

Nov. 17, 1931.

E. G. WATROUS

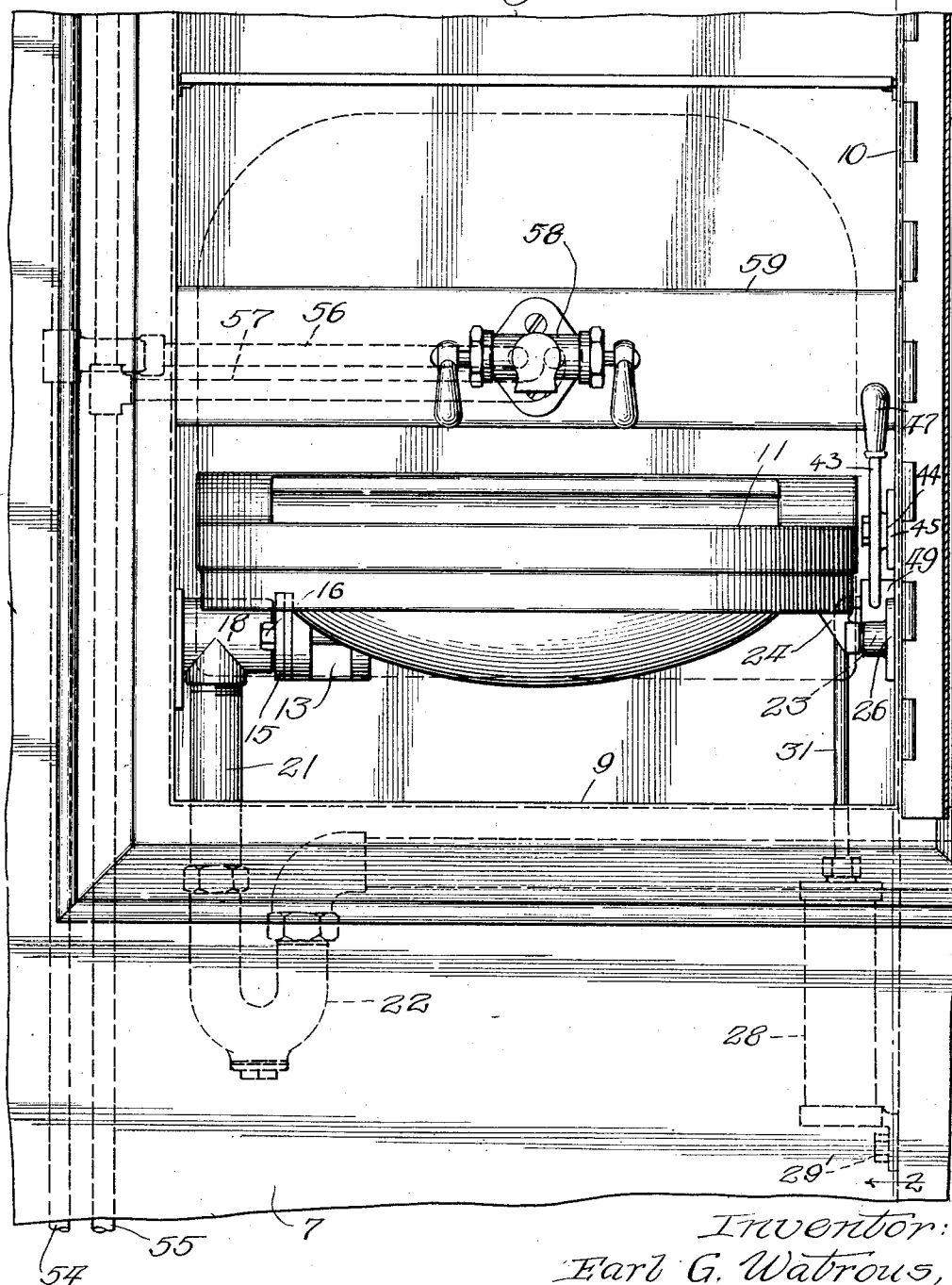
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SWINGING LAVATORY

Filed March 18, 1929

3 Sheets-Sheet 1

FIG. 1.



