

943,793.

F. A. SCHOSSOW.  
FLUSHING TANK FOR CLOSETS.  
APPLICATION FILED DEC. 21, 1907.

Patented Dec. 21, 1909.

2 SHEETS—SHEET 1.

FIG. 1.

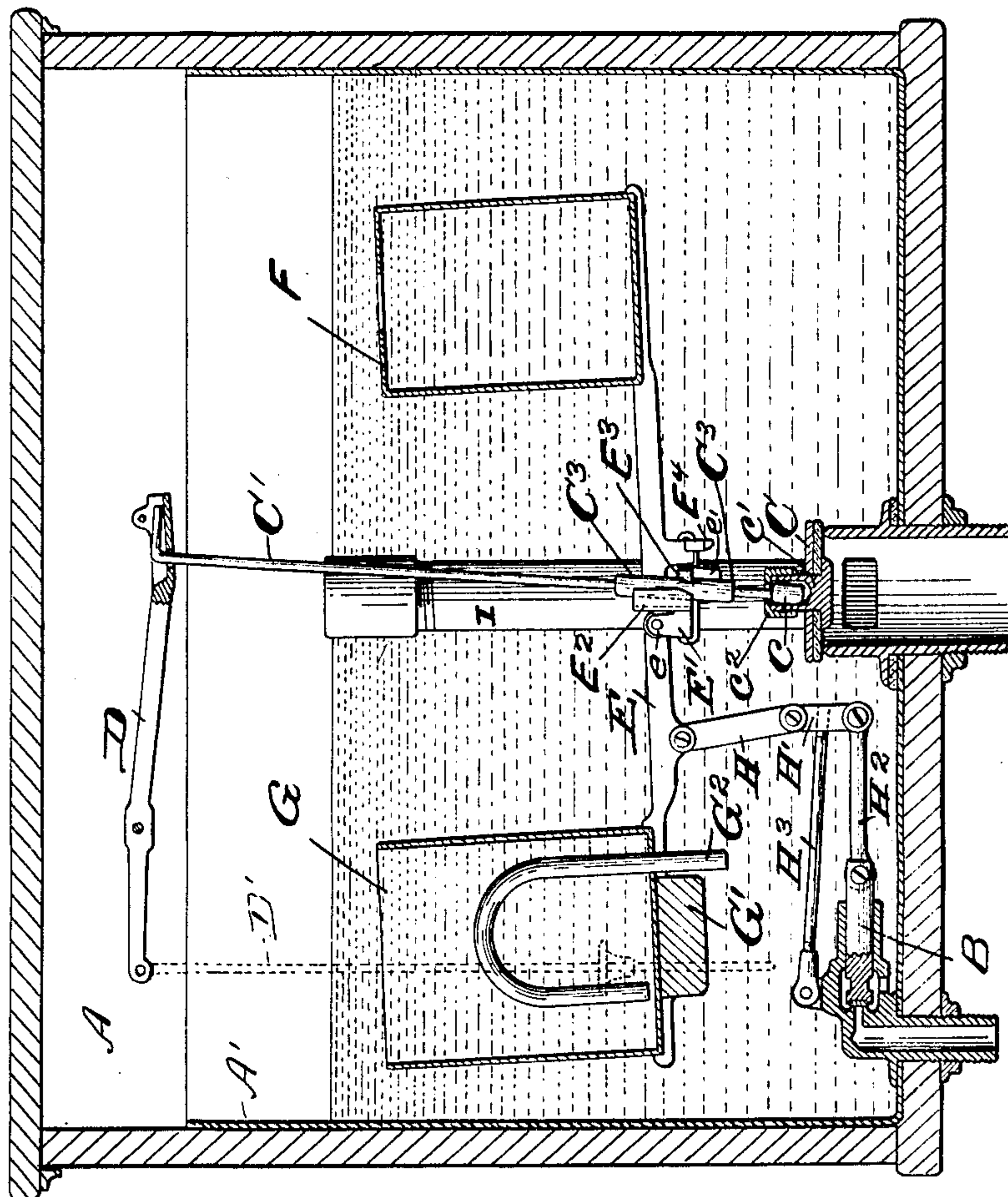
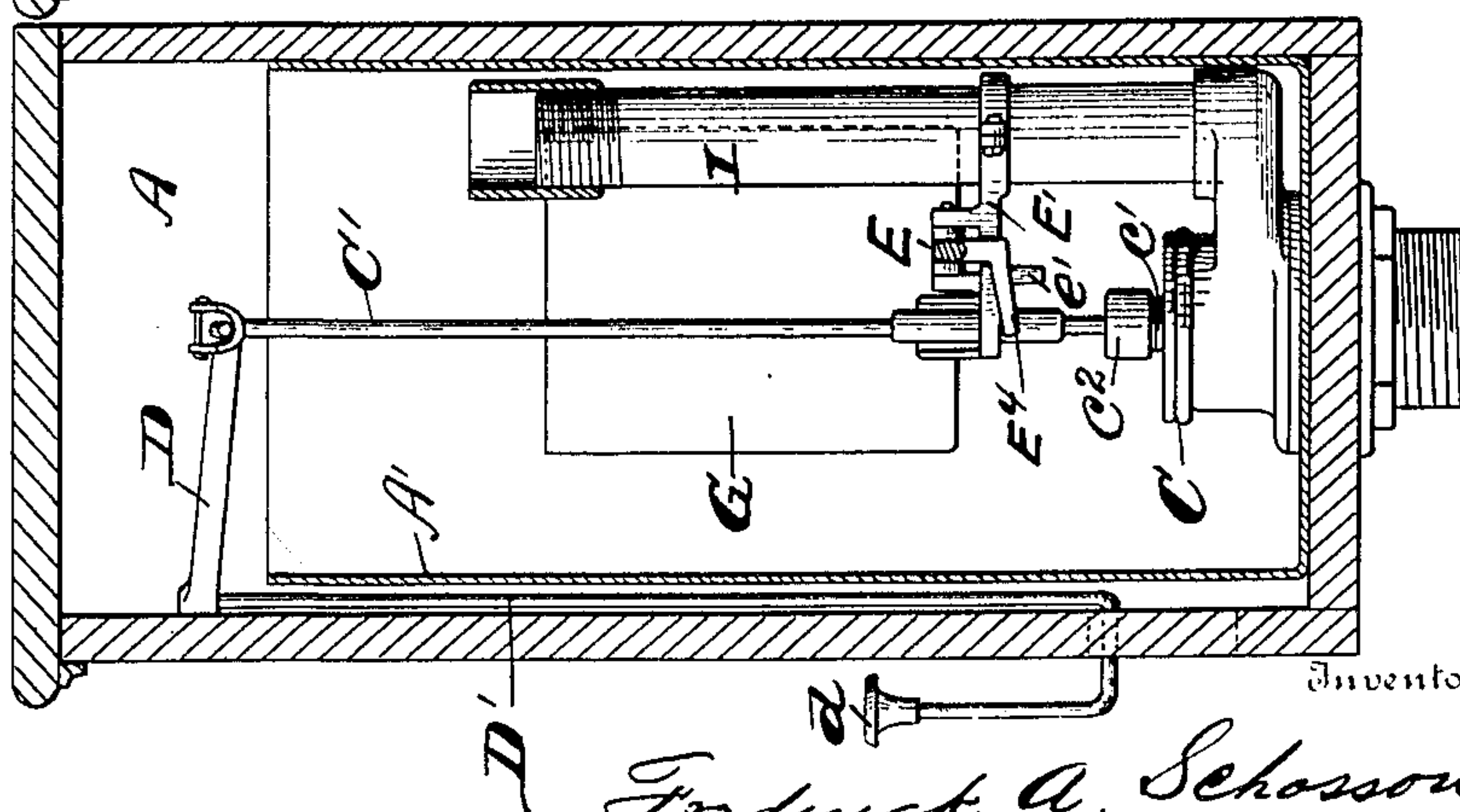


