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AUTOMATIC VALVE MECHANISM FOR FLUSHING CLOSETS.

APPLICATION FILED AUG. 5, 1903.

NO MODEL.

2 SHEETS--SHEET 1.



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INVENTOR

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No. 746,471.

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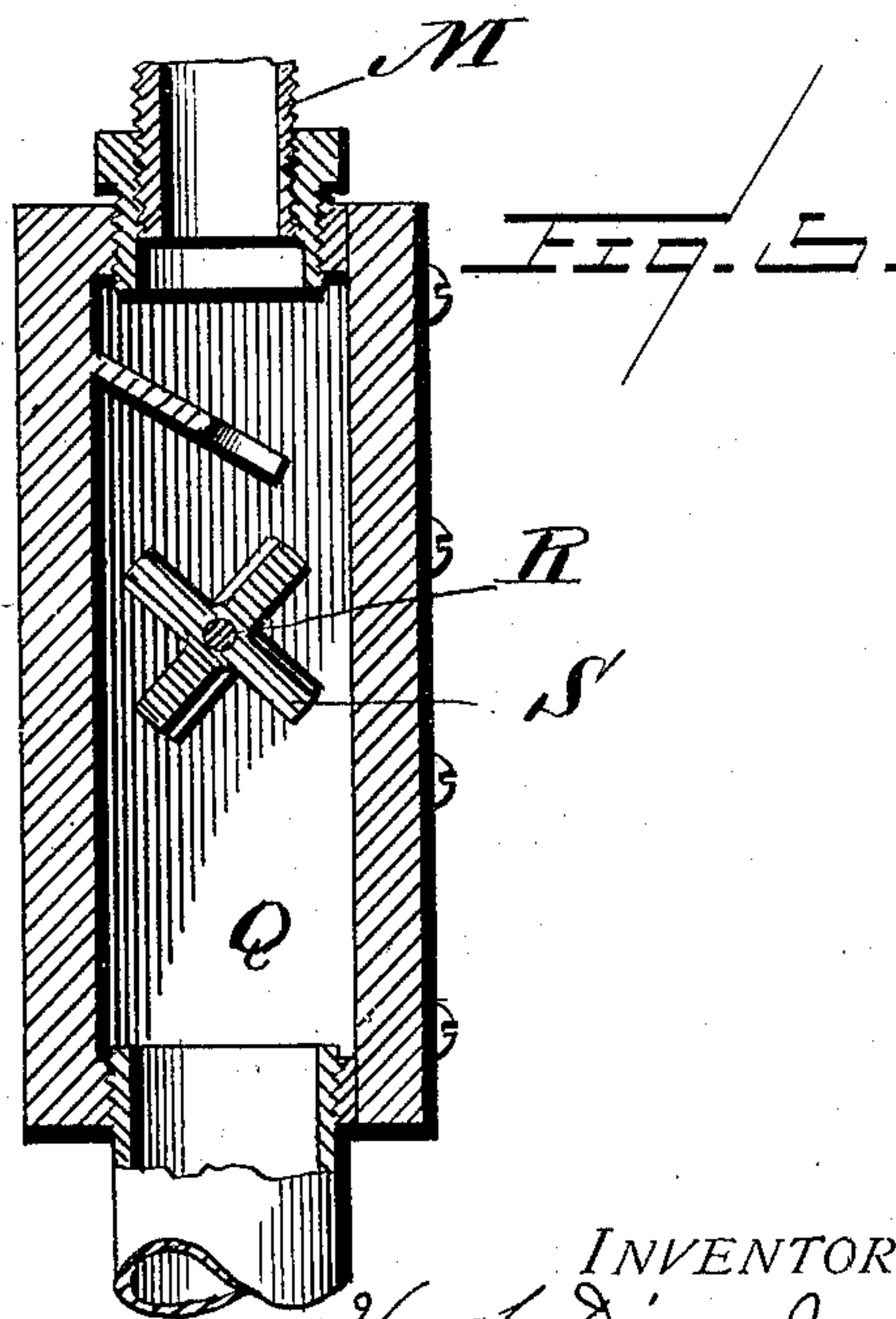
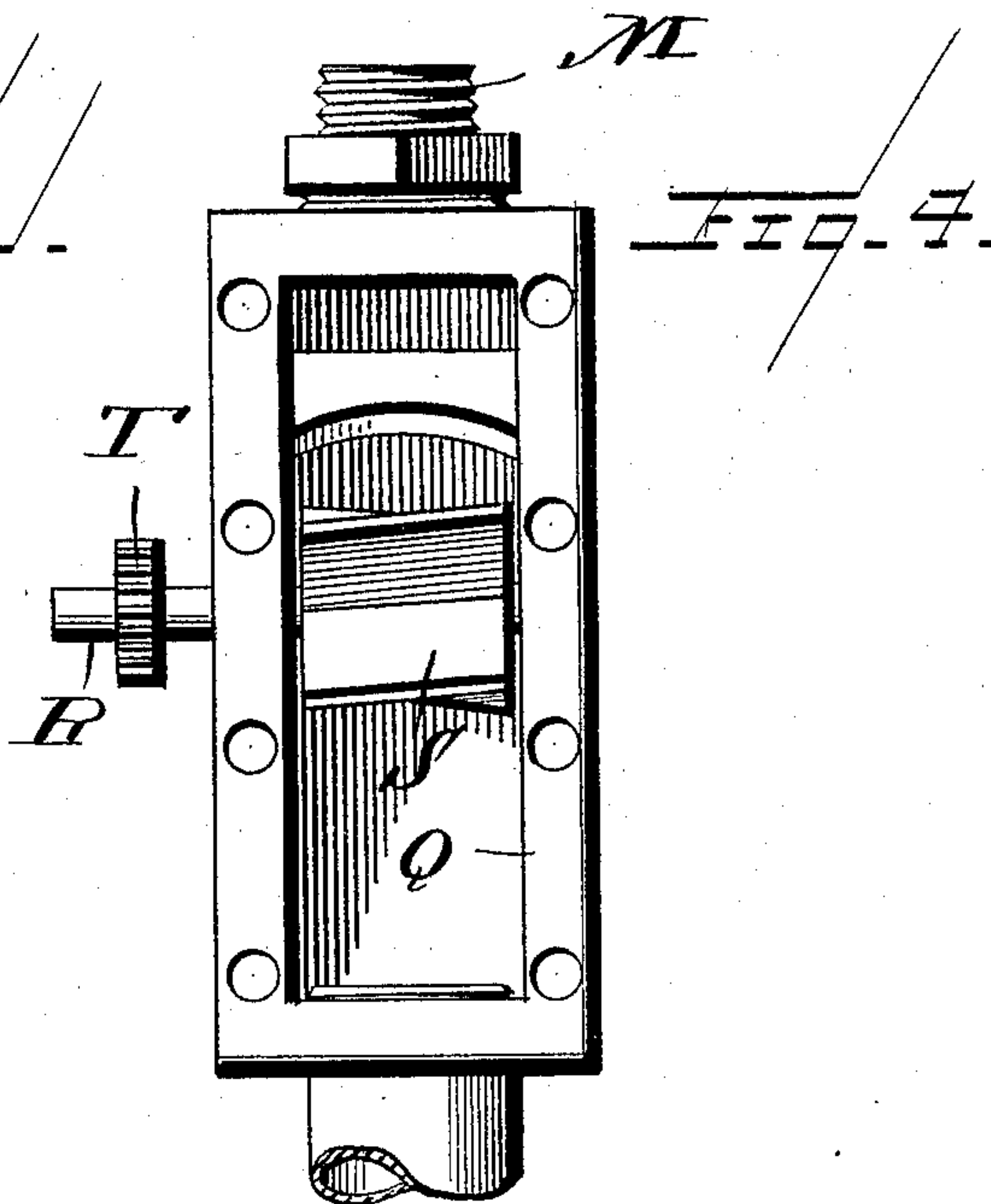
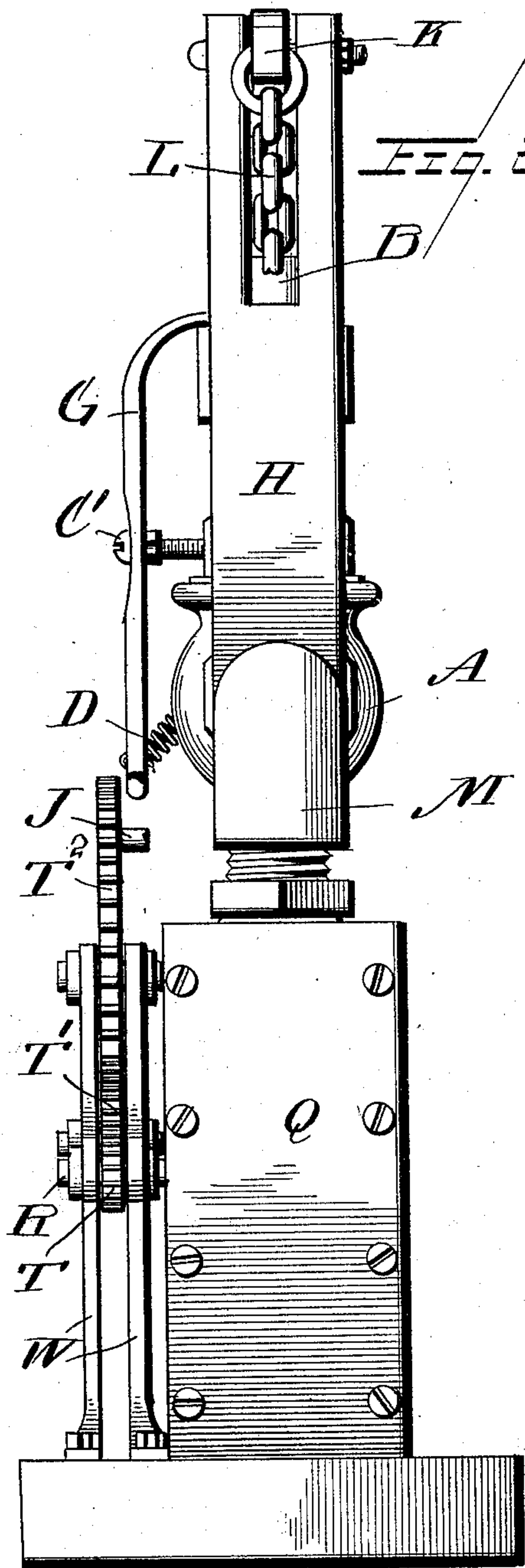
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WITNESSES:

