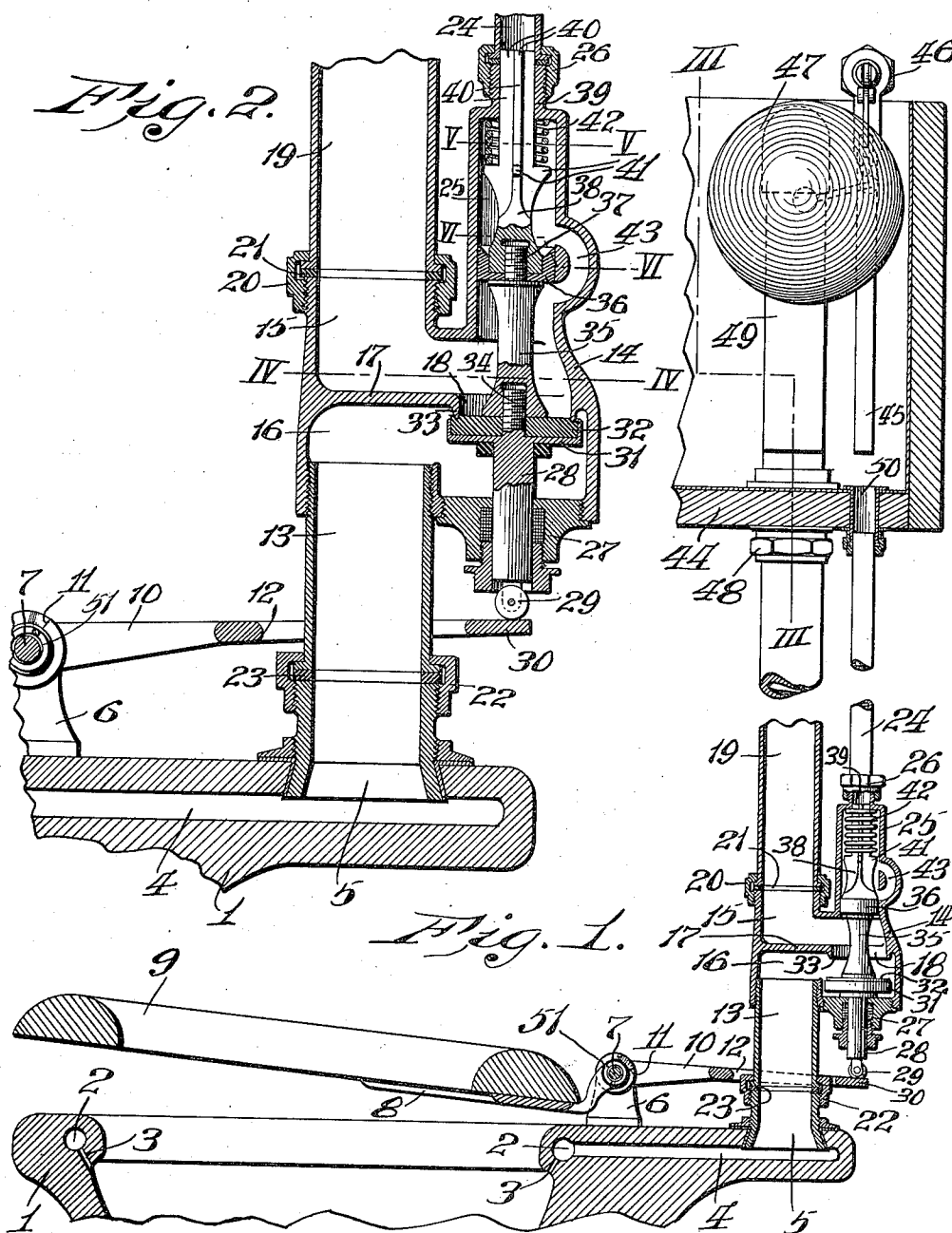


L. D. LAWNIN.
SEAT ACTUATED FLUSHING APPARATUS FOR WATER CLOSETS.
APPLICATION FILED FEB. 23, 1911.

1,023,572.

Patented Apr. 16, 1912.

