June 28, 1938. J. A. CALLAHAN 2,122,245

BATHTUB

Original Filed Nov. 27, 1935

FIG. 1.

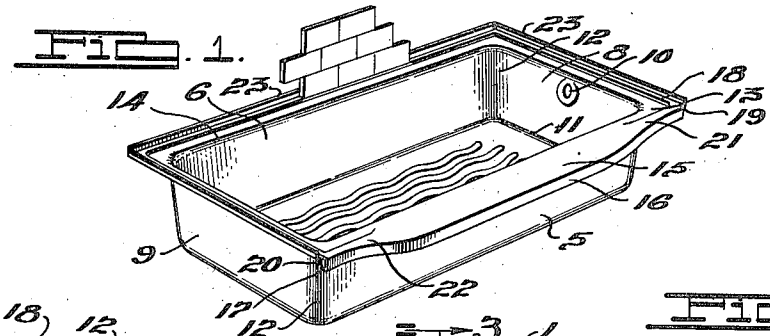
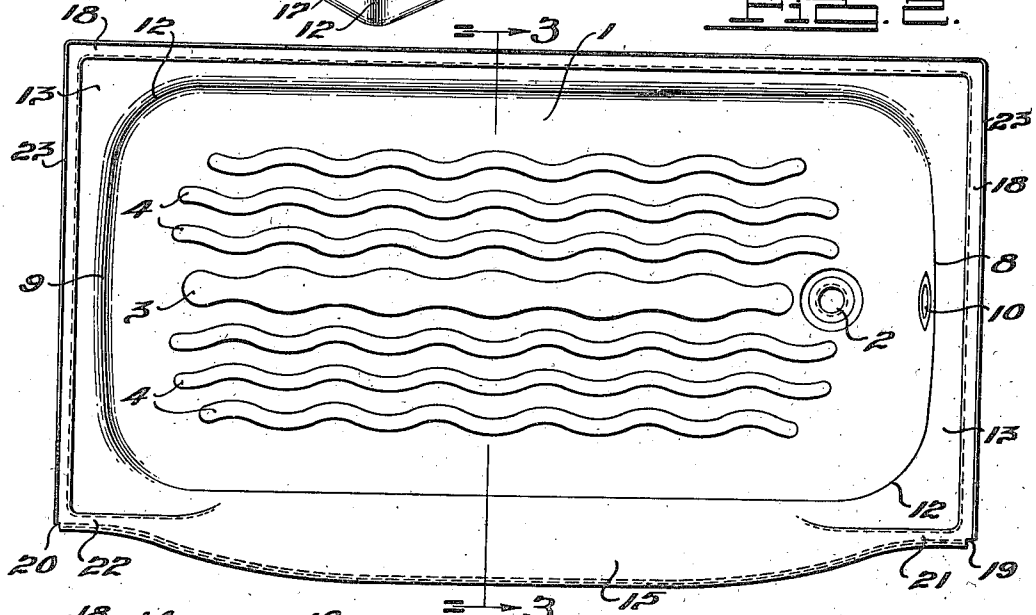


FIG. 2.



