

No. 865,300.

PATENTED SEPT. 3, 1907.

O. F. GLIDDEN.
FLUSH TANK.

APPLICATION FILED OCT. 24, 1905.

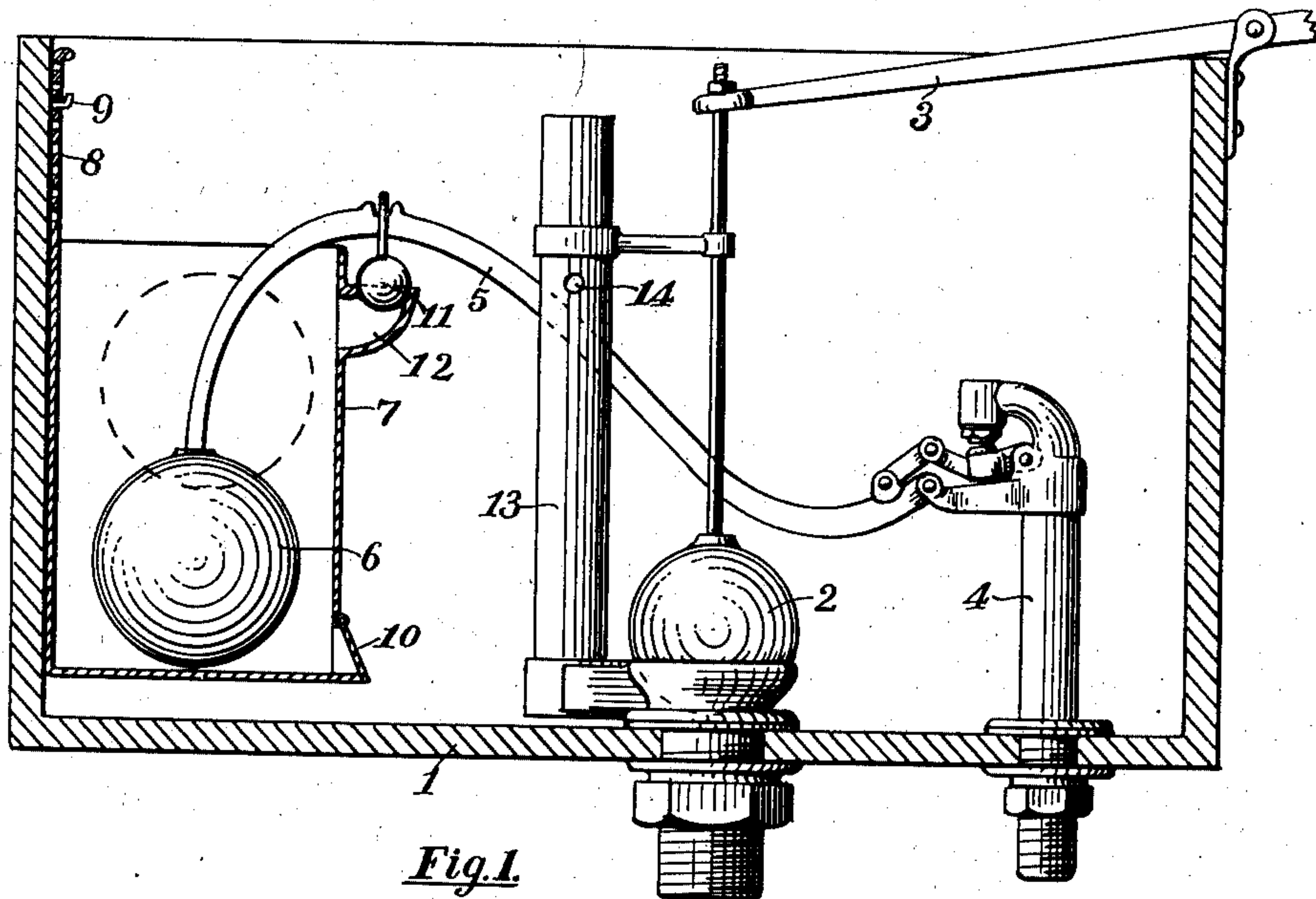


Fig. 1.

