

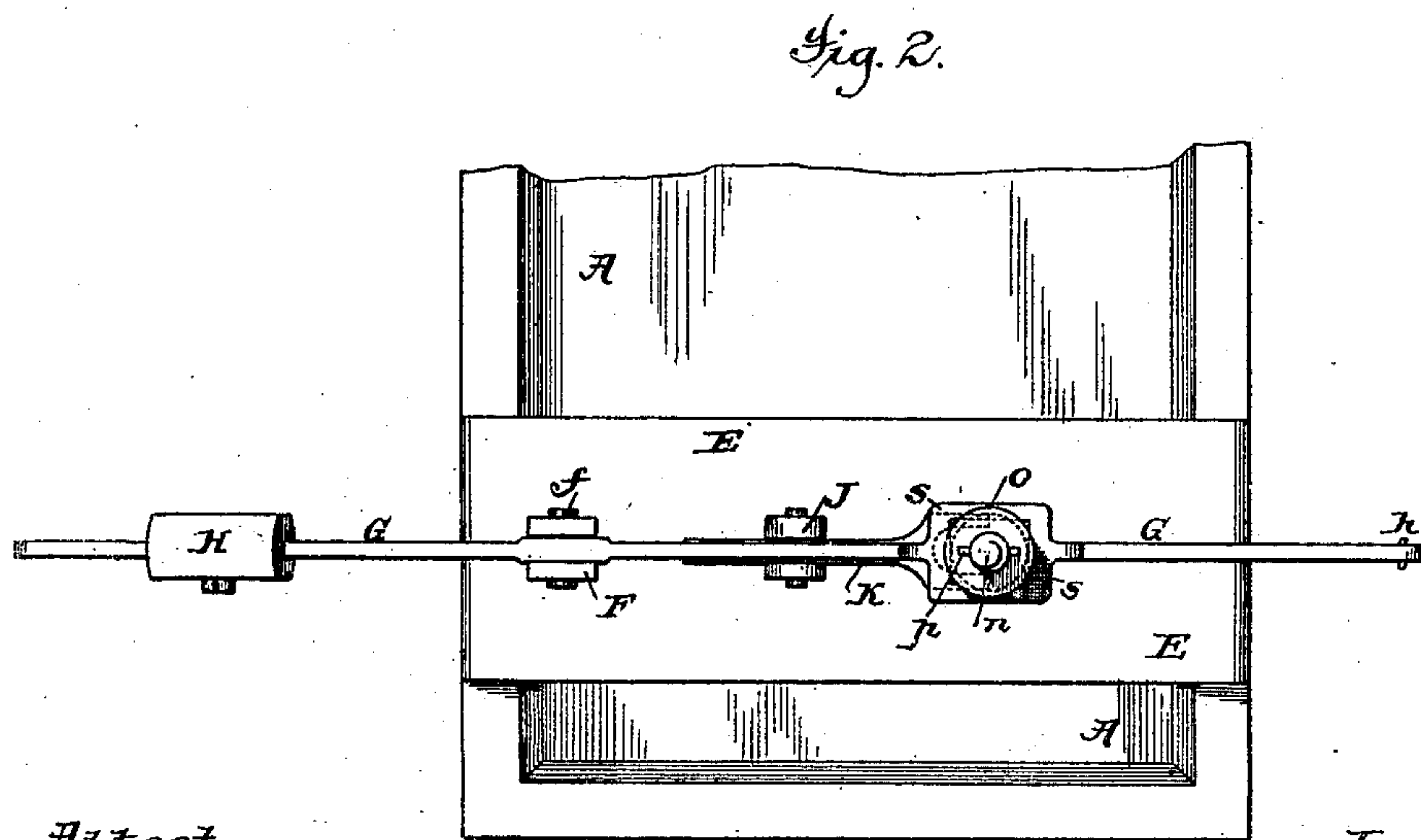
