

(No Model.)

C. WINN.

WATER WASTE PREVENTER FOR FLUSHING WATER CLOSETS.
No. 280,275.

Patented June 26, 1883.

FIG 1.

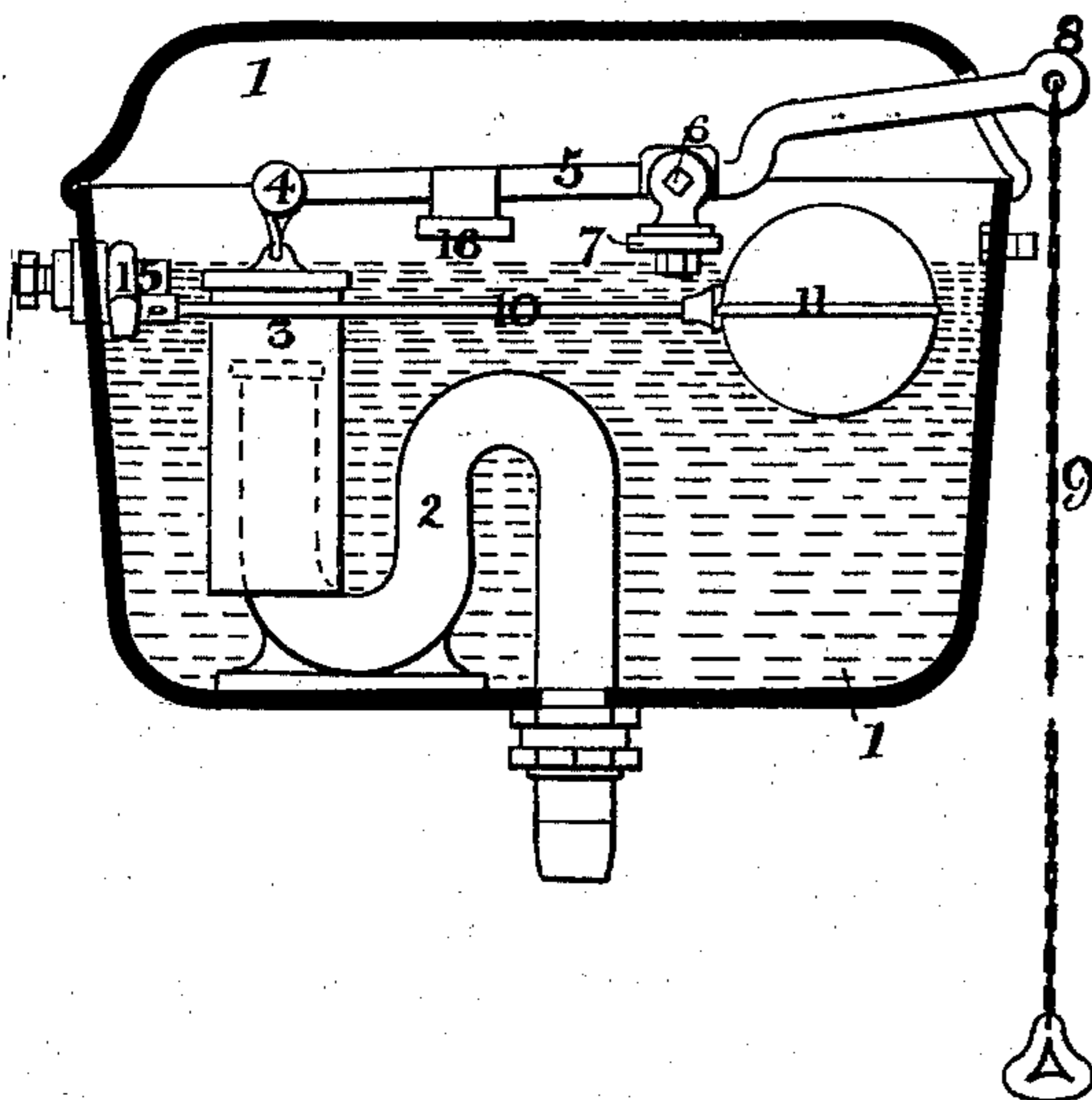


FIG 2.

