

(No Model.)

2 Sheets—Sheet 1.

J. E. BOYLE, Dec'd.

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LAVATORY WASTE, OVERFLOW, AND SUPPLY FIXTURE.

No. 562,210.

Patented June 16, 1896.

FIG. 1.

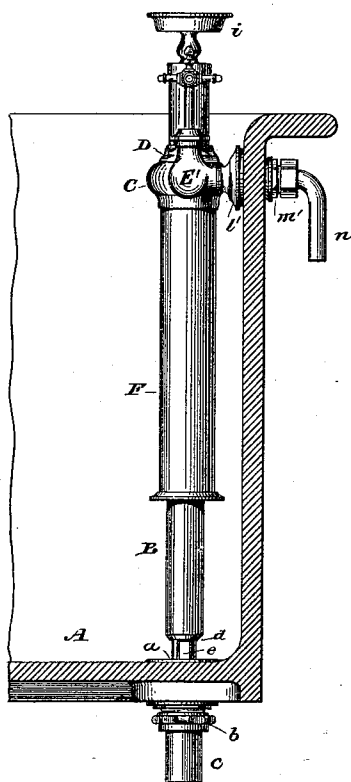


FIG. 2.

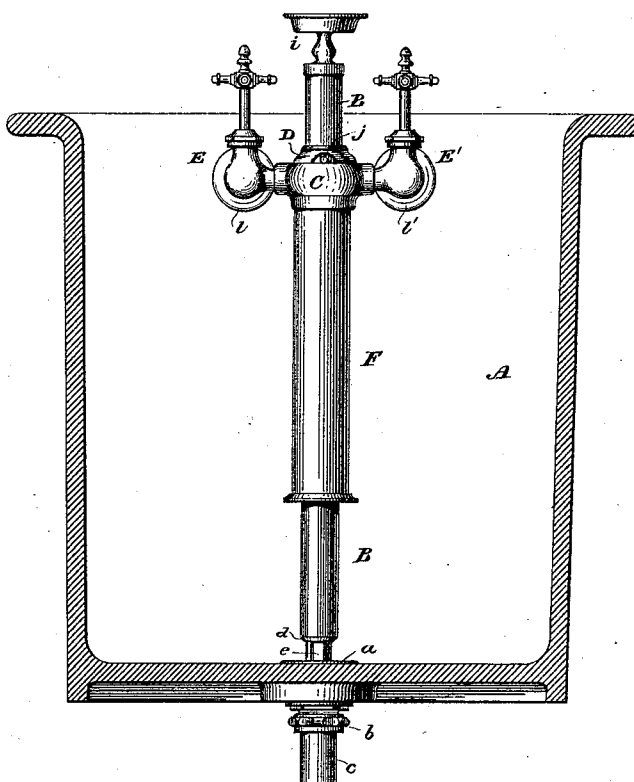


FIG. 9.

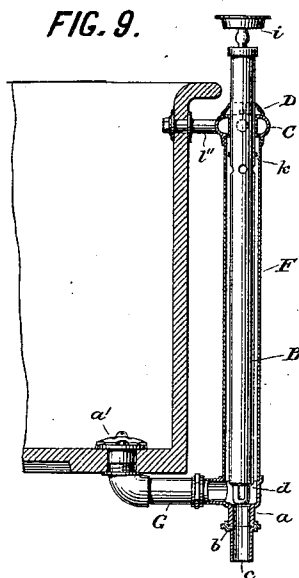
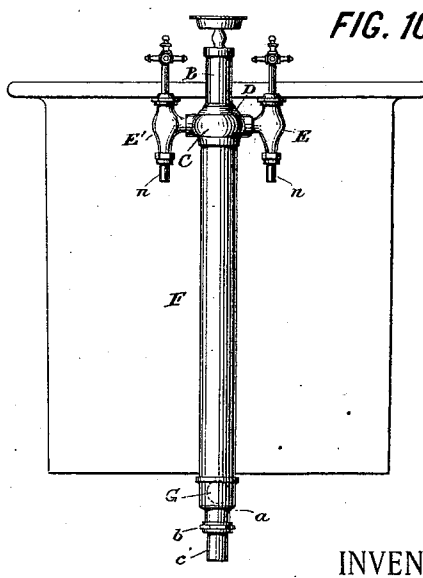


FIG. 10.



