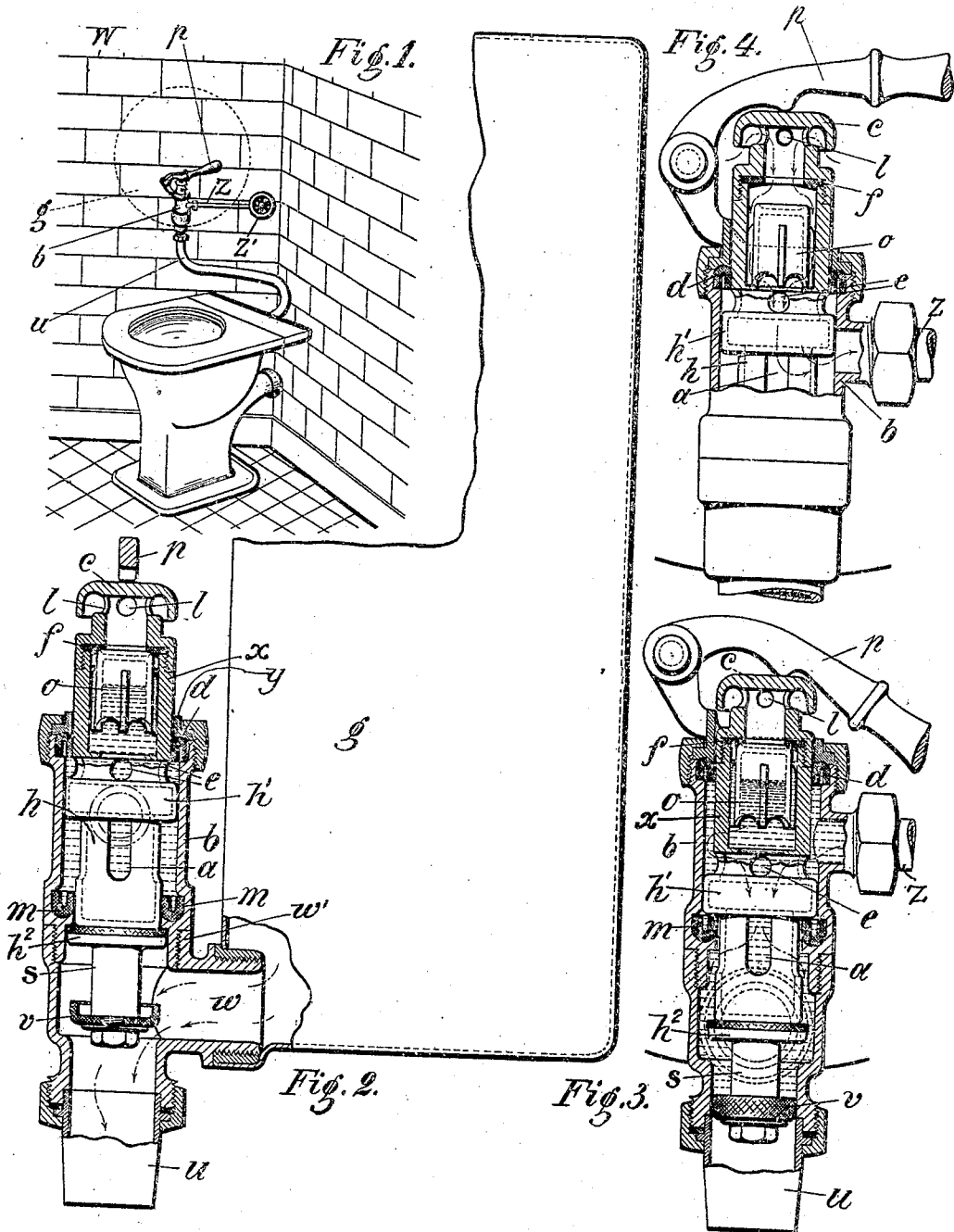


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CLOSET RINSING APPARATUS.
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Patented Apr. 12, 1910.



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CLOSET-RINSING APPARATUS.

954,899.

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To all whom it may concern:

Be it known that I, ROBERT STICKDORN, a citizen of Germany, residing at Dusseldorf, Germany, have invented new and useful Improvements in Closet-Rinsing Apparatus, of which the following is a specification.

This invention relates to a novel apparatus for rinsing water closet bowls in a quick and reliable manner.