Inventor:
Earl G. Watrous,
By Glenn S. Noble
Atty.

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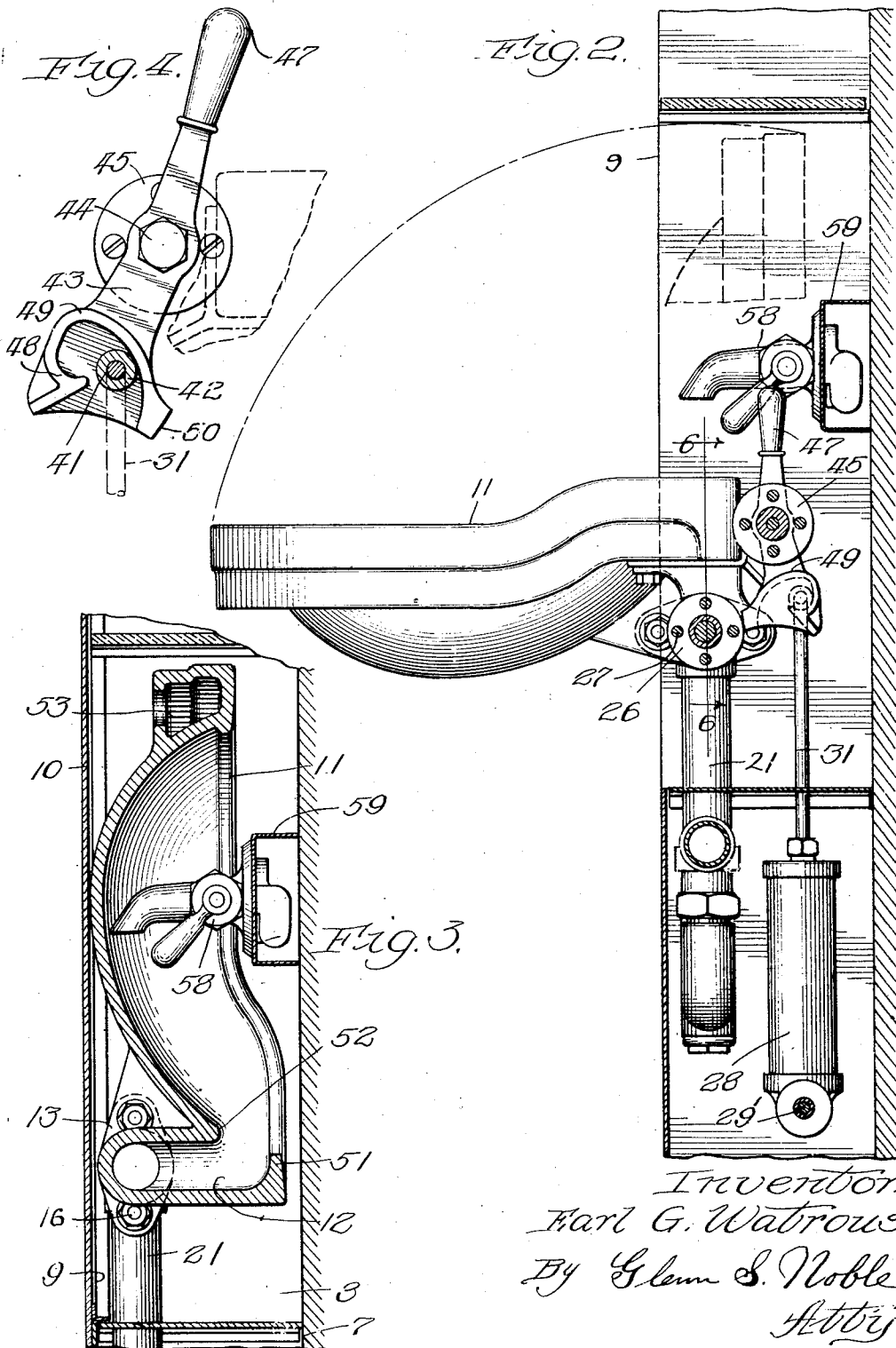
E. G. WATROUS

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Inventor:
Earl G. Watrous,
By Glenn S. Noble
Att'y.

