

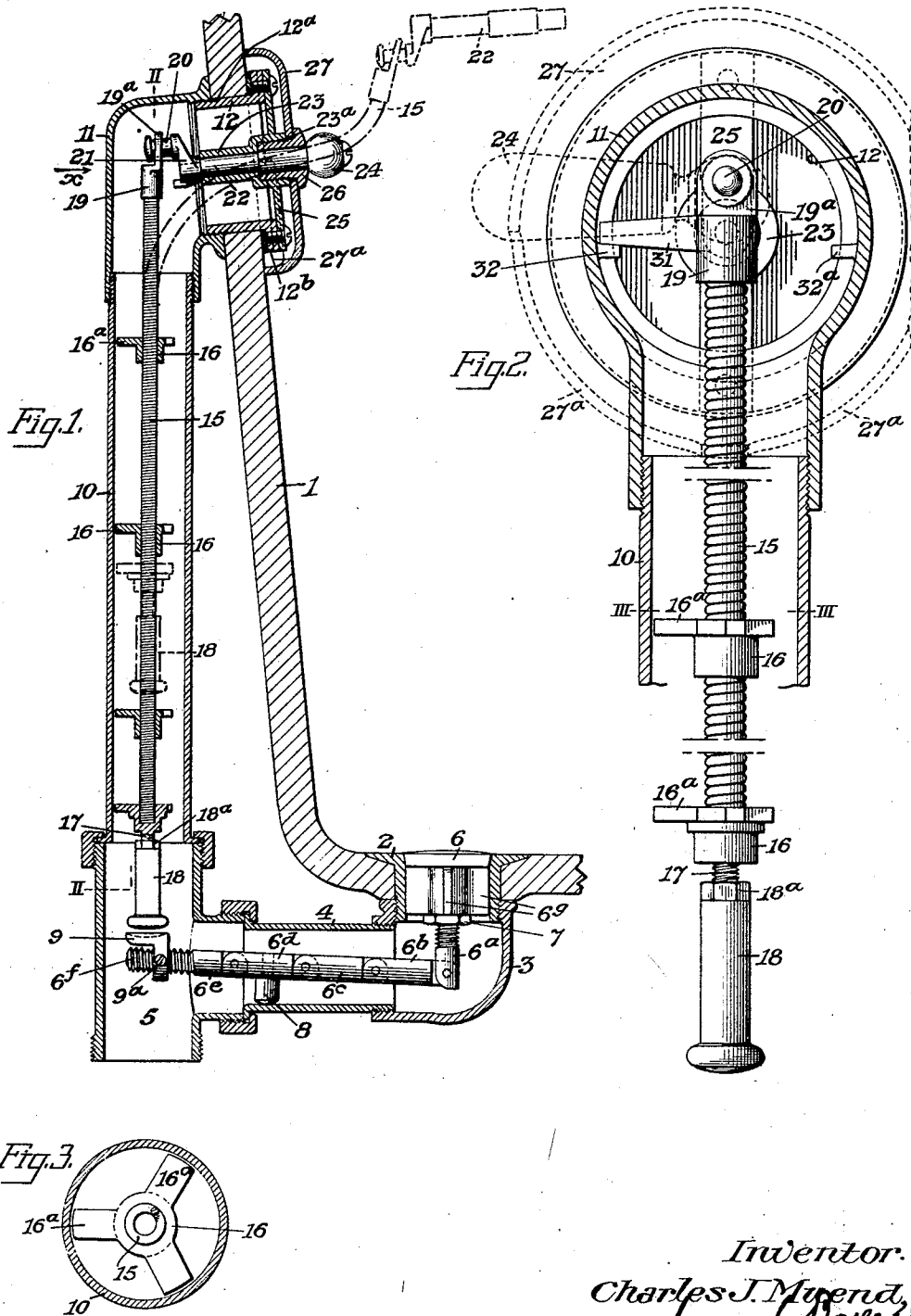
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WASTE AND OVERFLOW FIXTURE FOR BATHTUBS

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WASTE AND OVERFLOW FIXTURE FOR BATHTUBS.