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FIG. 3.

FIG. 4.

FIG. 5.

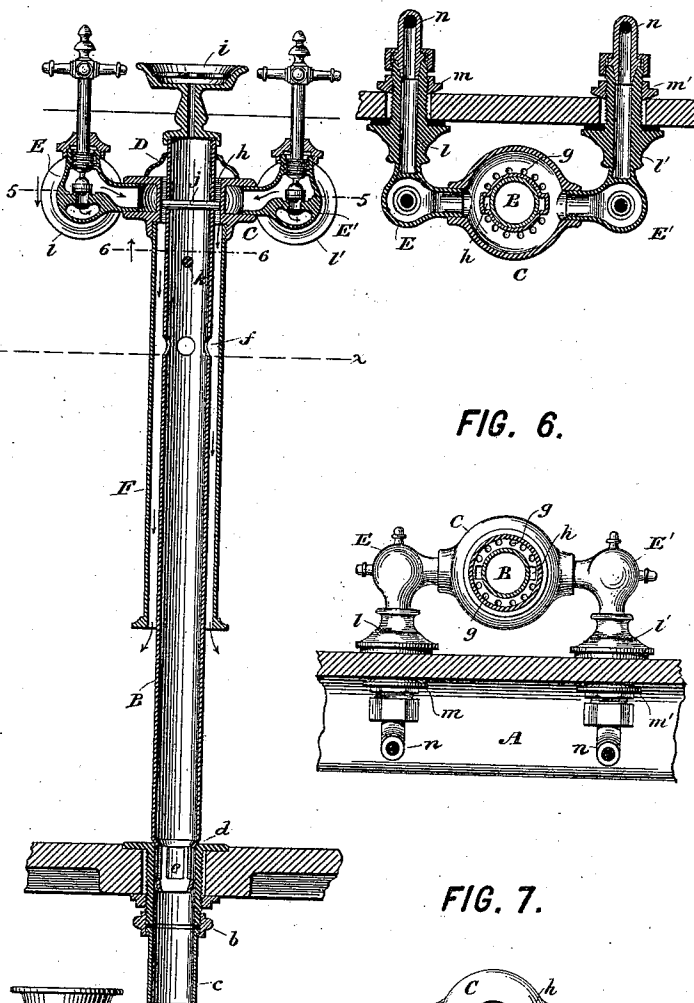
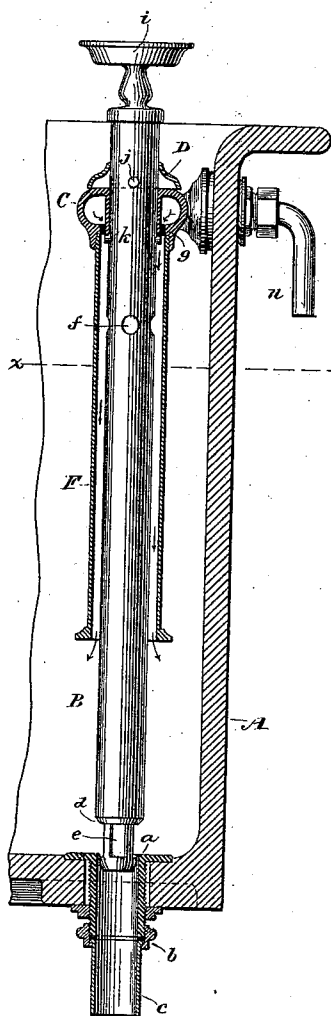


FIG. 6.

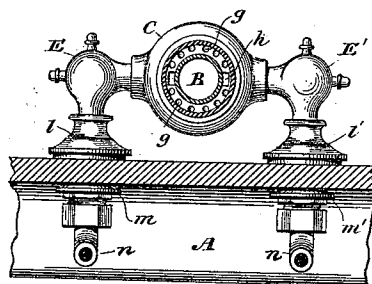


FIG. 7.

