

(No Model.)

W. STRONG.

CISTERN AND FLUSHING APPARATUS FOR WATER CLOSETS.

No. 322,078.

Patented July 14, 1885.

Fig. 1.

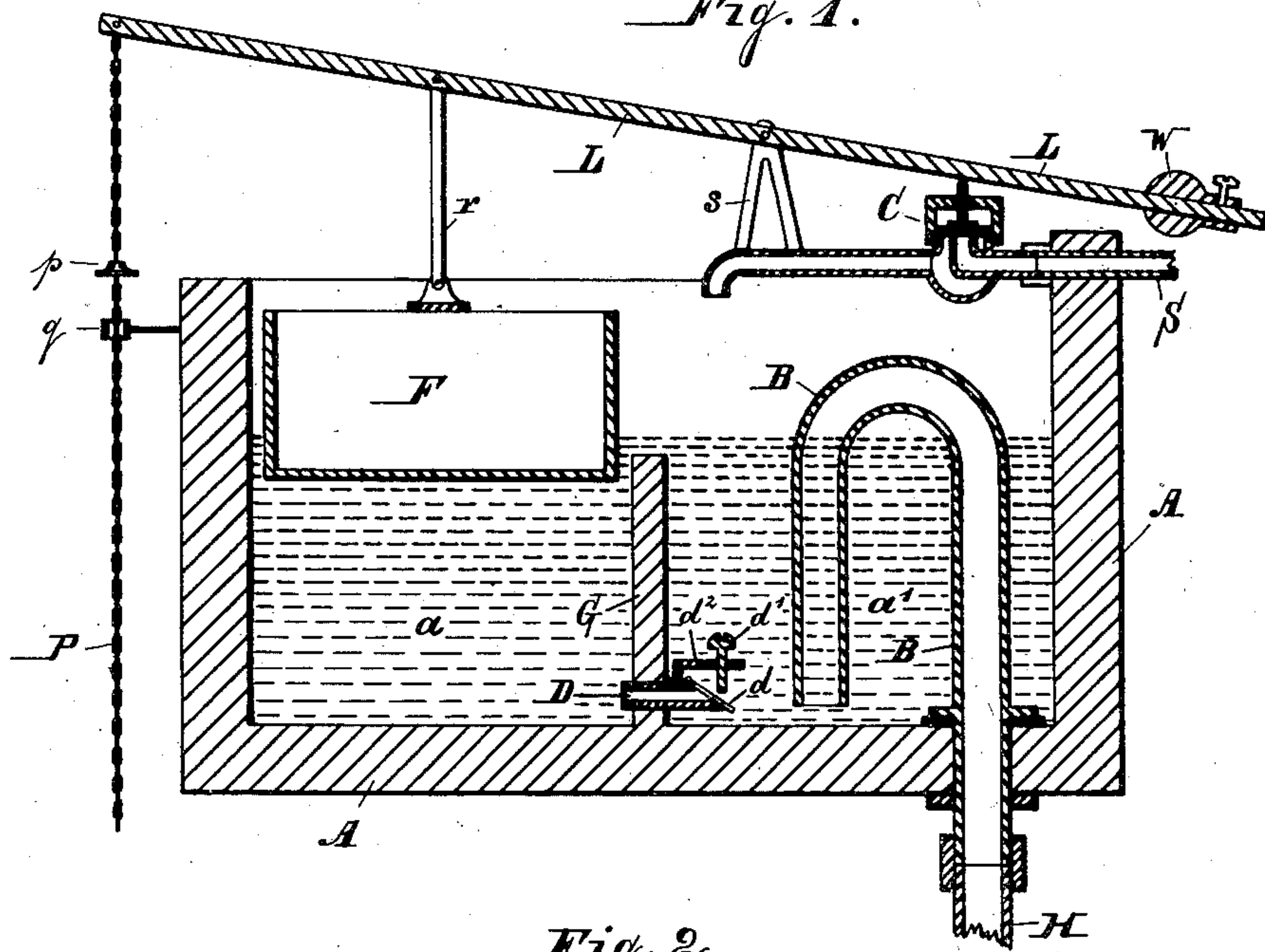
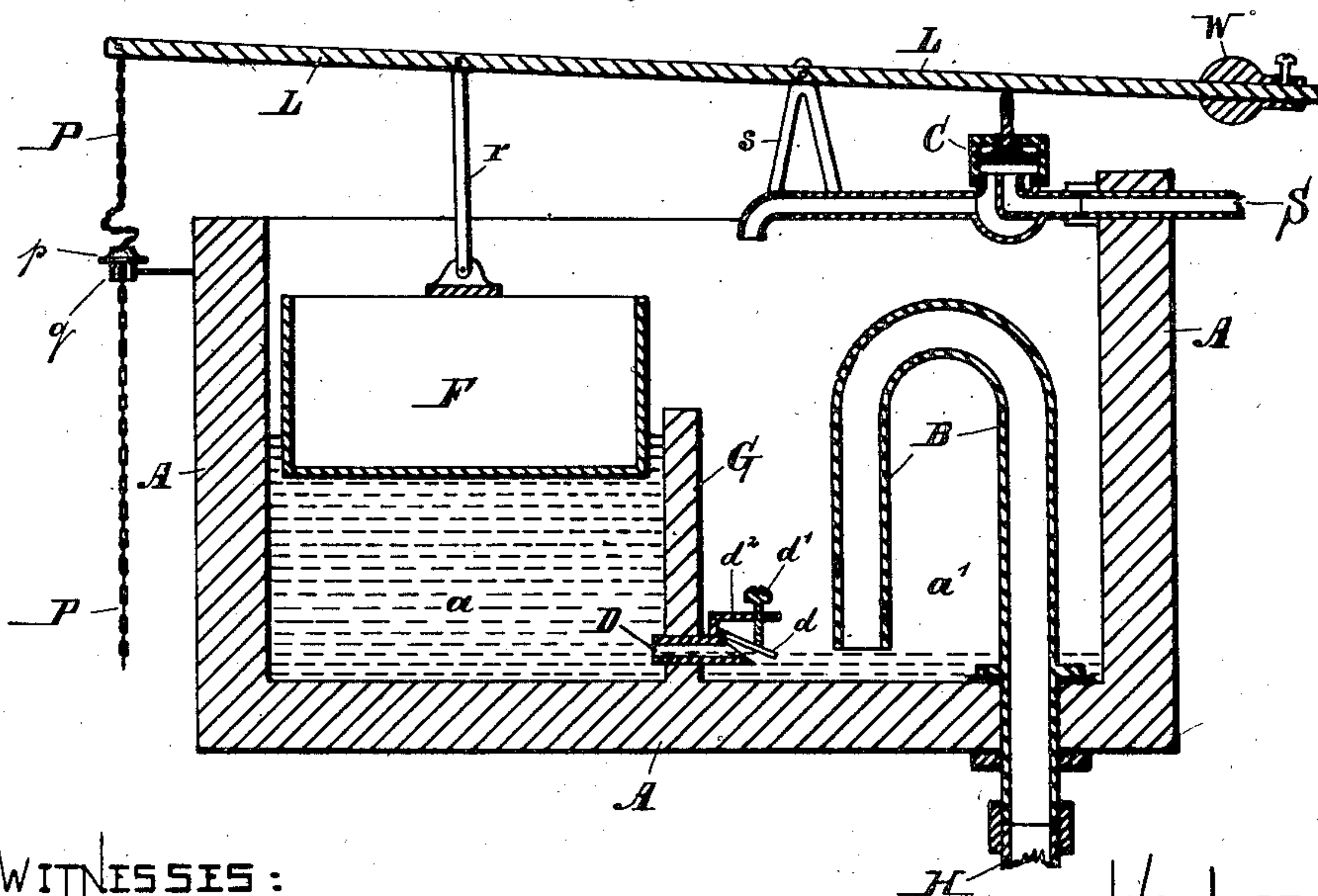