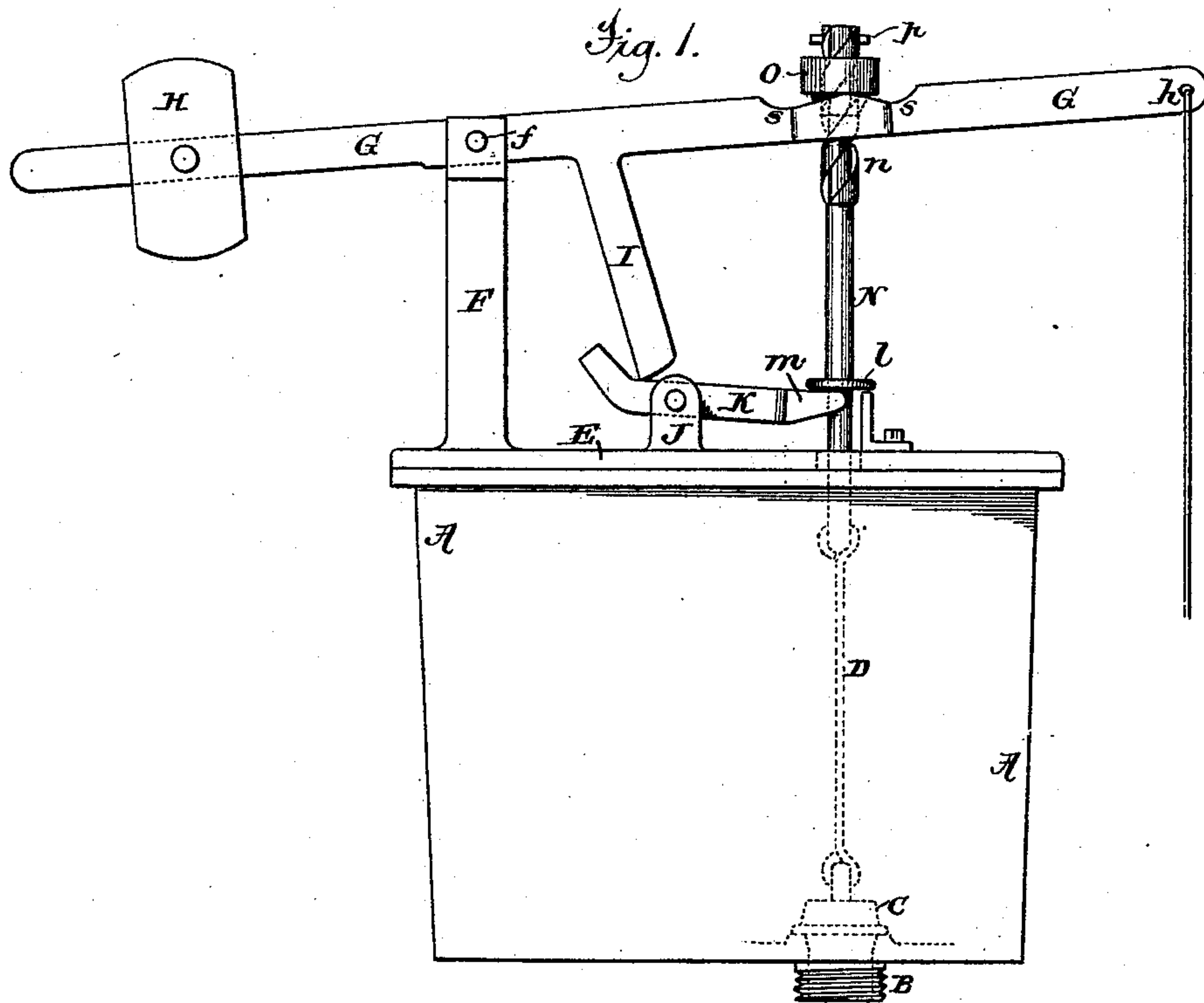
(No Model.)