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My invention relates to interconnected waste and overflow fixtures which are concealed behind the wall of a bath tub; in some instances being located within the wall of the room in which the tub is located.

The main object of my invention is to provide for the withdrawal and insertion of the waste valve and its operating member through the waste opening and the overflow opening of the fixture, respectively, without the necessity of opening the wall or of dismembering the fixture in any way, except for the removal of the escutcheon or shield covering the overflow opening, for such withdrawal or insertion.

A further object of my invention is to provide a waste valve operating member of a pliant and/or flexible type, which member is normally disposed within the overflow pipe and may be withdrawn and inserted through the overflow opening for the purpose of adjusting or replacement without breaking the joint between said overflow pipe and the tub.

And a still further object of my invention is to provide a pliant rod or stem for operating the waste valve to open position in the form of a closely coiled member of spring wire, having a weighted end to engage one end of a lever carrying the waste valve, and carrying guiding means permanently positioned at suitable points; such pliant weighted member being free to rise and fall within the overflow pipe under the influence of an operating handle disposed within the tub and which may be centrally located with respect to the overflow opening. The overflow opening is normally closed by a shield or escutcheon having suitable ports in the lower part thereof for the passage of overflow from the tub.

These and other features of my invention are more fully described hereinafter; reference being had to the accompanying drawings, in which:

Figure 1, is a sectional elevation of one end of a bath tub showing the waste outlet and the overflow pipe and the improvements forming the subject of my invention connected therewith.

Fig. 2, is an enlarged sectional elevation, partly broken away, taken on the line II—II, Fig. 1, and looking in the direction of the arrow *a*, and

Fig. 3, is a sectional plan view taken on the line III—III, Fig. 2.

In the drawings, 1 illustrates the wall of the bath tub, which may be of any ordinary construction and of any suitable material, having a waste opening formed in a flanged sleeve or collar 2, fitting within an opening in the bottom of the tub, and connected to an elbow 3, forming part of the waste outlet. A short section of pipe 4, is connected to the elbow 3, and this pipe in turn is connected to the usual T fitting, indicated at 5.

Fitting within the waste opening is a valve 6 of the pop-up type, having a combined stem and lever consisting of a series of links, 6^a, 6^b, 6^c, 6^d, and 6^e, pivotally connected together for movement in one direction, but normally forming a relatively stiff arm for a purpose to be described. The link 6^a is in threaded engagement with the pop-up valve 6; and a nut 7 may be employed to hold the same securely thereto. The links 6^b, 6^c, 6^d and 6^e form a lever for the pop-up valve; the fulcrum of which consists of a pin 8, which may be suitably connected, as by riveting, to the link 6^d. The link 6^e has a threaded portion 6^f upon which is adjustably mounted a pan or platform 9, for a purpose to be described; such pan being held in its adjusted position by means of a set screw 9^a.

The overflow pipe, indicated 10, is connected at its lower end to the T fitting 5 in the usual manner, and at the upper end to an elbow 11, which in turn is connected to the tub by a sleeve 12, forming the overflow outlet and fitting within an opening 12^a in the wall of the tub. These parts are in permanent engagement with the tub. The pan 9 at the end of the link lever carrying the pop-up valve 6 is in axial alignment with respect to the overflow pipe and the operating means for this valve, which engage said pan 9, are disposed within said overflow pipe 10.

A particular feature of my invention comprises the means for operating the pop-up valve by engagement with the flexible lever thereof. Located within the overflow pipe 10, is an operating member for the pop-up valve, consisting of a pliant and/or flexible rod or stem of coiled spring wire indicated at 15, carrying a series of guiding collars 16, which may be brazed or otherwise secured thereto; each of said guiding collars having a plurality of arms 16^a, loosely fitting within the overflow pipe so as to guide the operating member during its vertical movements but without affecting the free rising and falling

movement of the same under the control of a handle located within the bath tub. The guiding member at the lower end of this pliant stem is provided with a depending threaded stem 17, receiving a weighted member 18, for direct engagement or contact with the adjustable pan 9, at the end of the link lever carrying the pop-up valve. By having these parts in threaded engagement, provision is made for adjusting the weight relatively to said flexible stem so as to provide for the proper movement of the latter to operate the pop-up valve. The weight may be locked to the stem 17 by a nut 18^a.

