March 25, 1924. 1,488,042

H. P. GONSOULAND

TOILET VALVE

Filed Oct. 31, 1921

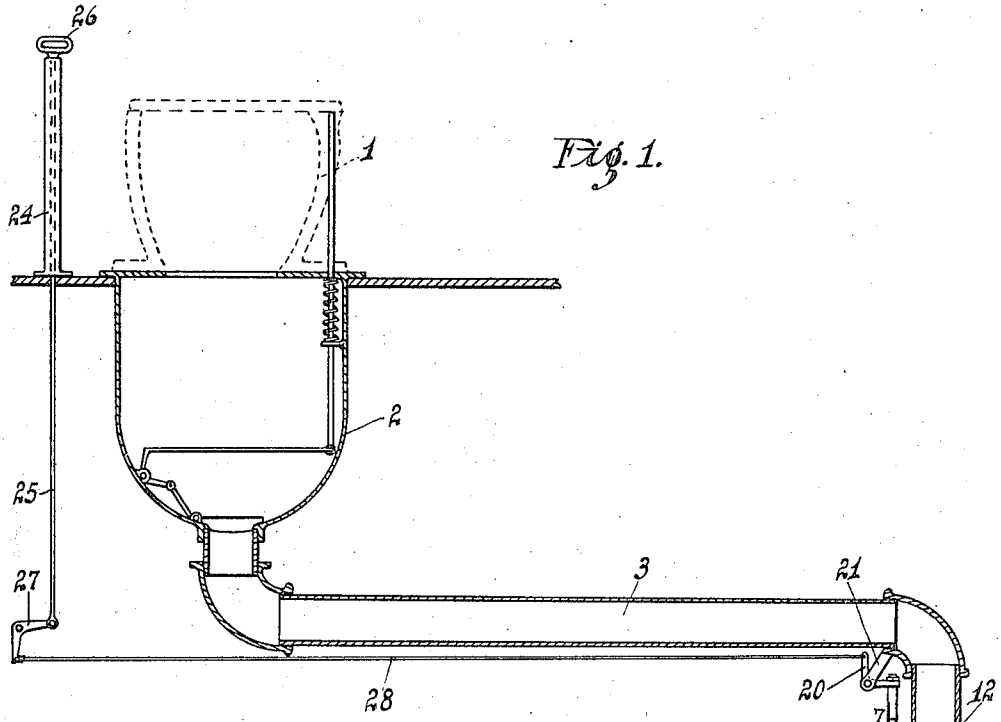


Fig. 1.

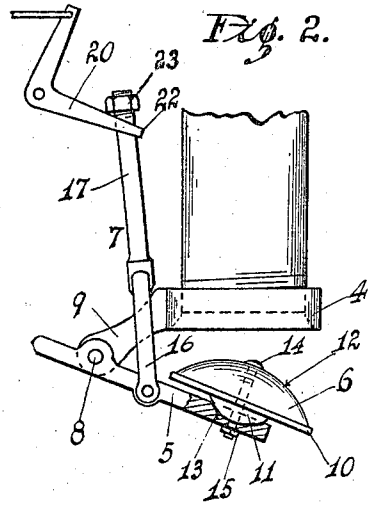


Fig. 2.

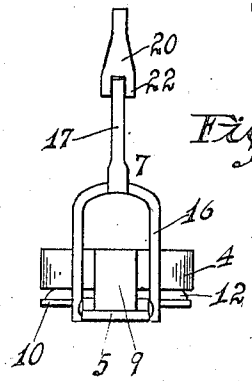


Fig. 3.

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UNITED STATES PATENT OFFICE.

HENRY P. GONSOULAND, OF OAKLAND, CALIFORNIA.

TOILET VALVE.

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To all whom it may concern:

Be it known that I, HENRY P. GONSOULAND, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Toilet Valves, of which the following is a specification.

My invention is an improved valve for railway toilet waste pipes which is effectively applied to waste pipes of large diameter.

Referring to the annexed drawing in which my invention is illustrated and which forms a part of this specification:

Figure 1 is a vertical section of a railway toilet with my valve applied to the waste pipe thereof.

Figure 2 is a side view of my valve.

Figure 3 is an end view of my valve.

In the drawing 1 indicates a toilet bowl, 2 a toilet sump and 3 a waste pipe of a railway toilet.