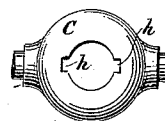
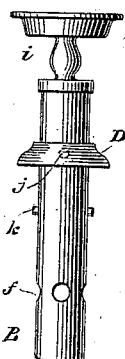


FIG. 8.



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UNITED STATES PATENT OFFICE.

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LAVATORY WASTE, OVERFLOW, AND SUPPLY FIXTURE.

SPECIFICATION forming part of Letters Patent No. 562,210, dated June 16, 1896.

Application filed June 16, 1890. Serial No. 355,523. (No model.)

To all whom it may concern:

Be it known that I, JAMES E. BOYLE, a citizen of the United States, residing in Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Lavatory Waste, Overflow, and Supply Fixtures, of which the following is a specification.

This invention relates to overflow waste-valves and hot and cold water supply devices applicable to washbasins, bath-tubs, wash-tubs, or other lavatory-receptacles or analogous vessels supplied with water from pipes, and from which the overflow and waste are conducted away through a waste or drainage pipe.

The object of the invention is to simplify the construction of overflow-wastes of the character wherein the valve which closes the waste-outlet is constructed in the form of a tube, or as a tubular stem extended upwardly to the overflow-level. When such overflow-tubes are seated, they close the outlet and any water rising above the overflow-level passes down through the tube to the outlet. When the tube is lifted to afford direct outflow through the outlet, it is upheld by suitable provisions, usually in the nature of a pin or projection in connection with the tube engaging a support which guides the upper part of the tube.

According to my invention the upper part of the tube passes through a guiding hole or opening in a supporting structure, and a loose ring is provided placed around the tube and normally resting on said support to conceal the upholding provisions for holding the tube uplifted. When the tube is lifted out for the purposes of cleaning or repairs, this loose ring comes out with it.

In its complete embodiment my invention provides a combined waste-valve and overflow, and a hot and cold water supply, all in one fixture. The support for the overflow-tube is formed as a hollow ring, and the hot and cold water faucets have their discharge-openings entering the hollow in this ring from which the water escapes through perforations on its lower side and enters the bowl or tub. Preferably a fixed tube or stand-pipe is pro-

vided extending downwardly from the ring, so that the entering water descends through the annular space between this pipe and the overflow-tube.

Figure 1 of the accompanying drawings is a fragmentary longitudinal section of one end of a bath-tub, showing the preferred form of my improved fixture in side elevation. Fig. 2 is a vertical transverse section of the tub, showing the fixture in front elevation. Fig. 3 is a similar section to Fig. 1, but cut in a different plane, namely, intersecting the axis of the overflow-tube, the latter being shown lifted and in elevation. Fig. 4 is a view looking in the same direction as Fig. 2, but with the parts cut in vertical section in the plane of the axis of the overflow-tube and this tube shown as being seated. Fig. 5 is a horizontal section on the line 5 5 in Fig. 4. Fig. 6 is a horizontal section on the line 6 6 in Fig. 4, looking upwardly. Fig. 7 is a fragmentary plan of the annular guiding-support for the overflow-tube. Fig. 8 is a fragmentary elevation of the upper part of the overflow-tube removed. Figs. 3 to 8 are on a larger scale than Figs. 1 and 2. Figs. 9 and 10 are two views answering to Figs. 1 and 2, but drawn to a smaller scale, illustrating a modified construction. Fig. 9 is a section in the plane of the waste outlet and overflow, while Fig. 10 is an end elevation looking in the opposite direction to Fig. 2, the fixture being here applied on the exterior of the tub.

I will first describe the preferred construction of my invention. (Shown in Figs. 1 to 8 inclusive.)

Let A designate the bath-tub or other lavatory vessel, *a* the waste-outlet therefrom, provided with the usual metal fitting for the attachment, through the medium of a union *b* and thimble *c*, of a waste-pipe.