The upper end of the pliant operating member 15 has fitted thereto a tubular member 19, having an apertured projection 19^a for pivotal engagement with an arm 20, of a crank 21, secured to the end of a stem 22, journaled in a support 23, within the overflow opening, and having an operating handle 24, disposed within the tub. The overflow opening of the tub is provided by the sleeve 12, in threaded engagement with an elbow 11, at the upper end of the overflow pipe 10. A cross-bar 25, secured to the flange 12^b of said sleeve carries the support 23 in which the stem 22 is journaled; said support being also provided with a threaded socket 23^a, receiving a flanged collar 26 bored centrally for the reception of an enlarged portion of the stem 22. These parts will be enclosed by a shield or escutcheon 27, having openings 27^a in the lower part of its flange for the escape of overflow, and being retained in place by the flanged collar 26.

The crank member 21 at the end of the stem 22 is provided with an arm 31, for engagement with stop projections 32 and 32^a, which may be integral with the wall of the elbow 11. When in the raised position, as illustrated in the drawings, the operating handle 24 disposed within the tub will lie in a substantially horizontal position toward the right, looking in the direction of the arrow *x*, Fig. 1, (toward the left as indicated by dotted lines, Fig. 2), and the arm 31 is in engagement with the stop projection 32. In such position the pliant operating member 15 is in the raised position, and the pop-up valve is seated; closing the waste outlet. When it is desired to open the waste outlet, the handle is thrown over 180°, until it occupies a substantially horizontal position, but directly opposite the position it occupied with the pliant member 15 in the raised position, and in such changed position the arm 31 will engage the opposite projection 32^a. Such action pushes down the pliant member; the weighted end engages the pan 9 at the end of the jointed lever for the pop-up valve, and the latter is moved on its fulcrum to elevate the waste valve from its seat.

The pop-up valve with the links 6^a, 6^b, et seq., is of sufficient weight to remain in the

closed position, when the pliant operating rod 15 is in the elevated position, as indicated in Fig. 1 of the drawings. It will be understood, however, that when the pan 9 is engaged by the operating means located within the overflow pipe, the link lever will be moved and the pop-up valve will be raised from its seat in a vertical direction; such valve being provided with fins or guides 6^c, which insure such operation. Pop-up valves of this type, operating in a substantially similar manner are more or less well known and, except for certain details, this pop-up valve and its link lever forms no part of my invention.

The pliant and/or flexible operating member is removable through the overflow opening formed by the sleeve 12, as indicated in dotted lines; such opening being accessible by removing the operating handle 24, collar 26, shield 27, and the cross-bar 25 which provides the journal bearing support for the stem 22 of the operating handle. The pop-up valve may be readily removed from the waste outlet, after it has been elevated; the several links which make up the stem and lever of the same flexing on their pivotal connections to permit such action.

An important feature of my invention resides in the fact that due to the pliancy and/or flexibility of the operating member disposed in the overflow pipe, no damage can be occasioned the valve 6 closing the waste outlet, or the flexible lever connected to the same, should a user of the tub happen to stand upon said valve when in the raised and open position. By having the pan 9 adjustable with respect to the flexible lever carrying the valve 6, it is possible to maintain said pan in central position with respect to the overflow pipe should variations exist between the centre of the waste opening and the centre of said overflow pipe.

I claim:

1. The combination with a bath tub having an overflow outlet, a waste outlet, a valve for controlling said waste outlet, a substantially horizontal pipe connected with the waste outlet, a valve operating lever loosely fulcrumed in said waste pipe, and an overflow pipe outside the tub and connected to said overflow and waste outlets, of a pliant rod of closely coiled wire freely supported in said waste pipe and adapted for operative engagement with the end of said waste valve operating lever, a series of guiding collars carried by said rod and maintaining the same substantially centrally of the overflow pipe whereby it may serve to actuate said lever by a downward push; a detachable support mounted in the wall of the tub over said overflow outlet, and a handle for raising and lowering said pliant rod journaled in said support; said rod being removable through the waste outlet when said support is detached.

