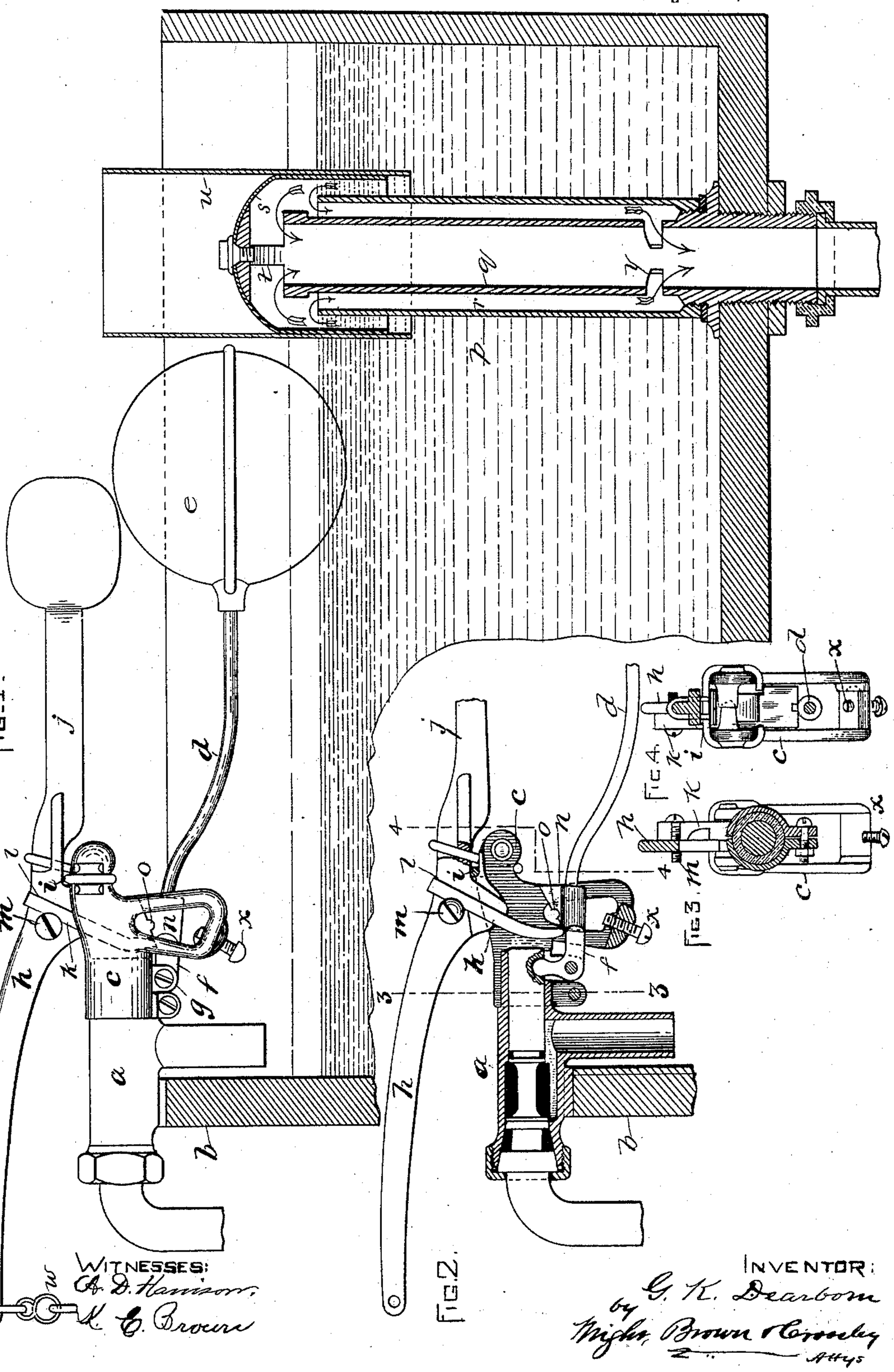
(No Model.) 2 Sheets—Sheet 1.

G. K. DEARBORN.

WATER SUPPLY APPARATUS FOR WATER CLOSETS.

No. 474,372. Patented May 10, 1892.



