E turned up.

We are aware that it has been proposed to supply flush-water to a closet from an air and water reservoir, the valve to be actuated by the pressure on the seat of the closet. In this device the air and water reservoir discharges all of its contents (that can be discharged) at one time through the flush-pipe, and fills again when the seat is depressed. The objection to this device is that the reservoir can fill only while the seat is depressed, and if the service-pipe is being robbed, as is frequently the case while the seat is depressed, the closet will be left without a flush and the reservoir cannot fill again until the closet comes to be used once more. Our device is intended to obviate and does obviate this defect. Otherwise it would be as well to supply the flush in the usual way.

We are also aware that it is not new to merely place an oblique deflector before an inlet-nozzle inside a water-reservoir; but we are not aware of the application of such a partition in a combined air and water chamber as and for the purpose set forth herein.

Having thus described our invention, we claim—

1. The combination, with a water closet, its flush-valve, and a service-pipe for supplying the flush-water, of a tight reservoir connected with the flush-valve by a supply-pipe, and with the service-pipe, the said pipes and a check-valve arranged to prevent the water from the reservoir from flowing backward into the service-pipe, all arranged to operate substantially as set forth.

2. The combination, with a closet-trunk provided with an extension, A′, of a tight reservoir, B, mounted in said extension, a service-pipe, E, provided with a check-valve, *a*, a pipe, F, to supply water from the reservoir to the flush-valve C, and the said flush-valve, all constructed and arranged to operate substantially as set forth.

3. A combined air and water chamber or reservoir of the character described, provided with an inlet-pipe entering it at the side near its bottom, and an outlet-pipe in its side near the bottom, and a breakwater arranged between the inlet and outlet to deflect the current upward and to prevent the formation of a direct current through the reservoir, whereby the air would be gradually withdrawn, substantially as set forth.

4. The combination, with the closet and its flush-valve, the pipes E and F, and the check-valve *a*, of the tight reservoir B, provided with the breakwater *b*, all arranged to operate substantially as shown, and for the purposes set forth.

In witness whereof we have hereunto signed our names in the presence of two subscribing witnesses.

RICHARD R. COGGIN.
JOHN A. SCOLLAY.

Witnesses:
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