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W. H. DARLING
WASTE PIPE FITTING
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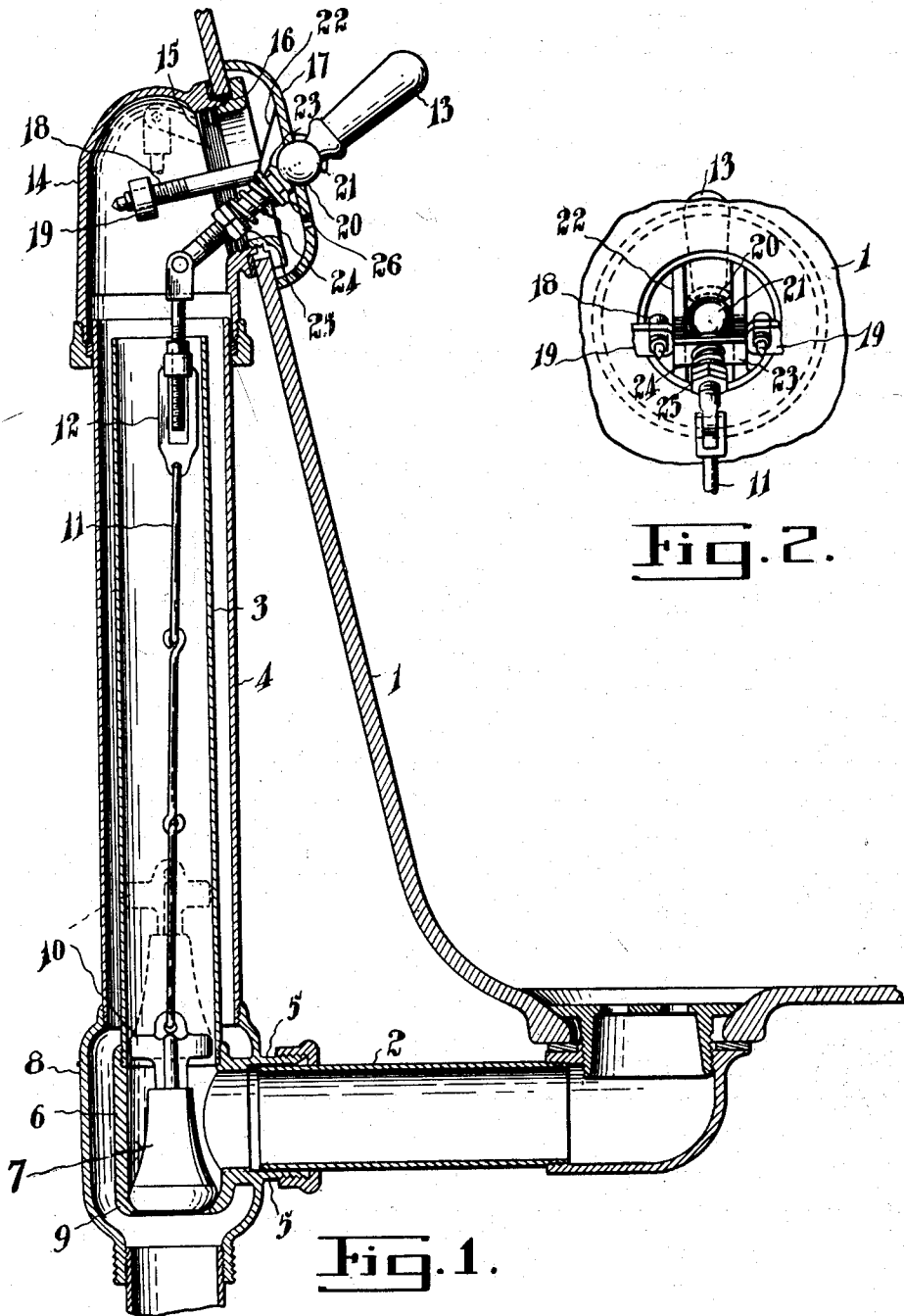


Fig. 2.

Fig. 1.

Inventor
W. H. Darling
by J. Edw. Maybee
ATTY.

UNITED STATES PATENT OFFICE

WILLIAM HENRY DARLING, OF LONDON, ONTARIO, CANADA

WASTE-PIPE FITTING

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This invention relates to waste and overflow valve mechanism for bath tubs, wash basins and the like of the type in which a valve seat is located in the T-fitting to which the bottom waste pipe, the overflow waste pipe and the soil pipe are connected, the control valve, which is normally located in the chamber of said T-fitting, being operated through linkage located in the overflow waste pipe by means of a lever pivoted on a cover or screen secured over the overflow opening of the bath.

Heretofore this valve mechanism has usually employed a tubular valve, which while shutting off the bottom waste passage, permits any water from the overflow waste to pass therethrough.

These tubular valves are difficult to maintain in a tight condition and further the operating mechanism has been such that it is necessary in bath rooms of limited dimensions to provide special means for getting at the waste pipes to disconnect before any repairs or adjustment may be made in the valve mechanism.

My object, therefore is to devise valve mechanism in which a solid valve may be employed while permitting proper escape of excess water in the event of the supply tap being left on too long, and particularly my object is to devise a construction in which the valve and its operating means may be withdrawn for adjustment without having to disconnect the waste pipes in any way.

