(No Model.)

J. CLIFFORD.

OUTLET VALVE AND TRAP FOR BATH TUBS, SINKS, &c.

No. 458,997. Patented Sept. 8, 1891.

Fig. 1.

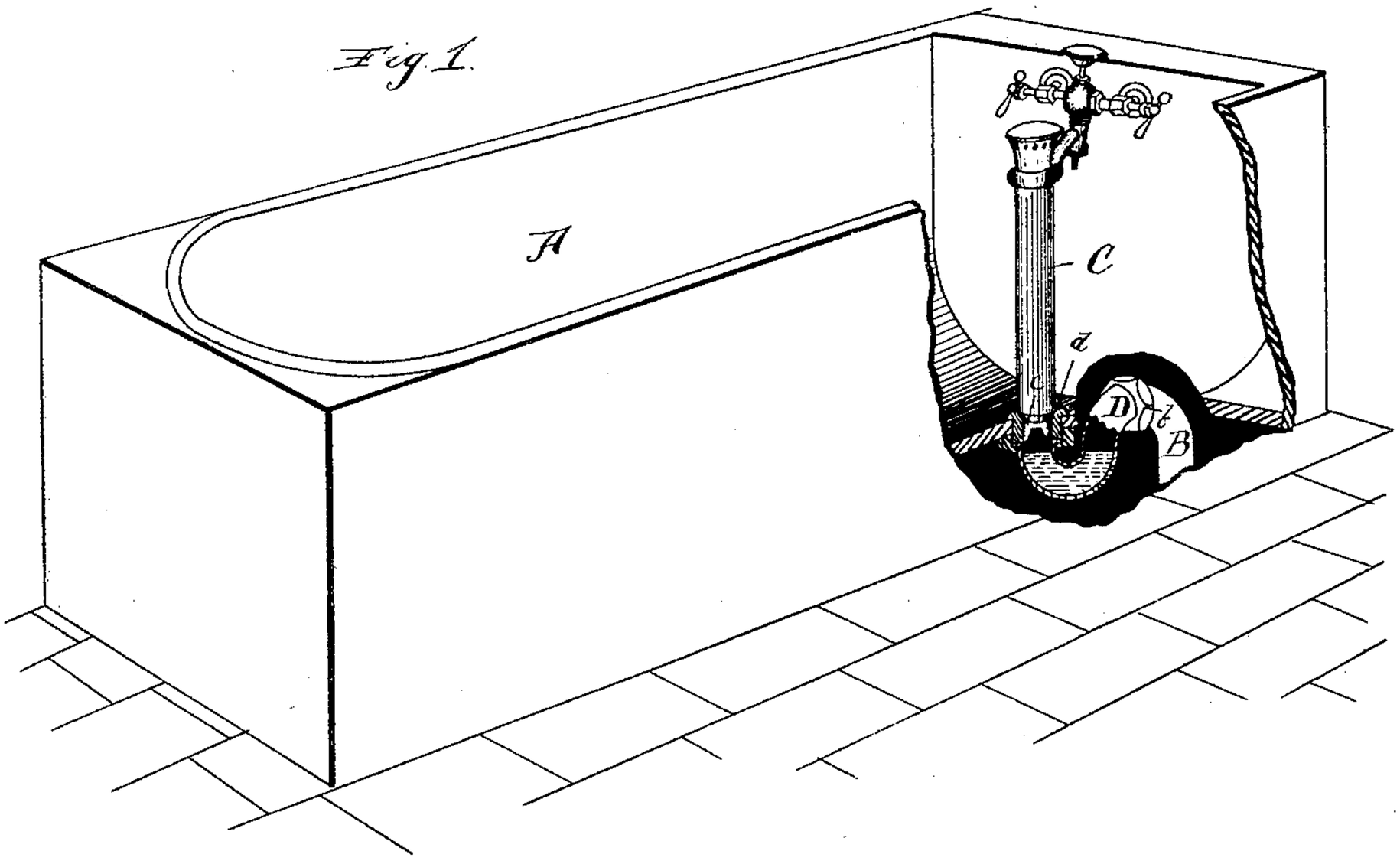


Fig. 2.