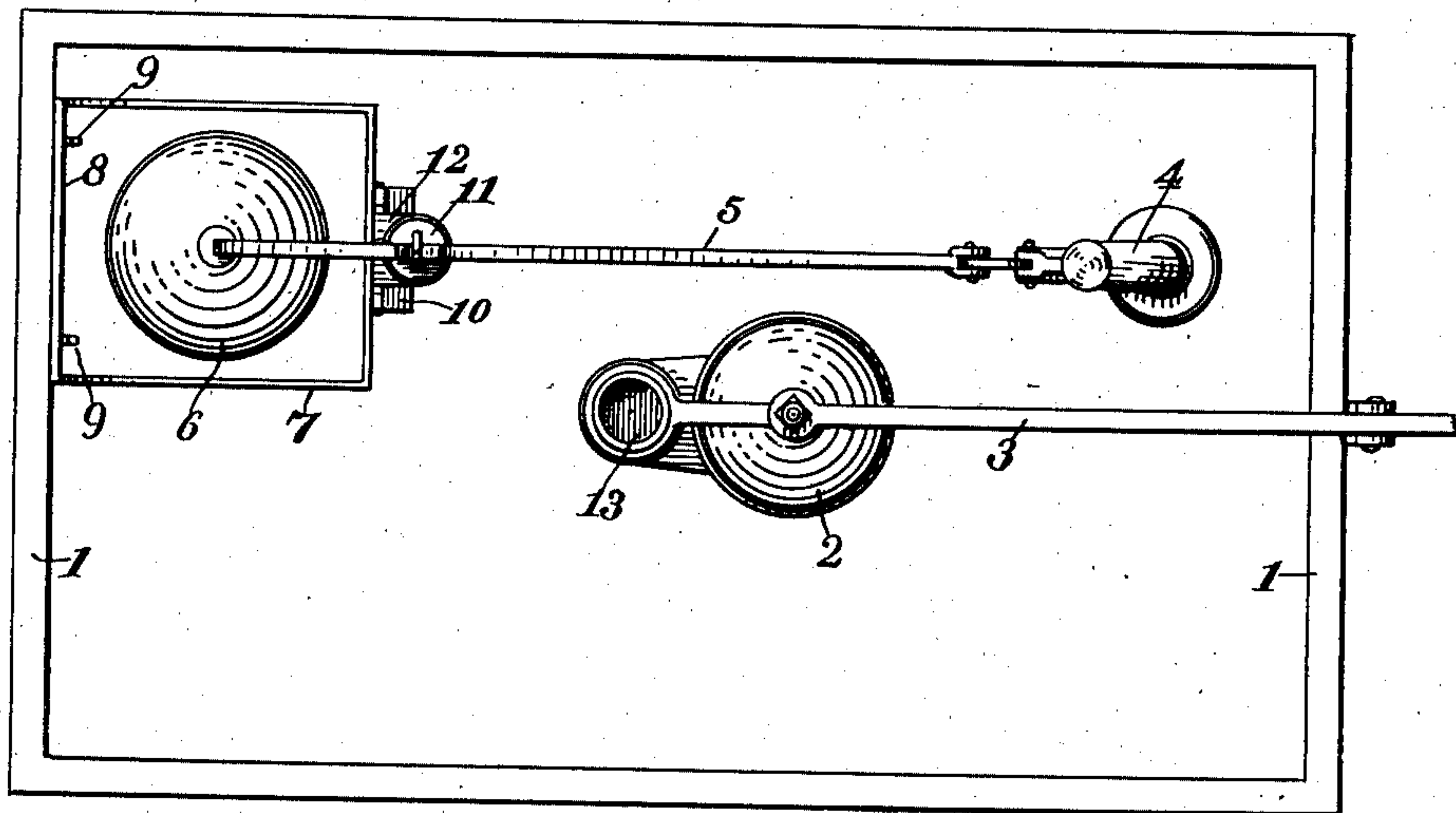


Fig. 2.

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FLUSH-TANK.

No. 865,300.

Specification of Letters Patent.

Patented Sept. 3, 1907.

Application filed October 24, 1905. Serial No. 284,219.

To all whom it may concern:

Be it known that I, OSCAR F. GLIDDEN, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Flush-Tanks; and do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in flush tanks for water closets; and its object is to provide improved means for supplying the after flow of water to seal the bowl; to provide improved means for operating the float; and to provide the device with various new and useful features hereinafter more fully described and particularly pointed out in the claims, reference being had to the accompanying drawings, in which:

Figure 1. is a side elevation of a device embodying my invention with the tanks shown in vertical section; and, Fig. 2. a plan view of the same.

Like numbers refer to like parts in both of the figures.

1 represents the main tank, 2 the flush valve; 3 the lever to open the same; and 4 the supply valve. These may be of any preferred construction.

