

(No Model.)

W. DAVIES.  
APPARATUS FOR REGULATING THE SUPPLY OF LIQUIDS FOR  
WATER CLOSETS.

No. 377,293.

Patented Jan. 31, 1888.

FIG.1.

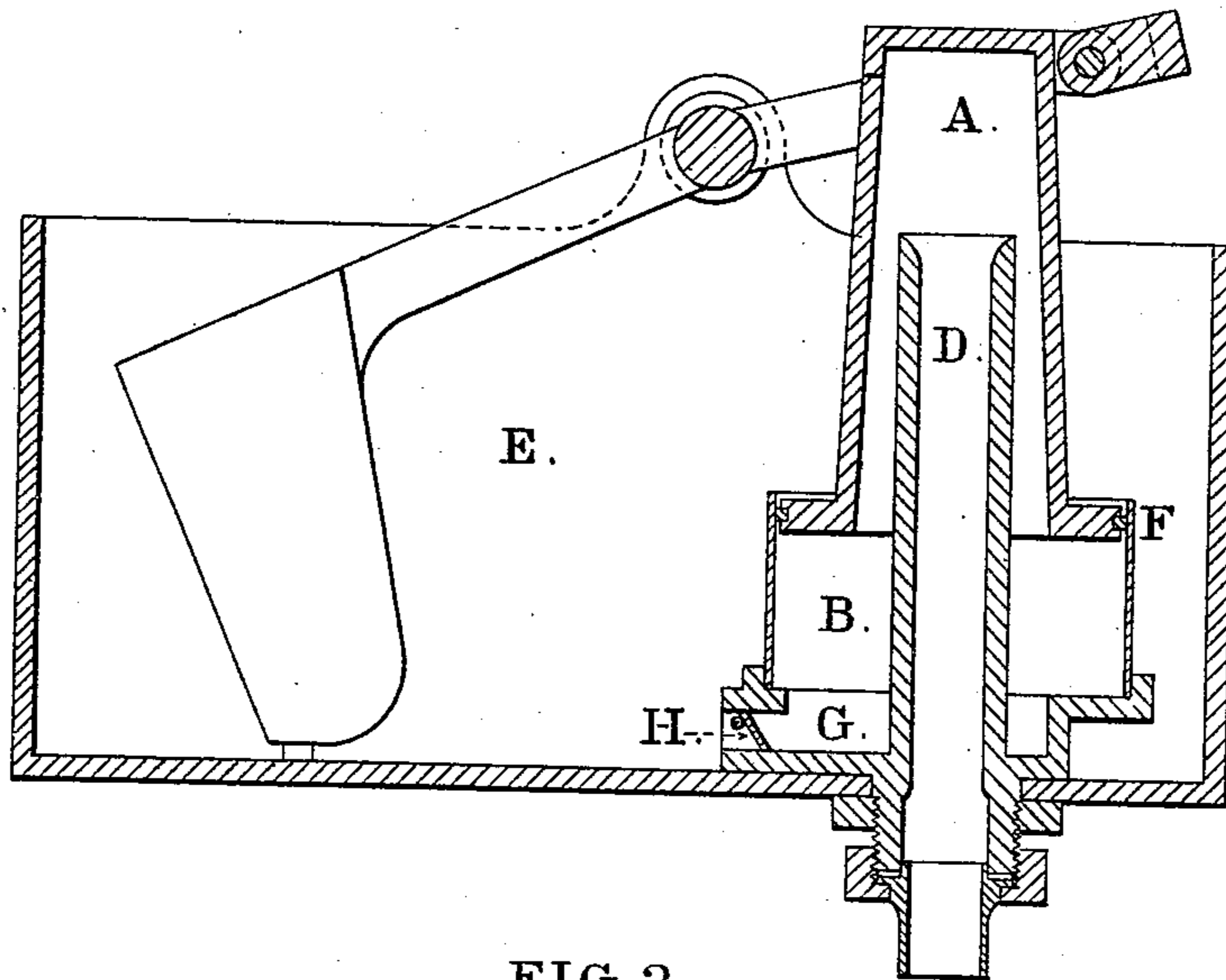
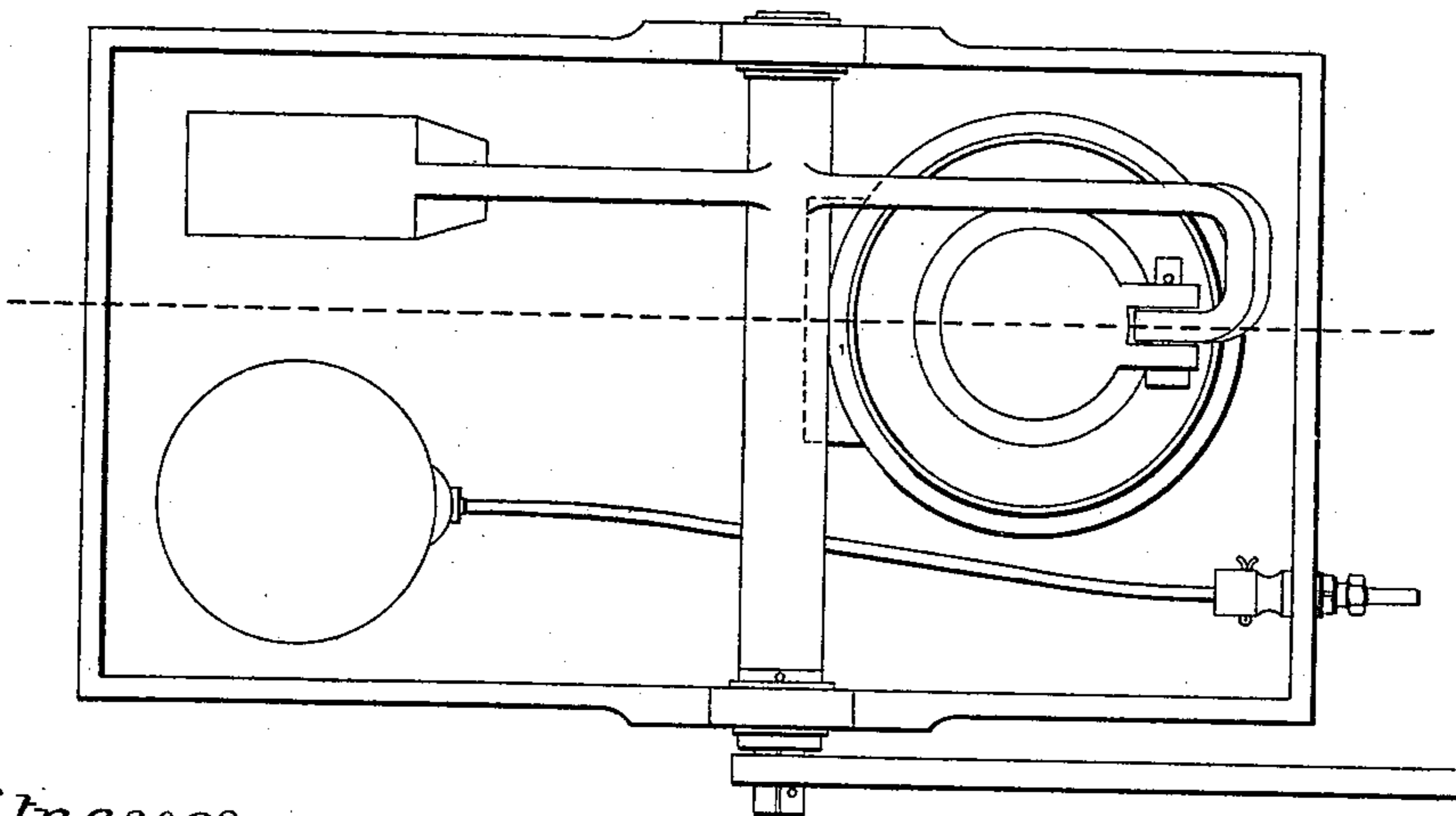


FIG.2.



Witnesses.

