A. R. GILMORE.

MECHANISM FOR OPERATING FLUSH VALVES.

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1,302,912.

Patented May 6, 1919.

Fig. I.

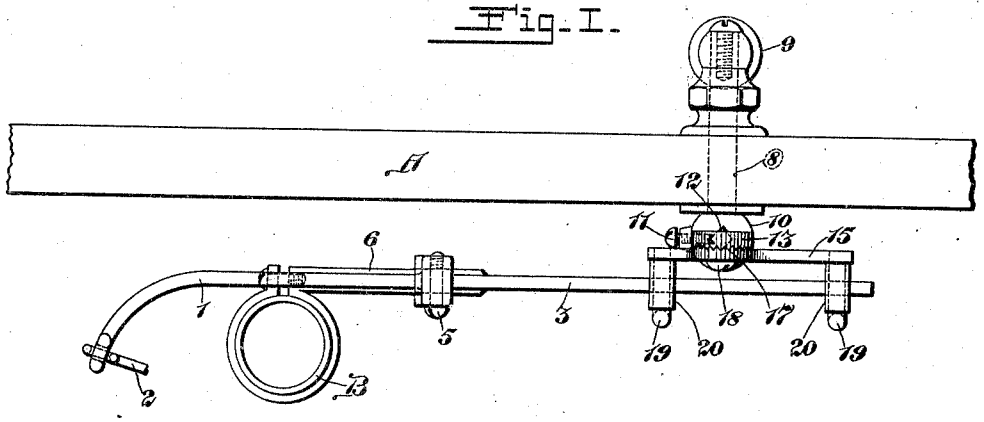


Fig. II.

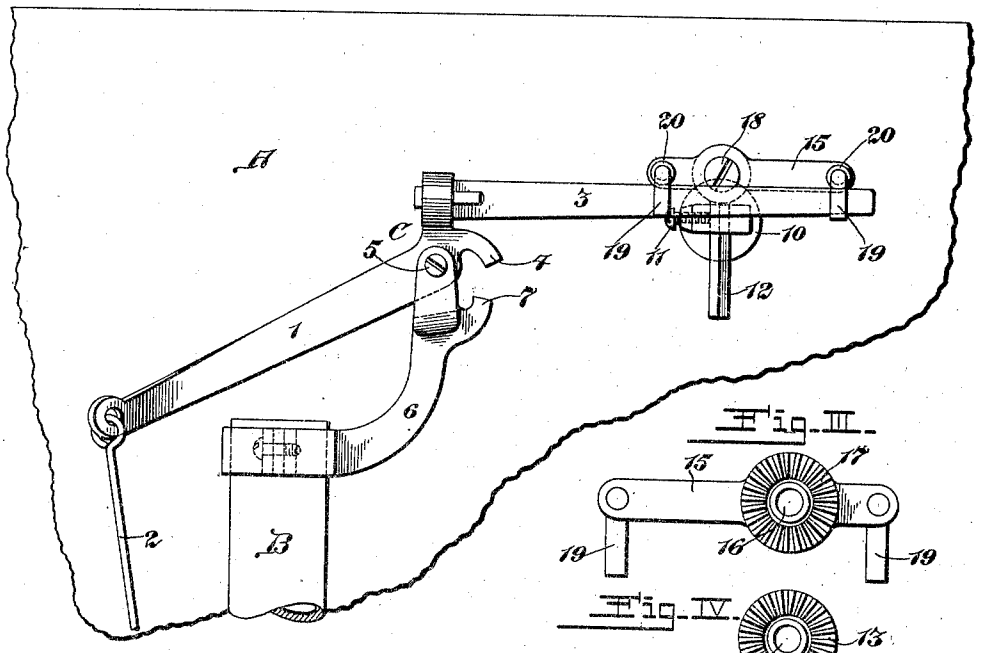
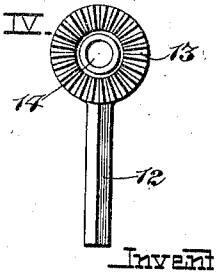


Fig. III.

Fig. IV.



Attest.

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UNITED STATES PATENT OFFICE.

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MECHANISM FOR OPERATING FLUSH-VALVES.

1,302,912. Specification of Letters Patent. Patented May 6, 1919.

Application filed September 3, 1918. Serial No. 252,415.

To all whom it may concern:

Be it known that I, ALLEN R. GILMORE, a citizen of the United States of America, a resident of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Mechanism for Operating Flush-Valves, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to mechanism for operating the valves of water closet flushing tanks, and it has for its object to furnish a mechanism of this kind in which the valve operating lever tripping means is so constructed as to permit its adjustment relative to said lever to avoid play between said operating means and the lever. The lever operating means is thereby of such nature that it may be properly adjusted relative to the lever, even though the mounting of the lever or the mounting of the lever operating means may not be accurate to provide for accurate coöperation of one with the other. The invention further relates to adjustable mounting of the valve operating lever so that it may be readily placed in juxtaposition to the mounting of the lever operating means.

