(No Model.)

W. BUNTING, Jr.

COMBINED VALVE AND OVERFLOW PIPE FOR BATH TUBS, WASH BASINS, SINKS, &c.

No. 347,684. Patented Aug. 17, 1886.

Fig. 1.

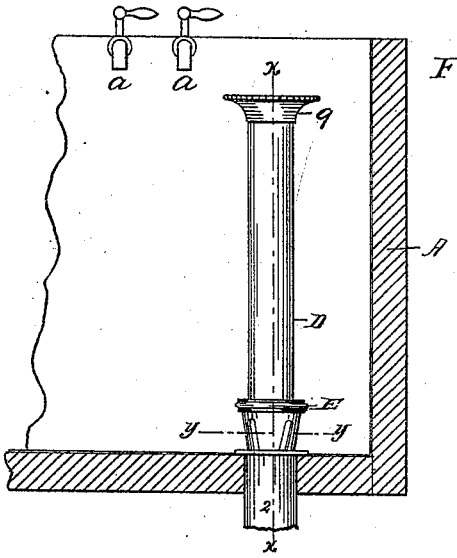


Fig. 2.

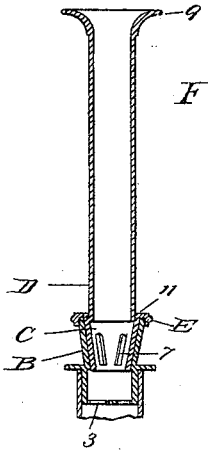
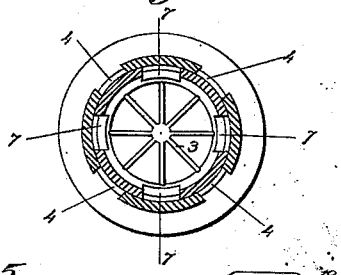


Fig. 3.



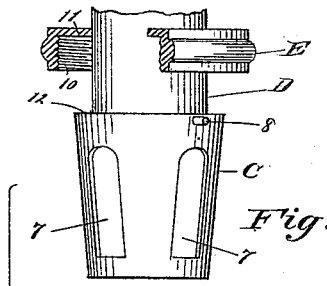
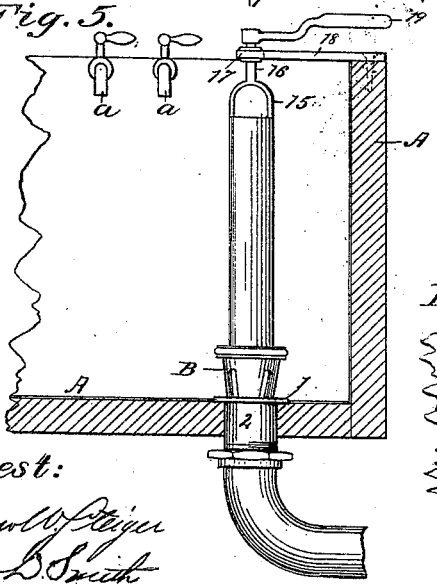


Fig. 4.

Fig. 5.



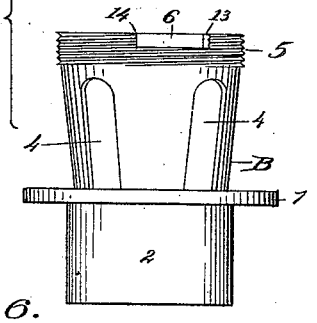
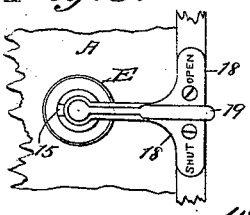


Fig. 6.



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UNITED STATES PATENT OFFICE.

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COMBINED VALVE AND OVERFLOW-PIPE FOR BATH-TUBS, WASH-BASINS, SINKS, &c.

SPECIFICATION forming part of Letters Patent No. 347,684, dated August 17, 1886.

Application filed January 27, 1886. Serial No. 189,919. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BUNTING, JR., a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Combined Valves and Overflow-Pipes for Bath-Tubs, Wash-Basins, Pantry-Sinks, &c., of which the following is a specification.

My invention relates to that kind of valvular contrivance for bath-tubs, &c., in which the means for controlling the egress of water from the tub are formed integral or combined with an overflow-pipe for carrying off the water automatically as it shall rise to a level with its mouth, and thus prevent a flooding of the apartment in case the cocks, through which the bathing-water is supplied to the tub, are left open for too long a time.