I attain my objects by means of constructions which may be briefly described as follows. A waste pipe from the bottom of the bath tub communicates with a vertical overflow pipe located within the usual overflow waste pipe. A plug valve controls an outlet to the vertical waste pipe from the overflow pipe, so that when the valve is unseated water may escape through the bottom of the overflow pipe and when the valve is seated water will rise in the vertical overflow pipe and may overflow into the usual waste pipe. The valve is operated by connections extending up to an operating lever mounted in a cap forming part of the closure of the upper end of the waste pipe. The operating lever

is provided with means yieldingly retaining it in either a valve opening or valve closing position substantially as hereinafter more specifically and as illustrated in the accompanying drawings in which

Fig. 1 is a vertical section showing my improved fittings applied to a bath tub; and

Fig. 2 an elevation of the operating mechanism.

In the drawings like numerals of reference indicate corresponding parts in the different figures.

1 is a portion of the bath tub with the bottom outlet of which the waste pipe 2 is connected in any known manner. This waste pipe communicates with an upwardly extending overflow pipe 3 which is surrounded by the usual overflow waste pipe 4 communicating with the opening in the side of the bath. The connection between the pipes is through the medium of an integral connection of T-form, which is shaped to form a lateral connection 5 for the connection of the waste pipe 2; a T-head 6, to the upper end of which the overflow pipe 3 is connected, while at the lower end is formed an opening shaped to provide a valve seat 9 for the valve plug 7; and a sleeve 8 forming a passage around the T-head 6, the upper end of the sleeve being connected with the lower end of the waste pipe 4, while the lower end is adapted for connection to the pipe leading to the drain.

The valve plug is preferably formed of metal tapering in an upward direction so as to facilitate flow of the overflow pipe when the discharge opening is closed.

The valve plug 7 is also provided at its upper end with a spider 10 adapted to guide it in the overflow pipe 3 without interfering with the flow of water.

The valve plug is operated through the medium of a flexible connection 11 secured to its upper end and provided with a turn buckle 12 whereby its length may be adjusted.

The turnbuckle is pivotally connected with the inner end of an operating lever 13 mounted as hereinafter described.

The upper end of the waste pipe 4 will

usually be provided with a closure 14 having a lateral opening 15 adapted to be fitted in the opening in the wall of the bath tub and secured thereto by means of the threaded clamp ring 16. A cap 17 is fitted over the ring 16 and is held in position against the inner wall of the bath tub by means of one or more screws 18 passing through the cap and threaded into lugs 19 carried by the closure 14. In the cap is formed an opening forming a seat for the ball 21, the ball and opening being of such a size that the inner end of the lever may be projected through the opening until the ball engages in the latter as a seat. The ball is of slightly larger diameter than the opening so that it will not pass therethrough. The inner face of the cap 17 is provided with a pair of cam surfaces 22 against which bears a plate or washer 23 slidable on the inner end of the lever 13. A coil spring 24 bears against this washer and against abutment nuts 25 threaded on the stem. The coil spring thus presses the washer 23 against the cam surfaces and at the same time holds the ball 21 in seated position. The cam surfaces are preferably formed in two parts at an angle to one another so that, when the lever is rocked, the washer will engage either one or the other of these inclined surfaces and thus tend to hold the lever in the position to which it has been moved. Two such positions are indicated in the drawings, in one of which, as shown in full lines, the valve 7 is closed, while in the other, as shown in dotted lines, it is open.

It will be noted from Fig. 2 that the seat for the ball 20 is partly formed in the cams 22. The lever is provided between the cams with flat sides bearing against the inner sides of the cams, thus acting as a guide for the lever 13 preventing turning or twisting of the latter and thus maintaining the action of the connection 11 and plug 7 directly up and down. I show the flat sides on the lever as formed on an extension of the ball 20, which, of course, is really a part of the lever.

From the above description it will be seen that it does not matter whether the cap 17 entirely shuts off the upper overflow opening or not as the main overflow is up the pipe 3 and then down the waste pipe 4 to the soil pipe.

It will also be seen that the movable parts are readily removable at any time for adjustment or repair.

What I claim as my invention is:

1. Improvements in waste pipe fittings including a down-flow waste pipe; a valve controlling discharge through the same; means for actuating the valve extending up through the waste pipe; a closure for the upper end of the waste pipe having a lateral opening; a cap for said opening detachably secured in place and having an opening therein; an op-

erating lever for the valve actuating means adapted to be projected through said opening from the outside, the wall of said opening and the said lever being formed with engaging parts forming a bearing on which said lever may rock up and down; a cam face on the inner side of the cap; and spring actuated means on the inner end of the lever engaging the cam face, the latter being figured to tend to retain the lever, by its engagement with the sliding member, in either of at least two positions.

2. Improvements in waste pipe fittings including a down-flow waste pipe; a valve controlling discharge through the same; means for actuating the valve extending up through the waste pipe; a closure for the upper end of the waste pipe having a lateral opening; a cap for said opening detachably secured in place and having an opening therein; an operating lever for the valve actuating means adapted to be projected through said opening from the outside, the wall of said opening and the said lever being formed with engaging parts forming a bearing on which said lever may rock up and down; a cam face on the inner side of the cap; a washer slidable on the inner end of the lever; an abutment on the lever; and a coil spring positioned on the lever between the abutment and washer and pressing the latter against the cam face.

Signed at London this 23rd day of September, 1929.

WILLIAM HENRY DARLING.