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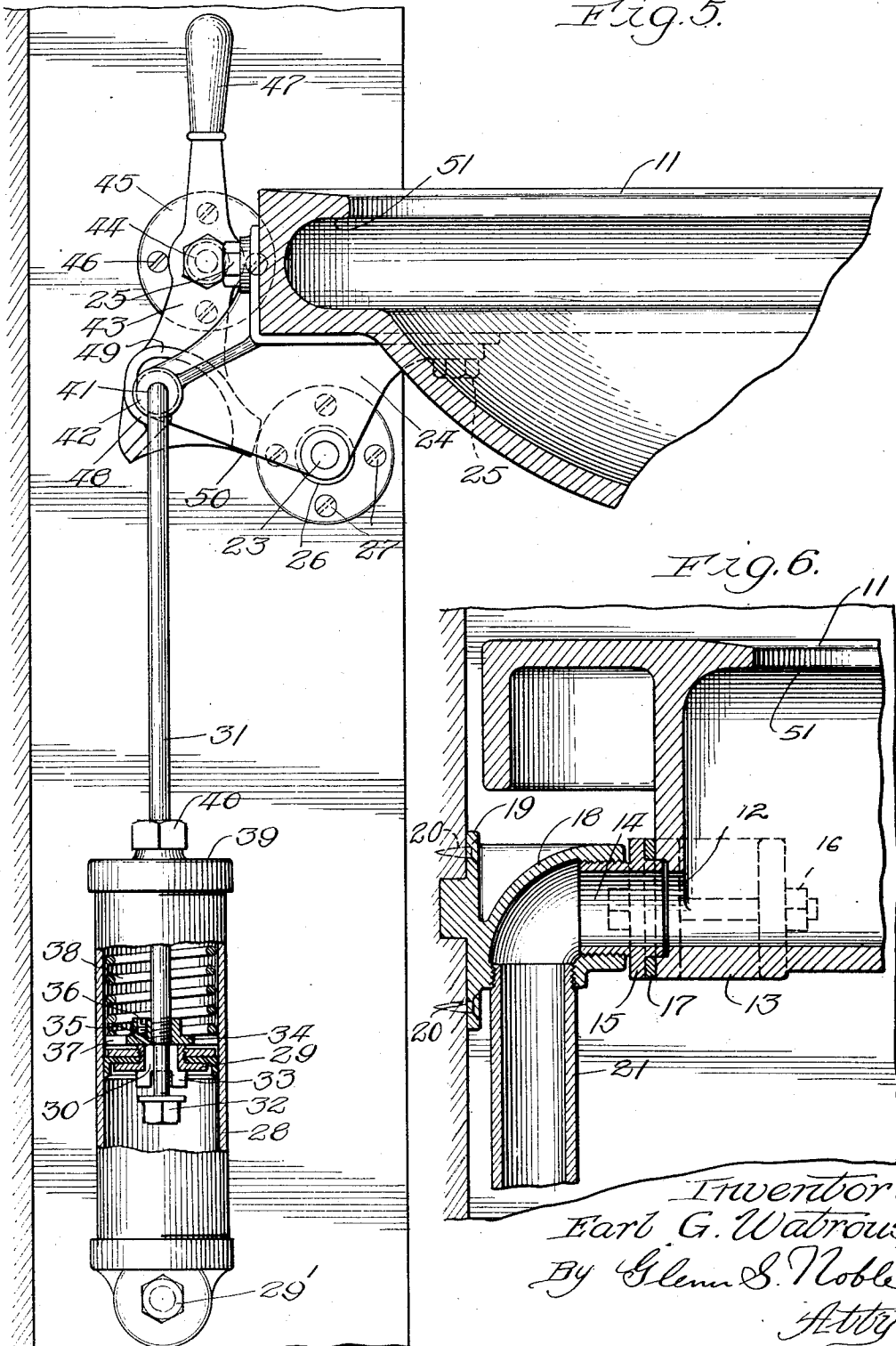
E. G. WATROUS

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SWINGING LAVATORY

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Inventor:
Earl G. Watrous,
By Glenn S. Noble
Atty.