The main objects of my invention are to provide a simple, efficient, durable, and noiseless contrivance of the description referred to; and to these ends my invention consists, primarily, in the combination, with a suitable valvular chamber, of a plug or other valvular device, provided with an overflow-pipe, and constructed and arranged so that upon a relative turning of the said plug or valvular device to the said chamber the exit of the water from the tub is either permitted or restrained, and so that any water which may rise in the tub as high as the mouth of the overflow-pipe may be discharged through said pipe and through the valve and its chamber, all as will be hereinafter more fully described; and my invention consists, secondarily, in certain features of construction in the various devices composing the combination, all of which will be hereinafter more fully set forth, and particularly pointed out in the claims.

In the drawings which accompany this specification, Figure 1 illustrates a section of a bath-tub containing a valvular contrivance embodying my invention, the latter being shown in elevation. Fig. 2 is a vertical section taken at the line *x x* of Fig. 1, but omitting the bath-tub. Fig. 3 is an enlarged horizontal section taken at the line *y y* of Fig. 1, looking downward. Fig. 4 is an enlarged sectional elevation of the parts of the contrivance separated, the overflow-pipe being only partly shown. Fig. 5 is a sectional elevation of a modified construction of contrivance embodying my invention, and Fig. 6 is a top or plan view thereof.

In the several figures the same parts will be found designated by the same letters and numerals of reference.

A represents a portion of a bath-tub, which is provided, as usual, with stop-cocks *a a*, through which water from the service-pipes discharge into the tub.

B represents a valve-chamber, formed with a circular flange or rim, 1, that is soldered to the bottom of the tub, and formed with a neck or extension, 2, that passes through the bottom of the tub, and is adapted to be connected, in any of the customary modes, to a pipe for carrying off the waste water. At the lower end of the neck 2 is provided, for the usual purpose, a strainer or sieve, 3, which is preferably cast integral with the neck. The valve-seat is tapering and is formed with vertical openings or ports 4 4 4 4, arranged circumferentially and about equal distances apart, and the upper end of the valve-chamber is screw-threaded, as shown at 5, and is cut away, as at 6, for purposes to be presently explained. From end to end the vertical valve-chamber or device B is entirely open, save at the lower extremity, where the strainer is located.

C designates a plug or valve, tapered to correspond with the taper of the plug or valve-seat and adapted to work therein. The plug is likewise formed with ports or openings 7 7 7 7, similar in shape, number, and size to those formed in the plug-seat, and at a point near the upper extremity of the plug is provided a pin or projection, 8, which, when the parts have been put together and are operated, works in the opening or cutaway 6, and serves to limit the turning of the plug, as will presently more fully appear.

D is an overflow-pipe connected with the plug and movable therewith. It may be made of a piece with the plug, or may be formed separate therefrom and joined thereto by brazing or otherwise. The upper end or mouth of the overflow-pipe is formed or provided with a circular flaring disk, 9, having a knurled pe-

riphery, by which the pipe and the plug connected therewith may be conveniently rotated or turned.

E is a nut, screw-threaded internally, as indicated at 10, to correspond with the threads 5 on the exterior of the chamber B, and formed with a circular flange or top, 11. This nut is used for the purpose of coupling together the devices C, D, and B, and preventing any upward or endwise movement of the plug and overflow-pipe.

When the parts have been assembled together, the threads of the nut engage with those on the chamber, and the flange of the nut comes to a seat or bearing on a circular offset or shoulder, 12, of the plug, thus preventing any longitudinal movement of the plug as well as the overflow-pipe.

In Figs. 1, 2, and 3, the several parts are shown coupled together in condition for use, and in such relationship that an escape of water from the tub through the ports 4 4 4 4 and 7 7 7 7 is impossible, in consequence of said ports being out of register. In other words, the valve or plug is closed, and if a bath is desired to be taken, water from the cocks *a a* may be admitted into the tub, where it will remain. If, however, the ingress of water is allowed to continue until the fluid shall reach a level with the mouth of the pipe D, any additional water that may enter the tub will flow over the pipe or tube D, and descend through the open way therein and in the hollow plug and chamber down into the waste or sewer pipe. Therefore, no matter how long the cocks *a a* may be left open, while the valve C is closed there cannot be any flow of water over the top of the tub, because, it will be observed, the discharging capacity of the pipe D is greater than the charging capacity of both the cocks *a a*.