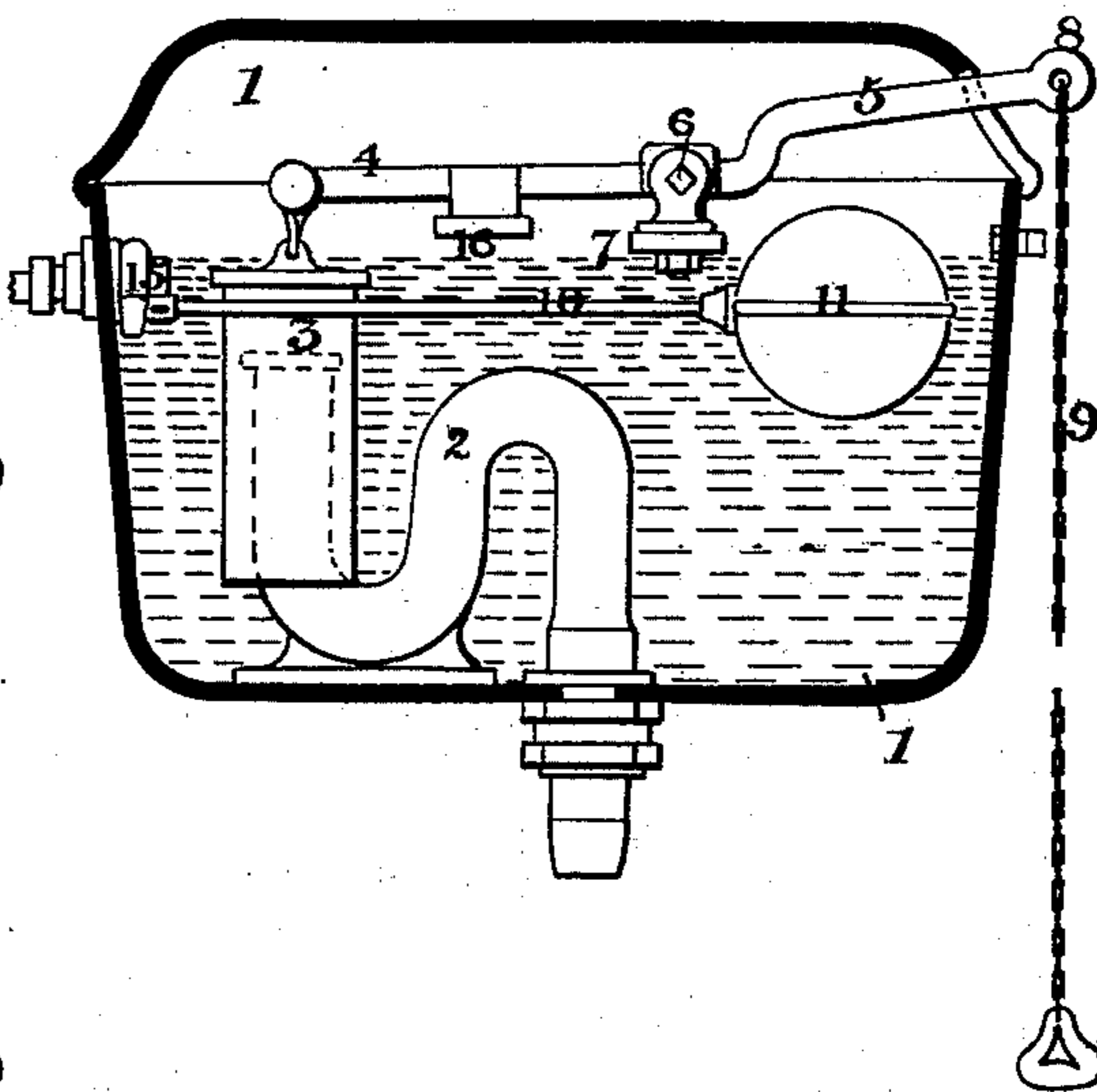


FIG 3.