5 represents the float lever to close the supply valve; 6 the float attached to the movable end of the lever; 7 is a small inner tank surrounding the float. This tank is vertically adjustable to determine the water level in the main tank 1. For this purpose it is extended upward as at 8 and provided with a series of superposed openings in the extension by means of which the tank 7 is adjustably attached to the wall of the main tank by vertically adjustable fastenings 9 inserted in the tank 1. This tank 7 is provided with an outwardly opening check valve 10 at the bottom, and also with an inlet valve 11 near the top adapted to close an inlet opening 12 in the side of the tank 7. This valve 11 is connected to the float lever 5; engages its seat when the float 6 is near the bottom of the tank and the supply valve open, and is raised off its seat when the float 6 rises.

13 is an overflow or stand pipe, open at the top, extending to near the top of the tank 1 and connected at its lower end to the flush pipe below the valve 2, whereby any excess of water will overflow through these pipes.

In the side of the pipe 13 and about on a level with the opening of the passage 12 is an opening 14, through which the after flow of water escapes to seal the bowl.

In operation, when the flush valve 2 is opened and the water escapes from the tank 1, the check valve 10 will also open and permit the water to escape from the tank 7. The parts will then assume the position shown in Fig. 1. with the supply valve open and the

passage 12 closed. As the tank 1 fills, the check valve 10 prevents the tank 7 from filling. As the water rises in the tank 1, it first overflows through the opening 14 and seals the bowl. This opening being restricted or limited so that it will not take water as fast as it comes through the supply valve. The water will thus continue to rise and the inner tank being held down by the fastenings 9, the water will overflow the top of the inner tank 7 and commence to raise the float 6. As soon as this float starts to rise, the valve 11 will be opened thereby and a sudden inrush of water through the passage 12 will quickly raise the float and close the supply valve. This closing will thus be practically instantaneous. The quantity of water in the tank 1 is sufficient when thus allowed to enter through the passage 12 to fill the tank 7 sufficiently to submerge the float 6 and thus utilize the entire buoyancy of the same and close the supply valve with a pressure in excess of what is necessary to merely overcome the pressure of the water. The valve thus remains closed under increased pressure of water, or any moderate lowering of the water in the tanks. It will also be noted that the valve 11 is only submerged a short distance and thus opens easily when the float rises, and can thus be made large enough to admit water freely to the tank 7.

The supply valve herein shown is not herein claimed, but is made the subject of a separate application of even date herewith and Serial Number 284,220.

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

1. In a flush tank, a stand pipe in communication with the flush pipe below the flush valve and having a restricted opening near the upper water level, a supply valve of greater capacity than said opening, and means for closing the supply valve after water has risen and flowed through said restricted opening to supply the "after fill."

2. In a flush tank, an overflow pipe connected to the flush pipe at the bottom and open at the top, a restricted opening in the side of said pipe near the water level, a supply valve of greater capacity than said opening, a float to operate the valve, a separate tank for the float, and means for filling the separate tank after the water has risen to said restricted opening and flowed through the same.

3. In a flush tank, the combination of an outer tank, an inner tank, a supply valve, a lever to operate the valve and extending within the inner tank, a float on said lever, an outlet valve near the bottom of the inner tank, and an inlet valve near the top of the inner tank and connected to the float lever.

4. In a flush tank, an outer tank, a pipe connected to the flush pipe at its lower end and having a restricted opening near the water level, an inner tank, a supply valve of greater capacity than said opening, a lever to operate the said valve and extending over the top of the inner tank and downward within the same, a float attached to the end of the lever, a valve to admit water to the inner tank, and means for connecting the valve to the float lever.

5. In a flush tank, the combination of an outer tank, an

inner tank vertically adjustable therein, an outlet valve near the bottom of the inner tank, an inlet valve near the top of the inner tank, a supply valve, a lever to operate the supply valve and extending within the inner tank, a float in the inner tank and attached to said lever, and means for connecting the inlet valve with the lever.

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6. In a flush tank, a stand pipe having a restricted opening in its side near the upper water level, an outer tank a smaller tank within the outer tank, and adjustably attached thereto, a supply valve in the outer tank, a float in the inner tank, a lever connecting the float with the supply valve, an outlet check valve near the bottom of the inner tank, an inlet valve near the top of the inner tank,

said inlet valve being connected to the lever, and opened thereby.

7. In combination, a flushing tank, an inlet valve thereto, an outlet valve, an overflow-tube provided with a small hole near its upper end; with means whereby the inlet valve is closed after the water level in the tank has risen above the small hole in the overflow tube.

In testimony whereof I affix my signature in presence of two witnesses.

OSCAR F. GLIDDEN.

Witnesses:

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GEORGIANA CHACE.