

(No Model.)

F. L. MENTEL.  
FLUSHING TANK FOR WATER CLOSETS.

No. 448,800.

Patented Mar. 24, 1891.

Fig. 1.

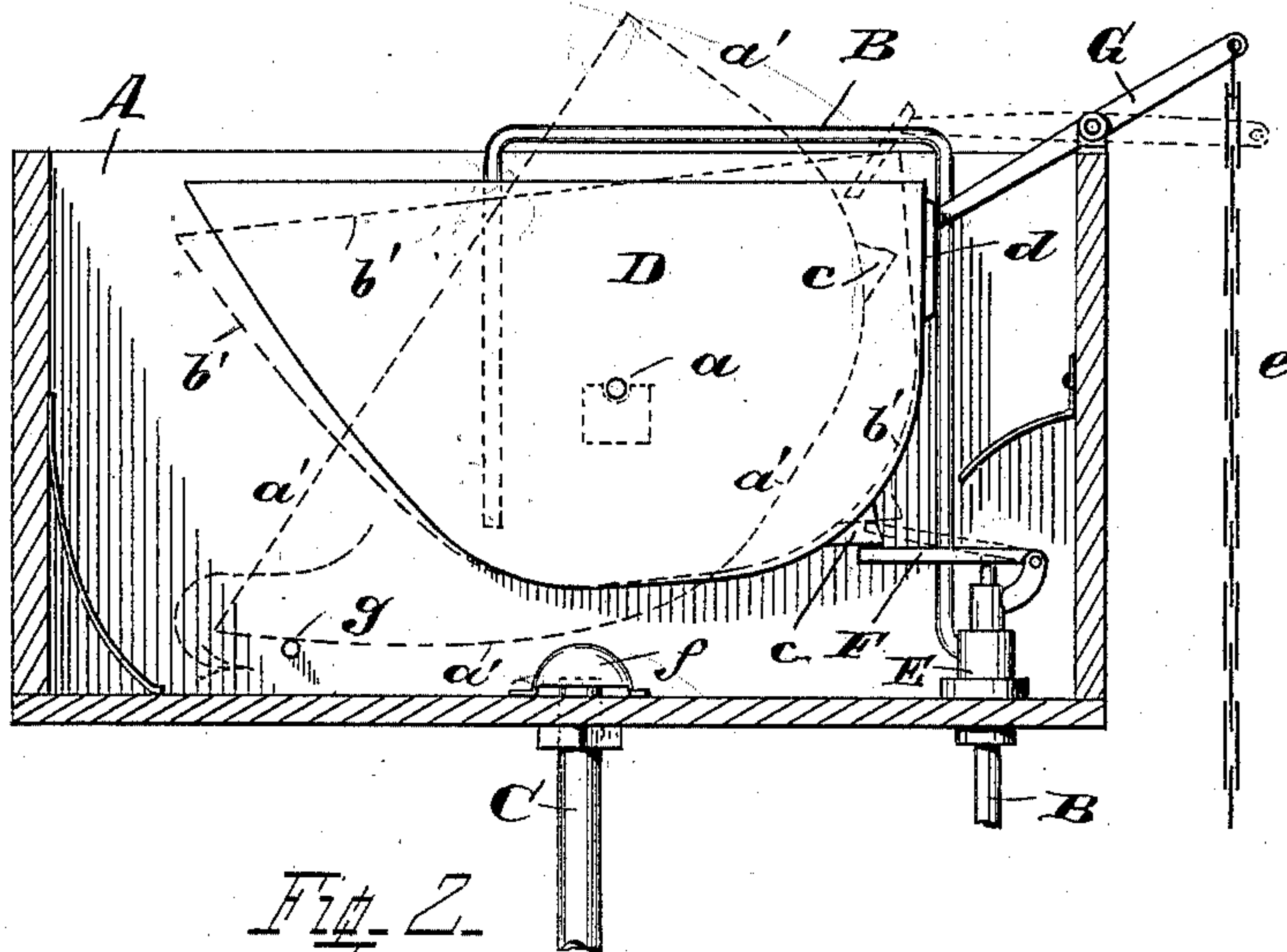


Fig. 2.