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HUGH DIXON, JR., OF KEARNEY, NEW JERSEY.

AUTOMATIC VALVE MECHANISM FOR FLUSHING CLOSETS.

SPECIFICATION forming part of Letters Patent No. 746,471, dated December 8, 1903.

Application filed August 5, 1903. Serial No. 168,328. (No model.)

To all whom it may concern:

Be it known that I, HUGH DIXON, Jr., a citizen of the United States, residing at Kearney, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Automatic Valve Mechanism for Flushing Closets; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in automatically-operated valves for water-flushing apparatus and comprises means whereby as a handle is actuated a spring-actuated valve may be opened for the purpose of allowing water to flow through the valve-chamber for flushing purposes and in the provision of an automatic catch for holding the valve open.

The invention comprises, further, a motor-wheel which is rotated by the impact of the water against the same, whereby the catch holding the valve open may be tripped through suitable geared mechanism, allowing the valve to close and the water cut off.

The invention consists, further, in various details of construction, combinations, and arrangements of parts, which will be hereinafter fully described and then specifically defined in the appended claims.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of my improved automatically-operated valve apparatus. Fig. 2 is a side view. Fig. 3 is a sectional view through the valve. Fig. 4 is an elevation showing the motor-wheel, and Fig. 5 is a cross-sectional view through the motor-wheel.