B is the overflow-tube, formed at or near its bottom *d* as a valve or plug to close the outlet *a* when the tube is lowered, as shown in Fig. 4. It is also preferably formed with a guiding gage or fingers *e*, projecting below the valve *g*. The level at which the water is to overflow is denoted by the line *x x* in Fig. 4, and at this level the tube B is formed with overflow-holes *f*. The upper portion of the

tube passes freely through a guiding-support C, which in this construction consists of a hollow ring having openings or perforations *g g* in its lower side, and with its central hole made a loose fit for the overflow-tube and having lateral extensions or notches *h h*, preferably two in number, and on diametrically opposite sides, Fig. 7. The upper end of the tube B projects somewhat above the support C and has at its top a handle *i* of any suitable design, which may be conveniently utilized as a soap-dish, as shown in Figs. 1 to 4. By means of this handle the tube B may be lifted. The tube is provided with two transverse pins *j* and *k*, passing through it, and with their ends projecting at both sides. They are arranged to cross the tube diametrically at different angles, being preferably at right angles to one another, as shown. The pin *j* is arranged at such height that when the tube B is lifted to the proper height to permit a free outflow through the outlet *a* this pin shall stand at the level of the top of the support C, and by resting thereon may uphold the tube, as shown in Fig. 3. The pin *k* is placed at least as far below the pin *j* as the vertical thickness of the support C in order that by coming against the bottom of the support it shall prevent the tube being lifted too high. To open the waste, the tube B is lifted until the ends of the pin *j* emerge above the support, and its further lifting is prevented by the ends of the pin *k* encountering the under side of the support. The tube is then slightly turned to bring the ends of the upper pin out of register with the notches, whereupon the tube will be upheld by the ends of the pin resting on the support. When the tube is seated, the pin *j* is in engagement with the lower part of the notches *h h*, and never passes beneath the support.

A ring D, preferably of sheet metal spun into ornamental form, is placed around the upper part of the tube B, embracing it loosely, and rests by its own weight on top of the support C. This ring is made hollow underneath in order that when the tube B is uplifted there may be room beneath the ring for the ends of the pin *j*, so that the ring shall continue to rest undisturbed on the top of the support. The ring is partly broken away in Fig. 2 to show the end of the pin within it. The ring remains stationary as the tube is raised or lowered in use, thus serving to conceal the notches *h h* and the ends of the pins, (or any other provisions that may be substituted therefor as means for upholding the overflow-tube B,) and thus constitutes an ornamental molding or finish for the fixture.

When it is desired to remove the overflow-tube in order to clean it or to get access to the other parts for the purposes of cleaning or repairs, the tube is lifted to the position shown in Fig. 3, and then turned until the ends of the pin *k* register in the notch *h h*, whereupon it may be lifted completely out.

In so doing the ring D is carried out with it by resting on the pin *j*, as shown in Fig. 8.

In the preferred construction the overflow-tube is placed inside the tub or other lavatory vessel, and the hot and cold water faucets E and E' are made with their shells integral with, or fastened to, the annular support C. The discharge-passages from their shells enter and communicate with the hollow annular space within the support C, as best shown in Figs. 4 and 5. When the faucets are opened, the water flows from them into this annular space and down through the perforations *g g* around the tube B and into the tub. By preference the tube B is inclosed for a considerable distance by a fixed tube or stand-pipe F, the upper end of which is fastened to the support C. This pipe F serves to inclose and conceal the overflow-openings and the upholding provisions or pins *j k* on the tube B, and also serves to guide and direct the downflowing stream of water and prevent spattering or spraying. In case both the hot and cold water faucets are opened the water from them will mingle in the annular passage in the support C, and will further mingle in the annular space between the tubes B and F.

The faucets E and E' may be of any suitable construction, ordinary compression-faucets being shown. These faucets are best constructed with standards *l* and *l'*, respectively passing through openings in the end wall of the tube, and having nuts *m* and *m'* screwed on their upper ends by which to clamp them securely to the tub. They thus constitute the means by which the annular support C is fastened rigidly to the tub. These standards *l l'* are made tubular and constitute the water-inlets to the faucets, their ends being connected by a union to the thimbles *n* of the hot and cold water pipes. In case both hot and cold water are not required only one faucet will be provided, the other being omitted, and the parts being rearranged in any tasteful manner to render them symmetrical.