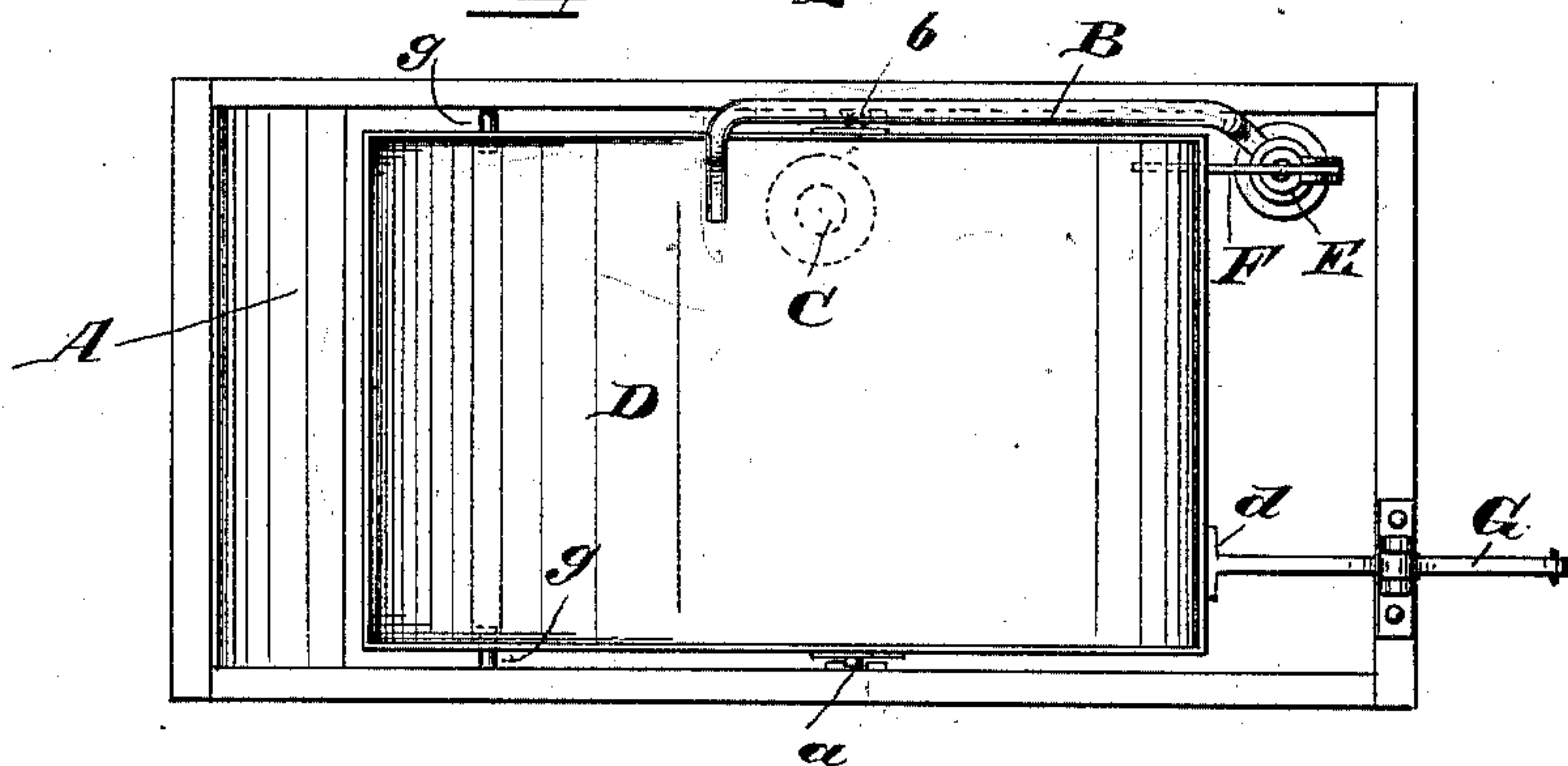
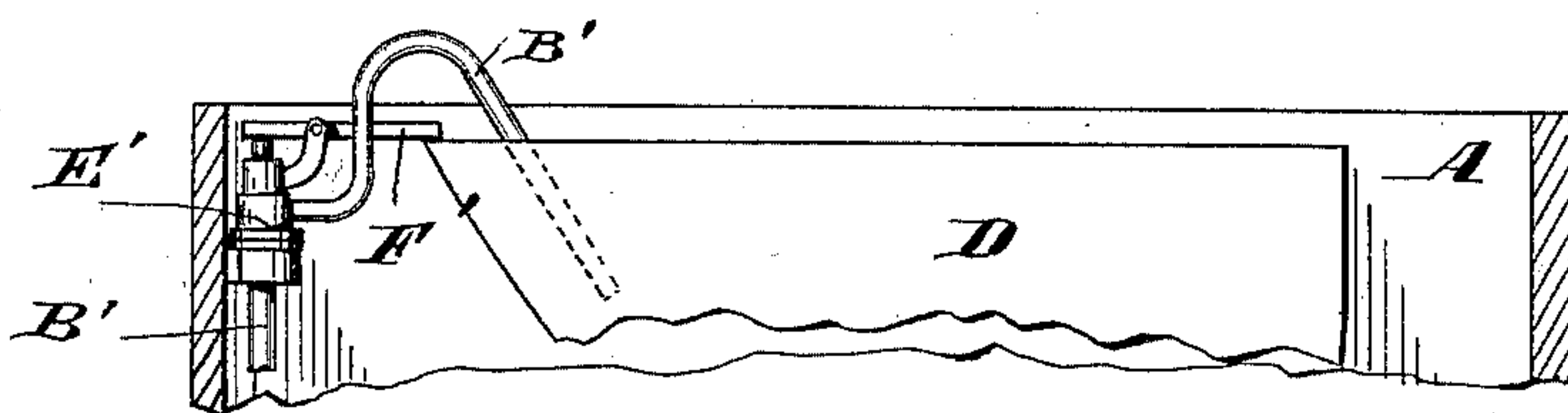