UNITED STATES PATENT OFFICE

EARL G. WATROUS, OF CHICAGO, ILLINOIS

SWINGING LAVATORY

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This invention is for swinging or tilting lavatories or wash bowls such as are adapted for use in limited spaces and which are particularly intended to be enclosed in a wall pocket or cabinet. Heretofore bowls of this character have been used which were emptied by being tilted or swung up so that the contents would overflow into a hopper placed to receive the same. However, such hoppers are apt to become foul and are unsanitary on account of sediment clinging to the sides thereof.

In the present invention I provide a swinging or tiltable bowl which has a permanent outlet connection to the discharge pipe so that when the bowl is raised the contents will flow out through such connection and discharge pipe. Other features of the invention are the provision of an outlet or drain through one of the pivot or hinge members and constructing the lavatory so that the outlet also serves as an overflow, and in order to regulate the discharge automatic means are provided for tilting the bowl, said means being timed in accordance with the capacity of the discharge.

The objects of this invention are to provide an improved swinging or tilting lavatory which is constructed to operate in a sanitary manner; to provide a lavatory having the features above indicated and having such other improvements and novel details of construction as will appear more fully from the following specification.

In the accompanying drawings illustrating this invention

Figure 1 is a front view of the lavatory shown in position in a recess in a wall or wall cabinet, the lavatory being shown in lowered position with the cabinet door open;

Figure 2 is a vertical sectional view taken on the line 2—2 of Figure 1;

Figure 3 is a sectional view taken on the line 3—3 of Figure 1 but showing the lavatory in raised position;

Figure 4 is an enlarged detail of the catch for holding the lavatory in open position;

Figure 5 is an enlarged sectional view showing the automatic tilting mechanism; and

Figure 6 is an enlarged sectional view of the combined pivot and drain outlet.

In the particular arrangement shown in these drawings, the wall 7 is provided with a recess 8 for receiving the lavatory, this recess being preferably enclosed by a cabinet 9 having a door 10. The bowl or lavatory 11 which is mounted in the cabinet may be formed of any suitable material but is preferably formed of porcelain or the like and is provided with an outlet hole or orifice 12 leading from a point adjacent to the top of the bowl down and through a lug or projection 13 adjacent to the bottom thereof. The outlet is continued through a hollow trunnion 14. This trunnion or fitting has an integrally formed flange or fulcrum plate 15 which is secured to the lug or projection 13 by means of bolts 16, a gasket 17 being inserted to make a tight joint, as shown in Figure 6. The trunnion 14 is threaded to engage with threads in a combined wall bracket and elbow 18; this bracket having a wall plate 19 which may be secured to the wall 7 or other support by means of screws or bolts 20. The main drain or outlet pipe 21 is threaded into the elbow 18 and may be provided with a trap 22 in the usual manner, this pipe leading to the sewer or other point of discharge. The trunnion 14 is somewhat loosely threaded into the ell 18 and serves not only as a discharge but also as one of the pivots upon which the bowl swings, the turning movement occurring on the threaded portion.

The opposite trunnion 23 is carried on a bracket 24 which is secured to the lavatory 11 in any suitable manner as by means of bolts 25. This trunnion engages with a bearing 26 which is secured to the adjacent side of the wall as by means of screws 27.

The bowl as thus arranged might be manually raised to discharge the contents, but in view of the relatively small outlet such discharge movement would require care in order to prevent the water from being spilled over the back of the bowl. In order that the discharge may be properly accomplished, I provide a timed automatic discharge mechanism so that the bowl will be tipped at a

