

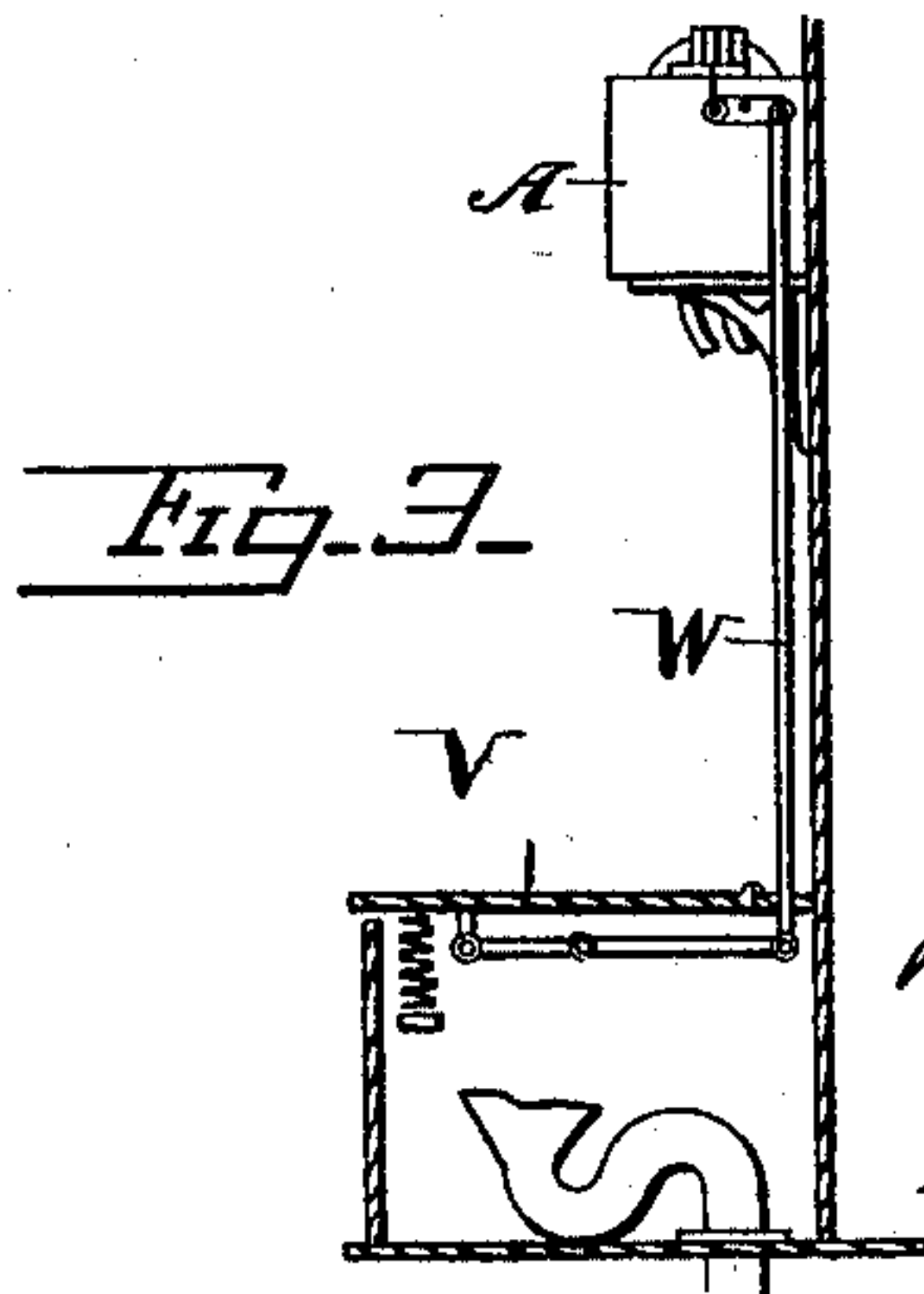
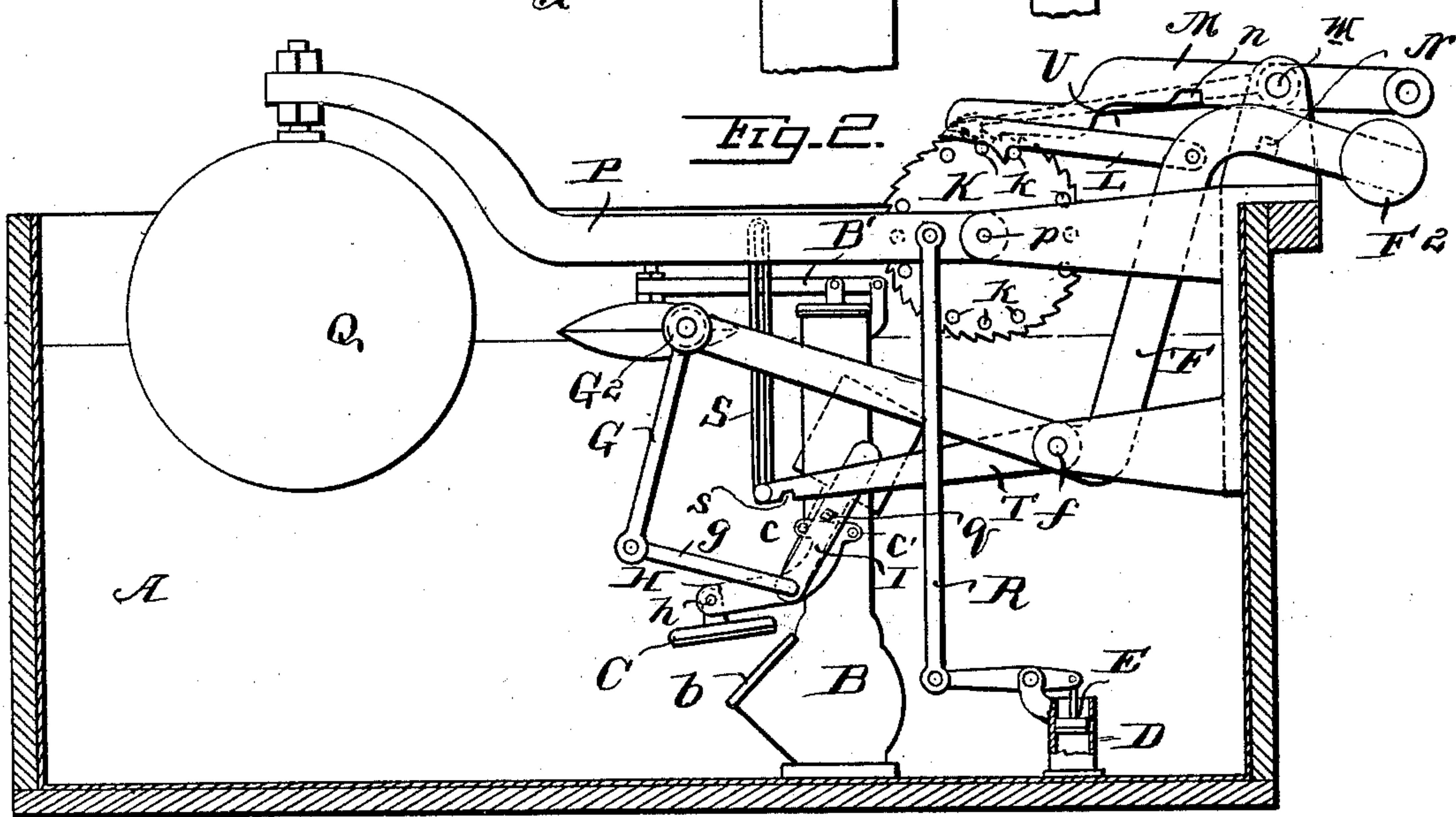