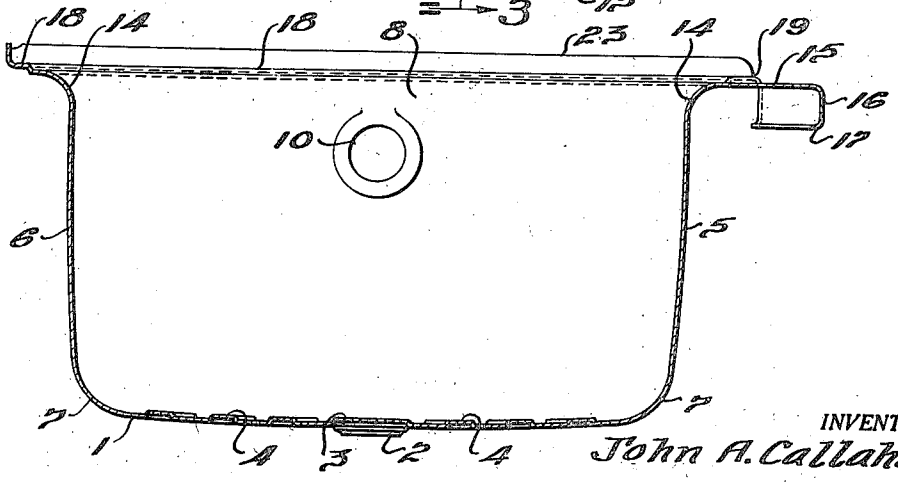


FIG. 3.

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BATHTUB

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18 Claims. (Cl. 4—173)

This invention relates to bathtubs formed from sheet or plate metal and preferably covered with a protective covering such as an enamel coating. More particularly the invention relates to that type of bathtub, known as a built-in tub, which has a flange extending outwardly at the top and adapted to be built into the walls against which the tub is placed and which has a rolled rim at the front of the tub which is shaped so as to form a seat.

Enamel coated metal bathtubs have been on the market for many years but they have all, so far as applicant knows, been made of cast metal. Such tubs are very heavy and require three or four men to handle them when they are being installed, and their excessive weight makes it advisable to especially reenforce the part of the building that supports them and is a contributing cause to the frequently seen settling of the tub which causes a crack to appear between the rim of the tub and the wall above it.

Sheet metal tubs made of several pieces soldered or welded together have long been known. Indeed the earliest metal bathtubs were of this character, but such tubs, due to their angular joints and lack of the protective enamel coating, are unsightly and unsanitary. It has been proposed to make sheet metal bathtubs out of a plurality of stamped sections welded together and so shaped that there are no angles at the joints. While it is possible to make such a tub and coat it with enamel, their commercial production has, at least up to now, proved to be impractical because of the expense of smoothing off the welded seams and the difficulty of securing an enamel coating which will adhere satisfactorily to the metal of the weld and have the same appearance over the welded metal as over the unwelded metal. It has also been proposed to make a tub having, on the sides to be built into the walls, a ledge raised up from the level of the flange around the tub upon which the tile or other wall material may rest and having an upstanding rim at the edge of the ledge behind the tile to prevent leakage between the tub and the tile. But such tubs have not been designed to have a pleasing appearance and to be made of one piece of pressed sheet metal without a commercially prohibitive number of drawing operations, and without intermediate annealings.

Accordingly it is an object of the present invention to provide an improved construction for bathtubs which overcomes the difficulties which have resulted from the prior designs of tubs.

Furthermore, it is an object of the present invention to provide a tub in which the tub proper together with the flange, tile supporting ledge, tile backing rim and front rolled rim forming a seat are all formed in and from a single piece or blank of sheet or plate metal without performing any cutting or welding operations at any point on the tub.

It is a further object of the present invention to provide a tub of such improved character which may be readily coated with vitreous enamel of the highest quality and in which the coating is absolutely uniform in appearance, adhesion and other characteristics throughout.

A further object of this invention is to provide a tub having anti-skid means on its bottom which are effective against slipping in all directions and which nevertheless do not interfere with the free draining of water from the tub.

A further object of this invention is to provide a means for reenforcing the generally flat bottom of a tub, without increasing its thickness at any point, by means of embossed serpentine ridges so that the tub can be made of thinner sheet metal than otherwise without the bottom of the tub having any noticeable give or deflection under the weight of a person in the tub.

It is a further object of the present invention to provide a tub incorporating the above described desiderata which is very light in weight because of its being made of sheet or plate metal which is formed from a single blank of metal and which is inexpensive to manufacture and which has an appearance which is as good or better than that of the present type of cast tubs.

Other objects of this invention will appear in the following description and appended claims, reference being had to the accompanying drawing forming a part of this specification wherein like reference characters designate corresponding parts in the several views.

Fig. 1 is a perspective view of a bathtub embodying the present invention.

Fig. 2 is a plan view of the tub shown in Fig. 1.