proper speed to permit the contents to flow out through the discharge. A cylinder 28 is pivoted at 29 to the wall or cabinet below the rear portion of the bowl and is provided with a piston 29 having a central passageway or hole 30 therethrough. A piston rod 31 extends through the piston and has a nut 32 at the lower end of the same which is adapted to engage with lugs 33 on the lower side of the piston. The piston rod has a valve or closure 34 secured thereto which rests on top of the piston and serves to close the hole 30 when in engagement with the piston. The valve 34 has a small hole or bypass 35 therethrough, the size of which may be adjusted by a screw 36, as shown in Figure 5. The valve 34 has outwardly extending projections 37 which fit closely within the cylinder. A spring 38 is interposed between these projections and the cap 39 of the cylinder, the arrangement being such that the spring tends to hold the valve and piston in normally lowered position. The cylinder is provided with any suitable liquid such as oil which coats with the piston and valve for regulating the movement thereof. The cap 39 has a packing gland or bearing 40 for the piston rod 31. The upper end of the rod is bent to form a hook 41 which engages with a bearing 42 in the bracket 24, this bearing being slightly at the rear of the trunnions as will be readily seen from Figure 5.

An operating lever 43 is pivoted at 44 on a fulcrum plate 45 which is secured to the wall or cabinet by screws 46. This lever has a handle 47 at the top and a catch or hook 48 at its lower end which is adapted to engage with the bearing 42 or other suitable projection on the bracket 24. The lower end of the lever has a cam projection 49 forming a continuation of the catch 48 which is adapted to be engaged by the bearing 42 for returning the lever to normal position. The lower end of the lever is also provided with an extension 50 which is adapted to engage with the fastening plate of the bearing 26 to limit the movement of the lever.

The bowl 11 is preferably provided with a ledge 51 around the upper edge which projects inwardly a sufficient distance to serve as a baffle or guard to prevent water from splashing out of the bowl and also serving as an abutment or guide at the back to direct the water to the outlet 12. It will also be noted that the outlet 12 is adjacent to the top of the bowl, although the lip or lower edge 52 of the outlet opening from the bowl is slightly below the top of the bowl so that the outlet serves as an overflow as well as a drain. While the bowl may ordinarily be manipulated by grasping the rim of the same, I have provided a hand hole 53, as shown particularly in Figure 3, which is formed in the hollow rim.

The top of the lavatory may be made straight, but in order to permit the same to be installed in a limited space with the water supply pipes arranged horizontally above the bowl, I have shown the forward portion of the bowl as being offset to clear such pipes. The hot and cold water pipes 54 and 55 are carried up through the wall and provided respectively with laterals 56 and 57 which connect with the opposite ends of the double faucet 58 which is preferably mounted on a casing 59 which encloses the laterals 56 and 57. The faucet is preferably arranged at the center of the bowl and slightly above the same and is of such proportions that it is enclosed in the bowl when the bowl is in raised position.

When the bowl is to be used, the user opens the cabinet and pulls the bowl down which raises the piston rod 31 against the tension of the spring 38 in the cylinder 28. During this movement the valve 34 is raised away from the piston, thereby leaving a free passageway for liquid through the piston as the piston is raised by the nut 32. When the bearing 42 reaches its uppermost position, it strikes the cam 49, as shown in Figure 4, and swings the lever 43 to upright or locking position, as shown in Figure 5. The bearing then engages with the hook 48 and serves to hold the bowl in lowered or operative position. When the bowl is to be raised or returned to the cabinet, the user pulls the handle 47 forwardly which releases the bearing 42 from the hook 48.

The spring 38 pressing down on the valve 34 causes the passageway through the piston to be closed and then moves the valve and piston downwardly. During this movement the liquid in the bottom of the cylinder passes through the hole 35, the size of which may be adjusted by the screw 36, and this gives a restricted downward movement to the piston rod, and consequently a restricted tipping or tilting movement to the lavatory. This retarded movement is regulated so that the lavatory will swing upwardly and the contents will be discharged through the outlet without any overflow or spilling.

From this description, it will be seen that I provide a swinging lavatory which may be installed in limited space and which will be not only efficient in operation but of a particularly sanitary nature. However, changes may be made to adapt the same for different conditions or uses; therefore I do not wish to be limited to the form herein shown and described, except as specified in the following claims, in which I claim:

1. The combination with a swinging lavatory bowl, of an outlet pipe connected directly therewith, and means comprising a spring operatively connected with the bowl and a cylinder having a liquid controlled piston co-acting with the spring for automatically

swinging the bowl to raised position at a predetermined rate of movement.