FIG. 2.



Inventor

Frederick A. Schossow

Witnesses

Grace E. Winkoop.  
Lina E. Mertz.

By

S. B. Thomas

Attorney

943,793.

F. A. SCHOSSOW.  
FLUSHING TANK FOR CLOSETS.  
APPLICATION FILED DEC. 21, 1907.

Patented Dec. 21, 1909.

2 SHEETS—SHEET 2.

FIG. 3.

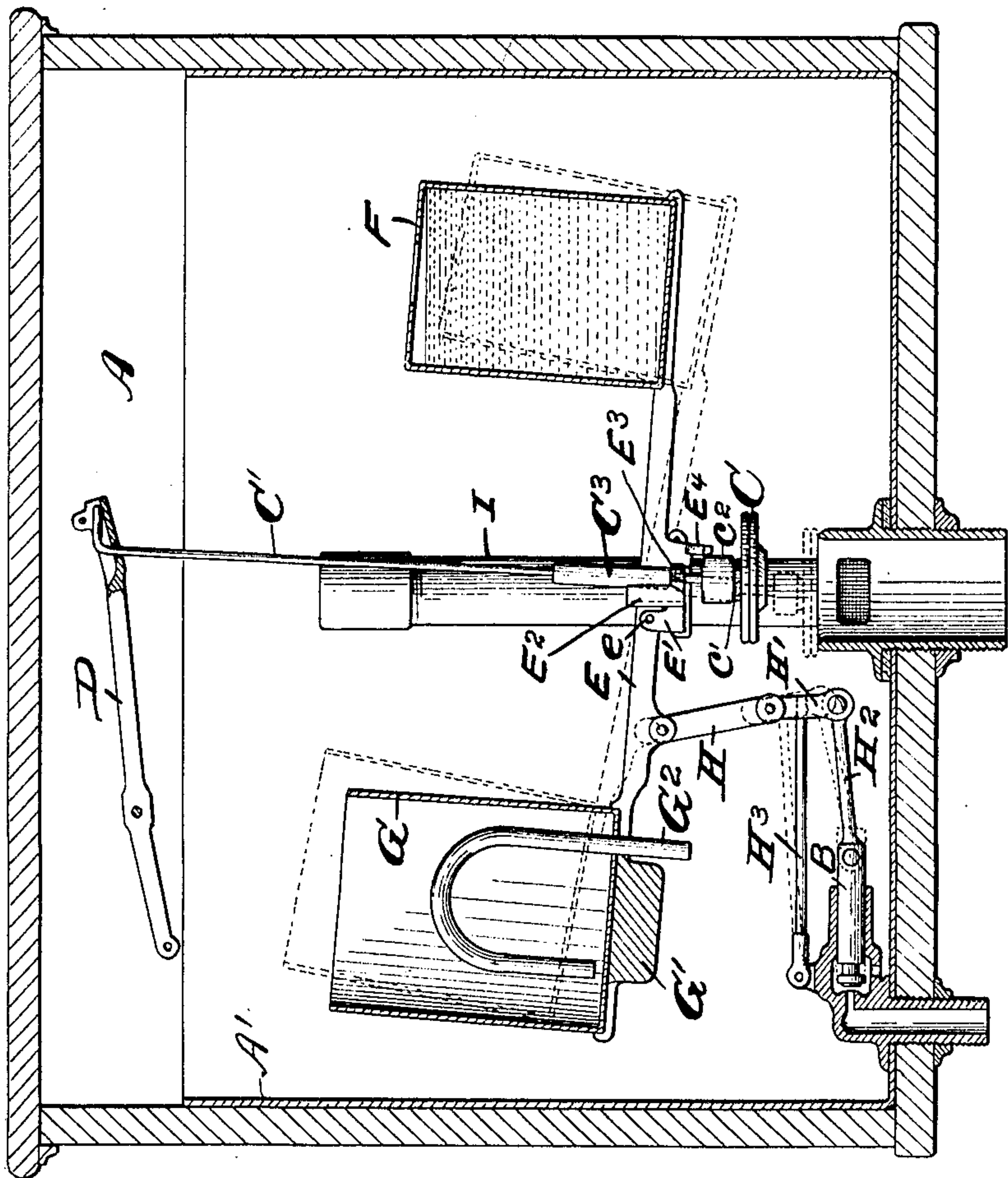
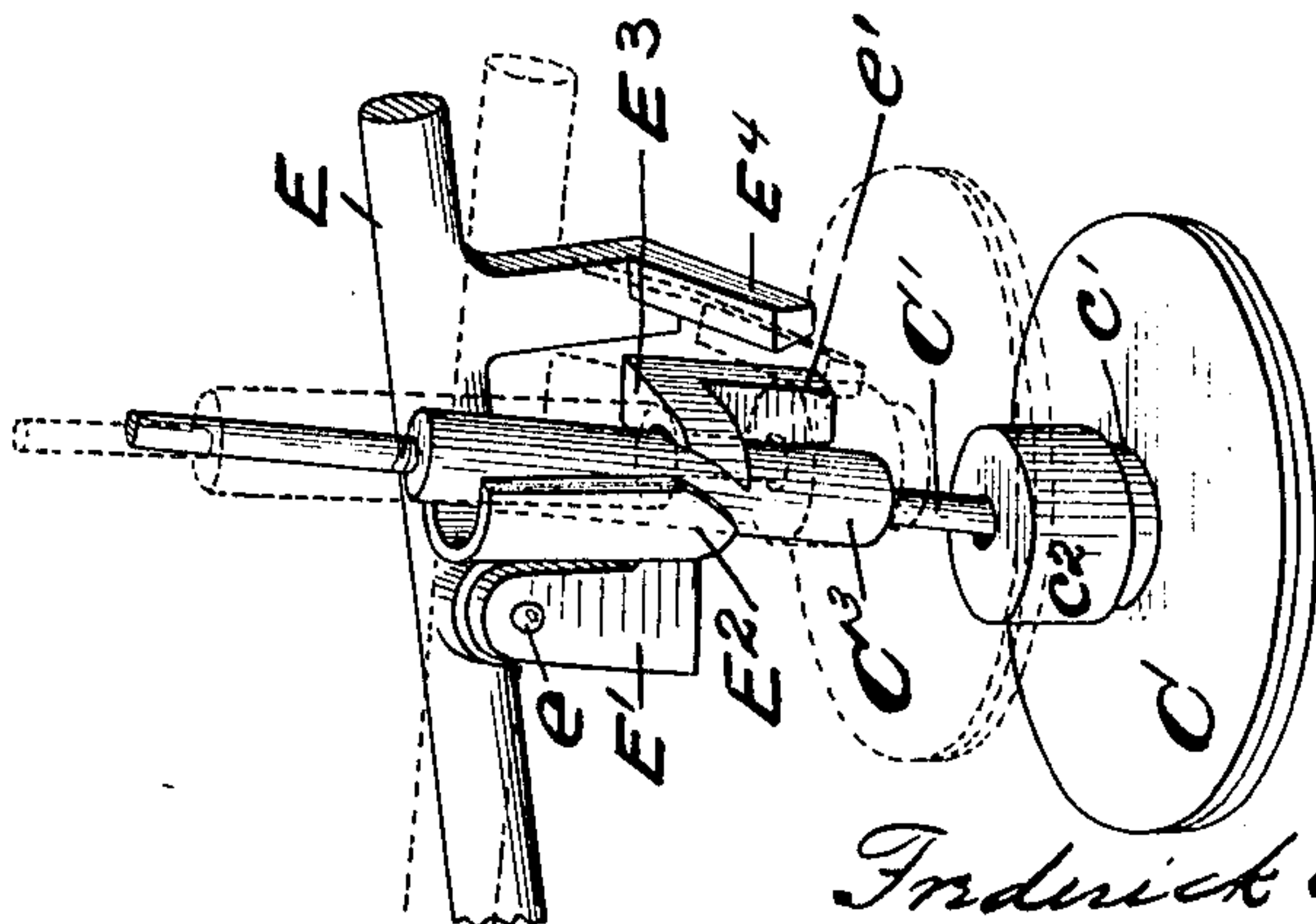