My valve includes a ring seat 4, a valve lever 5, a valve closure 6 and a valve connecting member 7. The ring seat 4 is internally threaded and screws on the lower outer end of the waste pipe 3 which is externally threaded to receive said seat. The lever 5 is pivoted at 8 to an arm 9 extending from the seat 4. The valve closure 6 comprises a metal disk 10 formed with a joint member 11 having a spherical surface and a rubber closure member 12 in the form of a segment of a sphere on the upper side of said disk. The lever 5 has a spherical depression 13 in which rests the member 11 and a bolt 14 extends through the closure member 12, disk 10, joint member 11 and the end of lever 5, on the end of which bolt screws a nut 15 against the under side of said lever whereby the valve closure is held on the end of said lever in position so that the closure member 12 engages the seat 4 when the lever is in its upper horizontal position. The connecting member 7 is formed with a yoke 16 and a rod 17 extending upwardly from the upper end of said yoke. The yoke 16 straddles the arm 9 and the lever 5 and is pivoted at its lower ends to said lever. A bell crank lever 20 is pivoted to an arm 21 on the waste pipe 3 near its lower end, which lever has a fork 22 on one end through which projects the upper end of rod 17. A nut 23 screws on the upper end of rod 17 for engaging the upper side of fork 22. On the floor of the car alongside the toilet bowl is secured a tubular stand 24 through which extends a rod 25 on the upper end of which is a hand grip 26. The lower end of said rod is connected to one arm of a bell crank lever 27 pivoted in the structure of the car. A rod 28 connects the other arm of bell crank lever 27 and bell crank lever 20.

Normally the valve is closed as shown in Figure 1 with valve member 12 on its seat 4. Upon pulling up on the rod 25 the lever 5 is swung down and the valve opened through the medium of bell crank lever 27, rod 28, bell crank lever 20 and connecting member 7.

Having described my invention, I claim:

1. A toilet valve including a valve seat adapted to be screwed on the lower outer end of the toilet waste pipe and having an outwardly and downwardly extending arm, a valve lever pivoted on said arm below the valve seat, a valve closure member secured on said lever for engaging said seat to close said pipe, and means for operating said lever to open said valve.

2. A toilet valve including a valve seat having an outwardly extending arm and adapted to be secured on the lower outer end of the toilet waste pipe, a valve lever fulcrumed on said arm, a valve closure member secured to said lever for engaging said seat to close said pipe, a connector member consisting of a rod and a yoke adapted to straddle said arm and connected to said lever, a forked bell crank lever, the upper end of said rod extending through the forked end of said bell crank lever, a nut on the upper end of said rod for engaging the forked end of said bell crank lever and means for swinging said bell crank lever to open the valve.

3. A toilet valve including a valve seat adapted to be secured on the lower end of the toilet waste pipe, a valve lever, a valve closure including a disk formed with a joint member having a spherical surface fitting in a spherical socket in said lever and a rubber valve member having a spherical surface for engaging said seat, a bolt extending through said closure and valve lever, and a nut screwing on the end of said bolt against said valve lever, and means for actuating said lever to open said valve.

4. A toilet valve including a valve seat

adapted to be screwed on the toilet waste pipe, a valve lever pivoted to the valve seat, a valve closure including a metallic disk formed with a joint member having a spherical surface fitting in a spherical socket in said lever and a rubber valve member for engaging said seat, means securing said closure and valve lever together and means for actuating said lever to open said valve, said means including two bell crank levers, a rod connecting the bell crank levers, and a connector member connecting one of the bell crank levers to the valve lever and means for actuating the other of the bell crank levers.

5. A toilet valve including a valve seat adapted to be screwed on the toilet waste pipe, a valve lever pivoted to the valve seat, a valve closure including a metallic disk formed with a joint member having a spherical surface fitting in a spherical socket in said lever and a rubber valve member having a spherical surface for engaging said seat, means securing said closure and said valve member together and means for actuating said lever to operate said valve.

6. A toilet valve including a disk a partispherical closure member mounted on the disk, valve supporting means having a spherical depression therein and a joint member attached to the disk and having a spherical surface seated in said depression.

7. A toilet valve including a flat member, a closure member comprising a segment of a sphere mounted on the flat member, a joint member having a spherical surface attached to the flat member, a lever having a depression therein adapted to receive the joint member and means connecting together the lever, the joint member, the flat member and the closure member.

In testimony whereof I affix my signature.

HENRY P. GONSOULAND.