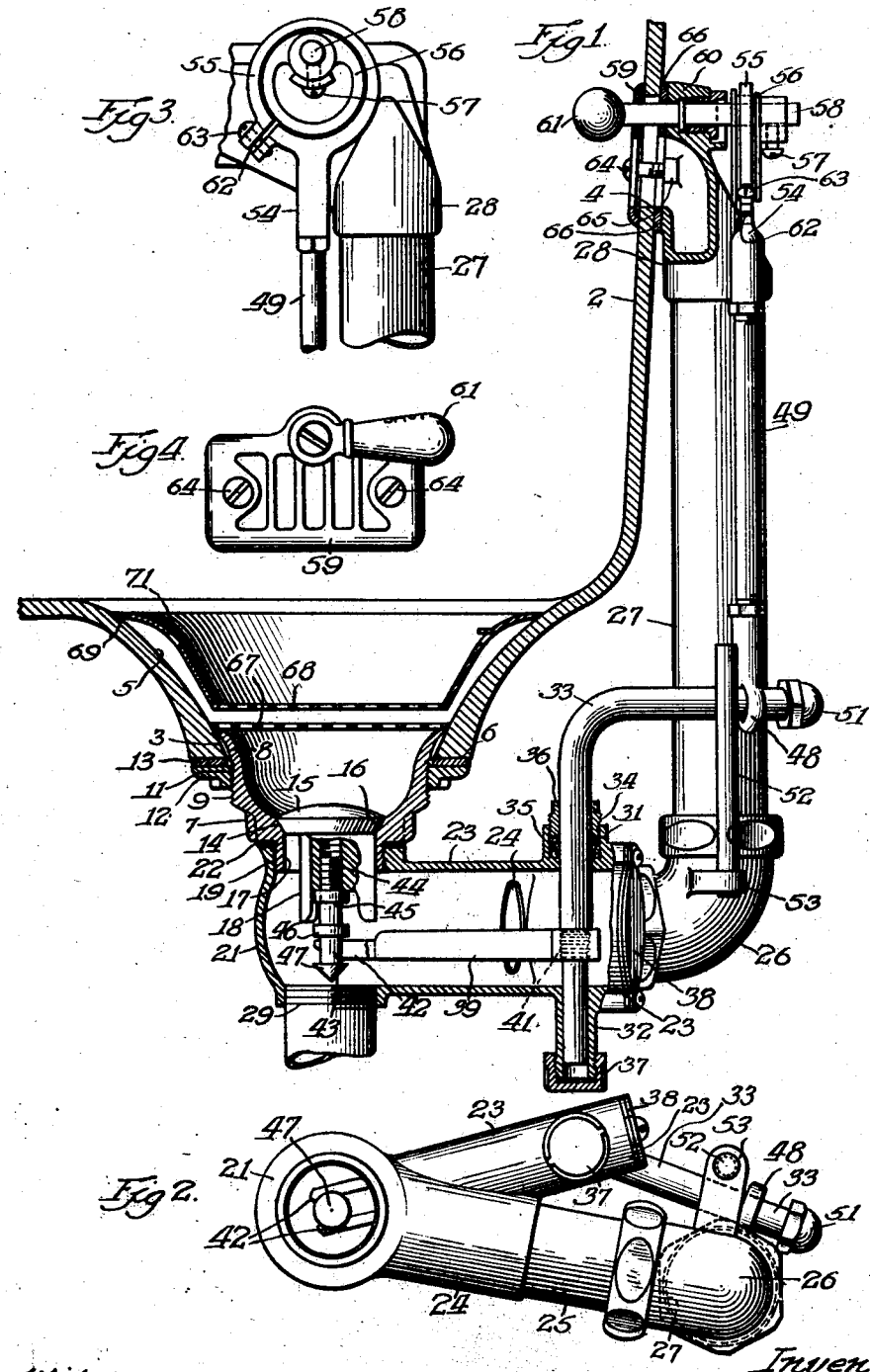
May 13, 1930. R. H. ZINKIL 1,758,270

WASTE MECHANISM FOR PLUMBING FIXTURES

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WASTE MECHANISM FOR PLUMBING FIXTURES

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This invention pertains to plumbing fixtures and has more particular reference to a mechanism for controlling the outflow of waste or drainage from tubs, sinks, basins and other plumbing fixtures or similar receptacles, and to a connection between a plumbing fixture and a water inflow or outflow pipe.

One of the primary objects of the invention is to provide a simple and economical mechanism for controlling the outlet or drainage of waste water etc. from a plumbing fixture or the like and a control mechanism which will have a minimum portion within the piping system.

Another important object of the invention includes the provision of a novel type of spud or element for connection of the fixture with the pipe. In this connection the spud or connection element also provides the valve seat against which the valve for controlling the flow through the orifice is adapted to seat and also provides a guide or bearing for such valve.