Supposing, now, that water having been admitted into the tub to the desired level, and the bath to have been taken, and it be desired to discharge the contents, the bather or attendant will grasp the wheel or disk 9, and give a slight turn to thus bring into line the ports 4 4 4 4 in the valve-chamber and the ports 7 7 7 7 in the plug, whereupon the water will make its exit from the tub through these registered openings and pass out into the waste or sewer pipe connections. Of course, if at any time during this discharge it be desired to check entirely the outflow of the water, the parts are turned back to their first positions, but if it be desired to check only partially the egress of the water to obtain a slow discharge, (which it will be understood is often desirable,) the plug, through the intervention of the overflow-tube, is turned back only part of the way, thus abridging the areas of the exit-ports and insuring a less rapid escape of the water. During the turning of the plug within its seat or shell the pin S moves around the cutaway 6, and when it arrives at one wall 13 of the same the ports 4 4 4 4 and 7 7 7 7 are all in line and the water-way therethrough open fully, and when it reaches the other wall, 14, of the cutaway or notch the said ports are all out of alignment, and the water-way through them entirely closed. Thus, by means of the pin and notch, the plug is prevented from turning further than to either wholly close or open the water-way, and one may thus be informed without visional observation and without feeling at the ports as to when the exit-passage is fully closed or opened; and when it is desired to effect a slow discharge of the water the bather may, by means of the pin and notch, be able to gage pretty accurately the extent of coincidence of the ports or openings, and thus regulate the outflow in accordance with his wishes.

In Figs. 5 and 6 I have shown the overflow-pipe D formed with an arched extension, 15, from which projects a stem or shaft, 16, that passes through an eye or bearing, 17, at the inner end of a plate or bracket, 18, which is screwed onto the top of the tub. A handle or key, 19, is made fast to the outer end of the spindle 16, and by this means the plug and overflow-pipe are turned to open and close the water-way through the ports. The bracket 18 is preferably inscribed with the words "Open" and "Shut," as shown, to indicate the directions in which the handle is to be turned to open and close the valve. In the position in which the handle is now represented as occupying, it will be understood that the valve will be held open half-way, and a movement of the handle in one or the other direction will either open or close the valve to a greater extent.

The arrangement for opening and closing the valve shown in Figs. 5 and 6 is shown as a substitute for the means illustrated at Figs. 1 and 2, but it will be understood that so far as the main feature of my invention is concerned both means may be omitted, and the valve operated by grasping and turning the body of the overflow-pipe.

Of course the number, size, and shape of the ports may be changed, and other details of construction of the contrivance varied without departing from the principle of my invention.

In having the valve rotate or turn, I am enabled to provide a fitting that is simple and durable in construction, and in its operation easy, noiseless, and convenient, wholly avoiding the objections existing to valvular contrivances which have to be lifted and dropped, in the use of which considerable noise and great wear and strain upon the working parts are occasioned, as well as a pounding action on the tub that is detrimental to the soldered seams or joints thereof.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with the valve-chamber, consisting of an open shell or casing provided with a port or ports, and with an extension for connection to a waste-pipe, and adapted to be secured to the bottom of a bath-tub or other receptacle, of a combined non-

lifting rotary overflow pipe and valve, the latter provided with a port or ports, the combination being such, as described, that when the contrivance is applied to a bath-tub or other receptacle the water therein may, by a turning movement of the overflow pipe and valve, be permitted to discharge directly through the ports of the valve-chamber and valve, and such that any water that shall rise in the bath-tub or other receptacle to a level with the top of the overflow-pipe will descend directly therethrough and through the valve and valve-chamber to the waste-pipe, as set forth.

2. The combination of the valve-chamber screw-threaded at its upper end, the rotary hollow valve having a circular shoulder, the overflow-pipe connected to the valve, and the screw-threaded nut for coupling the parts together and preventing lifting or endwise movements, as set forth.

3. The combination of the valve-chamber B, provided with the flange 1, neck 2, strainer 3, ports 4, threaded end 5, notch 6, the rotary valve C, having ports 7, pin 8, and shoulder 12, the overflow-pipe D, connected to the valve and the nut E, threaded, as at 10, and provided with the circular flange 11, substantially as described.

4. In combination with a bath-tub or other receptacle, the valve-chamber, consisting of an open shell or casing provided with a port or ports and secured to the bottom of the bath-tub or other receptacle and the combined non-lifting rotary overflow pipe and valve, the latter provided with a port or ports, the combination being such, as described, that by a turning movement of the overflow pipe and valve the water may discharge directly through the ports of the valve-chamber and valve, and such that any water that shall rise to a level with the top of the overflow-pipe will descend directly therethrough and through the valve and valve-chamber, as set forth.

5. In combination with a bath-tub or analogous structure, the valve-chamber fixed to the bottom thereof and consisting of the hollow shell or casing provided with a port or ports and with an extension for connection to a waste-pipe, the non-lifting hollow rotatory overflow pipe and valve, the latter provided with a port or ports, the bracket secured to the bath-tub or other structure, and means, substantially such as described, for turning said overflow pipe and valve, as set forth.

Signed at Boston, in the county of Suffolk and State of Massachusetts, this 25th day of January, A. D. 1886.

WILLIAM BUNTING, JR.

Witnesses:
F. W. C. WOOD,
GEO. Z. HAMOLEN.