2 Sheets—Sheet 1.

W. SCOTT.  
WATER CLOSET CISTERN.

No. 275,716.

Patented Apr. 10, 1883.



Attest;  
Geo. H. Graham  
H. B. Janvier

Inventor  
Wm Scott  
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Atty.

(No Model.)

2 Sheets—Sheet 2.

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### WATER CLOSET CISTERN.

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Fig. 3.

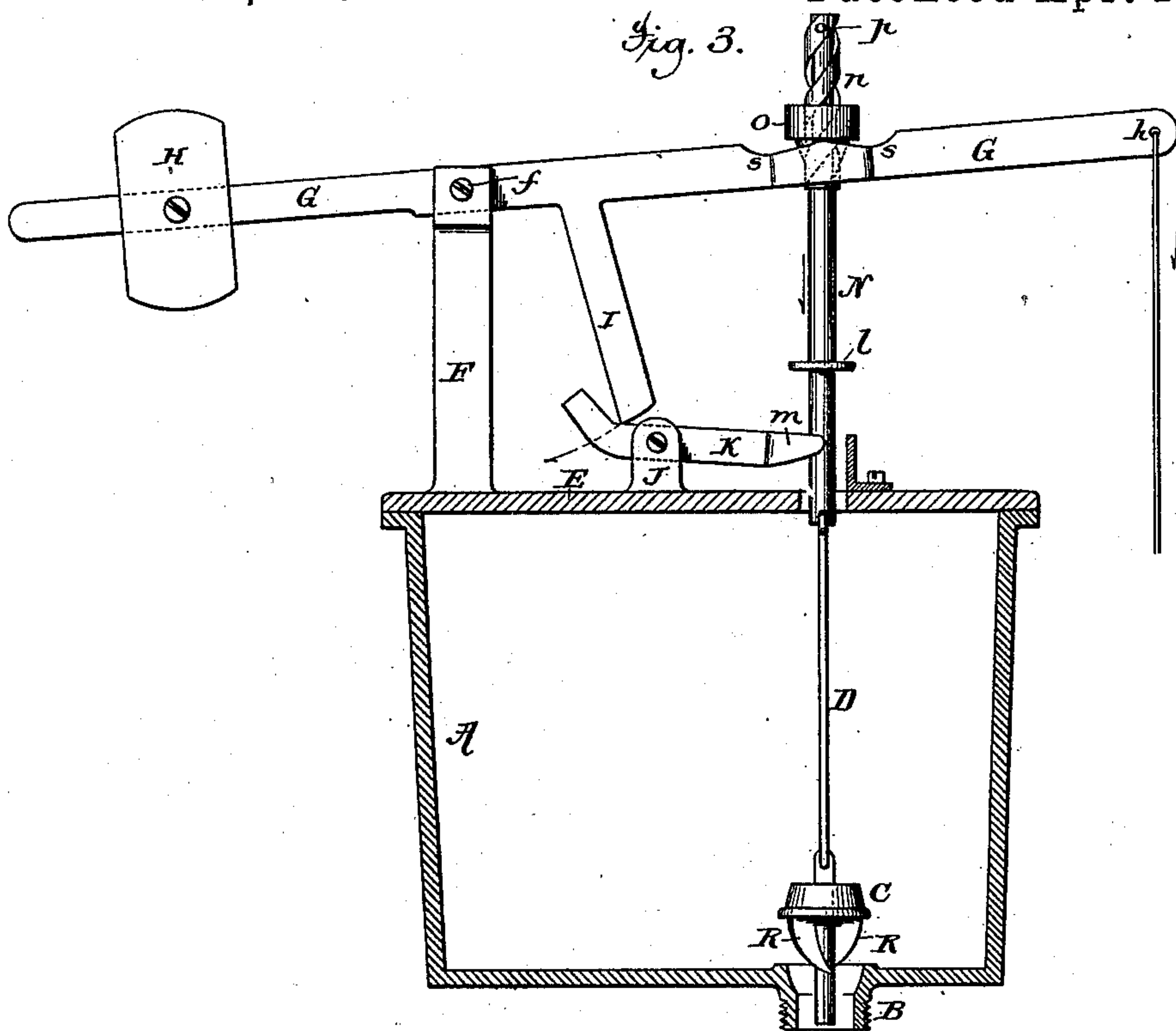
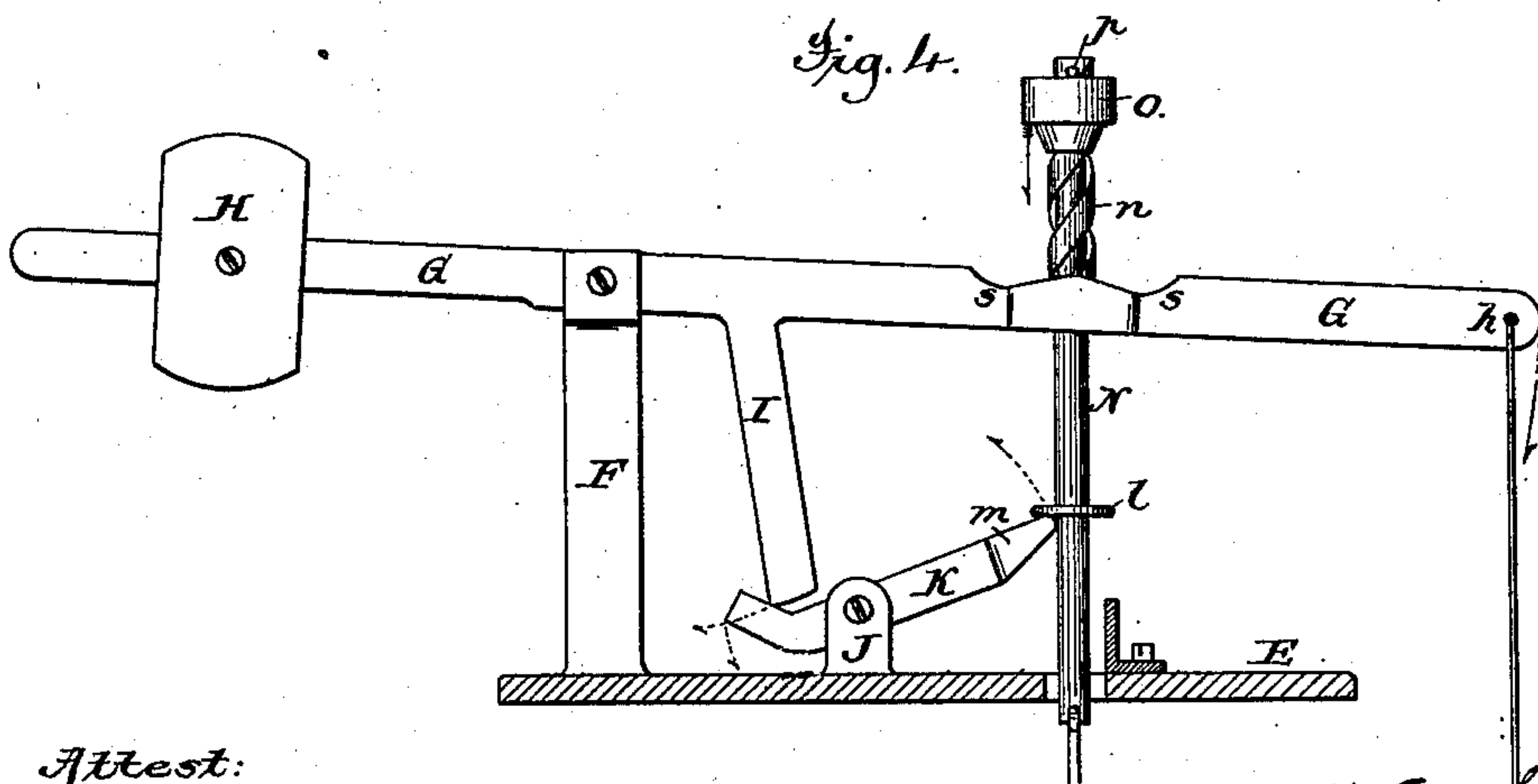