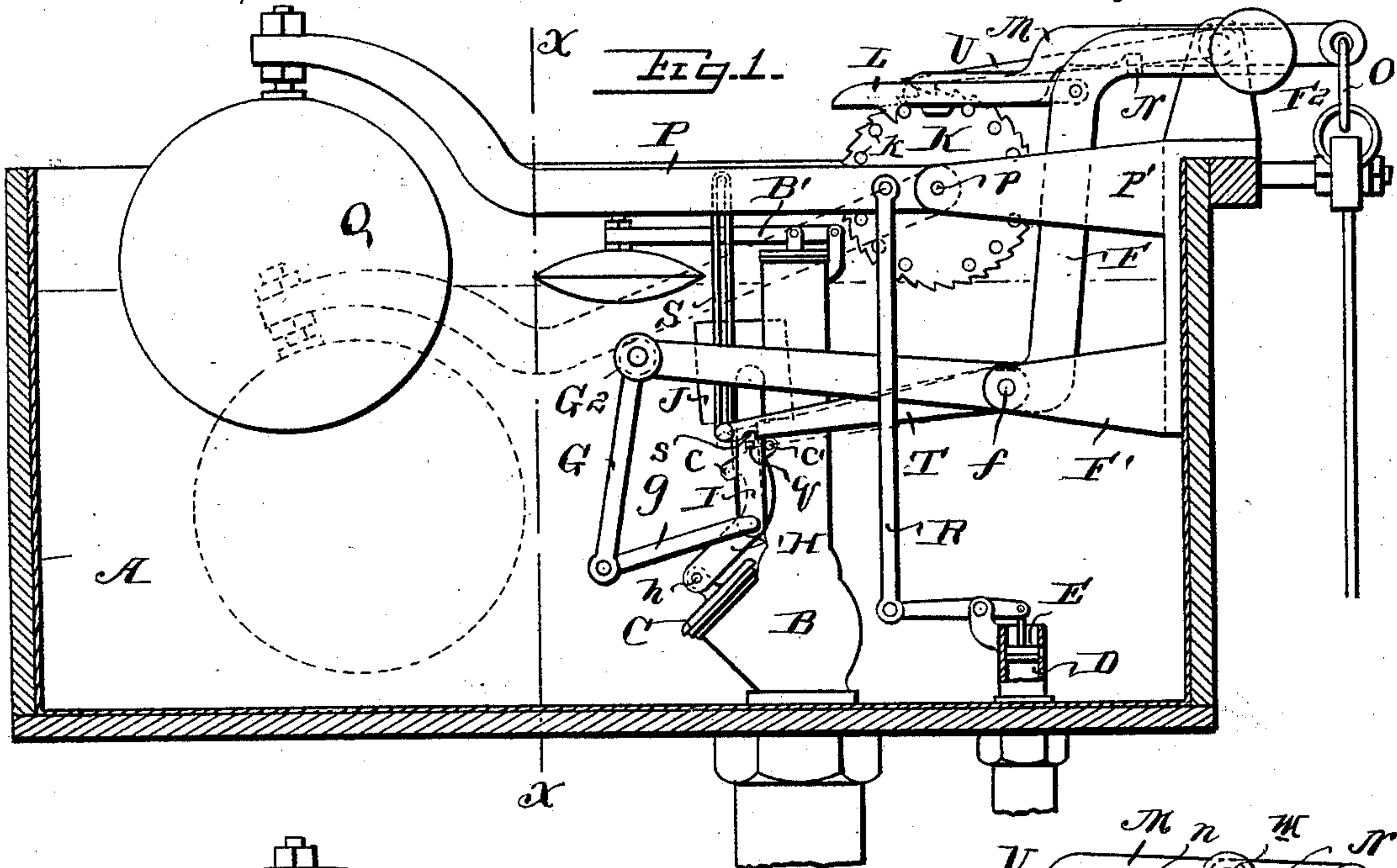
(No Model.)