Fig. 3 is a vertical section on a slightly enlarged scale on the line 3—3 of Fig. 2 taken in the direction of the arrows.

Before explaining in detail the present invention it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawing, since the invention is capable of other embodiments and of being practiced or carried out in various ways. Also it is to be understood that the phraseology or terminology employed herein is for the purpose of

description and not limitation, and it is not intended to limit the invention claimed herein beyond the requirements of the prior art.

As shown in the drawing the tub comprises a generally rectangular substantially horizontal bottom 1 which has a slight slope towards one end in which a drain outlet 2 is situated so that when the drain is opened water will flow out of the tub.

The bottom of the tub is provided with a pattern of anti-skid ridges which comprise a central ridge 3 extending longitudinally along the center line of the tub and having alternate wide and narrow portions along its length so that its sides are bounded by two symmetrical wavy lines. On each side of the central ridge are a plurality of serpentine or sinuous ridges 4 each of which extends longitudinally of the tub and is parallel to the adjacent wavy edge of the center ridge 3. Both the center ridge and the flanking serpentine ridges are low, wide and flat topped so that they will not be uncomfortable to stand on and still project up far enough to prevent slipping. The serpentine form of the ridges prevents slipping along their length and prevents them from acting like skids as would be the case if they were straight. The ribs are embossed up from the metal which forms the bottom 1 of the tub, and, because they increase the moment of inertia of the cross-section of the bottom about a transverse horizontal axis, they appreciably strengthen and stiffen the bottom of the tub. Since the ridges run lengthwise of the tub they do not interfere with the free drainage of the water.

Vertical sides 5 and 6 extend longitudinally of the tub at each side of the bottom and are connected to it by rounded corners 7 which merge smoothly into the surface of the bottom and the sides. Vertical ends 8 and 9, one of which is provided with a hole 10 through which a filler spout is adapted to project, are connected to the ends of the bottom 1 by rounded corners 11 which merge smoothly into the bottom and ends of the tub. The corners 12 of the tub between the side and end walls are rounded and merge smoothly into the bottom, sides, and ends of the tub. The interior of the tub is thus, except for the drain and filler openings and the anti-skid ridges on the bottom, one smooth continuous surface.

A horizontal flange 13 surrounds the top of the tub and is connected to the sides and ends by a smooth rounded corner section 14 which merges smoothly into the sides, ends and corners of the tub.

At the side 5 which forms the front of the tub the flange 13 extends out horizontally a greater distance in its central portion than at its ends to form a seat 15. The edge of the flange curves down vertically to form a short apron 16, and the lower edge 17 of the apron is flanged or curled in towards the tub to reenforce the apron and to give it a solid substantial appearance.

A narrow horizontal ledge 18 extends around the two ends and the back of the tub from one front corner 19 around to the other front corner 20, and the ends 21 and 22 of the ledge extend out from the corners 19 and 20 onto the flat upper surface of the flange 13 at the front of the tub and slope down and merge into it. A small upstanding rim 23 extends around the outer edge of the ledge at the ends in back of the tub and terminates at the front corners 19 and 20.

The entire tub is formed of a single non-jointed piece of pressed sheet metal and the design is such as to readily lend itself to economical production from that material. The front corners especially have been designed so as to be practical to make and still provide a ledge and an upstanding rim along the side and a pleasing appearance at the front. The entire inside of the tub is coated with a vitreous enamel, not shown in the drawing, which provides a smooth, attractive, easily cleaned, permanent and durable surface. This tub, when installed, may have its weight supported directly on its bottom or, if desired, the weight may be supported by suitable studding projecting up to the under side of the ledge 12 and the seat 15, by suitable brackets secured to the studding of the surrounding walls and having portions projecting under the ledge 12, or by screws or spikes through holes (not shown) in the rim 23 into studs or other framing members. The latter methods of mounting are made possible with a tub made of sheet metal of a reasonable thickness because the serpentine ridge give the suspended bottom of the tub the necessary strength and rigidity. The support of the tub by its edges is also made more practical because of the light weight of the tub as compared to the customary iron ones.