Fig. 4.



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# UNITED STATES PATENT OFFICE.

WILLIAM SCOTT, OF FAULKNER, MASSACHUSETTS, ASSIGNOR TO MEYER,  
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## WATER-CLOSET CISTERN.

SPECIFICATION forming part of Letters Patent No. 275,716, dated April 10, 1883.

Application filed December 20, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM SCOTT, of Faulkner, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Water-Closet Cisterns; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this application.

My invention relates to certain new and useful improvements in water-closet cisterns, and has for its object a simple and efficient construction of such contrivances in a manner which will render them capable of effecting both a preliminary and an after wash with comparative perfection and complete certainty of action.

Previous to my invention water-closet cisterns have been constructed so as to afford both a preliminary and a subsequent or main discharge of water to the bowl; but in all such contrivances with which I am familiar there are some practical objections, either as to complexity of construction or uncertainty of continuous perfect operation.

I propose by my invention to provide for use a water-closet cistern of the type referred to, which will be not only perfectly certain and efficient in its operation, but which will be simple and economic of construction, durable, and not liable to any derangement of any of its parts; and to this main end and object my invention consists in the novel construction of apparatus, which will be hereinafter more fully explained, and as will be more particularly pointed out and specified in the claims of my application.

To enable those skilled in the art to which my invention relates to understand and practice my invention, I will now proceed to more particularly explain the several features of my improvements as I have so far carried them out in practice, referring by letters of reference to the accompanying drawings, which form part of this specification, and in which I have illustrated a water-closet cistern apparatus containing my invention in the best form of carrying out the same now known to me.

In the drawings, Figure 1 is a side view or

elevation of the apparatus. Fig. 2 is a top view of the same. Fig. 3 is a vertical longitudinal central section with the parts in the relative positions which they occupy when the discharge-valve is closing. Fig. 4 is a partial similar section, showing the valve raised from its seat.

In the several figures the same part will be found designated by the same letter of reference.

A is the body of the cistern or tank, which is provided with the usual discharge-pipe, B, at the upper end of which is formed the seat for the valve C, the stem of which is connected, by a rod D, to a vertically-arranged screw-shaft, N, by means of which the said valve is lifted, in a manner which will be presently described.

E is the usual top cross-bar or platform of the cistern, carrying the usual standard, F, in which is pivoted, at *f*, the usual lever, G, weighted at H, and connected at *h* with the usual cord or chain, which descends to the seat of the closet, all in about the usual manner, except that the said lever G is provided at I with a pendent arm, which projects obliquely downward, for a purpose to be presently explained.

On the cross-bar or platform E there is also a smaller upwardly-projecting stand, J, in which is pivoted an auxiliary lever, K, one end of which is bifurcated, as seen at *m*, and straddles the lifting-shaft N just below its flange-like projection or collar *l*, the other end of said lever K being adapted to be depressed by the lower end of the pendant I, (of the main lever G,) in a manner and for a purpose which will be presently described.

The lifting shaft or bar N is formed, as seen at *n*, with a comparatively quick-threaded screw, with which engages a nut, O, which is arranged, as shown, immediately over that part of the main lever G which is yoked around the said shaft N, and said lever G, it will be observed, is so shaped at the upper side of its yoke-like portion (see *s s*) as to come to a suitable bearing against the under side of the nut O in any position in which said lever G may happen to be, in order that it may always press upwardly against the bottom of



said nut in such manner as will not tend to cramp or make the nut bind on the thread of the screw-shaft N.

The valve C is formed or provided at its base with helical wings or propeller-like blades, which project downwardly and are adapted to descend within the discharge-orifice of pipe B whenever the said valve C descends onto its seat.

*p* is simply a pin in the upper end of the screw-shaft N to prevent casual or other removal of the nut O from its shaft N.

In view of the foregoing explanation as to the construction and arrangement together of the several parts, together with a visual inspection of the drawings, the following description will serve to sufficiently explain the operation of my improved apparatus.