Still further objects as well as the advantages and uses of the invention will be or should become readily appreciated after reading the following description and claims, and after viewing the drawings, in which:

Fig. 1 is a sectional view of a fragment of a sink, tub or other similar plumbing fixture illustrating the application of a preferred embodiment of the invention,

Fig. 2 is a bottom plan view of the control mechanism and the connections, looking upward at the bottom of Fig. 1,

Fig. 3 is an elevation of a fragment, including the top, of the control mechanism, looking from the right of Fig. 1, and

Fig. 4 is a front elevation of the escutcheon plate and handle of the control mechanism, looking from the left of Fig. 1.

The plumbing fixture illustrated and designated 2 may conveniently be considered to be a sink provided with an outlet or waste orifice 3 in its bottom and an overflow orifice 4 adjacent its top. The walls of the bottom about the orifice 3 are preferably tapered as shown at 5 so that they converge gradually downward toward the orifice 3. This tapering or converging of the walls serves several purposes, as will be more fully appreciated as this description proceeds. The bottom portion of the fixture about the orifice 3 is provided with a fairly broad shoulder 6 which serves as an abutment.

A spud generally designated 7 has an upwardly and outwardly flared lip 8 extending circumferentially thereabout and adapted to engage the tapered walls of the fixture above the outlet orifice 3. The over-all diameter of this outwardly flared lip or mouth is sufficiently greater than the diameter of the orifice 3 that the lip will contact with the walls of the fixture about the orifice at a reasonable distance thereabove. The spud is externally threaded, as shown at 9, for engagement with the threads 11 of a clamping ring or nut 12 which screws thereon and serves to clamp the rim of the fixture about the orifice 3 tightly between it and the flared lip. a rubber or other suitable gasket 13 being interposed between the shoulder 6 and the ring 12.

The spud 7 converges downwardly and is provided with a ground seat 14 against which a valve 15 having a conforming seat 16 is adapted to seat. The bore 17 of the lower portion of the spud serves as a guide for guide ribs 18 formed on the valve 15, while the lower part of the exterior of this portion of the spud is threaded, as shown at 19, for threaded engagement with internal threads formed on a piping member 21, a gasket 22 being interposed therebetween.

The piping member 18 is preferably a horizontally disposed Y fitting having branches 23 and 24, the branch 23 preferably being oval in cross section with its major axis vertically disposed and the branch 24 being of substantially the same shape as the branch 23, but merging therewith. The branch 24 is connected with a fitting 25 in turn adapted to be coupled to an elbow fitting 26 which connects with a stand pipe or overflow pipe 27 in turn joined to an overflow fitting 28. The piping member 21 is connected with a waste pipe 29 preferably disposed in axial alignment with the bore 17 of the spud.

The branch 23 of the pipe 21 is provided with hollow bosses 31 and 32 in axial alignment with one another which form bearings

or guides for a reciprocable rod 33. The boss 31 is provided with a packing gland 34 within which packing 35 is disposed and held in place and under compression by a stuffing nut 36, while the boss 32 is tightly closed at its lower end by a cap nut 37. The end of the branch 23 is closed by a removable cap 38 for access and inspection.

The reciprocable rod 33 at a portion intermediate the top and bottom inner walls of the branch 23 is secured to a link or connecting member 39 as by threads 41 so that upon reciprocation of this rod the member 39 will be moved transversely of the piping member 21 to raise and lower the valve 15, thereby opening and closing the waste orifice. The member 39 for this purpose is provided with a forked end 42 which embraces a pin 43 threadedly connected to the center of the bottom of the valve as by threads 44 and locked in position by a lock nut 45. Shoulders 46 and 47 serve to retain the fork and pin in proper relationship. It will now be apparent that as the reciprocable rod 33 is raised and lowered, the valve 15 will be raised and lowered, respectively.

The upper end of the rod 33, in the embodiment illustrated, is bent at right angles to its lower portion and passes through an eye 48 secured to a vertically reciprocable operating rod 49. A cap nut 51 prevents the eye 48 and top portion of the rod 33 from relative displacement, while a bar 52 secured to a lug 53 integral with the fitting 26 is spaced a distance from the overflow pipe 27 and forms with the pipe 27 a guide for the upper end of the rod 33. The rod 49 is connected with and secured to a boss 54 integral with a strap 55 disposed about an eccentric 56 in turn secured by a set screw 57 to a shaft 58 rotatably mounted through the upper portion of the fitting 28 and an escutcheon plate 59. A handle 61 is secured to the shaft 58 at the inner side of the fixture and upon rotation of the handle 180° from its illustrated position the rod 49 will be raised, which will in turn raise the rod 33 and the valve 15.