2 SHEETS-SHEET 1.



attest:
H. G. Hatcher.
M. C. Hammon

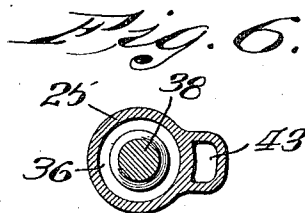
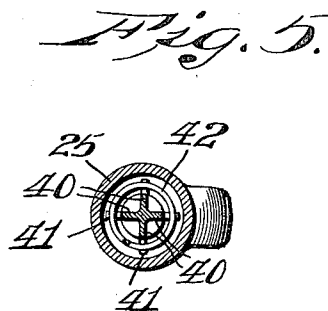
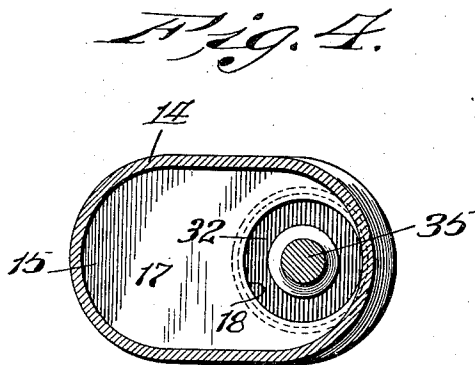
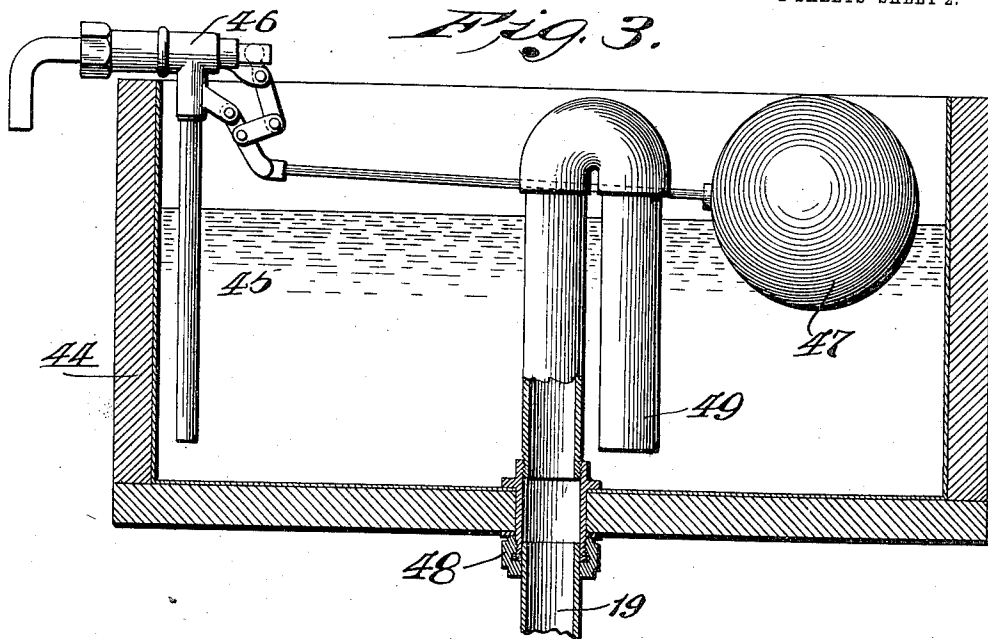
Inventor:
Louis D. Lawnin.
By *Knights* attys.

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2 SHEETS-SHEET 2.



attest:
J. E. Fletcher.
M. C. Hammer.

Inventor:
Louis D. Lawnin.
By *Smith & Bros* attys.

UNITED STATES PATENT OFFICE.

LOUIS D. LAWNIN, OF EDWARDSVILLE, ILLINOIS, ASSIGNOR OF ONE-HALF TO N. O. NELSON MANUFACTURING COMPANY, OF EDWARDSVILLE, ILLINOIS, A CORPORATION OF ILLINOIS.

SEAT-ACTUATED FLUSHING APPARATUS FOR WATER-CLOSETS.

1,023,572.

Specification of Letters Patent.

Patented Apr. 16, 1912.

Application filed February 23, 1911. Serial No. 610,167.

To all whom it may concern:

Be it known that I, LOUIS D. LAWNIN, a citizen of the United States, and a resident of Edwardsville, in the county of Madison and State of Illinois, have invented certain new and useful Improvements in Seat-Actuated Flushing Apparatus for Water-Closets, of which the following is a specification.

10 An object of the present invention is to provide an improved structure in that class of water closet apparatus which is seat actuated, such improved structure being designed to simplify and reduce the cost of the mechanism and enhance its efficiency and also to permit its application to old flushing systems. Such apparatus is fully described in the following specification and is clearly shown in the accompanying drawings, in which like reference characters refer to like parts and in which—

Figure 1 is a vertical section, the central portion being removed, of the flushing apparatus. Fig. 2 is an enlarged like view illustrating the controlling valves, their housing, the connections to the bowl and flush pipe and the seat actuated yoke for operating the valve. Fig. 3 is a longitudinal section on the line III—III, Fig. 1. Fig. 4 is a horizontal section on the line IV—IV, Fig. 2. Fig. 5 is a like view on the line V—V, Fig. 2. Fig. 6 is a similar view on the line VI—VI, Fig. 2.

Referring now in detail to the drawings, 35 1 is the closet bowl provided with an annular duct 2 discharging through perforations 3 into the interior of the bowl. Duct 2 is supplied by a duct 4 extending rearwardly to a point beneath the bowl section 5 of the flushing pipe. Section 5 of the flushing pipe is suitably secured to or seated in bowl 1 or its rearward extension and discharges into duct 4.

6 represents seat standards (one only shown) mounted on bowl 1 carrying hinge pintle 7 on which is mounted hinge butt or butts 8 supporting seat 9.