J. MOLONEY, Jr.
FLUSHING TANK.

2 Sheets—Sheet 1.

No. 519,337.

Patented May 8, 1894.



Witnesses:

Jesse B. Heller.
Must Must Must

Inventor.

Inventor.
John Holoney, Jr.
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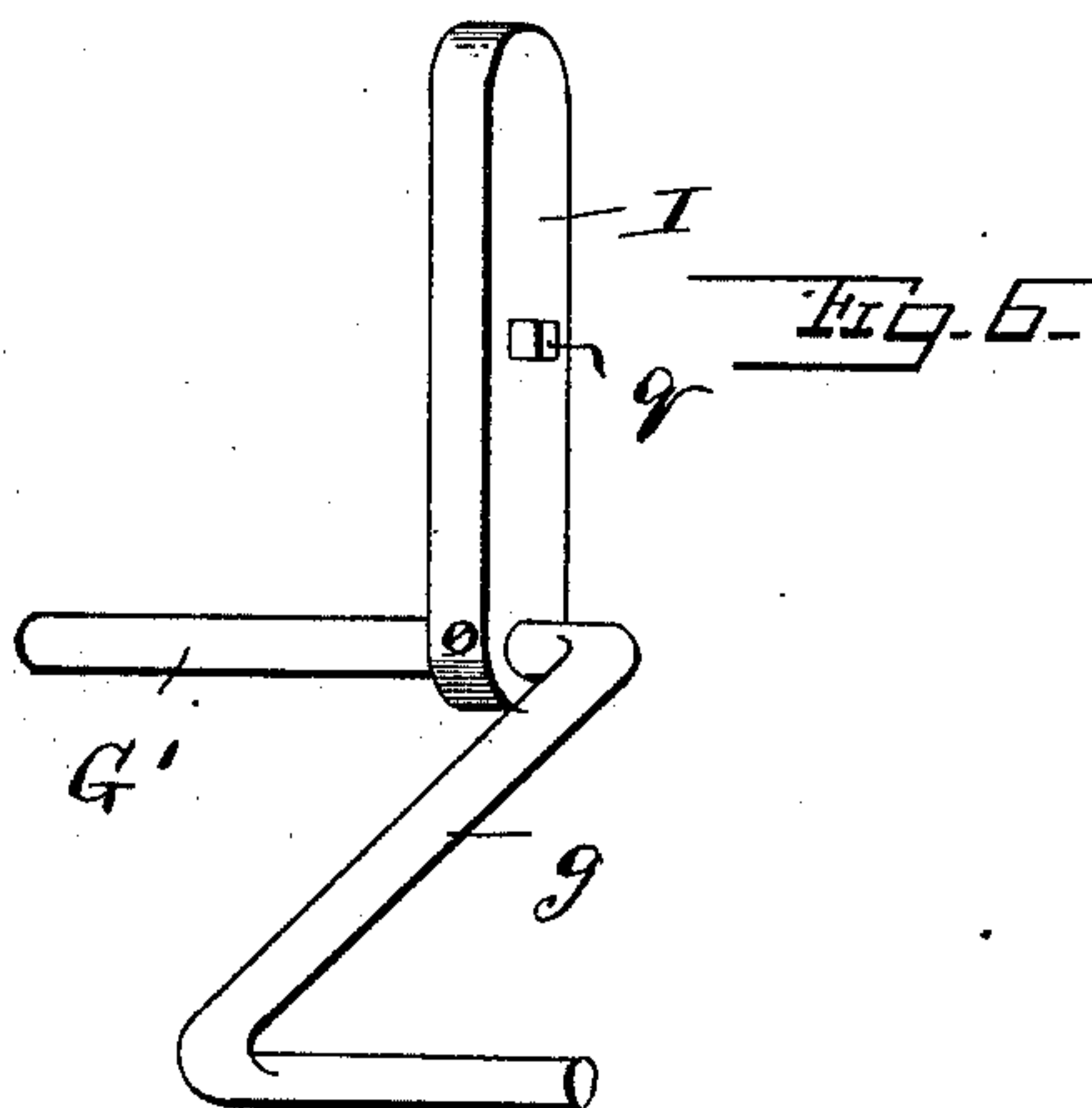
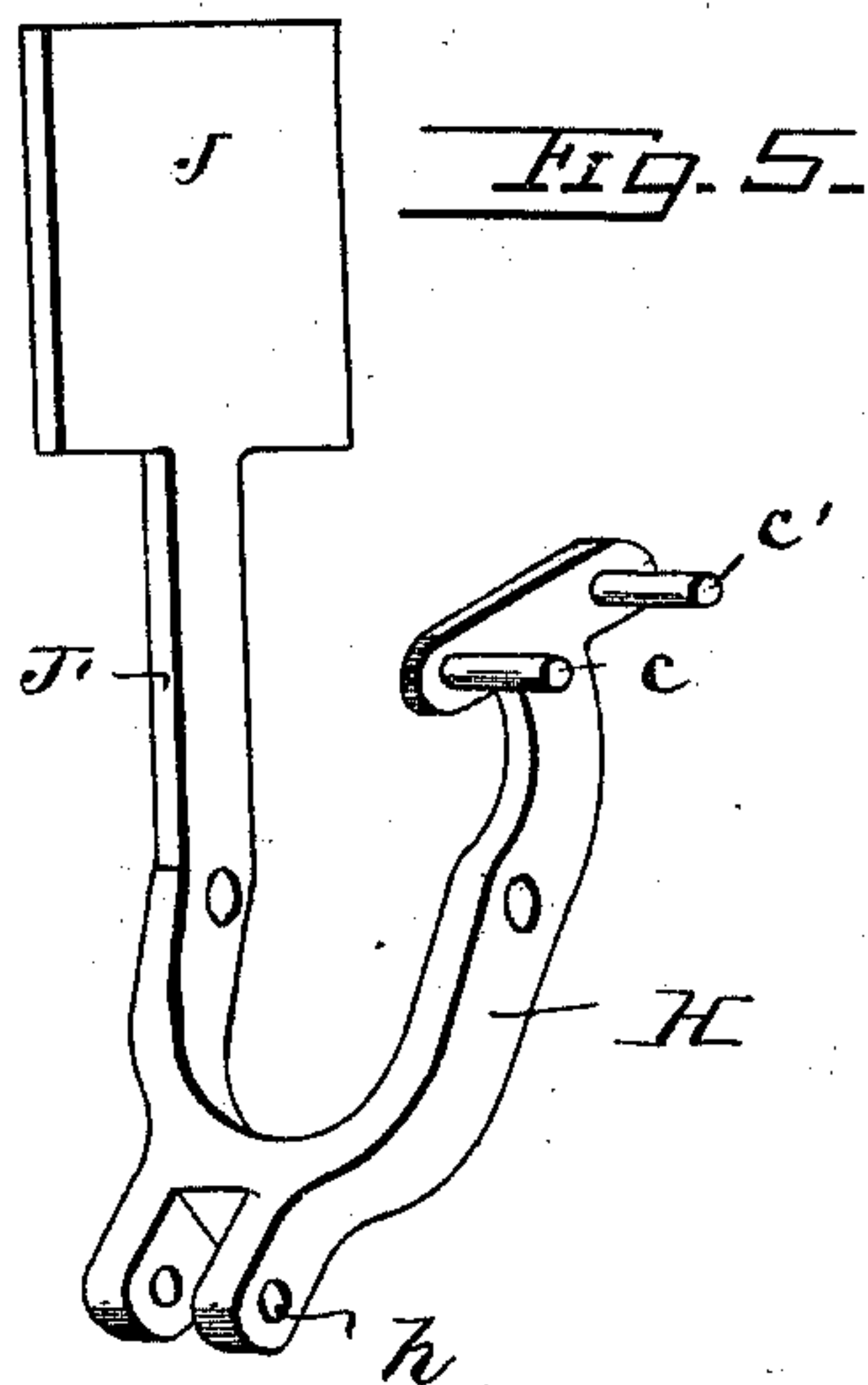