Fig. 3.



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# UNITED STATES PATENT OFFICE.

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## FLUSHING-TANK FOR WATER-CLOSETS.

SPECIFICATION forming part of Letters Patent No. 448,800, dated March 24, 1891.

Application filed July 12, 1890. Serial No. 358,505. (No model.)

*To all whom it may concern:*

Be it known that I, FERDINAND L. MENTEL, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Flushing-Tanks for Water-Closets and the Like, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to tanks for flushing out water-closets and the like, in which by a suitable arrangement of parts water will flow into the tank until it is full, when the valve in the supply-pipe is automatically closed to be opened again upon the discharge of the water by the discharge-pipe through which the closet is flushed.

The devices which have hitherto been employed to control the inflow of water automatically have consisted of hollow spheres or other devices arranged to float on the water and connected with the inlet-valves, so as to close the valve when the water has reached a certain height, the retreat of the water through the discharge-pipe allowing the valve-float to fall with it and thus open the inlet-valve. These floating devices, however, are apt to get caught at the bottom of the tank, and their efficacy depending, as it does, on the buoyant power of the floats alone, they are very apt to become impaired, so that the valves do not work properly. Further, with flushing-tanks as ordinarily constructed, the discharge-pipe being opened by the user and continuing open only while the operator holds the discharging-lever down, it often happens that too little water is allowed to flow through the discharge-pipe to properly flush the closet.

It is to remedy these defects that my invention is directed; and it consists in a new construction and arrangement of parts wherein all floating devices for the regulation of the valves are dispensed with and a sufficiently large flow of water is always furnished to the discharge or flushing pipe to properly flush the closet, and all valves in the flushing-pipe are dispensed with.

In the drawings, Figure 1 is a central longitudinal section of my improved tank. Fig. 2 is a top plan view of same. Fig. 3 is a lon-

gitudinal section of a modified form of tank, showing the location of the inlet-pipe.

A is a rectangular box or tank made up of suitable sides, ends, and bottom and open at the top to receive and hold the water with which the closet is to be flushed.

B is the inlet-pipe, and C the discharge-pipe.

