

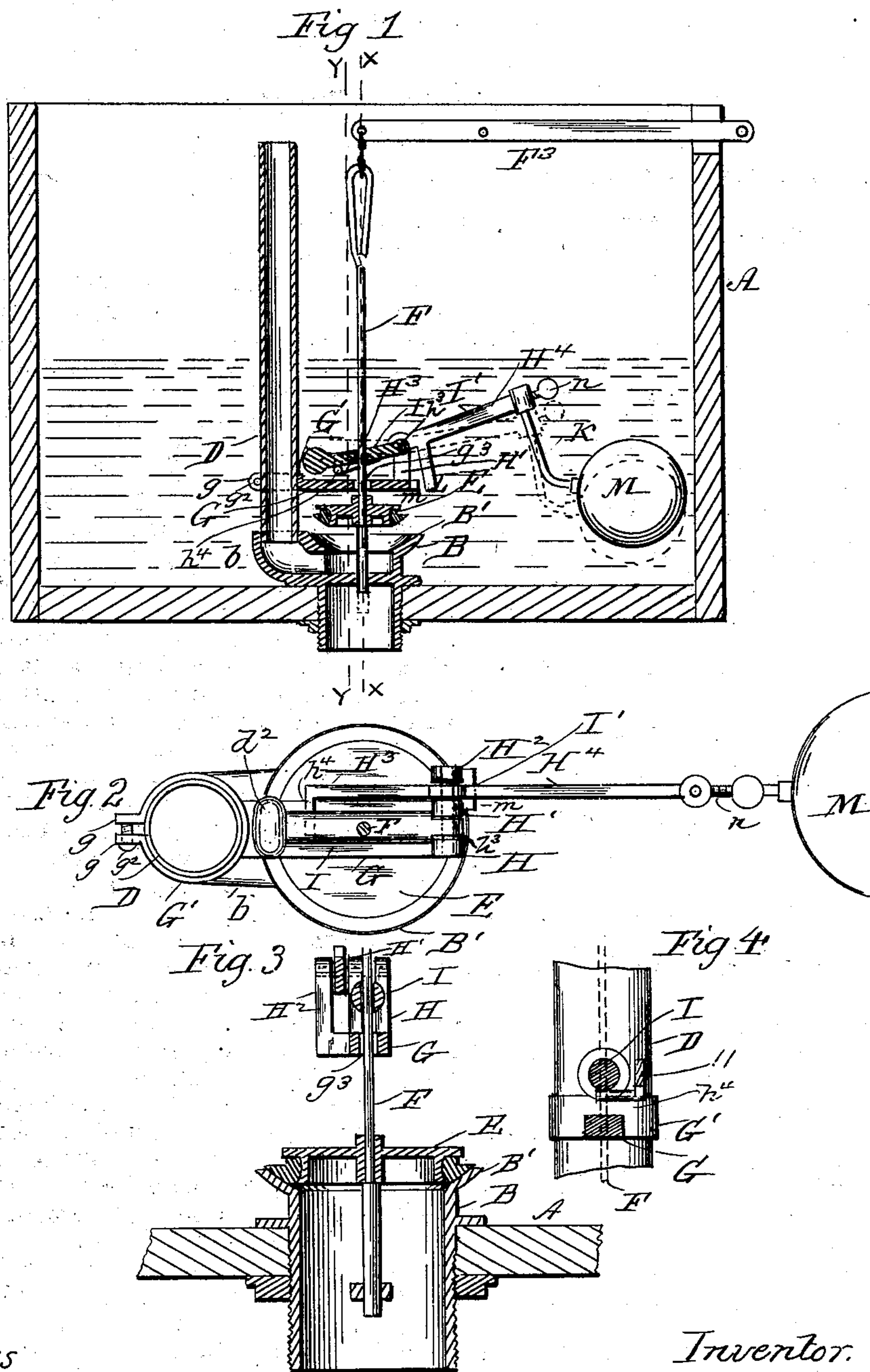
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Patented Mar. 4, 1902.

P. F. GLACKIN.  
FLUSHING APPARATUS.

(Application filed May 22, 1901.)

(No Model.)



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## FLUSHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 694,629, dated March 4, 1902.

Application filed May 22, 1901. Serial No. 61,411. (No model.)

*To all whom it may concern:*

Be it known that I, PETER F. GLACKIN, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Flushing Apparatus; 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.

My invention has relation to flushing-valves and valve-controlling mechanism for flushing-tanks, and has for its object the provision of novel mechanism whereby when the tank is full and the valve raised to open the flush-pipe outlet the valve-stem will frictionally engage with a suitable lever and be firmly held in an elevated position until the tank is completely emptied and the lever raised by the descent of the float and the operation thereby of a trip-lever which will release the valve-stem and allow the valve to drop and close the flush-pipe.

My invention consists in the novel construction and combination of parts hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal section of a flushing-tank and its connections embodying my invention. Fig. 2 is a plan view of the valve and valve-controlling mechanism. Fig. 3 is a transverse section on the line X X, Fig. 1. Fig. 4 is a transverse section through the valve and valve-controlling mechanism on the line Y of Fig. 1.