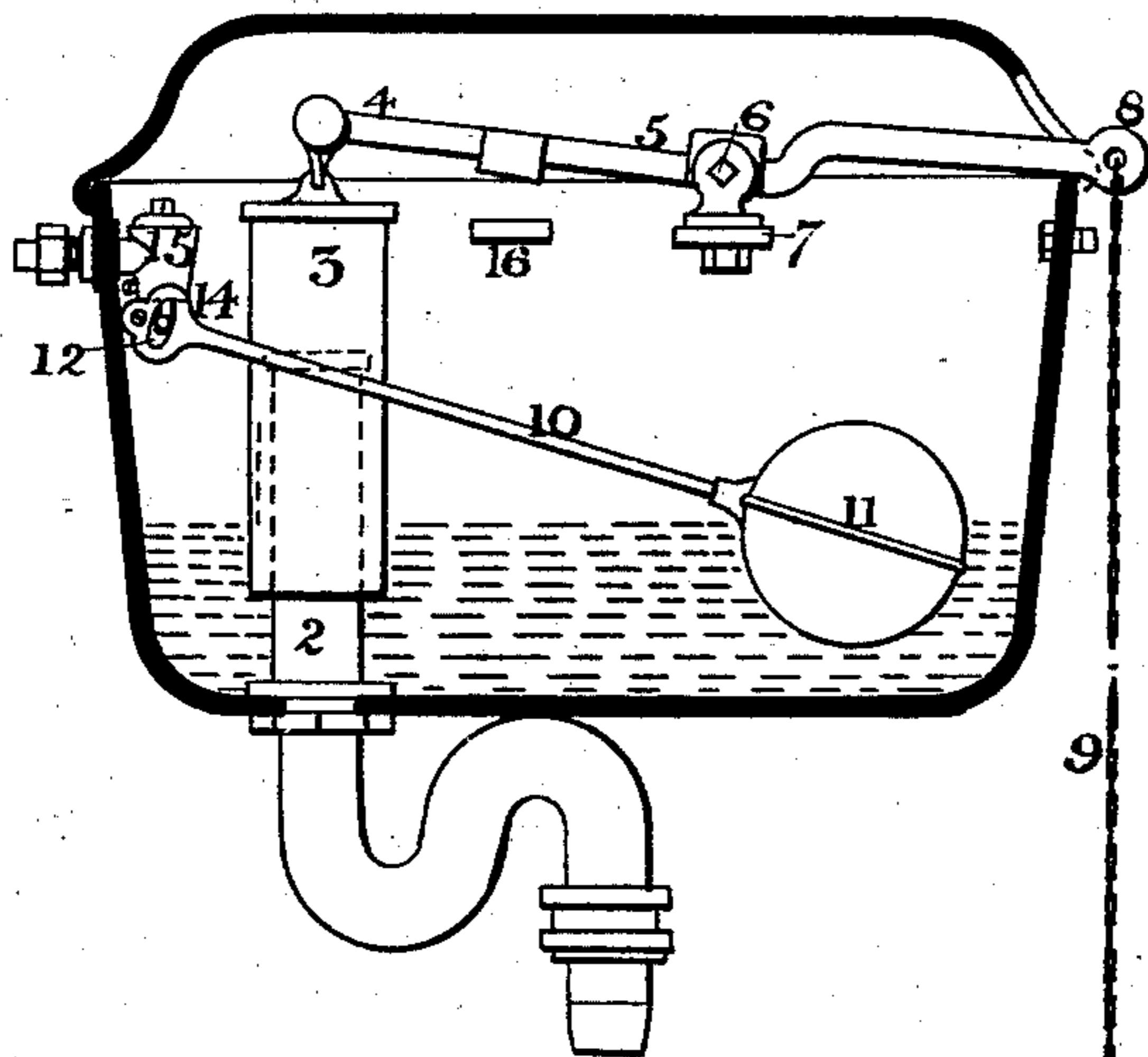
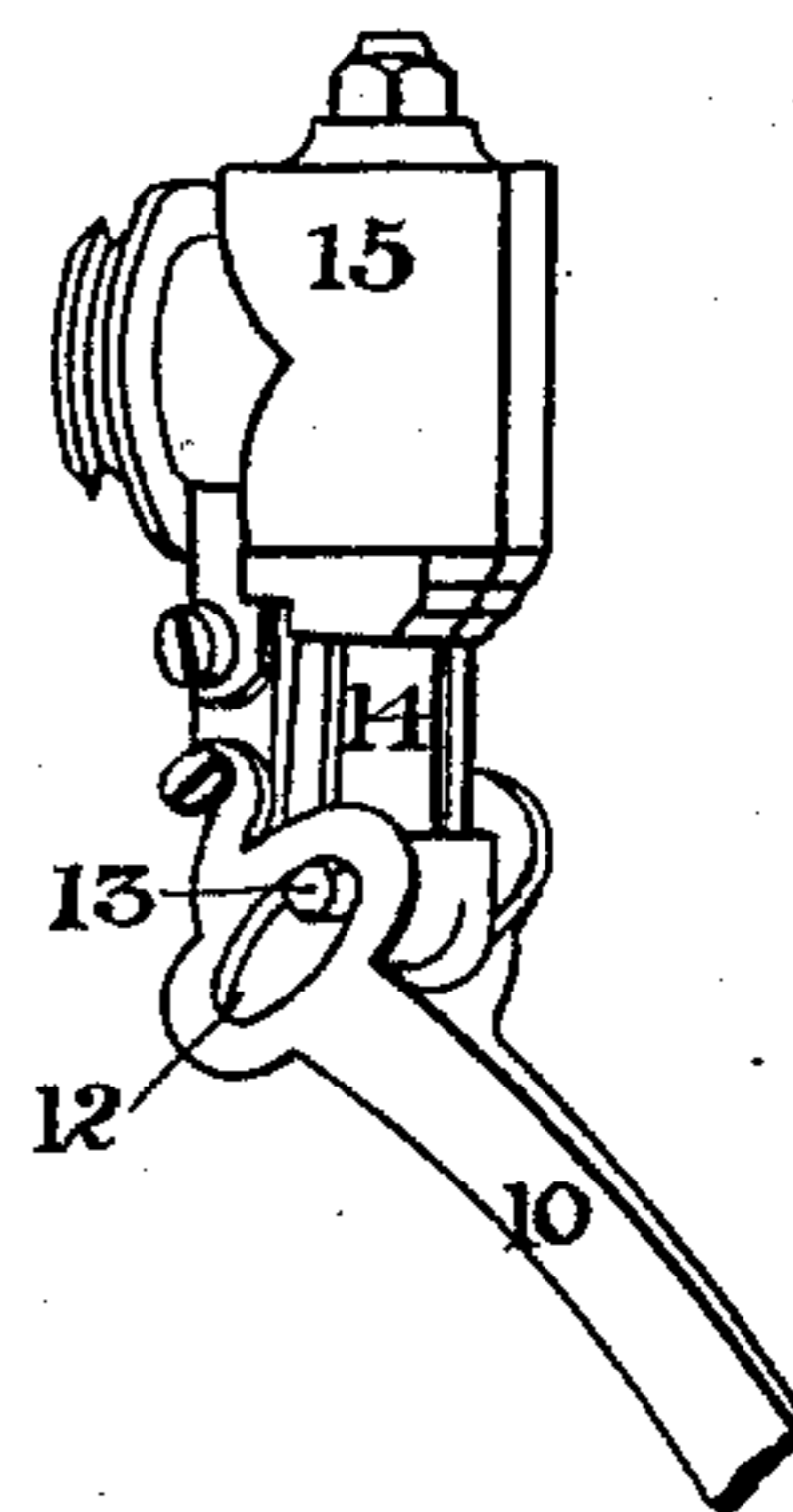