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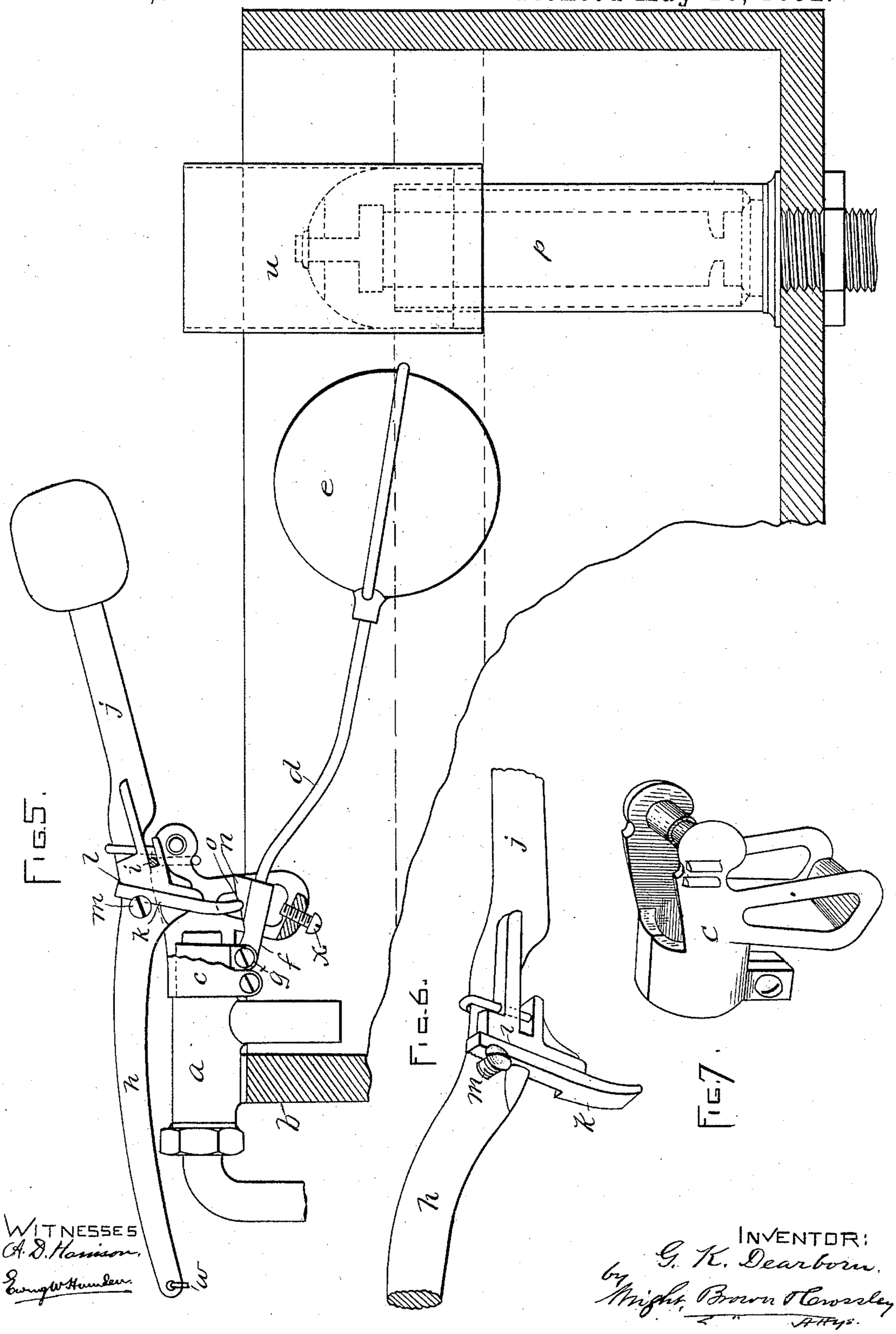

FIG. 5.

FIG. 6.

FIG. 7.

WITNESSES
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UNITED STATES PATENT OFFICE.

GILBERT K. DEARBORN, OF SOMERVILLE, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO WILLIAM A. MUZZY, OF SAME PLACE.

WATER-SUPPLY APPARATUS FOR WATER-CLOSETS.

SPECIFICATION forming part of Letters Patent No. 474,372, dated May 10, 1892.

Application filed April 27, 1891. Serial No. 390,704. (No model.)

To all whom it may concern:

Be it known that I, GILBERT K. DEARBORN, of Somerville, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Water-Supply Apparatus for Water-Closets, of which the following is a specification.

It is the object of the invention to provide such improvements in the water-supply apparatus of water-closet tanks and bowls as will render it unnecessary to raise the valve to start the flow of water.

It is, furthermore, the object of the invention to provide improved means for securing the flow of a definite amount of water into the bowl and regulating the quantity of such flow to suit circumstances or desires.

It is, furthermore, the object of the invention to simplify the construction and cheapen the cost of manufacturing water-closet-supply apparatus, and at the same time render such apparatus certain and entirely efficient in operation.

The invention consists of a stationary siphon combined with a co-operating ball-cock and a lever for opening and holding open the ball-cock for a definite time, so that the siphoning operation of the valve may be begun and maintained until the desired quantity of water has been discharged into the bowl.

The invention also consists of the construction, combination, and arrangement of parts comprised in the foregoing, and as is hereinafter more fully described and claimed.

My improvements will first be described in view of the annexed drawings, forming a part of this specification, and then be particularly pointed out in the claims.