The tank A is of the usual or any suitable construction either for an elevated or "low-down" tank and is provided at its bottom with a fitting B, connected with the flushing-pipe and formed at its upper end with a concave valve-seat B', upon which seats the rubber-incased flush-valve E. The fitting B is formed or provided with a branch b, to the upturned end of which is connected the overflow-pipe D, which conveys the overflow to the flush-pipe below the valve E.

F designates the valve-stem, secured to the center of the valve E and terminating at its upper end in a ring or loop, by which the valve and stem are suspended from the flushing-lever F<sup>3</sup>.

G designates a horizontal bar having at one end a split ring G', which embraces the overflow-pipe D and is provided with lugs g g, through which pass a bolt g<sup>2</sup>, by which the bar G is securely attached to the overflow-pipe at any desired height. The bar G projects over the valve and is formed with an opening g<sup>3</sup>, through which the valve-stem passes. At its rear end the bar G is widened and formed or provided with three standards H H' H<sup>2</sup>, constituting supports for a pivotal pin h<sup>3</sup>, upon which are pivoted the levers I I'. The space between the standards H H' is on line with the valve-stem and receives the end of the lever I, which extends toward the overflow-pipe D and is formed or provided with a counterbalancing weight or head d<sup>2</sup>. The lever I has a hole bored through it on a vertical line with the center of the flush-valve for the passage of the valve-stem, such hole being sufficiently large to allow the valve-stem to slide freely therethrough, when by the elevation of the weighted end of the lever the hole is brought to a vertical position, as shown in dotted lines in Fig. 1. The diameter of this hole, however, is such that when the weighted end of the lever I is lowered, as shown in full lines in Fig. 1, the metal at the ends of the hole forming sharp angles will catch and frictionally bind the stem and prevent it from moving.

The lever I' is pivoted between the standards H' H<sup>2</sup>. The short arm H<sup>3</sup> of the lever I projects at a downward inclination toward the overflow-pipe and at one side of the lever I and is formed or provided with a laterally-projecting toe h<sup>4</sup>, which passes under lever I between the valve-stem and the overflow-pipe. The long arm H<sup>4</sup> of the lever I' projects in an opposite direction and terminates at its end in an enlargement bored for the reception of the end of the float-rod K, to which is attached a small float M. The float-rod is secured to the lever I' by a set-screw n, which allows of any desired adjustment.

An arm L, depending from the under side



of the lever I', contacts with a stud *m*, projecting from the rear end of the bar G when the float is at its lowest required point and acts as a stop to prevent further descent of the float.

Operation: The tank being filled with water and the parts being in the positions shown in full lines in Fig. 1, the valve may be raised to produce a flush by pulling down the outer end of the flushing-lever F<sup>3</sup>, which will cause the valve-stem to slide upward without impediment. When so raised, the valve-stem will be held in position by frictional contact with the angles at the end of the hole through the lever I, the lever remaining at the inclined position shown in full lines in Fig. 1 and the sides of the hole through which the stem passes being oblique to the stem. The counterweight on the end of the lever I is sufficient to bind the lever at the angles formed with its upper and lower sides by the sides of the hole, so as to prevent the stem from slipping downward. When, however, the tank has been emptied and the float caused to descend, the latter will draw down the lever I' at its outer end and raise the toe *h*<sup>4</sup>, thus lifting lever I until the hole through which the valve-stem passes becomes vertical and no longer binds the valve-stem, whereupon the latter being released will with its attached valve drop and the valve close the outlet to the flush-pipe. The tank may then be filled in the usual way.

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

1. In flushing apparatus, the combination with the flush-valve and its lifting-stem, of a gravitating bar or lever having an opening through which said stem passes and in which it is frictionally held when the valve is raised, a float, a lever to which said float is connected having a projection adapted to engage with said gravitating bar or lever, whereby, on the descent of the float, the latter will be lifted and the valve-stem released, substantially as described.

2. In flushing apparatus, the combination with the flush-valve and its lifting-stem, of a gravitating or counterbalance bar or lever having a hole through which said stem passes and in which the latter is frictionally restrained when the valve is lifted, a stationary bar to which said lever is pivoted, a float, a lifting-lever to which said float is connected having a toe or projection to engage with said gravitating lever and lift the same when the float has descended to its lowest required limit, substantially as described.

3. In flushing apparatus, the combination with the flush-valve and its lifting-stem, an overflow-pipe and a horizontal bar secured thereto, of a gravitating bar or lever attached to said horizontal bar and adapted to frictionally restrain said valve-stem when raised to empty the tank, a float and a lever to which said float is connected, said lever being pivoted on said horizontal bar and provided with a toe or projection which extends under said gravitating lever, whereby when said float descends, said gravitating lever will be lifted and the valve-stem released.

4. In flushing apparatus, the combination with the flush-valve E, lifting-stem F, and overflow-pipe D, of the bar G, secured to the pipe D, and provided with standards H, H', H<sup>2</sup>, weighted gravity-lever I, pivoted between two of said standards and formed with an opening through which said stem passes and with the edges of which it engages and is held when lifted, lever I', pivoted between two of said standards and provided with a toe or projection *h*<sup>4</sup> passing under lever I and float M, connected to lever I', the parts being so arranged that when the float descends the lever I will be lifted and the valve-stem released.

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

PETER F. GLACKIN.

Witnesses:

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C. F. ARROTT.