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# UNITED STATES PATENT OFFICE.

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APPARATUS FOR REGULATING THE SUPPLY OF LIQUIDS FOR WATER-CLOSETS.

SPECIFICATION forming part of Letters Patent No. 377,293, dated January 31, 1888.

Application filed February 19, 1887. Serial No. 228,171. (No model.) Patented in England December 7, 1877, No. 4,643, and  
March 13, 1886, No. 3,575.

*To all whom it may concern:*

Be it known that I, WILLIAM DAVIES, a  
subject of the Queen of Great Britain, and re-  
siding in the city of Liverpool, in the county  
5 of Lancaster, England, have invented new  
and useful Improvements in Flushing Appa-  
ratus for Water-Closets, (for which I have ob-  
tained patents in Great Britain, No. 4,643, of  
the 7th of December, 1877, and No. 3,575, of  
10 the 13th of March, 1886,) of which the follow-  
ing is a full, clear, and exact description, ref-  
erence being made to the accompanying draw-  
ings, in which—

Figure 1 represents a vertical section of the  
15 apparatus embodying my invention. Fig. 2  
is a plan of the apparatus.

My invention relates to means for discharg-  
ing from a cistern, tank, or reservoir a defi-  
nite quantity of water for flushing the hopper  
20 of a water-closet; and it consists in the pecu-  
liar means, hereinafter described and claimed,  
operating on the old principle of the siphon.

A is a tubular or cap-shaped piston, which  
moves up and down in a chamber, B, sur-  
rounding an outlet or stand pipe, D, the top  
25 of which stand-pipe is higher than the level  
of the liquid to be emptied from the reservoir  
E. The cap portion of the piston A may have  
sides parallel or tapered, or partly parallel  
30 and partly tapered, and the piston may or  
may not be constructed with a packing-ring,  
as shown at F.

The communication between the chamber B  
and the reservoir is through a passage or open-  
ing, G, in the side of the chamber, at same  
35 point of which passage or opening a movable  
diaphragm or valve, H, is placed, opening to-  
ward the chamber B and closing toward the  
reservoir E.

40 The apparatus may be worked by a lever  
jointed to the top of the piston, and provided  
with a balance-weight on the opposite side of  
the fulcrum, as shown, to which lever proper  
connection by the usual pull chain or rod may  
45 be made. I do not, however, confine myself  
to any specific means for operating the piston.

The action of the apparatus is as follows:  
The piston A being at the top end of the cham-  
ber B, the weight of the water in the reser-

voir E opens the valve H and permits the liq- 50  
uid to fill the chamber B and part of the hol-  
low piston A, displacing the air in the cham-  
ber and the piston to the level of the water in  
the reservoir. The piston is then pressed  
down in any convenient manner, whereby the 55  
valve or diaphragm H is closed, and the air  
remaining in the piston is forced down the  
stand-pipe or outlet D, and is followed by the  
water in the piston and chamber until a siphon  
action is set up, which will by suction open 60  
the valve or diaphragm H, and thereby allow  
the whole of the water in the reservoir to es-  
cape down to the level of the top of the open-  
ing or passage G.

I am aware that it is not new to apply a si- 65  
phon to a water-closet tank or reservoir, and  
to start it into action by lifting the water-level  
to the bend or descending point of the siphon  
by means of a piston, and I do not claim this  
broadly. My invention is, however, distinct- 70  
ive in novelty in that the tubular piston A  
itself forms the short leg of the siphon; also  
in the application of the valve H and in the  
forcible expulsion of the water down the long  
leg of the siphon, which makes my apparatus 75  
much more positive and sensitive.

It is obvious that my invention is not lim-  
ited to use for water-closets alone; but it may  
be equally well applied to the emptying of  
any cistern or reservoir. 80

Having thus described my invention, what I  
claim as new is—

The combination of the reservoir and cham-  
ber B, having valve H between, the stand-pipe  
D, extending up through said chamber, and 85  
the hollow piston A, fitted within chamber B  
and surrounding the stand-pipe and adapted,  
as described, to act both as a plunger and the  
short leg of the siphon.

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