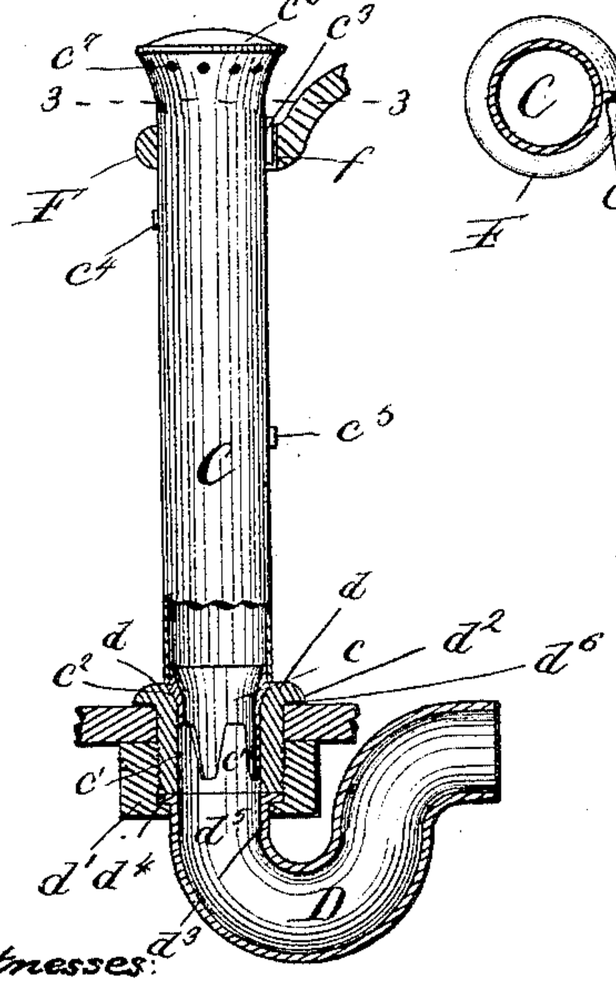
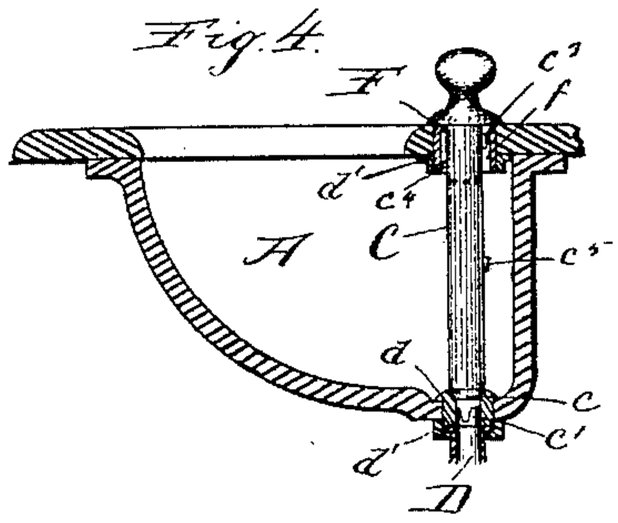


Fig. 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

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OUTLET-VALVE AND TRAP FOR BATH-TUBS, SINKS, &c.

SPECIFICATION forming part of Letters Patent No. 458,997, dated September 8, 1891.

Application filed January 23, 1888. Serial No. 261,615. (No model.)

To all whom it may concern:

Be it known that I, JOHN CLIFFORD, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Outlet-Valves and Traps for Bath-Tubs, Sinks, &c., of which the following is a specification.

My invention relates to tubular overflow-valves for bath-tubs, sinks, wash-basins, &c.; and it consists, in connection with a supporting-ring or guide provided with a slot or enlargement at one side, of an overflow hollow valve mounted to slide in such supporting-ring and having projections arranged thereon at an angle to each other.

The invention further consists in such an overflow-valve having a strainer or guard attached thereto.

The invention further consists in the parts and combination thereof hereinafter set forth and claimed.

The two stops or guide projections are set at an angle to each other radially, so that the hollow valve must be turned on its axis in order to bring the lower or stop projection into line with the slot in the supporting-ring. This prevents the valve being raised too high in the ordinary use of the same, while at the same time the valve may be readily removed from its supporting ring or bearing when desired. The hollow valve or pipe is further provided with a third stop projection, also adapted to pass through the slot of the guide-ring located lower down on the pipe for the purpose of holding the same in an elevated position out of the way when it is desired to clean out the trap or to flow water through the same unobstructed by the strainer. The invention also consists in the novel devices and novel combinations of devices herein shown and described, and more particularly pointed out in the claims.

In the accompanying drawings, which form a part of this specification, and in which similar letters of reference indicate like parts, Figure 1 is a perspective view of a device embodying my invention as applied to a bath-tub. Fig. 2 is an enlarged sectional view of the same, and Fig. 3 is a cross-section on line 3 3 of Fig. 2. Fig. 4 is a sectional view of a wash-basin with my overflow-valve applied thereto.