In the construction shown in Figs. 9 and 10 the fixture is applied on the exterior of the tub. In this case the pipe F of the construction first described is fastened at the end of the tub and is extended downwardly to beneath the level thereof, and is formed at its lower end with the outlet-opening or valve-seat *a*, against which the valve portion *d* of the overflow-tube B seats. From the outlet-opening *a'* in the tube a branch pipe or passage G extends downwardly and horizontally and enters the stand-pipe F above its outlet *a*. The construction and operation of the overflow, the means for upholding it when lifted, and the loose ring D are all the same as in the form already described. The annular support C is provided with a standard *l'*, which is fastened to the end of the tub, and the faucets E' and E are supported by their attachment to the ring C. Both these con-

structions have the advantage that the overflow tube and waste may be thoroughly cleansed by lifting the overflow and turning on a stream of water from one or both the faucets.

It will be understood that the pins *j* and *k* are employed as being the most convenient construction by which to form diametrically opposite projections from the tube B, the projecting ends of the pins constituting these projections. The projections may, however, be formed in any other way, and instead of being two diametrically opposite projections one single tooth or pin applied in any manner to the tube will suffice, in which case only a single notch *h* is necessary. Any other construction of reciprocally-engaging projections and recesses adapted, when the overflow-tube is lifted and slightly turned, to uphold it, may be used in place of the particular construction shown. Several such provisions are already well known in the art, as an example of which may be named the Carr combined waste and overflow for wash-basins, which employs an angular groove or bayonet-joint engaging with a stationary pin or screw end, (patented December 7, 1875, No. 170,709.)

My combined fixture has one important advantage over previous constructions of bath-fixtures wherein the supply of water is admitted at or near the bottom of the tub. In such previous fixtures the opening of a faucet in the lower part of the house while the bath-tub faucets are turned on frequently results in siphoning back into the supply-pipes some of the water in the bath-tub, which may be dirty water, thereby polluting the water supply. This result cannot happen with my improved fixture by reason of the fact that in case of a suction in the pipes, due to drawing water below, air will enter beneath and around the loose ring D, so that no water can be siphoned from the tub.

I claim as my invention the following-defined novel features or improvements, substantially as hereinbefore specified, namely:

1. A bowl or tub, an overflow-tube therefor having two lateral projections *j, k* in different vertical and horizontal planes, and a guiding-support through which said tube loosely passes, said support having a lateral notch or recess *h*, coöperating with said projections,

in combination with the loose ring or collar loosely surrounding said tube and resting on said support, said ring or collar being recessed or made hollow on its under side to receive and accommodate the upper one of said projections, substantially as set forth.

2. The combination with a bowl or tub, of an overflow-tube formed at its lower end as a valve to close the waste-outlet, a hollow annular support through which the upper end of said tube works, having perforations for discharging water, and a faucet the discharge-passage from which enters the hollow in said annular support, whereby when said faucet is opened the water flows therefrom into said annular passage and emerges therefrom through the perforations and streams down around the overflow-tube.

3. The combination with a bowl or tub, of an overflow-tube formed at its lower end as a valve to close the waste-outlet, a stationary pipe surrounding said tube, a hollow annular support through which the upper end of said tube works, having outlet-perforations communicating with the annular space between such tube and stationary pipe, and a faucet the discharge-passage from which enters the hollow in said annular support, whereby the entering water flows down the annular space between the tube and stationary pipe.

4. The combination with a bowl or tub, of an overflow-tube B formed at its lower end as a valve to close the waste-outlet, a hollow annular support C through which the upper part of said tube passes, having perforations *g* through its lower side, provisions for upholding the tube when uplifted, hot and cold water faucets E and E' fixed to said annular support on opposite sides thereof with their discharge-passages communicating with the hollow therein, and supporting-standards *l l'* for said faucets respectively, adapted to be passed through openings in the bowl or tub and fastened thereto, whereby the faucets serve as the means of attachment for said support.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JAMES E. BOYLE.

Witnesses:

C. K. FRASER,
JNO. E. GAVIN.