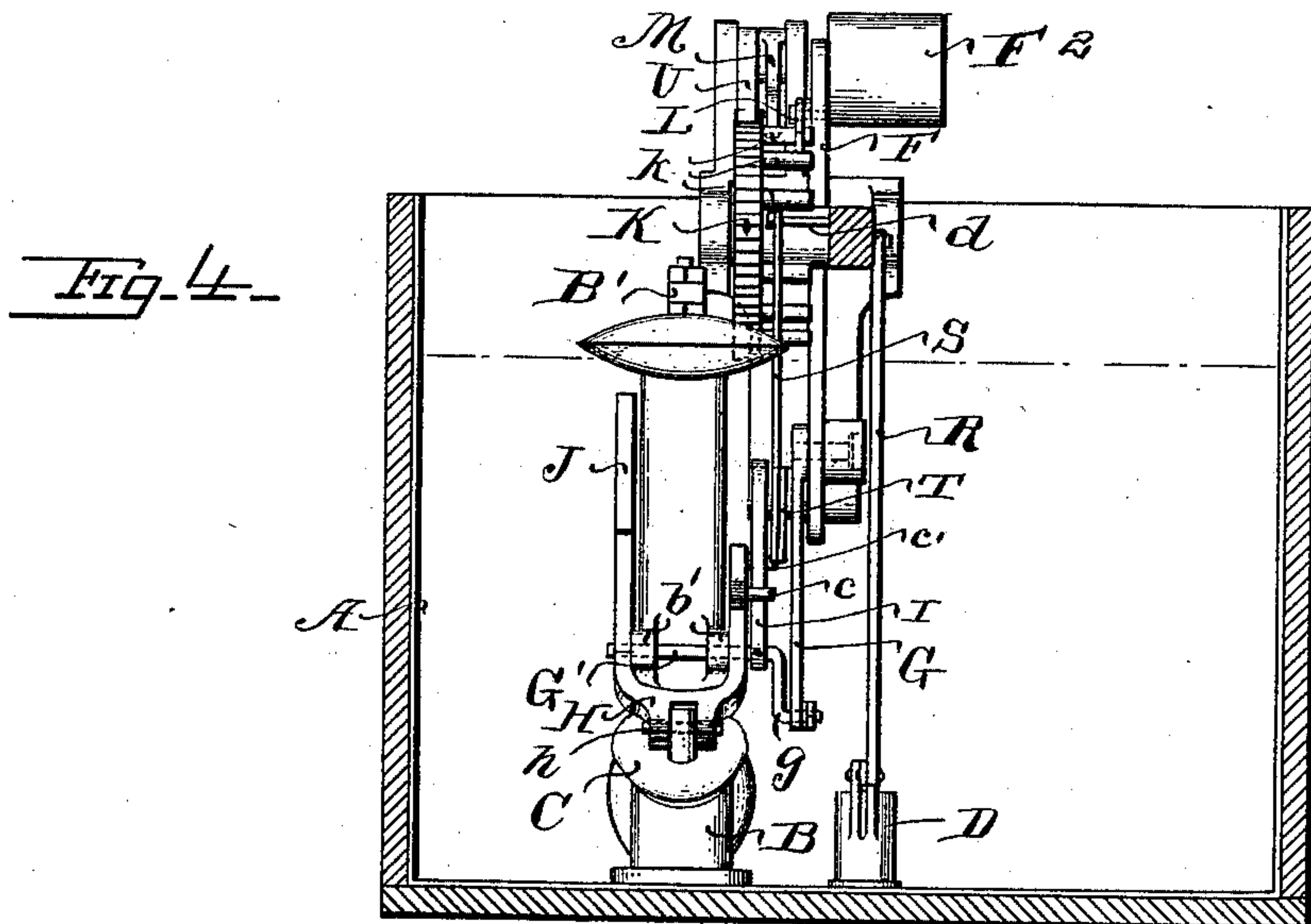
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J. MOLONEY, Jr.
FLUSHING TANK.