In said drawings, A represents a bath-tub, wash-basin, or other vessel; B, its discharge-pipe; C, its hollow or tubular overflow-valve, and D the trap, the outer leg of which is furnished with a valve-seat *d* for the tubular valve C. The lower end *c* of the hollow valve C is furnished with slots or notches *c'* to serve as the strainer, and it is of smaller diameter than the upper portion of the same, so that it will fit within the discharge-opening or within the valve-seat sleeve or ring *d*. The hollow valve is preferably round, though it may be made of other cross-section. The conical shoulder or enlargement c^2 of the hollow-valve pipe fits upon the valve-seat *d* and closes the discharge-opening. The slotted strainer portion *c* of the hollow valve C is preferably made in a separate piece from the larger upper portion, the two parts being soldered together or secured by other suitable means. The slots or notches *c'* are preferably cut flaring, as shown in the drawings. The overflow-valve pipe C is provided with an upper guide rib or projection c^3, which fits in a slot *f* in the supporting-ring, guide, or bearing F, secured to or forming a part of the bath-tub, sink, or wash-basin fixture. The guide rib or projection c^3 should be long enough to prevent its becoming disengaged from the slot *f* when the valve is closed or resting upon the valve-seat, so that the valve cannot turn and move the guide-rib out of line with the slot *f*. The valve-pipe is held at the proper height by the guide rib or projection c^3, the valve being turned so that the lower end of said rib will rest upon the guide-ring or bearing F. The valve C is prevented from being raised too high, or high enough to disengage the strainer *c* from the valve-seat *d*, by means of a stop projection c^4, secured on the valve-pipe at an angle radially to the guide-rib c^3, so that it will not be in line with the slot *f*. The projections c^3 and c^4 may preferably be placed about diametrically opposite each other on the valve-pipe, though they of course may be otherwise located. The stop c^4 should be secured to the pipe C at a space below the

lower end of the rib c^3 about equal to the thickness of the ring or support F. The pipe C is further provided with a projection c^5 for the purpose of holding the valve up out of the way when it is desired to clean the valve-seat, discharge-opening, or trap D. The mouth or top of the pipe C is closed by a cap c^6. This cap or tube C near its top is furnished with holes or openings c^7 for the water to overflow through when it rises too high in the vessel A.

For convenience of construction, as well as for convenience in making a water-tight-joint connection between the outer leg of the trap D and the bottom of the bath-tub, I make the valve-seat d and the trap D of two separate pieces of metal and connect the same together by a screw-threaded coupling-ring d', though they may be made integral with each other. The externally-threaded ring d, which constitutes the valve-seat, as well as, in fact, the upper portion of the outer leg of the trap, is furnished with an exterior flange or collar d^2, which fits over and engages the bottom of the bath-tub, surrounding the opening therein, and the internally-threaded ring d' is provided with an internal flange or collar d^3, which engages a corresponding external collar d^4 at the end of the part d^5 of the trap.

Rubber or other suitable packing d^6 should be inserted between the flange d^2 and the bottom of the bath-tub, and also between the abutting ends of the parts d and d^4 of the trap, and then tight and perfect joints may be made by simply tightening the screw-threaded coupling-ring d'. The inner leg of the trap D is connected to the discharge-pipe B by a coupling or joint b. By this means a much better as well as a cheaper construction is made than those heretofore commonly in use, and the bath-tub is provided with a trap which is readily accessible for purposes of cleaning, &c., from the inside of the bath-tub. In order to clean the trap, all that is necessary to be done is simply to lift the valve and turn it so that it will be supported by the projection c^5, the valve C and its attached strainer being thus bodily removed from the valve-seat and trap, and thus leaving the outer end of the trap projecting directly into the bath-tub and having a large and unobstructed opening through which it may be readily cleaned.

My improved overflow-valve and movable strainer is of course applicable for use in cases where the trap D may not be desirable or necessary. It is shown so in Fig. 4.

The upper portion of the valve-tube C (all excepting the strainer portion c) is preferably made in one piece of pipe, the projections c^3 c^4 c^5 being all adapted to pass through the slot f to permit the valve-pipe being entirely disengaged from its supporting-ring F. The stop c^4 and its shape is an important feature of this invention, as it prevents the overflow-pipe being withdrawn inadvertently or by children, so that it may not be lost or do damage to the bath-tub, as would be the case if it could be readily withdrawn and left lying about loosely. By having this stop c^4 and the lower stop c^5 of the same form as the upper guide c^3 it permits their passing through the slot f, so that the tube may by design be bodily withdrawn or removed from its guide-ring F for the purpose of cleaning it, while at the same time it is not liable to be withdrawn by children or by accident. The overflow-tube is liable to become fouled by soapy water, &c., from the surface of that in the tub while in use, so that its cleansing is necessary, and its withdrawal, consequently, of importance.

I hereby disclaim as not of my invention the devices shown and described in United States Patents No. 137,726, to Scrimgeour, April 8, 1873; No. 229,627, to McFarland, July 6, 1880; No. 324,542, to Demarest, August 18, 1886; No. 327,272, to Johnson, September 29, 1885; No. 329,947, November, 10, 1885, and No. 360,480, April 5, 1887, to Putnam, and in English Patent No. 2,277 of 1859.

I claim—

1. The combination, with the supporting ring or bearing having a slot or enlargement, of the hollow-valve pipe having projections arranged at an angle to each other on said pipe, substantially as specified.

2. The combination, with supporting ring or bearing F, having slot or enlargement f, of hollow-valve pipe C, having a strainer or guard attached thereto and removable with said valve and having projections c^3 and c^4, arranged at an angle to each other radially on said pipe, substantially as specified.

3. The combination, with supporting ring or bearing F, having slot or enlargement f, of hollow-valve pipe C, having projections c^3, c^4, and c^5, arranged at an angle to each other radially, substantially as specified.

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