Reference now being had to the details of the drawings by letter, A designates a valve-chamber in which a valve B of ordinary construction is seated upon an apertured partition within said chamber, and a stem B' rises from said valve and is notched, as at B², for the purpose of the reception of a spring-actuated catch C, which catch is shown as

angular at one end and pivoted at C' to the shell of the casing A. A spring D is secured at one end to the lower end of said catch C, and its other end is fastened at D' to a fixed point and is provided for the purpose of normally throwing the upper end of said catch into the notch B² when the latter comes opposite said angled end. A spring F is interposed between said valve and the cap of the casing and serves to normally hold the valve seated.

Mounted upon a standard H is a lever K, one end of which is pivoted to the stem B', as at K', while the other end is connected to a chain L, having a handle L' on the end thereof, whereby as the chain is pulled down the stem of the piston will be raised and also the valve from its seat, allowing water to pass through the valve-chamber A into the pipe M. As the stem is raised sufficiently the angled end of the catch will engage the notch B' and hold the valve off its seat. The pipe M leads into a boxing Q, in which is journaled a shaft R, carrying a turbine-motor S, and a pinion-wheel T is mounted upon said shaft R and meshes with a pinion-wheel T', journaled in the standard W. Mounted upon the gear-wheel T² is a lug J, which is adapted to contact with the lower end of the catch at each revolution of said wheel T² for the purpose of tripping said catch and throwing it out of engagement with the notch in the valve-stem.

In operation when it is desired to use the water for flushing purposes the operator pulls down on a handle L, which causes the valve to rise from its seat and the water will pass freely through the valve-chamber A, thence through the pipe leading therefrom. As the stem B' is raised, so that the notch B² therein comes opposite the angled end of the catch C, the latter will engage said notch and hold the stem suspended. As the water rushes through the pipe M and the box Q the impact of said water against the wings of the motor S will cause the latter to rotate and also the gear-wheels which are in train with the pinion-wheel upon the shaft R. As the gear-wheel T² makes a complete revolution a lug carried thereby will strike against the lower end of the catch C and cause the upper end thereon to be disengaged from the notch in

the stem, and the spring F will throw the valve to its seat, thus shutting off the supply of water.

From the foregoing it will be observed by
5 the provision of an automatically-operated valve mechanism as described all floats are dispensed with and a positive means provided for the closing of the valve and shutting off of the water through geared mechanism actuated by the motor-wheel.
10

While I have shown a particular construction of apparatus in the illustrated features of my invention, it will be understood that I may make alterations in the construction, if
15 desired, without departing from the spirit of the invention.

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

20 1. An automatically-operated valve mechanism for flushing apparatus comprising a valve-chamber, with spring-pressed valve therein, a notched stem to said valve, a standard rising above the valve-chamber, a lever
25 fitted upon said standard and connected to said valve, an angled lever pivoted to one side of the valve-chamber and having an angled end adapted to engage said notch to hold

the valve unseated, a spring secured at one end to the valve-casing and its other to said angled lever, a motor adapted to be driven
30 by water passing through said valve-chamber, a geared mechanism driven by said motor and designed to throw the angled end of said angled lever out of engagement with the notch
35 in the valve-stem, as set forth.

2. An automatically-operated valve mechanism for flushing apparatus comprising a motor-compartment, a valve-chamber
40 mounted thereon, a motor in said chamber, a deflecting-plate disposed at an angle and having a recessed edge mounted within said chamber and above the motor-wheel, a spring-pressed valve in said valve-chamber, a notched
45 stem secured to said valve, a spring-pressed angled lever adapted to engage the notch in said stem and hold the valve unseated, and geared mechanism actuated by the motor for
50 throwing said lever out of engagement with the notch in said valve-stem, as set forth.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

HUGH DIXON, JR.

Witnesses:

HUGH DIXON,
THOMAS WINDLE.