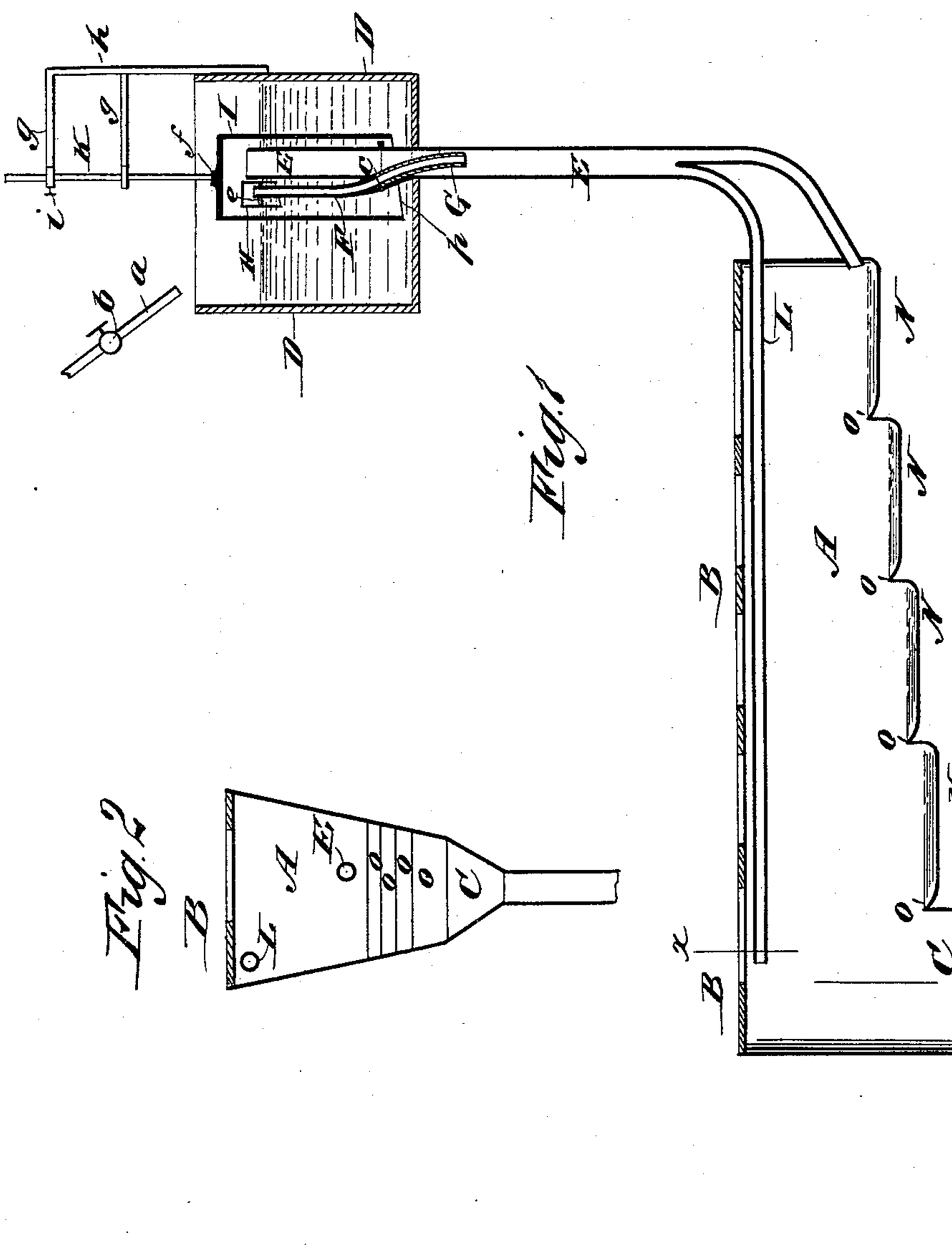
(No Model.)

W. B. PARSONS, Jr.

AUTOMATIC FLUSHING WATER CLOSET.

No. 332,428. Patented Dec. 15, 1885.



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AUTOMATIC FLUSHING WATER-CLOSET.

SPECIFICATION forming part of Letters Patent No. 332,428, dated December 15, 1885.

Application filed August 19, 1885. Serial No. 174,804. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BARCLAY PARSONS, Jr., of Elmira, in the county of Chemung and State of New York, have invented a new and Improved Water-Closet Trough, of which the following is a full, clear, and exact description.

My invention relates to the construction of troughs, and more especially to that class of troughs used for water-closets that are intermittingly flushed.

The invention consists in the construction of such a flushing attachment as has been mentioned, and also in a novel formation of the water-closet trough, as will be hereinafter described, and specifically pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a vertical sectional elevation of my improved form of water-closet and flushing apparatus. Fig. 2 is a cross-sectional view of the trough, taken on line *x x* of Fig. 1.