FIG. 4.



Inventor

Fredrick A. Schossow

By

J. B. Thomas

Attorney

Witnesses

Grace E. Wynkoop.  
Vina E. Mertz.



# UNITED STATES PATENT OFFICE.

FREDERICK A. SCHOSSOW, OF DETROIT, MICHIGAN.

## FLUSHING-TANK FOR CLOSETS.

943,793.

Specification of Letters Patent.

Patented Dec. 21, 1909.

Application filed December 21, 1907. Serial No. 407,580.

*To all whom it may concern:*

Be it known that I, FREDERICK A. SCHOSSOW, citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Flushing-Tanks for Closets, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improvement in flushing tanks for closets shown in the accompanying drawings and more particularly pointed out in the claims.

The object of my invention is an improvement in the general construction and arrangement of the parts particularly of the mechanism controlling the opening and closing of the inlet and outlet valves.

One of the features of this invention is a float so constructed and arranged that it serves to support a weighted lever with which the inlet valve is connected, holding the valve open until the tank has filled,—the float itself then fills with water permitting the weighted lever to descend, and this action forces the valve to its seat and cuts off the supply of water to the tank.

Another feature is the means employed to hold the valve open, after being raised manually, until the water in the tank has been discharged. As the water passes from the tank, that in the float above referred to is also discharged. This action permits the weighted lever to operate, tripping the outlet valve which returns to its seat by gravity;—opening at the same time the inlet valve admitting water again to the tank.

Another feature of the invention is the means employed to regulate the volume of the afterflow or seal.

Other improvements and advantages will hereafter appear.

In the drawings:—Figure 1 is a longitudinal central sectional view through the tank, showing it filled with water, the inlet valve being closed. Fig. 2 is a cross-sectional view through the tank, showing in section an adjustable collar on the overflow pipe by means of which the volume of the afterflow or seal is regulated. Fig. 3 is a similar sectional view to that shown in Fig. 1, the water, however, having been discharged

from the tank, the inlet valve being shown in the act of opening, while the discharge valve, in its raised position, is about to be tripped or released by the action of the tilting lever;—showing also in dotted lines the position of the parts when the outlet valve is closed and the inlet valve open. Fig. 4 is a perspective view of a detail of construction, showing the discharge valve, the position of the valve stem and the lever as it appears when the tank is filled with water;—and in dotted lines the position of the valve, its stem and the arm on the rocking lever as it would appear when about to release the valve that it may return to its seat.

Referring now to the letters of reference shown upon the drawings: A denotes the tank, A' a lining of sheet metal.

B is an inlet valve of the plunger type, and C is the outlet valve, C' its stem having an enlarged portion *c* inclosed within the upstanding collar *c'* of the valve.

*c*<sup>2</sup> is a screw-threaded cap engaging the collar and loosely sleeved upon the valve stem C', confining the enlarged portion *c* of the stem within.

D is a lever pivoted to the tank to which the valve stem C' is engaged.

D' is a rod connected with the lever and provided with a thumb piece *d* for manually actuating it.

E is a tilting lever pivoted at *e* to a suitable supporting bracket E' attached to the overflow pipe.

F is a weight or water bucket mounted on one end of the lever designed to contain water at all times. G is a float and water bucket mounted on the other arm of the lever E, beneath which is supported the fixed weight G', it being of less relative weight, however, than that of the water bucket F when filled.

G<sup>2</sup> is a siphon supported within the water bucket G its longer leg extending through the bottom of the bucket into the tank chamber A.

H, H' and H<sup>2</sup> are linked connections between the tilting lever E and the inlet valve B, and H<sup>3</sup> is a rod pivoted to the body of the valve and engaging the link H', the action being such that when the lever E tilts the valve B is either opened or closed dependent upon the position of the tilting lever.

Projecting from the bracket E' is a sleeve



E<sup>2</sup> embracing the stem C' which at this point is provided with an enlarged portion or shoulder C<sup>3</sup>. The sleeve portion E<sup>2</sup> is cut away on one side to provide a platform E<sup>3</sup> upon which rests the shoulder C<sup>3</sup> of the valve stem when in its elevated or open position as shown in Fig. 3.

Projecting from a depending arm on the tilting lever E is a tripping arm E<sup>4</sup> designed to encounter the cap C<sup>2</sup> on the outlet valve C, upon the movement of the lever,—whereby the enlarged portion C<sup>3</sup> of the valve stem may be forced from its supporting platform E<sup>3</sup>, permitting the valve to descend to its seat.

e' is a stop lug projecting downwardly from the bracket E' and is designed to limit the movement of the tilting lever E by the arm E<sup>4</sup> encountering the lug.

I is an overflow pipe having a discharge connection with the valve fitting C beneath its seat. The upper open end of the pipe is provided with a collar screw-threaded thereon by means of which the altitude of the opening into the pipe may be increased and decreased at will to provide for a greater or less volume of after-fill.

Having indicated the several parts by reference letters upon the drawings, I will now describe the operation of the device.

The water bucket F is first filled through the opening provided at its top:—the weight of the water bucket F when filled being greater than the weight G'. The lever E is thus caused to tilt which action serves to open the inlet valve B permitting the water to enter and fill the tank. As the water rises in the tank it gradually enters the water bucket G by way of the siphon G<sup>2</sup>. The water, however, does not rise in the bucket G as rapidly as it does in the tank due to the restricted opening of the siphon.