Fig. 2.



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CISTERN AND FLUSHING APPARATUS FOR WATER-CLOSETS.

SPECIFICATION forming part of Letters Patent No. 322,078, dated July 14, 1885.

Application filed May 9, 1885. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM STRONG, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Cisterns and Flushing Apparatus for Water-Closets, of which the following is a specification.

The objects of my improvements are to provide a cistern and flushing apparatus for water-closets, which is simple in construction and easily operated by a limited short pull. I attain these objects in the device illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section through my cistern and flushing apparatus, showing the cistern full, ready to be operated for flushing the water-closet. Fig. 2 is a vertical section through the same, showing the cistern emptied, the closet having been flushed and the fresh supply gradually turning on.

Similar letters refer to similar parts throughout the several views.

A is the reservoir or cistern, where only a certain amount of water from the water-works main or a large store-tank at a time is received and transmitted to the water-closet when needed. This cistern A can be placed at any convenient place above the water-closet.

The cistern A is divided into two compartments, *a* and *a'*, by a vertical partition, G, extending across the width of the cistern A. In the compartment *a* floats and operates the float F, secured to and connected with one arm of the lever L by the bar *r*. This lever L has its pivotal or fulcrum point on a standard, *s*, supported by the supply-pipe S, near its outlet, and rests with the other arm on a compression-ball cock, C. Attached to the end of that arm of the lever L which is connected with the float F is the pull-down chain or rope P, which terminates in a handle, or can be secured to the water-closet seat. Slipped over the end of the other arm of the lever L is the adjustable weight W, which is provided with a set-screw or other suitable means, so that it can be moved closer to or farther off from the compression-cock C. In the compartment *a'* rises the siphon-pipe B, the inlet of which is elevated a little distance above

the cistern-bottom, while the neck is located above the high-water line in the cistern A, and above the top of the partition G, which, with the walls of the cistern A, forms the two compartments *a* and *a'*. The siphon-pipe B extends through the side or the bottom of the cistern A, and connects with the flush-pipe H, which conveys the water to the water-closet.

Through the partition G, near the bottom of the cistern, extends from the compartment *a* into the compartment *a'* a small pipe, D, which is closed in the latter compartment by an adjustable valve-lid, *d*, opening upward and adjusted in regard to the amount of outlet needed from the pipe D, by a set-screw, *d'*, supported by a bracket, *d''*, above the valve-lid *d*. The siphon-pipe B has a much greater capacity than the supply-pipe S.

The device is to be set up and arranged in the following manner preparatory to operate satisfactorily. When the float F, acting on the lever L, perfectly shuts the compression-cock C, and thus cuts off the water-supply, the water in the cistern A must stand above the top of the partition G and below the neck of the siphon-pipe B. Both compartments, *a* and *a'*, are then filled with water; also one side of the siphon-pipe B is filled to the same height as the water in the cistern. The weight W is adjusted and secured to the end of one arm of the lever L, at such a distance from the compression-cock C that it will aid the float F to keep the cock C shut when no supply is needed—that is, when the cistern is full—thus preventing any extra-supply pressure that might at times be brought to bear on the cock C to open said cock and cause a waste of water. The valve-lid *d* on the end of the pipe D, in the compartment *a'*, is adjusted by having the set-screw *d'* down closer to it or farther away from it; or, in other words, the outlet of the pipe D into the compartment *a'* is increased or diminished to such a degree that the supply-pipe S and the pipe D, combined, cannot fill the compartment *a'* as fast as the siphon-pipe B empties the same.

The device operates as follows: A quick pull on the chain P immerses the float F into the water. The water displaced by the float rises in the cistern A and in the siphon-pipe

B, filling the neck of the siphon-pipe and starting the siphonage into the flush-pipe H. While the pipe B is siphoning and quickly emptying the compartment a' , the float F falls slowly with the water in the compartment a , the water slowly passing from a to a' through the pipe D. The float, sinking with the water, gradually opens the cock C, turning on the supply into the compartment a' ; but the supply through S and D being less than the exhaust through B, the water in the compartment a' sinks below the end of the pipe B, breaking the siphon. After the siphon is broken, the water sinks in a and rises in a' until the same level in both is reached, this being the lowest water-line in a , at which moment the cock C is full open and the supply running into the compartment a' at its fullest capacity. The water column rising quickly in a' acts on and shuts the valve-lid d , thus preventing the water and float in a from rising with the column in a' , and from gradually shutting off the cock C. The water and float in a are kept at the low point, and the supply from S is kept running into a' at its fullest capacity until a' is full and the water running over partition G into the compartment a , which is quickly filled, raising the float and shutting off the supply quickly.

To prevent the operator from pulling down the float F more than is necessary to cause the water to rise into the siphon-neck and start the siphon, I secure a ring, q , to the side of the cistern, through which I let the chain

P pass. To the chain P, I attach firmly a burr, p , at such a point above the ring q that when, in pulling down the chain, the burr strikes against the ring and prevents any farther down movement, the float F is sufficiently immersed to start the siphon into the pipe B.

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

In a flushing apparatus for water-closets, the combination, with the cistern A, the flush-pipe H, the supply-pipe S, and the chain-pull P, check p q , lever L, bar r , float F, fulcrum-support s , compression-ball cock C, adjustable weight W, forming means to turn the water-supply onto and shut it off from the cistern, of the partition G, dividing the cistern into the two compartments a and a' , the pipe D forming an outlet from the compartment a into the compartment a' , and being provided with the valve-lid d and the adjusting device d' , and the siphon-pipe B, located in the compartment a' , having its inlet near the bottom of the cistern and its neck above the top of the partition G, and connecting with the flush-pipe H, all arranged as described, and for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM STRONG.

Witnesses.

THEODORE LANGBEIN,
GOTTFRIED KOEHLER.