FIG 4.



Witnesses,
Richard Kerrett
Arthur John Powell.

Inventor
Charles Winn

UNITED STATES PATENT OFFICE.

CHARLES WINN, OF BIRMINGHAM, COUNTY OF WARWICK, ENGLAND.

WATER-WASTE PREVENTER FOR FLUSHING WATER-CLOSETS.

SPECIFICATION forming part of Letters Patent No. 280,275, dated June 26, 1883.

Application filed December 1, 1882. (No model.) Patented in England August 17, 1881, No. 3,582.

To all whom it may concern:

Be it known that I, CHARLES WINN, a subject of the Queen of Great Britain, residing at Birmingham, in the county of Warwick, England, have invented certain new and useful Improvements in Water-Waste Preventers for Flushing Water-Closets, and for like purposes, (for which I have received Letters Patent in Great Britain, No. 3,582, dated August 17, 1881,) of which the following is a specification.

This invention has reference to improvements in the construction of water-waste preventers for use in flushing water-closets or for other purposes.

The object of my invention and the advantages I seek to secure thereby are to provide for a good flush while economizing water and preventing its wasteful use in flushing the pipes. The apparatus hereinafter described is so constructed as to dispense with valves, leathers, rubbers, or joints liable to wear away and get out of order, and the containing tank or reservoir has tapering sides and rounded corners, so as not to be liable to fracture from frost.

The invention is illustrated in Figures 1 to 4 of the accompanying drawings, Figs. 1, 2, and 3 being sectional views, partly in elevation; and Fig. 4, a detail view in perspective.

According to the arrangement illustrated in Fig. 1, I combine with or fit to a cistern, 1, of any desired capacity, a siphon-tube, 2, by means of which the flush of water is given, the siphon-tube being inside of the cistern and made in one piece with it for the avoidance of leakage, and having no joints or valves; and I surround and inclose its open leg with or by means of a vertically depending or guided cylindrical cap or cover, 3, which depends from or is connected to one end, 4, of a lever, 5, centered at 6 to an inner projecting lug, 7, of the cistern, and to the other end, 8, of which lever the usual draw-handle or pulling-wire, 9, is connected. When in a position of inaction the lever 5 rests upon another lug, 16. The action of this arrangement is that when the handle or wire 9 is pulled the cap 3, covering the open leg of the siphon 2, is raised, and tends to cause less than the atmospheric pressure in the space above the water therein. The full atmospheric pressure, then acting on the water in the cistern 1, causes it in equaliz-