2 Sheets—Sheet 2.

No. 519,337.

Patented May 8, 1894.



Witnesses:

Jesse B. Heller.
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Inventor.

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Attorney.

UNITED STATES PATENT OFFICE.

JOHN MOLONEY, JR., OF PHILADELPHIA, PENNSYLVANIA.

FLUSHING-TANK.

SPECIFICATION forming part of Letters Patent No. 519,337, dated May 8, 1894.

Application filed November 13, 1893. Serial No. 490,754. (No model.)

To all whom it may concern:

Be it known that I, JOHN MOLONEY, Jr., of the city and county of Philadelphia and State of Pennsylvania, have invented an Improvement in Flushing-Tanks, of which the following is a specification.

My invention relates to flushing tanks for water closets, and consists of certain improvements which are fully set forth in the following specification and are shown in the accompanying drawings.

The particular object of my invention is to provide a flushing tank with capacity for automatically performing an additional or second flushing or "afterwash" of good head and volume, so that, whenever the basin is flushed, a second flushing or "afterwash" takes place automatically, thereby keeping the basin clean at all times and effectively carrying off the refuse. The mechanism which I employ is of such a character that whenever the chain or cord is pulled to produce the first flushing or washing of the basin, the second flushing or afterwash follows automatically as a matter of necessity. Even if the chain be pulled at a time when the tank is empty, or partially empty, so that the water does not immediately flow, the mechanism is brought into such a position that the first flushing and "afterwash" result from such pulling of the chain as soon as the tank becomes filled. The operation of the apparatus is therefore certain and the basin of the closet will always be kept clean.

I shall now refer to the accompanying drawings for the purpose of more particularly describing my invention.

Figure 1 is a side elevation of my improved flushing apparatus with the tank in section. Fig. 2 is a similar view showing the apparatus operated to discharge the contents of the tank. Fig. 3 is an illustrative view showing the apparatus provided with an automatic seat connection. Fig. 4 is a transverse vertical sectional view of the apparatus on the line $x-x$ of Fig. 1. Figs. 5 and 6 are perspective views of details for controlling the "afterwash" or second flushing.

A is a tank of usual construction.

B is an outlet pipe leading to the basin of the closet having its outlet b controlled by a valve C.

D is a water inlet, for supplying water to the tank, having a valve E. The outlet pipe B may be extended in the usual manner to the normal high water line so as to form an overflow outlet provided with a float valve B'.

F is an automatically actuated lever. This lever is preferably of the construction shown being fulcrumed as at f to a bracket or support F', and having one arm weighted as at F². The other arm of the lever F is connected by intermediate connections with the valve C. In the drawings these connections are shown as follows: A link G connects the outer end of the lever F with a short arm g of a pivot pin G', journaled in suitable supports b' , preferably on the pipe B. A rocking frame or arm H is journaled on the pin G' and hinged as at h to the valve C. The upper end of the rocking arm or frame above the journal is provided with two pins or lugs c, c' between which extends an arm I carried by the pin G' or crank arm g so as to move with it.