Assuming the valve C to be closed and all the parts in the relative positions which they would occupy when the closet is in disuse, any occupancy of the closet and consequent depression of the seat thereof will, as usual, through the medium of the pulling-down chain or cord, cause the descent of the outer or unweighted end of the main lever G, and said lever will, as usual, remain in this depressed condition so long as the seat is occupied; but when the lever is thus caused to descend (at its unweighted end) the pendent arm I, moving in the arc of a circle, as indicated by the arc in dotted lines and the arrow at Fig. 3, will cause the lever K to vibrate about its fulcrum in such a manner and to such extent as will cause its bifurcated end *m* to first strike against and elevate the collar *l*, and then slip upwardly past and free itself from said collar, and this action and operation necessarily cause the screw-shaft N, (to which collar *l* is fast,) to be lifted up, and then permitted to descend, which operation of said shaft N of course causes the valve C to be lifted, and then permitted to close, for the purpose of allowing an escape through the pipe B of a quantity of water sufficient to produce the preliminary wash. Of course the construction, arrangement, and proportions of the parts the operations of which produce this lifting and permit this descent of the valve C are to be such as to lift the valve to a sufficient extent to permit the escape of just whatever quantity of water may be deemed necessary for producing the preliminary flush. The valve C is again lifted entirely from its seat and to its highest position, whenever the seat shall become unoccupied, by the ascent of the free end of the lever G (caused by the action of its usual weight H,) and by the sudden upward pressure of said lever at the part *s s* against the under side of the nut O, which is lifted by the sudden ascent of this part of lever G too rapidly for any appreciable relative movement to occur between said nut O and the threaded portion *n* of the lifting-shaft N. As soon as the lever G shall have finished its upward movement (at the unweighted end) the gravity of the shaft N, augmented

by the valve C and its attachments, will cause the shaft N, on which said valve depends, to gradually descend, the pitch of its thread *n* being so quick or great as to easily permit such descent, and thus the valve C will be enabled to resume its seat and cut off the flow of water through pipe B, which commenced at the beginning of the shaft N. In order that this action of the parts shall always be positive, and that it shall under no circumstances be impeded by the collection of dirt or by the presence of any slight impediment to the action of the working parts, I deem it necessary to have the pitch of the thread *n* so quick or great that without some counteracting influence the valve C would be apt to descend too rapidly, and thus cut off the supply of water before an ample or sufficient after-wash might have been effected. To counteract such too rapid descent of the valve C, I have provided it with the downwardly-projecting helical vanes or propeller-like blades R, which are constructed and arranged so as to tend to prevent the descent of the valve C when the latter shall be rotated on its vertical axis in the direction of rotation of the screw-shaft N.

It will be observed that in an apparatus constructed as shown and described not only will the usual depression and subsequent ascent of the unweighted end of lever G cause a proper preliminary and also a proper after-wash or main wash of the closet, but that the means by which these desirable ends are effected are simple and positive in their actions, and hence not liable to get out of order.

Of course the details of construction may be varied in many particulars without changing the principle of operation of my improved apparatus, and the sizes, proportions, and relative arrangements of the parts of the contrivance may be varied more or less, according to the judgment and experience of the manufacturer, and in view of the circumstances or conditions under which the contrivance is designed for use, without departing from the spirit of my invention.

Having now so fully explained the construction and operation of a contrivance in which my invention is embodied in the best form now known to me to enable those skilled in the art to make and use my improvements, what I claim as new, and desire to secure by Letters Patent, is—

1. In a water-closet cistern, the combination, with the usual weighted lever and discharging-valve, of a screw shaft and nut, the combination being such, as described, that when the said lever ascends at its unweighted end it will operate against said nut, so as to bodily lift the discharge-valve through the medium of said screw-shaft, and also such that said screw-shaft will then turn within and descend through the said nut until the discharge-valve shall be reseated, all substantially as set forth.

2. In combination with a discharge-valve



which descends by gravity and means for raising said valve, vanes or helical blades R, arranged and operating to retard the rotatory movement of the valve during its descent, substantially as and for the purposes set forth.

5 3. In combination with the main lever G, the lifting stem or rod of the discharge-valve of the water-closet cistern, provided with a collar or suitable projection on said stem, a  
10 lever, K, one end of which is adapted to first lift and then release the said projection or col-

lar in the manner described, and a suitable device, I, adapted to depress the other end of lever K, the combination being and operating substantially as and for the purposes set forth. 15

In witness whereof I have hereunto set my hand this 13th day of December, 1882.

WILLIAM SCOTT.

In presence of—

F. J. MACKAE,  
AMASA T. DAY.