In the construction shown in the accompanying drawings, A represents the trough below the seat-board B. This trough is formed with sloping sides, as best shown in Fig. 2, and the bottom consists of a series of shallow basins, (shown at N N,) of which each one toward the outlet is lower than the one immediately behind it.

C is the outlet, preferably funnel-shaped, and leading to the sewer, cesspool, or other means or place provided for the disposal of the refuse matter. At the end of each of the basins N, on the side nearest the outlet C, the bottom of the trough is curved upward to form a ridge or dam, *o*, that extends from side to side of the tank-trough. These ridges *o o* are formed, as described, in order that a small quantity of water will be retained to cover the bottom of each of the basins.

In order to automatically and intermittingly flush the trough above described, I provide an apparatus which will now be specifically described.

D is a tank fed by a pipe, *a*, the flow of water from said pipe being controlled by a stop-cock, *b*, which can be set to deliver the amount of water required. A large pipe, E, passes up through the bottom of the tank D, and from this pipe E there is a branch pipe, F, of relatively much smaller bore, the top of pipe F being slightly lower than the top of E, so that water will flow down F before reaching the top of E. The junction *c*, where F branches out from E, is so arranged that a small pipe, G, of bore similar to F, can be tapped therein, so as to prolong F within the bore of E, as clearly shown in Fig. 3, in case it may be desired to increase the fall through F, the pipe E being jointed just below the junction so that the mechanical part of this operation can easily be performed. The top of F is covered by a small concentric cap, H, secured in any suitable manner, but preferably by means of arms *e e*, while a large cap, I, covers the whole arrangement within the tank. This cap I is held in adjustable position by a rod, K, that is secured to a boss, *f*, on the top of the cap, and passes through eyes formed in two horizontal arms, *g g'*, which project from a vertical standard, *h*, that is rigidly secured to the side of the tank D. The arm *g* carries a set-screw, *i*, arranged to bear against the rod K and bind it within the eye, which arrangement permits the cap I to be raised or lowered, so that a large or small depth of water can be drawn off from the tank D. The water from the pipe *a* is usually allowed to trickle in a small stream, so that the water-level in the tank D is slowly raised inside of cap I and cap H. Now cap H, in connection with pipe F, forms a siphon. When, therefore, water reaches the top of F, the siphon is automatically set in operation, and F being larger in size than the stream flowing from pipe *a*, the water-level is quickly drawn down to bottom of cap H. On reaching the bottom of H the rush of water draws air, which air is that contained between the water-level and the top of cap I, because air cannot rise up the pipe E against downflowing water from F and G. A partial vacuum is thus suddenly produced in cap I, which is quickly followed by a corresponding rise of water, and this rise of water will be sufficient to start the flow from the pipe E, which, being of large diameter, will quickly draw off the water in D to a level below the bottom of I, and the water so drawn will be rapidly discharged into the upper pan, N, of the trough A, which the lower end of the pipe E enters, as best shown in Fig. 1. It

will thus be seen that the purpose of the auxiliary siphon formed by cap H and pipe F is to cause the main siphon formed by I and E to operate with a very small supply-stream, which, if it flowed directly down E, would not be sufficient to move the air in the pipe, and so cause the siphon to begin to flow.

In order to insure a periodical discharge from E by breaking the vacuum in I, and thus allowing the tank D to be refilled, the lower edge, *p*, of the cap I is cut at an angle, so that air will flow in at the uppermost point, *s*, as soon as the water is drawn below such point, or the same result could be obtained by forming a V-shaped notch in one side of the cap. Cap H can be cut in the same manner or straight, as desired. When the siphon formed by E and I begins to flow, as previously described, the water is discharged with great vehemence out of the pipe E and into the first of the basins N, thereby flushing said basin, then falling over the first dam *c* flushes the second, and so on with each basin, until the whole contents of the trough are discharged through the outlet C and the trough thoroughly cleansed. The object of these separate basins is thus clearly seen to be to assist, as it were, the flow of water through the trough, and so by maintaining the inflowing velocity to produce an effective scouring or flushing action at all points in the trough A. If the trough A had a level bottom, only that part near the mouth of pipe E would be scoured, while the part next the inlet would be covered with backwater as it flows quietly over the edge to the outlet.

In addition to the main discharging-pipe E there is an auxiliary pipe, L, which branches from E, and is carried along the back of the trough close to the seat-board B. The end of this pipe L is closed, but the side next the back of the trough is perforated, so that in case the trough becomes soiled it will be washed down and cleansed.

To aid in the perfect cleansing of the trough all corners therein are rounded or sloped.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A trough formed with a series of basins, each basin being provided with a weir or dam, the trough being adapted to receive a current of water, substantially as described.

2. A trough formed with a series of basins located in different levels, and each provided with a weir or dam, said trough being adapted to be connected to a supply-pipe, substantially as described.

3. A trough formed with a series of basins located on different levels, each basin being provided with a weir or dam, in combination with a flushing attachment, substantially as described.

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Witnesses:
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