J is a counter weight carried by an extension J' of the rocking frame or arm H. When the lever F rocks on its pivot f under the action of the weight F², it raises the arm g through the link G, and thus rocks the arm or extension I and causes it to strike the pin or lug c' and thus rocks the arm H on the pin G' opening the valve C. The counterweight J tends to throw the valve fully open when the arm H has been actuated. When the lever F is moved in the opposite direction, it causes the arm I to strike the pin c and thus closes the valve C.

K is a lock controller preferably constructed as a ratchet wheel suitably journaled in the tank A and provided with pins or lugs k .

L is a dog carried by the lever F and engaging the pins or lugs k so as to actuate the lock controlling ratchet wheel K.

M is a lock, preferably constructed as a lever fulcrumed as at m to the tank and having its free end sustained by the lugs or pins k .

The pins or lugs k are so arranged that at intervals they are omitted, so that when the end of the lock M is in a position where the lugs or pins are omitted, it will fall.

The lever F is provided with a lug or pin N and the lever M is provided with a notch n adapted to engage the lug N on the lever

F thereby locking the lever against action under its weight. If desired the relative positions of the lug N and notch *n* may be reversed. The parts are shown so locked in Fig. 1 and unlocked in Fig. 2.

Instead of controlling the lever M by the pins or lugs *k* the periphery of the controller K may be suitably notched or recessed and the end of the lever M may rest upon such notched or recessed periphery. These two constructions are obvious equivalents. The outer end of the lock M is connected with the chain or cord O whereby the lever M may be positively actuated to unlock the lever F.

P is a float lever fulcrumed as at *p* in a bracket P' and carrying the float Q upon its outer end.

R is a link connecting the float lever Q with the inlet valve E in the well known manner.

S is a link connected at one end with a lock or lever T which is fulcrumed as at *f* and connected at the other end with a pin *d* upon the float lever P, whereby the float lever is adapted to actuate the lock T and lift it when the float lever is elevated. The lock T is provided with a notch *s* adapted when the lever is depressed into its lowest position to engage a lug *q* on the arm I to lock the arm and lever F out of action. If desired the relative positions of the notch *s* and lug *q* may be reversed.

U is a pawl to prevent backward rotation of the controller or wheel K.

I shall now describe the operation of the apparatus: Normally when the tank is full the parts are in the positions shown in Fig. 1, the float lever P in its highest position, the lever F raised and locked by the lock M with its free end resting in a depression in the periphery of the wheel K or in a tooth denuded space therein and the valve C closed. To operate the apparatus the chain or cord O is pulled, this raises the outer end of the lock M so as to disengage the lug N from the notch *n*. The lever F being thus unlocked rocks under the action of its weight F² elevating its outer end and opening the valve C through the link G, crank *g*, arm I and frame H in the manner heretofore described. As the lever F rocks the dog L turns the wheel K so as to bring a pin *k*, or raised portion of the wheel, under the end of the lock M. The lock M is thus held in a raised position so that its notch *n* cannot re-engage the lug N of the lever F. When the valve C is opened the water flows through the outlet *b* and pipe B to the closet. This is the first flushing operation. As the water in the tank flows out, the float Q and its lever P descend and the lever P strikes the joint of the lever F with the link G, thereby depressing the lever and link and rocking the arm *g* and its extension I. The extension I when thus rocked strikes the lug *c* of the frame H and closes the valve C. At the same time the lever P descending on the link S strikes the end of the lock T and depresses

