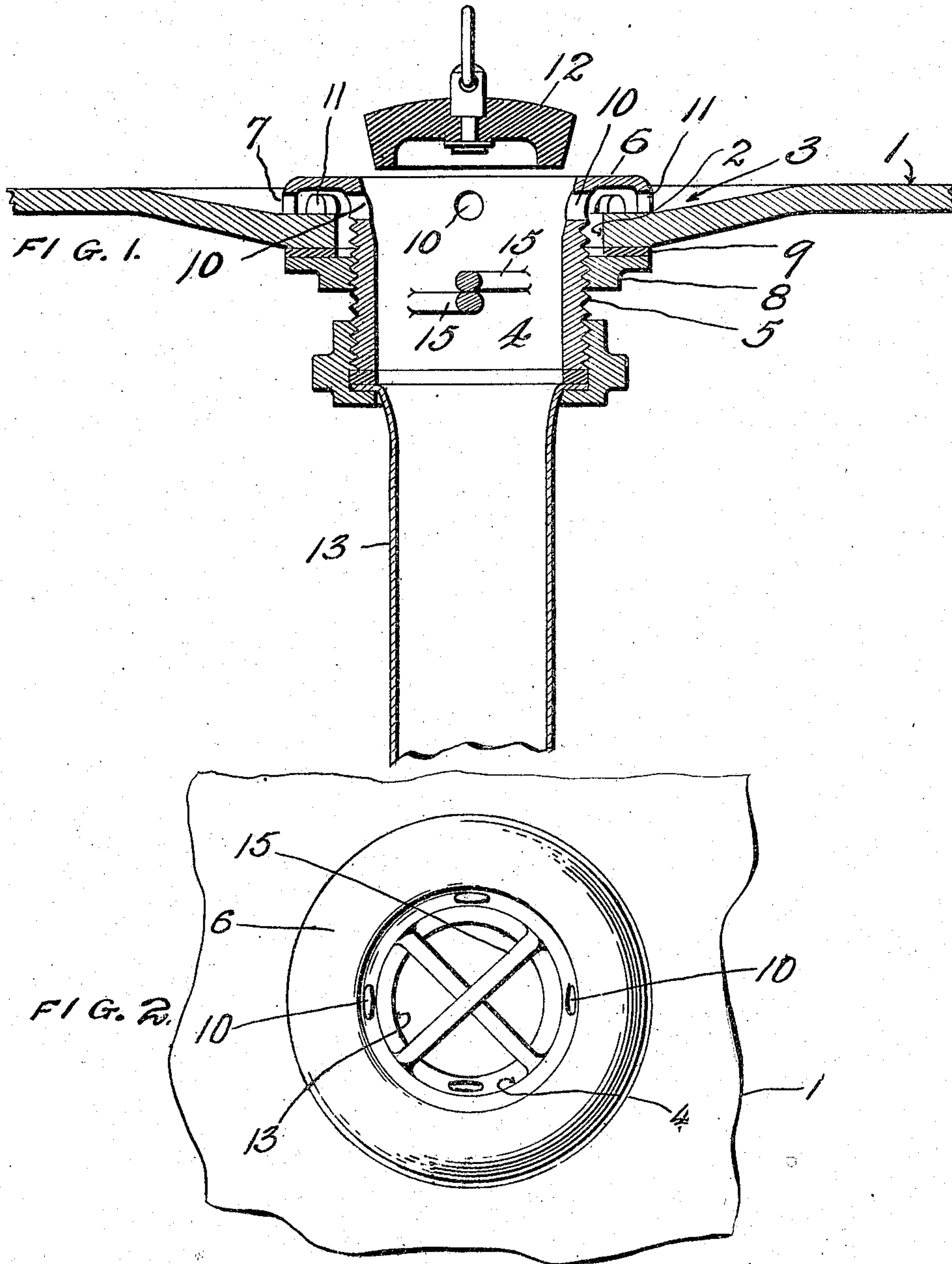


E. L. DAWES.  
DRAIN CONNECTION.  
APPLICATION FILED JAN. 28, 1909.

930,845.

Patented Aug. 10, 1909.



WITNESSES  
C. H. Davies  
E. L. Corbett.