ing the pressure to flow into the siphon, which, being thus set in action, continues in action until the cistern is empty, and without needing that the pulling handle or wire should be held throughout the time. The siphon may be situated either inside or outside of the cistern, and made in one piece or cast therewith, as hereinbefore mentioned, and as illustrated in Fig. 1; or, for greater convenience or economy of manufacture, it may be made separately therefrom and suitably connected thereto, as illustrated in Fig. 2, so that in case of accident it can be replaced at a very small cost; or it may be made in parts, with the double bend separate from the legs, the parts being suitably connected together, and one or other of the legs being suitably connected to the cistern. Fig. 3 represents the siphon as arranged outside and underneath the cistern. The action in all such cases is similar to that hereinbefore described.

The improvements also comprise the fitting of the cistern with an improved ball-valve apparatus for supplying the cistern with water, and which is so adjusted that water cannot enter the cistern until the action of the siphon has ceased in the emptying of the cistern, nor after the latter is filled to the proper level. The combined arrangement thus constitutes a perfect water-waste preventer of a most simple and inexpensive construction. This action of the valve is effected automatically, and is insured by slotting the lever 10, as shown in Figs. 3 and 4, carrying the ball or float 11 at its intersection 12 with the cross-pins 13, projecting from the valve 14, so that the ends of the slots 12 only engage with the pins 13 of the valve at the time when the cistern is filled or emptied, the slots moving freely about the pins and having no action on the valve in any intermediate position of the ball-lever 10, so that the valve is closed when the cistern is quite filled, and is not again opened (though the ball-lever falls with the water) until the action of the siphon has ceased in the emptying of the cistern.

From the foregoing the combined action of the emptying-siphon and filling-valve will be understood to be as follows: When the cistern is empty the ball-valve is open. The siphon is covered by the cap. Water then enters the cistern from the tap 15, fitted with the valve,

and the ball or float on the slotted lever rises with the water until, as the cistern is filled, it actuates the valve, closing it and shutting off the supply. If the said handle or wire 9 be
 5 now pulled or actuated, as is usual, the cover 3 is raised from the siphon, and, as hereinbefore mentioned, the siphon consequently becomes charged with water. The handle or wire may then be released, as the water in the
 10 cistern will continue to flow through the siphon until the cistern is emptied, the velocity of the flush increasing to the end of the discharge. The ball or float, being then in its lowest position, again actuates the valve, opening it and
 15 enabling the cistern to be again filled or charged for another flush.

As hereinbefore mentioned, it is not necessary to hold the handle or wire down to insure the proper flushing of the closet, as the siphon
 20 is instantly set in motion by the pulling of the handle or wire, and does not cease running till the cistern is emptied to the required level and the supply is perfectly controlled by the the improved valve arrangement.

25 The improved apparatus may be made to give any desired flush of water to insure the sufficient flushing by varying the size of cistern 1 of the closet. Two gallons is a usual quantity for ordinary purposes.

30 Having now fully described my said invention and the manner of carrying the same into effect, I would observe, in conclusion, that I am aware that it has been heretofore proposed to use a siphon in flushing apparatus for water-closets, the siphon being set in action by a
 35 pull-cord lifting a cap inclosing the short leg of the tube. Such construction, broadly, is therefore not claimed herein; but

What I do claim, and desire to secure by Letters Patent, is—

1. The combination, in water-waste preventers for use in flushing water-closets or for other purposes, of the siphon-tube having a bend or trap near its upper end, the closed cap or cover surrounding the open leg of the siphon, and devices for lifting said cap to start the flow of water, substantially as described. 40

2. The combination, with the cistern provided with a flushing apparatus constructed when once started to continue in operation until all the water is drawn off, of the valve and its controlling ball or float connected therewith, so as to operate said valve to open it only when at the lower limit of its movement, and to close the same only when at the upper limit, and having no action on the valve at any intermediate position, substantially as described. 50

3. The combination, in such apparatus, with the siphon and its guided or vertically-dependent cap or cover, as hereinbefore described, of a ball or float lever, slotted as hereinbefore described, and a water-supply valve or tap, arranged in connection with such slotted lever, and being intermittently actuated thereby, as hereinbefore described. 60

4. The combination of the valve, the ball or float, and its lever, the latter having at its end a slot the extremities of which engage with pins on said valve when the ball or float is at its highest or lowest position, substantially as described. 70

CHARLES WINN. [L. S.]

Witnesses:

RICHARD SKERRETT,
 ARTHUR JOHN POWELL.