Figure I is a top view of a portion of a wall of a water closet flushing tank, the valve operating lever and my lever operating means.

Fig. II is a side elevation of the parts shown in Fig. I.

Fig. III is an enlarged rear elevation of the lever tripping device of my lever operating means.

Fig. IV is a rear elevation of the supporting head to which the tripping device is secured and the stem of said head.

In the drawings, A designates a wall of a flushing tank and B the upper portion of an overflow pipe in the flushing tank.

The valve operating lever C comprises an arm 1 to which the valve lifting rod 2 is connected, and a trippable arm 3 operable by means to be herein described. The valve operating lever is pivotally connected at 5 to a bracket 6, which is adjustably fitted to the overflow pipe B, so that it may be raised and lowered to position the trippable arm 3 of said lever at any desired elevation according to the location of the lever tripping means. On the operating lever is a stop lug 4 which is adapted to engage a stop lug 7 on the bracket 6 to limit the degree of movement of the lever when its trippable arm is actuated.

Proceeding now to the description of the valve lever operating means:

A spindle 8 (see dotted lines Fig. I) extends through the flushing tank wall A and has fixed to its outer end a handle 9 by which the spindle may be rotated in either direction. At the inner end of the spindle 8 is a socket 10 having a vertical aperture therein and containing a set screw 11.

12 designates a non-circular stem extending vertically in the socket 10 and adapted to be held at any desired vertical adjustment in said socket by the set screw 11. At the upper end of the stem 12 is a serrated head 13 provided with a central aperture 14.

15 designates a double-arm trip lever having an aperture 16 therein intermediate of its ends which coincides with the aperture 14 in the serrated head 13. Said aperture 16 is surrounded by a serrated head 13 fitted to the serrated head 17 and held thereto by a screw 18 removably mounted in said heads in order that it may be withdrawn for adjustment of the trip lever 15 relative to the head 13.

Each arm of the double arm trip lever 15 is provided with a finger 19 for engagement with the trippable arm 3 of the valve operating lever C. Said fingers extend laterally from the trip lever 15 and have end portions extending at angles to their horizontal portions so that they will embrace the lever arm 3. The lateral portions of the fingers preferably have mounted thereon rollers 20 which operate against the lever arm 3 to provide anti-friction engagement between the fingers and the lever arm.

From the foregoing it will be seen that varied adjustments of the parts of my mechanism may be made to provide for accurate coöperation of the several parts. The lever supporting bracket 6 may be raised and lowered on the overflow pipe B to position the trippable arm 3 of the valve operating lever in juxtaposition to the trip lever 15. The serrated head 13 may be adjusted vertically by loosening the set screw 11 and again tightening it after vertical adjustment of the stem 12; and the fingers of the trip lever 15 may be accurately positioned to engage the lever arm 3 and bear thereagainst with-

out play by simply loosening the screw 18, turning the trip lever 15 relative to the head 13, and thereafter readjusting said screw.

I claim:—

1. In a flushing valve mechanism, the combination with a valve operating lever, of a spindle, means for rotating said spindle, and means for operating said valve operating lever, said last named operating means being adjustable on said spindle relative to said means for rotating the spindle.

2. In a flushing valve mechanism, the combination with a valve operating lever, of a spindle, means for rotating said spindle, and means for operating said valve operating lever, said last named operating means being adjustable transversely of said spindle and independently of said means for rotating the spindle.

3. In a flushing valve mechanism, the combination with a valve operating lever, of a spindle, means for rotating said spindle, and means for operating said valve operating lever, said last named means being adjustable around the axis of said spindle and independently of said means for rotating the spindle.

4. In a flushing valve mechanism, the combination with a valve operating lever, of a spindle, means for rotating said spindle, and a tripping lever for engagement with said valve operating lever, said tripping lever being adjustable on said spindle independently of said means for rotating the spindle.

5. In a flushing valve mechanism, the combination with a valve operating lever, of a spindle, means for rotating said spindle, a head carried by said spindle, and a tripping lever arranged transversely of said spindle for engagement with said valve operating lever, said tripping lever being adjustably secured to said head.

6. In a flushing valve mechanism, the combination with a valve operating lever, of a spindle provided with a socket, means for rotating said spindle, a stem adjustably mounted in said socket, a head carried by said stem, and a tripping lever for operating said valve operating lever, said tripping lever being adjustably secured to said head.

7. In a flushing valve mechanism, the combination with a tank, and an overflow pipe in said tank, of a spindle rotatably mounted in a wall of the tank, lever tripping means carried by said spindle, a valve operating lever adapted to be engaged by said lever tripping means, and a support for said valve operating lever adjustably secured to said overflow pipe.

In testimony that I claim the foregoing I hereunto affix my signature.

ALLEN R. GILMORE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."