INVENTOR  
Edward L. Dawes  
by Brock, Becken & Smith  
Attorney



# UNITED STATES PATENT OFFICE.

EDWARD L. DAWES, OF NEW BRIGHTON, PENNSYLVANIA, ASSIGNOR TO STANDARD SANITARY MANUFACTURING COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

## DRAIN CONNECTION.

No. 930,845.

Specification of Letters Patent.

Patented Aug. 10, 1909.

Application filed January 28, 1909. Serial No. 474,633.

*To all whom it may concern:*

Be it known that I, EDWARD L. DAWES, a citizen of the United States, and resident of New Brighton, in the county of Beaver and State of Pennsylvania, have invented a new and useful Improvement in Drain Connections, of which the following is a specification.

My invention provides a new form of drain connection for use on tubs, sinks and basins when it is desired to use a stopper or plug in connection with the drain opening to prevent escape of fluid.

Fittings which have heretofore been applied to the drain openings of tubs and the like have required a recess to be formed in the surface of the tub surrounding the drain opening. Practically all metal tubs, sinks, etc., of high grade are now covered on their inner surfaces with vitreous enamel and it has been found difficult to properly enamel tubs which have a recess of the kind referred to. Moreover, when fittings of well-known style are applied to tubs so formed it is found that the enamel is liable to crack or craze either at the time of applying the fittings or subsequently for reasons understood by persons versed in the art. The portions of fittings heretofore used which appear within the tub or sink have also been quite large and generally some kind of fastening device extends through the fitting and is visible from within the tub.

My invention provides a fitting which may be applied to a tub bottom which is of ordinary uniform shape without any abrupt angle or changes of direction and without any recess surrounding the drain opening. The fitting does not tend for any reason to crack or craze the enamel. The tub or sink may be provided with a shallow depression gradually merging with the main surface of the tub bottom and surrounding the drain opening, but this depression is of an easy curvature and is not in the nature of a recess. It is employed in some cases to facilitate drainage. A tub constructed as described may be perfectly enameled with a minimum number of failures.

A fitting constructed in accordance with my invention is small and simple in construction, consisting of few parts. It dispenses with any exterior projection on the tub bottom. The portion of the fitting visible within the tub is of small diameter and has

a pleasing and decorative appearance. No fastening device is visible within the tub. The fitting further provides for complete drainage of all the fluid in the vessel, there being no portion of the fluid contents which is trapped by any part of the tub bottom or fitting.

The accompanying drawing illustrates an exemplifying structure in which the invention is embodied, but it is to be understood that the invention is capable of embodiment in different forms.

In the drawing: Figure 1 is a vertical section through a tub bottom and fitting constructed in accordance with my invention. Fig. 2 is a view from within the tub of a fragment of a tub bottom with the fitting in position, the plug being removed.

Reference character 1 designates the main inner bottom surface of a tub sink or basin. This surface is generally covered with vitreous enamel but to avoid complicating the drawing the enamel is omitted.

2 is the drain opening passing through the tub bottom. It may have a perfectly straight cylindrical wall, as shown.

3 is a depression surrounding the drain opening and joining the main inner surface of the tub with a gradual curvature. The inner surface of the depression as shown immediately joins the drain opening without any intervening recess. The depression may sometimes be omitted and in this case the substantially horizontal and flat inner bottom surface of the tub continues without change in shape directly to the edge of the drain opening.

A nipple 4 passes through the drain opening. The nipple comprises a tubular exteriorly screw-threaded portion 5 which extends below the outer surface of the tub, and an outwardly extending wall 7, the bottom edge of which rests upon the inner surface 3 of the tub bottom close to the drain opening. A nut 8 is screwed on the nipple below the tub and serves to hold the flange firmly against the inner tub surface. A gasket 9 is placed between the nut and the outer bottom surface of the tub providing a fluid seal. One or more radial holes 10 are drilled or otherwise formed through the nipple so that the bottom of the hole or holes is slightly below the adjoining inner bottom surface of the tub. One or more apertures 11 are also formed in the vertical wall 7 of the flange.



A plug 12 shaped to fit the opening in the nipple is provided. The upper end of the bore of the nipple is generally flared as shown and the plug is deep enough so that when it is in position it comes below and closes the holes 10.

The drain pipe 13 is connected with the nipple in any suitable way.