It will be seen from the foregoing that the tub which I have invented attains the objects set out above and results in a commercially practical modern pressed sheet metal tub.

I claim:

1. A one piece pressed sheet metal bathtub having embossed serpentine ridges on its bottom.

2. In a one piece pressed sheet metal bathtub, a bottom having a drain opening, said bottom sloping down towards the drain opening and having embossed serpentine ridges extending generally in the direction of the slope.

3. A pressed sheet metal bathtub comprising a relatively deep basin or sump having surrounding upright side and end walls terminating in outwardly directed generally horizontal rim flanges extending continuously around the four sides of the tub basin, the rim flange at the front side being widened to provide a seat and the end rim flange adjacent thereto having a reinforcing ledge pressed upwards therein, said ledge being extended uninterruptedly into the front rim flange to provide a reinforcement for said seat at the juncture of said front and end rim flanges.

4. A pressed sheet metal bathtub comprising a relatively deep basin or sump having surrounding upright side and end walls terminating in outwardly directed generally horizontal rim flanges extending continuously around the four sides of the tub basin, the rim flange at the front side being widened to provide a seat and the end rim flange adjacent thereto having a reinforcing ledge pressed upwards therein, said ledge being extended uninterruptedly into the front rim flange to provide a reinforcement for said seat at the juncture of said front and end rim flanges, the ledge portion of said end rim flange terminating in an upwardly directed reinforcing flange.

5. A pressed sheet metal bathtub comprising a relatively deep basin or sump having surrounding upright side and end walls terminating in outwardly directed generally horizontal rim flanges extending continuously around the four sides of the tub basin, the rim flange at the front side being widened to provide a seat and the end rim flange adjacent thereto having a reinforcing ledge pressed upwards therein, said ledge being extended uninterruptedly into the front rim flange to provide a reinforcement for said seat at the juncture of said front and end rim flanges, the ledge portion of said end rim

flange terminating in an upwardly directed reinforcing flange and said front rim flange terminating in a depending apron flange pressed inwardly to provide a reinforcing channel structure.

6. A pressed sheet metal bathtub comprising a relatively deep basin or sump having surrounding upright side and end walls terminating in outwardly directed generally horizontal rim flanges extending continuously around the four sides of the tub basin, the rim flange at the front side being widened to provide a seat and the end rim flange adjacent thereto having a reinforcing ledge pressed upwards therein, said ledge being extended uninterruptedly into the front rim flange to provide a reinforcement for said seat at the juncture of said front and end rim flanges and said front rim flange terminating in a depending apron flange pressed inwardly to provide a reinforcing channel structure.

7. A pressed sheet metal bathtub comprising a relatively deep basin or sump having surrounding upstanding side walls terminating in outwardly directed generally horizontal rim flanges extending continuously around the four sides of the tub basin, the rim flanges along three sides of the tub being offset upwards to provide a continuous reinforcing shoulder and a substantially flat ledge terminating in a reinforcing flange, and said shoulder being extended uninterruptedly into the rim flange along the remaining side of the tub to stiffen the same.

8. A pressed sheet metal bathtub comprising a relatively deep basin or sump having surrounding upstanding side walls terminating in outwardly directed generally horizontal rim flanges extending continuously around the four sides of the tub basin, the rim flanges along three sides of the tub being offset upwards to provide a continuous reinforcing shoulder and a substantially flat ledge terminating in a reinforcing flange, and said shoulder being extended uninterruptedly into the rim flange along the remaining side of the tub to stiffen the same, said last-mentioned rim flange being formed with a depending apron terminating in an inturned flange.