The eccentric strap 55 is split for adjustment and removal, as shown at 62, the parts being held together by a set screw 63. The escutcheon plate 59 and the fitting 28 are held tightly against the upper portion of the fixture about the outlet orifice 4 by screws 64 which screw into bosses 65 formed internally of and integral with the fitting 28, a gasket 66 being placed between the fitting and the rear side of the fixture about the overflow orifice. It will be noted that the fitting 28, while circular at its end connected with the pipe 27, changes from such shape to a rectangular shape at its upper end where it registers with the overflow orifice. The capacity, however, remains substantially the same. It will also be noted that the shaft 58 passes through a boss 60 formed integral with the fitting 28 and does not pass through the water channel in the fitting. This arrangement permits the major part of the waste control mechanism, that is, the mechanism for operating the valve, to be disposed wholly exterior of the overflow and drain pipes, thereby lending to cleanliness and accessibility while minimizing chances of stoppage of pipes and the chances of the parts getting out of order.

In order further to minimize the chances of the control mechanism getting out of order and stoppage of the waste pipes with débris, the outlet orifice is covered with two screens, a lower screen 67 and an upper screen 68. The lower screen 67 is adapted to fit within the tapered walls just above the orifice 3 and to rest upon and be supported by the upper end of the flared lip 8 of the spud 7 and is seldom removed in practice. The upper screen 68 is spaced above the lower screen and preferably is of dish-shape and arranged to contact with the fixture only about its upper circumferential edge 69 so that it is spaced away from the fixture between its bottom and upper edge. Lugs 71 are struck at two or more places from the sides of the upper screen 68 so that it may be engaged by the fingers or by a tool and readily removed for cleaning or access to lower parts as and when desired.

Though I have illustrated and described a preferred embodiment of the invention, it will be appreciated that it is susceptible of other embodiments and that many changes may be made without departing from the spirit of the invention or the scope of the appended claims.

I claim:

1. In combination, a plumbing fixture having waste, a spud connected to said waste and overflow orifices, piping including a horizontal portion and a vertical portion connecting said orifices, a valve for closing said waste orifice, a reciprocable rod extending externally of and substantially parallel to said vertical pipe portion, a second rod mounted transversely of said horizontal piping portion and having connection with the first said rod for reciprocation thereby, means connecting said valve and said second rod for raising and lowering said valve to open and close said waste orifice as said second rod is reciprocated, and means adjacent said overflow orifice for reciprocating the first said rod.

2. In combination, a plumbing fixture having waste, a spud connected to said waste and overflow orifices, piping including a horizontal portion and a vertical portion connecting said orifices, a valve for closing said waste orifice, a reciprocable rod extending externally of and substantially parallel to said vertical pipe portion, a second rod mounted transversely of said horizontal piping portion and having connection with the first said rod for reciprocation thereby,

means extending through a part of said horizontal piping portion, movable transversely thereof and connecting said second rod and valve for opening said valve when said second rod is reciprocated in one direction, and means adjacent said overflow orifice for reciprocating the first said rod.

3. In combination, a plumbing fixture having a waste orifice in the bottom, a spud connected to said orifice and an overflow orifice adjacent the top thereof, a waste pipe connected with said waste orifice, an overflow pipe including a substantially horizontal portion and a substantially vertical portion connecting said waste pipe and overflow orifice, a valve for closing said waste orifice, a reciprocable rod extending externally of and substantially parallel to said vertical pipe portion from a place adjacent said overflow orifice to a place adjacent said horizontal pipe portion, and means including a member extending into said horizontal pipe portion and connected with said valve for actuating the valve upon reciprocation of said rod.

4. In combination, a plumbing fixture having a waste orifice in the bottom and an overflow orifice adjacent the top thereof, a waste pipe, an overflow pipe connecting said overflow orifice and waste pipe, said overflow pipe including a horizontal portion having connection with said fixture at said waste orifice, a valve for controlling flow through said waste orifice, a reciprocable rod extending externally of said overflow pipe and from a place adjacent said overflow orifice to a place adjacent said horizontal pipe portion, a second rod connected with the first said rod for movements therewith and extending transversely through a part of said horizontal pipe portion, a connection between the second said rod and said valve for moving the same to control flow through said waste orifice when the second rod is moved, and means internal of said fixture for operating the first said rod.

In witness of the foregoing I affix my signature.

ROY H. ZINKIL.

CERTIFICATE OF CORRECTION.

Patent No. 1,758,270. Granted May 13, 1930, to

ROY H. ZINKIL.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 3, line 26, claim 4, after the word "bottom" insert the words "a spud connected to said orifice"; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 22nd day of July, A. D. 1930.

Wm. A. Kinnan,
Acting Commissioner of Patents.

(Seal)