2. The combination, in a waste and overflow fixture for bath tubs having an overflow outlet in the tub wall and a waste outlet at the bottom of the tub communicating with a discharge passage, an overflow pipe leading from said overflow outlet and connected to said discharge passage, a pop-up valve disposed in the waste outlet, a series of links forming a flexible lever connected to said pop-up valve, and an adjustable connection between one of said links and the valve, of a pan adjustably connected to the end of said flexible lever opposite the pop-up valve, a pliant, loosely hung operating member for said pop-up valve located in the overflow pipe; said member having a weighted end for engagement with the adjustable pan at the end of the flexible lever, means for guiding said pliant operating member within the overflow pipe, and a handle for raising and lowering said pliant member operatively mounted in the overflow outlet; said pliant member being removable through the overflow outlet when said handle is detached.

3. The combination, in a waste and overflow fixture for bath tubs having an overflow outlet in the tub wall and a waste outlet at the bottom of the tub communicating with a discharge passage, an overflow pipe leading from said overflow outlet and connected to said discharge passage, a pop-up valve disposed in the waste outlet, a series of links forming a lever flexible in one position connected to said pop-up valve, and an adjustable connection between one of said links and the valve, of a pan adjustably connected to the end of said flexible lever opposite the pop-up valve, a continuous, pliant operating member located in the overflow pipe for operating said pop-up valve; said member having a weighted end for engagement with the adjustable pan at the end of the flexible lever, a handle for raising and lowering said pliant member operatively mounted in the overflow outlet; said pliant member being removable through the waste outlet when said handle is detached, and fixed guides carried by said pliant member.

4. The combination, in a waste and overflow fixture for bath tubs having an overflow outlet in the wall of the same and a waste outlet at the bottom of the tub communicating with the discharge passage, a pipe leading from said overflow outlet and connected to

said discharge passage, a sleeve in fixed engagement with the overflow pipe and registering with the overflow outlet in the wall of the tub, a pop-up valve disposed in the waste outlet, and a flexible lever connected to said pop-up valve and extending to the overflow pipe, of a pan adjustably connected to the end of said flexible lever opposite the pop-up valve and positioned in the lower part of the overflow pipe, a loosely hung pliant rod of coiled wire for operating said pop-up valve disposed in said overflow pipe, a handle operatively mounted in the waste outlet for raising and lowering said pliant rod; the end of the latter serving to engage the adjustable pan at the end of the flexible lever when moved by the handle and being removable through the waste outlet when said handle support is detached, and fixed guides carried by said pliant rod for positioning the same in the overflow pipe.

5. The combination, in a waste and overflow fixture for bath tubs having a waste passage at the bottom of the same communicating with a discharge passage, an overflow pipe connected to said discharge passage, a sleeve fixed to the wall of the tub and said overflow pipe and forming an overflow outlet, a pop-up valve disposed in the waste outlet, a series of links forming a flexible lever connected to said pop-up valve; the latter with its flexible lever being removable through said waste passage, and an adjustable pan connected to the end of said flexible lever opposite the pop-up valve, of a continuous pliant rod of coiled wire for operating said pop-up valve disposed in said overflow pipe and normally in the raised position, a detachable support mounted in said overflow outlet, a crank arm loosely connected to the upper end of said pliant rod, a rocking handle carrying said crank arm and journaled in said support; said pliant rod being operable vertically by said handle which is movable to positions 180° apart and being removable through the waste outlet when the handle support is detached, cooperative means carried by said crank arm and overflow pipe for limiting the movement of said handle in each direction, and fixed guide members secured to said pliant rod for positioning the same in the overflow pipe.

In witness whereof I have signed this specification.

CHARLES J. MUEND.