2. The combination with a pivoted lavatory bowl having a discharge outlet, of means for swinging the bowl to discharge position at a predetermined rate of speed conforming to the rate of discharge said means comprising a resilient member operatively connected to the bowl so that it is stressed when the bowl is swung to lowered position, a cylinder having a suitable liquid therein and a piston in said cylinder also operatively connected to the bowl and having a restricted passage for the liquid as the piston moves during the swinging of the bowl to discharge position.

3. The combination with a bowl, of trunnion supports, a discharge pipe connected with one of said trunnion supports which support has an outlet therethrough, a bracket secured to the bowl, a cylinder pivoted below the bracket, a piston in said cylinder, a piston rod connecting the piston and bracket, means providing a restricted passage through the piston when it moves in one direction, and a free passage when it moves in the opposite direction, liquid in said cylinder, a spring tending to move the piston downwardly, and a catch for holding the bowl against the tension of said spring.

4. The combination with a pivoted bowl, of means tending to swing the bowl upwardly to discharge position, a projection connected with the bowl, an operating lever pivoted adjacent to the bowl and having a cam-shaped engaging portion for engagement with the projection, said engaging portion having a hook for holding the projection against downward movement, the arrangement being such that the projection will engage the cam and swing the lever to holding position.

5. In a lavatory, the combination of a bowl having a combined overflow and discharge outlet, a hollow trunnion secured to the bowl and forming a continuation of said outlet, an elbow having threaded engagement with the trunnion and forming a support therefor, a discharge pipe connected with said elbow, a bracket secured to the bowl on the side opposite said trunnion and having a trunnion projecting therefrom, a bearing for said last named trunnion, a cylinder pivotally mounted below the rear portion of the bowl, a piston in said cylinder having a central passageway therethrough, a closure plate above the piston having a hole therethrough, a piston rod secured to the closure plate and extending through the piston, a nut on the end of the rod adapted to engage with projections on the piston when moved in one direction, a spring in the cylinder tending to press the closure plate downwardly, liquid in said cylinder, said piston rod being pivoted at its upper end to a bearing on the bracket, an operating lever pivotally mounted adjacent

to said bracket and having a hook for engaging with said last named bearing to hold the same against downward movement, said lever also having a cam which is adapted to be engaged by the last named bearing to swing the lever to engaging position.

6. The combination with a wall having a recess therein, of a cabinet in said recess and having a door therefor, a lavatory bowl pivotally mounted in said cabinet and adapted to be swung outwardly and downwardly to operative position, a discharge directly connected with the bowl, means for automatically swinging the bowl upwardly with a retard movement, means for holding the bowl in lowered position, water supply pipes arranged above the bowl, and a faucet connected with said pipes for supplying the bowl, the upper portion of the bowl being offset to clear said pipes, substantially as described.

7. A lavatory of the character set forth, having a swinging bowl with an outlet connected directly therewith and means coacting with the bowl to swing it to discharge position with a uniform retarded movement said means comprising a cylinder having a liquid therein, a piston in said cylinder operatively connected with the bowl and having a restricted opening for the passage of the liquid when the piston travels in one direction and a spring coacting with the piston and tending to move the bowl to discharge position.

8. The combination with a lavatory bowl, of means for rotatably supporting the bowl to permit swinging of the same, an outlet from the bowl through one of said supporting means, means for temporarily holding the bowl in lowered position and means for automatically swinging the bowl to raised position with a retarded movement which is timed in accordance with the size of the outlet to prevent spilling of the contents of the bowl over the top when discharged.

9. A new article of manufacture comprising a tiltable bowl formed of porcelain and having a combined outlet and overflow passageway leading from a point adjacent to the top of the bowl downwardly and then laterally to the side of the bowl and pivotal supports at the sides of the bowl, one of which registers with said passageway, said bowl also having an inwardly projecting rim around the top thereof for directing the discharge to said passageway.

EARL G. WATROUS.