In the accompanying drawing: Figure 1 is a perspective view of a water closet provided with my improved rinsing apparatus; Fig. 2 a vertical section through the valve casing, showing the tank in view and partly broken away; Fig. 3 a vertical section through the valve casing, taken at right angles to Fig. 2, and Fig. 4 a similar section, showing the parts in a different position.

The water tank *g*, is preferably made in the form of a short horizontal cylinder of comparatively large diameter. Tank *g*, is completely countersunk within wall *W*, in such a manner that its flat circular head extends parallel to said wall. At its bottom, tank *g*, communicates with a T-shaped pipe *w*, into the upper leg *w'*, of which is tapped a cylinder or valve casing *b*. The latter is connected to a suitable water supply pipe *z*, controlled by valve *z'*. Cylinder *b*, embraces the collar *h'*, of a vertically reciprocating hollow piston *h*. Collar *h'*, plays between upper and lower stuffing rings *d*, and *m*, which are fitted into the cylinder at its upper and lower ends respectively. Below collar *h'*, piston *h*, is provided with water outlet openings *a*, while above such collar, water inlet openings *e*, are formed within piston *h*. From the latter extends downwardly a stem *s*, carrying a packed ring *h²*, and a cup-shaped valve *v*, which snugly fits into outlet spout *u*. The upper end of piston *h*, is provided with a hollow cylindrical extension *x*, movable within a stuffing box *y*, of cylinder *b*. To the top of extension *x*, is secured a hood *c*, beneath which air openings 1, are formed that communicate with the interior of extension *x*, and piston *h*. Within the former is contained a bell-shaped float valve *o*, which, when raised, abuts against a washer *f*, and thus prevents communication between ports 1, and the interior of extension *x*.

The parts normally assume the position shown in Fig. 2, so that openings *a*, and *e*, are located above ring *m*, to shut the water supply off tank *g*, while the latter is free to communicate with the outlet *u*, through

opened valve *v*. If it is desired to flush the closet bowl, a suitable hand lever *p*, is depressed to lower piston *h*, into the position shown in Fig. 3. Water will now enter cylinder *b*, through pipe *z*, and will flow through openings *e*, hollow piston *h*, and openings *a*, into pipe *w*. As valve *v*, is closed the water will enter tank *g*, in which the pressure will gradually rise owing to the compression of the air contained therein, until said pressure becomes sufficient to lift piston *h*, into the position illustrated in Fig. 2, which movement takes place owing to the difference in area of ring *h²*, and valve *v*. In this way the water supply is automatically cut off and valve *v*, is opened to permit the discharge of the water contained within tank *g*, through spout *u*. The relative position of ports *a*, and valve *v*, is such that the ports are closed by ring *m*, prior to the opening of valve *v*, so that any communication between the water supply and the contents of the bowl is effectively prevented.

The air inlet device provided at the top of piston *h*, prevents the return of the contents of the bowl into the water service pipe *z*, when either a pipe bursts or when the water supply is turned off. It will be seen that normally bell *o*, is by the water pressure forced against washer *f*, thus preventing communication between the interior of extension *x*, and the outer air. Bell *o*, remains in the raised position during the alternate filling and emptying of tank *g*. When, however, the service pipe breaks, or when the water supply is turned off, the water will flow out of cylinder *x*, and float *o*, will consequently fall to establish communication between cylinder *x*, and the atmosphere, (Fig. 4). In this way the air valve allows drainage of the service pipe by preventing formation of a vacuum in the chamber *b*.

I claim:

1. A closet rinsing apparatus comprising a water tank, a cylinder adapted to communicate therewith, a water supply pipe opening into the cylinder, a hollow piston having a water inlet opening and a water outlet opening, a collar on the piston which is embraced by the cylinder, a float contained within the upper end of the piston and adapted to establish communication between the interior of said piston and the atmosphere, and a discharge valve carried by the lower end of the piston.

2. A closet rinsing apparatus comprising a water tank, a cylinder adapted to communicate therewith, a water supply pipe opening into the cylinder, a hollow piston having a water inlet opening and a water outlet opening, a collar on the piston which is embraced by the cylinder, stuffing boxes at the upper and lower ends of the cylinder, a float contained within the upper end of the piston and adapted to establish communication between the interior of said piston and the atmosphere, and a discharge valve carried by the lower end of the piston. 10

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