Upon the water mounting in the tank until it reaches the level of the top of the bucket G it flows over the top filling the bucket thereby destroying its action as a float, the purpose of which in conjunction with the action of the bucket F has been to hold open the inlet valve until the tank has filled with water. The action of the bucket F having been neutralized by the filling of the bucket G and the water rising in the tank, the weight G' becomes operative serving to tilt the lever E in the opposite direction thereby forcing the inlet valve to its seat thus cutting off the supply of water to the tank.

To release the water from the tank, the outlet valve C is raised by manually actuating the lifting rod D as in the usual way. Upon raising the valve stem C' which is slightly inclined, the enlarged portion C<sup>3</sup> swings over the shoulder E<sup>3</sup> of the bracket E' which serves to support the valve in its open position permitting the discharge of water from the tank. As the tank is grad-

ually emptied the water contained within the bucket or float G passes out by way of the siphon G<sup>2</sup>. This is so timed due to the size of the siphon that the water in the bucket G is discharged at the time the tank is emptied. This action causes the lever E to tilt due to the action of the superior weight of the bucket F, and thus the outlet valve C is closed by forcing it from its supporting platform from which it descends to its seat by gravity as before explained. The tilting of the lever E has also served to open the inlet valve B permitting the water to enter the tank as before, the action and operation of the several parts being again repeated as previously explained. As the water mounts in the tank it enters the top of the overflow pipe; the altitude of which may be increased and decreased by adjusting the collar, thus providing the after-fill or water seal required following the discharge of the closet. In place of the siphon in the float water bucket, a restricted opening may be provided in the bottom, the action of which would be practically the same so far as the result is concerned.

Having thus described my invention, what I claim is:

1. In a flushing device, a tank having an inlet and an outlet, an operating lever, a valve for said outlet having its stem connected to said lever, a tilting lever mounted in the tank, a variable float mounted at one end of the lever, and a fluid chamber adapted to serve as a weight whose function is lessened as a weight by the rising of the water in the tank, said tilting lever having engagement with the stem of said valve when the lever moves in one direction to effect a lowering of the valve into engagement with the outlet.

2. In a flushing tank, an outlet valve, a manually operated lever, a valve stem engaging said lever having a universal joint connection with the valve to insure proper seating of the latter, said stem also provided with a shoulder to assist in supporting the valve when raised, a suitable platform to receive the projecting shoulder of the valve stem, a weighted tilting lever provided with tripping means to force the valve stem from its support, a float mounted on one end of the lever, and means for filling said float with water and for discharging the same into the tank, substantially as described.

3. In a flushing device, a tank having an inlet and an outlet, a manually operated lever, a valve for said outlet having its stem connected to said lever, the stem having a shoulder, a platform to receive the shoulder of the stem, a weighted tilting lever, a curved arm carried by the lever and operable upon movement of the latter in one direction to engage the stem and move the



latter from engagement with said platform, and a float carried by the tilting lever.

4. In a flushing device, a tank having an inlet and an outlet, a tilting lever mounted  
5 in the tank, a permanent weight mounted at one end of the lever, a fixed weight mounted at the opposite end of the lever and lighter than the first-mentioned weight, a combined  
10 weight and float cooperating with the second-mentioned weight to provide for an alternate raising and lowering of the opposite ends of the lever, a second lever, a valve for said outlet, a stem connection between  
15 said valve and the second-mentioned lever, means whereby the second lever may be operated manually, a valve for said inlet, means between the inlet valve and the tilting lever whereby the inlet may be closed automatically by the tilting of said lever, an  
20 overflow pipe, a platform, said outlet valve stem having an enlargement to rest upon said platform when the outlet valve is

opened and adapted to leave the platform to permit the outlet valve to close said outlet automatically when the tank has been 25 emptied.

5. In a flushing device, a tank having an inlet and an outlet, a manually operated lever, a valve for said outlet having its stem connected to said lever, the stem having a 30 shoulder, a platform to receive the shoulder of the stem, a weighted tilting lever, means operable upon movement of the tilting lever in one direction to force the stem from engagement with said platform, a hollow float 35 carried by the tilting lever, and a siphon communicating with the float.

In testimony whereof, I sign this specification in the presence of two witnesses.

FREDERICK A. SCHOSSOW.

Witnesses:

GRACE E. WYNKOOP,  
SAMUEL E. THOMAS.