9. A pressed sheet metal bathtub comprising a relatively deep basin or sump having surrounding upstanding side walls terminating in outwardly directed generally horizontal rim flanges extending continuously around the four sides of the tub basin, the rim flanges along three sides of the tub being offset upwards to provide a continuous reinforcing shoulder and a substantially flat ledge terminating in a reinforcing flange, and said shoulder being extended uninterruptedly into the rim flange along the remaining side of the tub to stiffen the same, said last-mentioned rim flange being widened intermediate its ends to provide a seat and being bent downwardly and inwardly to provide a continuous reinforcing channel structure from one end of the tub to the other.

10. A bathtub pressed from a single metal sheet and comprising a deep drawn basin having surrounding upright side walls turned outwardly along their upper edges to provide a generally horizontal rim flange offset upwards within its width to provide a reinforcing shoulder extending continuously around all four corners of the tub, the rim flange along the front side of the tub being stiffened by said shoulder formation and terminating in a depending apron flanged inwardly along its lower edge to provide a front rim for the tub of channel formation.

11. A bathtub pressed from a single metal sheet and comprising a deep drawn basin having surrounding upright side walls turned outwardly along their upper edges to provide a generally horizontal rim flange offset upwards within its width to provide a reinforcing shoulder extending continuously around all four corners of the tub, the rim flange along the front side of the tub being stiffened by said shoulder formation and terminating in a depending apron flanged inwardly along its lower edge to provide a front rim for the tub of channel formation, and said rim flanges along a plurality of other sides of the tub being bent upwards to provide a stiffening flange.

12. A pressed metal bathtub comprising a relatively deep basin or sump having surrounding upstanding side walls pressed along their upper edges to provide outwardly directed generally horizontal rim flanges extending continuously around the four sides of the tub basin, the rim flanges along three sides of the tub being pressed upwards between their side edges to provide a continuous reinforcing shoulder and a substantially flat raised ledge, said shoulder being extended uninterruptedly into the rim flange along the remaining side of the tub to stiffen the same, and said last-mentioned rim flange terminating in a depending inwardly flanged apron providing a rim of channel formation connecting the opposite ends of the tub.

13. A pressed metal bathtub comprising a relatively deep basin or sump having surrounding upstanding side walls pressed along their upper edges to provide outwardly directed generally horizontal rim flanges extending continuously around the four sides of the tub basin, the rim flanges along three sides of the tub being pressed upwards between their side edges to provide a continuous reinforcing shoulder and a substantially flat raised ledge, said shoulder being extended uninterruptedly into the rim flange along the remaining side of the tub to stiffen the same, and said last-mentioned rim flange terminating in a depending inwardly flanged apron providing a rim of channel formation connecting the opposite ends of the tub, said tub having its bottom pressed to provide raised reinforcing ribs extending longitudinally of the tub and forming therebetween drain channels sloping toward one end of the tub.

14. A pressed metal bathtub comprising a relatively deep basin or sump having surrounding upstanding side walls pressed along their upper edges to provide outwardly directed generally horizontal rim flanges extending continuously around the four sides of the tub basin, the rim flanges along three sides of the tub being pressed upwards between their side edges to provide a continuous reinforcing shoulder and a substantially flat raised ledge, said shoulder being extended uninterruptedly into the rim flange along the remaining side of the tub to stiffen the same, and said last-mentioned rim flange terminating in a depending inwardly flanged apron providing a rim of channel formation connecting the opposite ends of the tub, said tub having its bottom pressed to provide raised reinforcing ribs of serpentine formation extending longitudinally of the tub and forming therebetween drain channels sloping toward one end of the tub.

15. A pressed sheet metal bathtub having its bottom pressed to provide raised anti-skid ribs extending longitudinally of the tub and forming

therebetween channels sloping toward one end of the tub.

16. A pressed sheet metal bathtub having its bottom pressed to provide raised anti-skid ribs extending longitudinally of the tub and forming therebetween channels sloping toward one end of the tub, said ribs having substantially flat top surfaces.

17. A pressed sheet metal bathtub having embossed serpentine ridges on its bottom.

18. In a pressed sheet metal bathtub, a bottom having a drain opening, said bottom sloping down towards the drain opening and having embossed serpentine ridges extending generally in the direction of the slope.

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