In the said drawings, Figure 1 is a side view, partially in section, of a water-closet tank equipped with my improved apparatus. Fig. 2 is a sectional view of the supply-cock and some of its immediate adjuncts. Fig. 3 is a sectional view taken on the line 3 3 of Fig. 2. Fig. 4 is a sectional view taken on the line 4 4 of Fig. 2. Fig. 5 is a side elevation (portions being shown as broken away) of the parts represented in Fig. 1, but with the lever and ball and immediately-associated parts in a different position. Fig. 6 is a perspective view of the lever for opening the cock. Fig. 7 is a perspective view of the bracket which supplies a bearing and support for the parts connected with the supply-cock.

Similar letters of reference designate similar parts or features, as the case may be, wherever they occur.

In the drawings, *a* designates a ball-cock, which may be of common form for supplying water to the tank *b*.

c designates a bracket, so constructed as that it may be clamped upon or secured to the cock *a*.

The rod *d* of the ball or float *e* is connected with the angular lever *f*, which is fulcrumed upon a lug or extension *g* of the cock, as usual, and the said lever operates the valve of the cock in the common or any suitable way.

h is a lever, which is fulcrumed at *i* upon the bracket *c* and is provided with a weighted arm *j*, which overbalances the lever *h*. A dog *k* is adjustably connected with the lever *h* by being clamped between a shoulder *l* on the latter and the shank of a screw *m* or in any other suitable manner. The said dog extends down to or nearly to the lever, and is adapted when the lever is pulled to engage the incline *n* on the horizontal arm of the angular or bell-crank lever *f* and depress the same, actuating the valve, so as to open the ball-cock.

In Figs. 1 and 2 the parts are represented as in their normal position, and in Fig. 5 they are shown in the position they will assume when the lever *h* is pulled, the dog *k* having moved inward on the incline *n*, depressed the ball *e* into the water, and stopped in the notch *o* of the incline, locking the ball down and holding the valve of the supply-cock open.

p designates an outlet siphon or pipe, consisting of an inner tube *q* and an outer and shorter tube *r*. A hood *s* is supported upon extensions *t*, connected with the upper end of the inner tube and extended out and down below the upper end of the tube *r*. The hood *s* is larger in diameter than the tube *r*, as is clearly shown in Fig. 1.

u designates a tube of sheet metal adapted to fit over the hood *s* and to be slid up and

down thereon and be held in place by friction, so as to practically lengthen or shorten the downward extension of the hood.

Apertures *v* are provided in the lower part of the tube *q*, affording communication at that point between the interior of the inner and outer tubes.

The operation of my invention is as follows: The parts being in their normal position, with the ball floating on the water, the lever *h* will be pulled through the medium of chain *w*, causing dog *k* to move inward on incline *n*, depressing the ball and actuating the angular lever *f* to open the ball or supply cock until the said dog catches in the notch *o*. Water will now be admitted to the tank and flow in under tube *u* and hood *s*, over the top of tube *r*, down to and through apertures *v* of the inner tube, setting up a siphoning action, which as it continues will result in a suction in the inner tube to a degree that will cause the water to be drawn up over the top of and down through the inner tube until the water is lowered in the tank to a line coincident with the lower end of tube *u*, when the siphoning action will be broken and cease. As soon as the ball or float drops below the line to which it was lowered by the action of the dog *k* on the incline *n*, the said dog will be released from notch *o* and the weighted arm of lever *h* will operate to carry the said lever and dog back to normal position and the ball will operate in the usual way to close the supply-cock. A stop *x* in the nature of a screw may be tapped into the bracket *c* to limit the downward movement of the ball.

By my invention it will be seen that the necessity of raising or otherwise operating on the outlet valve or pipe is obviated and that the point or line at which the siphoning is broken can be varied or adjusted with the greatest readiness and nicety by adjusting the tube *u* up and down on the hood *s*, and this is an important feature of the invention, since it provides a means for readily regulating the amount of water that may be drawn off from the tank at each operation of the means for opening the ball-cock.

It is obvious that changes may be made in the form and arrangement of parts comprising my improvements without departing from the nature or spirit of the invention.

Having thus explained the nature of my invention and described a way of constructing and using the same, though without attempting to set forth all the forms in which it may be made or all of its modes of use, I declare that what I claim is—

1. In a water-supply apparatus for water-closets, the combination, with a stationary siphon, of a supply-cock, an angular lever for operating the valve of the cock, a ball and its rod connected with the said lever, and a lever *h*, arranged to act upon the angular lever to open and lock in opened positions the valve of the supply-cock, as set forth.

2. The combination, with a siphon and the supply-cock, angular lever *f*, provided with the incline *n* and notch *o*, the ball and its rod connected with the said lever, of the weighted lever *h*, provided with the dog *k*, arranged to act upon the incline of the angular lever, as set forth.

3. A siphon for water-closet tanks, consisting of the inner tube provided with extensions at its upper end, an outer tube shorter than the inner tube, a hood supported upon the extensions of the inner tube and extended below the upper end of the outer tube, and a tube *u*, vertically adjustable upon the hood to practically lengthen and shorten the downward extension of the latter, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 6th day of April, A. D. 1891.

GILBERT K. DEARBORN.

Witnesses:

ARTHUR W. CROSSLEY,

A. D. HARRISON.