Within the tank A is a second tank or receiving-vessel D, made of copper or other suitable material, and into which the inlet-pipe B discharges. This tank D is made in any convenient shape and is of a size to hold sufficient water to properly flush the closet. I prefer to make this tank, as shown in the drawings, with vertical parallel sides and rounded bottom extended in front, so as to form a mouth from which the water can be easily poured. This tank D is pivoted at about its central point by the pivots *a b* to the interior sides of the tank A, so as to swing easily. The inlet-pipe B is controlled by the valve E, which is operated by the lever F. When the end of the lever is down, the valve is closed, and when in the position shown in dotted lines, Fig. 1, the valve is open. This valve is so arranged with a spring or otherwise, the pressure of the water alone usually being sufficient, that it automatically opens when pressure is removed from the lever.

At the base of the tank D is the lug or arm *c*, which when the tank D is filled presses on the lever E, and thus closes the supply or inlet pipe. G is another lever pivoted to the side of the tank A. At the inner end of this lever is attached at an oblique angle to the lever a short board or pusher *d*, and a chain or cord *e* connects the other end with a handle to be grasped by the user. The discharge or flushing pipe C opens into the tank A at the bottom, and over the top of the pipe is placed the cap *f*. The top of the pipe C extends slightly above the bottom of the tank, and the edge of the cap comes down below the point of opening, but leaving sufficient space for the passage of water, and any water emptied into the tank will rise up under the cap *f* and be discharged through the pipe C, while, the edges of the cap *f* extending below the point of discharge, the cap will serve as an effectual seal to prevent any gases which



might arise from the closet from escaping through the tank.

The operation of my tank will be at once obvious. When the tank D is filled with water from the inlet-pipe B, the lug *c* will rest upon the lever F, and thus close the valve E and prevent further influx of water. When it is desired to flush the closet, the chain *e* is drawn down, throwing the lever out horizontally into the position of the dotted lines, Fig. 1. This action tips up the tank D, and the center of gravity being shifted forward the tank at once turns over into the position of the dotted lines *a'*, where further rotation in that direction is prevented by stop *g*, and thus all the water in D is discharged into the tank A, where it at once flows out through pipe C. The tipping forward of the tank D removes the lug *c* from its contact with the lever F of valve E and allows the lever to rise, thus opening the inlet-pipe and allowing the water to begin to flow into the tank D as soon as the water is discharged from the smaller tank into the larger. The equilibrium of the tank D is such that it at once returns into the position of the dotted lines *b' b'* and continues in that position until the water has filled the tank D to the proper height, and then the weight of the water brings the tank back into its original position, and, the lug *c* pressing upon lever F, the inlet-valve is again closed. It will be understood that the tank D is so constructed and pivoted that until it is filled with water to a certain height its position of equilibrium is that shown by dotted lines *b' b'* in Fig. 1, and that it is only when filled with water to the proper height that the lug *c* rests upon lever F with such force as to close the valve E. It will be understood that the location of the pipes is not a matter of any importance so long as the tank D is arranged to close the inlet-valve as soon as the water has reached the proper height.

In Fig. 3 I show a modification in which

the inlet-pipe B' and valve E' are at the top of the tank instead of the bottom, and the valve is closed by the upward pressure of the lip of the tank D on the lever F' as it returns to place instead of by a lug at the bottom of the tank.

I have shown and described my device as applied to flushing water-closets; but of course it can be used for other flushing purposes, such as sewers and the like.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a flushing-tank for water-closets, the combination, with the outer tank, of a receiving-vessel pivoted within the same, arranged to be upset and to discharge its contents into the outer vessel, inlet-pipe connected therewith, inlet-valve therein balanced so as to open under the pressure of the water in said inlet-pipe, and lever to operate said valve, said inner receiving-vessel being so balanced that the weight of the water in said vessel when filled will bring said vessel into contact with said lever to operate the same and thus close the inlet-valve, substantially as shown and described.

2. In a flushing-tank for water-closets, the combination, with the outer tank, of a receiving-vessel pivoted within the same, inlet-pipe to supply water to the receiving-vessel, inlet-valve therein balanced so as to open under the pressure of the water in said inlet-pipe, lever to operate said valve, discharge-pipe for conducting the water to the closet, with lever for upsetting said vessel, said inner vessel being so balanced that the weight of the water in said vessel when filled will bring same into contact with the valve-lever to close same and thus shut off the water, substantially as shown and described.

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Witnesses:

ALFRED M. ALLEN,  
GEORGE HEIDMAN.