When the plug 12 is in position in the nipple the central opening through the nipple is closed and the inner ends of holes 10 are also closed by the plug. No fluid can then escape from the tub through the drain opening. When the plug is pulled, however, the bulk of the water is discharged through the central opening in the nipple and at the same time water may pass through openings 11 which adjoin the tub surface and then through holes 10 and so out through the nipple and drain pipe. When water in the tub reaches the level of the upper surface of flange 6 it ceases to flow over the flange and through the upper part of the bore of the nipple and the fluid then remaining in the tub passes out through apertures 11 and holes 10. These apertures and holes thus provide means for draining out every particle of water in the tub or sink. When the depression 3 is used it facilitates the collection of residual water around the drain opening and the discharge of this water through the opening and the depression also serves to bring the upper surface of the fitting within the tub down to approximately the level of the main bottom surface of the tub. By varying the depth of the depression the position of the upper surface of the fitting in relation to a tub bottom may be varied. When depression 3 is not provided water will drain out through the fitting more completely than is the case with fittings heretofore used of which I have knowledge.

The nipple may be provided with cross-bars 15 for the usual purpose.

I claim:

1. The combination of a tub or the like having an enameled inner surface and a substantially horizontal bottom, the bottom being provided with a drain opening joining the inner bottom surface of the tub without any intervening recess, a nipple passing through the opening and provided with a flange, means for holding the nipple in position, and one or more fluid passages passing through the flange of the nipple below the top of the nipple and adjoining the inner bottom surface of the tub for the drainage of residual water.

2. The combination of a tub having a substantially horizontal bottom, the bottom provided with a drain opening and a gradual depression surrounding the drain opening, a nipple passing through the opening and provided with a flange resting on the inner bottom surface of the tub adjacent to the open-

ing, the nipple having a central bore, and a fluid passage extending through the nipple and flange below the top of the nipple, said passage adjoining the inner bottom surface of the tub and serving to permit escape of residual water through the nipple.

3. The combination of a tub having a substantially horizontal bottom provided with a drain opening, a nipple passing through the opening, said nipple comprising a tubular threaded portion extending below the tub bottom and a flange resting on the inner bottom surface of the tub, a radial opening through the nipple and flange below the top of the nipple for the drainage of residual water and a nut screwed on the nipple below the tub bottom and serving to hold the flange against the inner tub surface.

4. The combination of a tub or the like provided with a drain opening, the inner bottom surface of the tub immediately joining the opening without any intervening recess, a nipple passing through the opening and provided with a lateral flange turned down at its periphery to form an approximately vertical wall resting on the tub bottom adjacent to the opening, and one or more fluid passages passing through the nipple and vertical wall below the top of the flange for the drainage of residual water.

5. The combination of a tub having a substantially horizontal bottom, the bottom provided with a drain opening and a gradual depression surrounding the drain opening, a nipple passing through the opening and provided with a flange resting on the inner bottom surface of the tub adjacent to the opening, the nipple having a central bore, a fluid passage extending through the nipple and flange below the top of the nipple, said passage adjoining the inner bottom surface of the tub and serving to permit escape of residual water through the nipple, and a plug serving to close the top of the nipple and said fluid passage.

6. The combination of a tub having a substantially horizontal bottom provided with a drain opening, a nipple passing through the opening, said nipple comprising a tubular threaded portion extending below the tub bottom and a flange resting on the inner bottom surface of the tub, a radial opening through the nipple and flange below the top of the nipple for the drainage of residual water, and a nut screwed on the nipple below the tub bottom and serving to hold the flange against the inner tub surface.

7. The combination of a tub or the like provided with a drain opening, the inner bottom surface of the tub immediately joining the opening without any intervening recess, a nipple passing through the opening and provided with a lateral flange turned down at its periphery to form an approximately vertical wall resting on the tub bot-



tom adjacent to the opening, one or more fluid passages passing through the nipple and vertical wall below the top of the flange for the drainage of residual water, and a plug serving to close the top of the nipple and said fluid passage or passages.

8. The combination of a tub having a substantially horizontal bottom provided with a drain opening and a gradual depression surrounding the drain opening, a nipple passing through the opening and provided with a flange resting on the inner bottom surface

of the tub adjacent to the opening, the nipple having a central bore, a fluid passage extending through the nipple and flange below the top of the nipple, said passage adjoining the inner bottom surface of the tub and serving to permit escape of residual water through the nipple. 15

EDWARD L. DAWES.

Witnesses:

JOHN C. REED,  
FRANK PAINTER.