10 is a rearwardly extending yoke loosely mounted on pintle 7 but having a toothed engagement 11 with the hub of the hinge butts 8 to permit elevation of the seat 9 without depression of the yoke 10 but causing elevation of the yoke 10 upon depression of seat 9. Yoke 10 is perforated at 12

through which perforation extends the discharge pipe 13 of the valve housing 14.

Pipe 13 is connected to housing 14 preferably by a threaded connection to form practically an extension of the housing 14. Housing 14 is provided with a pair of parallel, horizontal flushing ducts 15 and 16 separated by a partition 17 perforated at one end at 18 to form a communicating passage-way between the ducts 15 and 16.

19 is the main flushing pipe connected to the housing 14 to discharge into the duct 15. The pipe 13 leads from the duct 16. Flushing pipe 19 is connected to the housing 14 by a coupling 20 with the usual washer 21. Housing discharge pipe 13 is connected to bowl section 5 of the flushing pipe by a similar coupling 22 and washer 23.

24 is the priming pipe which is connected to the priming pipe extension 25 of the housing 14 by a suitable coupling 26, preferably similar in character to couplings 20 and 22, so that by unscrewing couplings 20, 22 and 26, the entire housing 14 is disconnected from the flushing system and, of course, is as easily assembled when the apparatus is installed.

Housing 14 has formed thereon a stuffing box 27 through which extends a valve stem 28 carrying an antifriction roller 29 bearing against the upper surface of the rear part 30 of the yoke 10. At its upper end, stem 28 has formed thereon an integral cup 31 which receives the valve packing 32 adapted to bear against an annular valve seat 33 extending around the perforation 18 when stem 28 is elevated sufficiently to close the perforation or duct 18. Stem 28 is also provided with an integral centering pin 34 on which is seated a stem section 35 carrying at its upper end valve packing 36. Stem section 35 also is provided with a centering pin 37 which receives a stem guide section 38 which extends upwardly through a nipple 39 on the priming pipe extension 25. Stem guide section 38 is provided with radial guide wings 40 at its upper end which bear against the inner surface of the nipple 39, as shown clearly in Figs. 2 and 5, and each wing 40 is formed with an annular shoulder 41 which receives a coiled spring 42 bearing thereagainst, the opposite end of spring 42 bearing against the end wall of the priming pipe extension 25 of

the housing 14. Stem guide section 38 is held by spring 42 against valve packing 36, which in turn holds stem section 35 against valve packing 32 which in turn holds the stem 28 and its antifriction roller 29 against the extension 30 on the yoke 10. In this manner, all of the several valve stem sections are held together and moved unitedly. 43 is a by-pass or by-duct formed in the extension 25 of the housing 14 and adapted to be closed at its lower end by packing or valve 36 when the united valve stem sections are in projected or lowermost positions bearing against the inside of nipple 39. The radial wings 40 on the stem guide section 38 gives sufficient steadiness to section 38 without choking the priming pipe or nipple 39.

The two valves 32 and 36 are so united and related to each other that while one is in closed position the other is in open position, so that when valve 32 is in closed position, water may flow from the priming pipe 24 through byway or by-pass 43 into the duct 15 and rise in the flushing pipe 19.

44 is the customary tank supplied by a pipe 45 controlled by any suitable valve 46 operated by the customary float 47, if desired, or by any other means. At its upper end, flush pipe 19 is suitably connected (such, for instance, as by union 48) to a siphon 49 located within the tank and having its mouth located adjacent the bottom of the tank. The priming pipe 24 opens directly at 50 into the bottom of the tank.

In the use of the apparatus described, seat 9 is normally in elevated position so that by-pass or duct 42 is normally closed and water will, therefore, fill the tank from the supply pipe 45 until the water is shut off

by the float 47. When the seat is depressed, valve 32 is closed and by-pass 43 is opened, thus allowing a portion of the water in the tank to enter the duct 15 and rise in the flushing pipe 19, thus forming a siphonic column of water, which column when released by closing by-pass 42 and opening perforation or duct 18 through spring 42, will discharge into the transverse duct 16, the pipe 13 and through the bowl section of the discharge pipe 5 into the bowl. The siphonic action in the discharge pipe and siphon 49 will be sufficient to draw all water from the tank down to the level of the mouth of the siphon 49. Spring 42 by projecting the united valve stem sections returns seat 9 to elevated position.

If desired, a spring 51 may be mounted on the pintle 7 and engaging the hinge butt 8 of the seat to assist valve spring 42 in raising the seat 9 to normal position.

I claim:

In an apparatus of the character described, the combination with flushing and discharge pipes, of a valve housing connecting said pipes, a priming pipe, an extension to said valve housing of larger diameter than said priming pipe, said extension being provided with a by-pass, and a valve for said by-pass, said valve being provided with wings slidably engaging the walls of said priming pipe, said wings being provided with enlargements within said extension, said enlargements forming shoulders for mounting a coiled spring between them and the end of said extension.

LOUIS D. LAWNIN.

In the presence of—

J. B. MEGOWN,

M. C. HAMMON.