it so that the notch *s* engages the lug *q* of the extension I thus locking the valve C shut and preventing it from being operated by the lever F. The parts are shown in this position in dotted lines in Fig. 1. The water flows into the tank from the now opened valve E causing the float Q and its lever P to rise. When the lever P is elevated the pin *d* reaches the end of the slot in the link S and raises the link sufficiently to lift the lock T from engagement with the arm I. The valve C and lever F are then unlocked so that the weight F² rocks the lever F and opens the valve C in the same manner as has been previously described. The water again passes out through the outlet *b* and the second flushing or "afterwash" takes place. As the lever F rocks, its dog L turns the wheel K the distance of another tooth, this time bringing a tooth denuded or depressed portion of the wheel K under the end of the lock M, so that when the lever F is again elevated by the action of the descending lever F in the manner described it is engaged and locked by the lock M. When the locking lever T is now lifted from engagement with the arm I the afterwash does not take place, since the lever F is locked, but the tank remains full with the parts in their original position ready to be operated by the pulling of the cord or chain attached to the lock M. There should be sufficient play in the connections between the end of the lever F and the valve C to permit the lever F when released by the lock M to move slightly, even when the lock T is engaged with the arm I, so that, even if the lock M is operated after an "afterwash" has taken place and the tank is empty, the slight movement permitted in the lever F by this loose play will be sufficient to prevent the re-engagement of the lever F by the lock M when the chain O is released. Consequently the lever F remains unlocked by the lever or lock M and will operate under the influence of the weight F² as soon as the water in the tank has reached a sufficient level to cause the float lever P to raise the lock T. Then the wash and "afterwash" proceed regularly.

I have described the operation of the apparatus with a single "afterwash." It is apparent that by a proper arrangement of the depressions or pins for controlling the lock M several "afterwashes" may be obtained from a single operation of the lever M by the chain or cord. The "afterwash" it will be observed may be made with the full contents of the tank. An "afterwash" with less than the full contents of the tank may be produced by shortening the length of the slot of the link S so that the lock T will be disengaged before the float lever P has been fully elevated.

In Fig. 3 I have shown the apparatus adapted to an automatically operating closet seat V having connection W with the lever M. With such a construction as this, however, as the tank continues to empty as fast as it

is filled, so long as the seat is occupied, the "afterwash" attachment is not usually necessary.

5 The joint of the lever F with the link G may be provided with an antifriction roller G² to receive the contact of the lever P.

The minor details of construction shown may be varied without departing from the invention.

10 What I claim as new, and desire to secure by Letters Patent, is—

1. In a flushing tank for water closets, the combination of an automatically acting outlet valve controlling lever, with a positively
15 actuated lock adapted to hold the valve controlling lever out of action, and a lock controller operated by the valve controlling lever for controlling the positively actuated lock.

2. In a flushing tank for water closets, the
20 combination of an automatically acting outlet valve controlling lever, with a positively actuated lock adapted to hold the valve controlling lever out of action, a lock controller operated by the valve controlling lever for
25 controlling the positively actuated lock, a float lever, and a second lock actuated by the float lever for controlling the outlet valve lever.

3. In a flushing tank for water closets, the
30 combination of an automatically acting outlet valve controlling lever, a positively actuated lock adapted to hold the valve controlling lever out of action, and lock controlling devices controlled by the automatically act-
35 ing lever for temporarily throwing the positively actuated lock out of re-engagement with the automatic lever.

4. In a flushing tank for water closets the
40 combination of a weighted lever connected with the outlet valve, a positively actuated lock for holding the lever against movement, and a wheel K controlled by the weighted lever having projections and recesses for controlling the engagement of the positively
45 actuated lock with the weighted lever.

5. In a flushing tank for water closets, the combination of an automatically actuated outlet valve operating lever, a positively actuated lock for holding the valve operating lever out of action, devices operated by the valve oper- 50 ating lever for controlling the engagement of the lock, a float lever arranged when it descends to operate the valve actuating lever, and a second lock controlled by the float lever to temporarily lock the valve actuating 55 lever in a raised position.

6. In a flushing tank for water closets, the combination of an automatically acting lever, a positively actuated lock therefor, a lock controller, for the positively actuated lock oper- 60 ated by the automatically actuated lever, an outlet valve, intermediate connections between the automatic lever and the valve, a float lever arranged in descending to operate the automatic lever, and a lock controlled by 65 the float lever to lock the intermediate connections between the automatic lever and outlet valve.

7. In a flushing tank for water closets, the combination of a weighted lever F fulcrumed 70 above the tank, a lock M located adjacent to the lever F and adapted to normally hold the lever out of action, a lock controller K adjacent to the lock M and adapted to control it, the outlet valve C from the tank, a movable 75 frame H within the tank carrying the valve C, connections between the lever F and frame H for actuating the valve C when the lever is permitted to operate, a lock adjacent to the frame H for locking said frame, a float lever 80 fulcrumed over the tank, and connections between the float lever and the lock for locking the frame H, substantially as and for the purpose specified.

In testimony of which invention I have 85 hereunto set my hand.

JOHN MOLONEY, JR.

Witnesses:

ERNEST HOWARD HUNTER,
HELEN D. MOTHERWELL.