June 28, 1938. H. G. COORDES 2,122,247

SHEET METAL BATHTUB

Filed Jan. 7, 1936 4 Sheets-Sheet 1

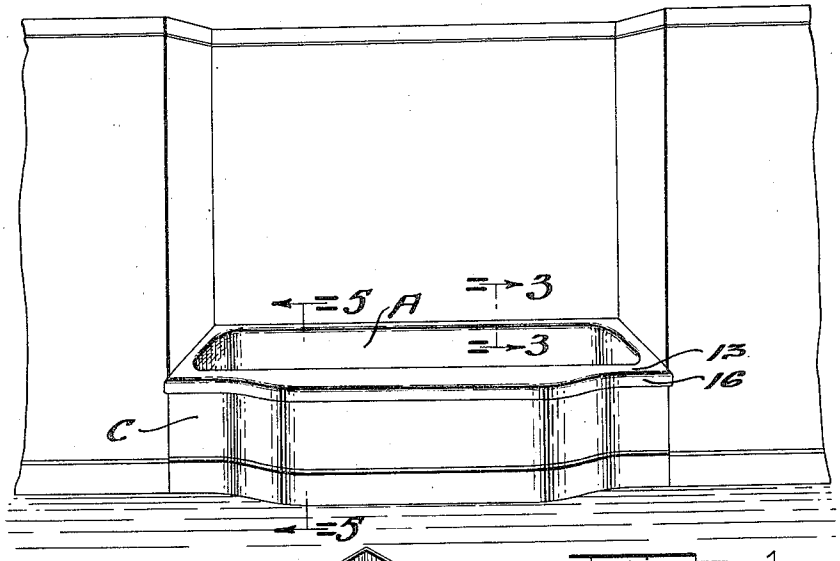

Fig. 1.

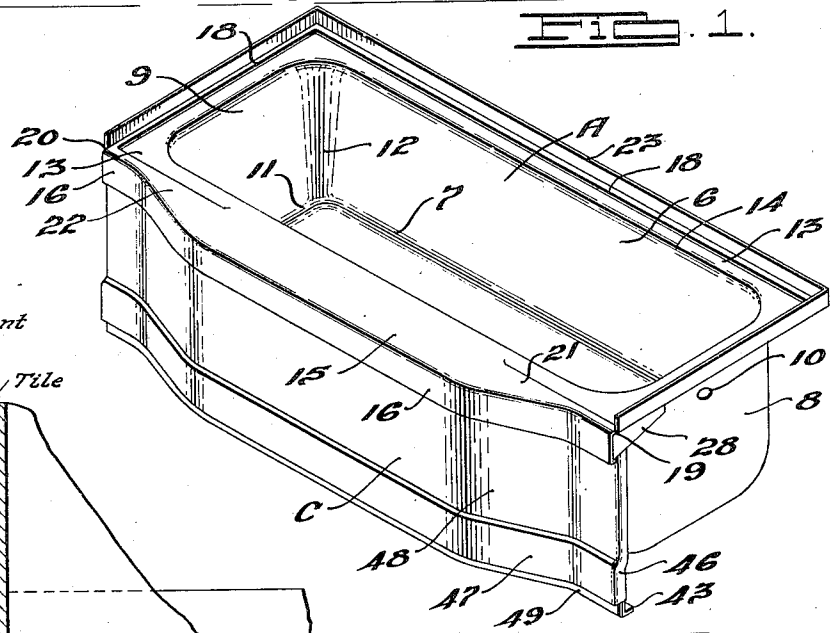

Fig. 2.

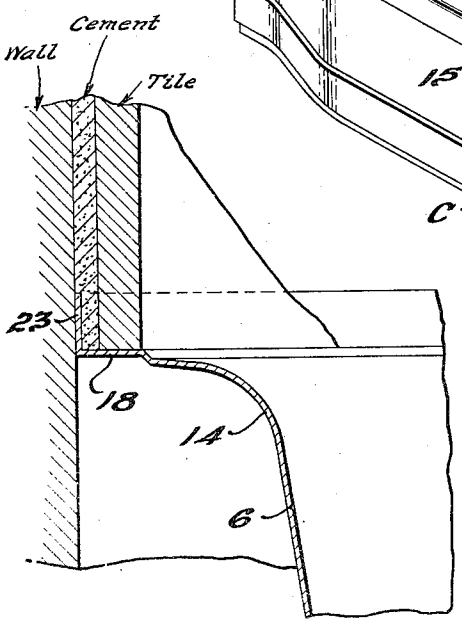

Fig. 3.

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SHEET METAL BATHTUB

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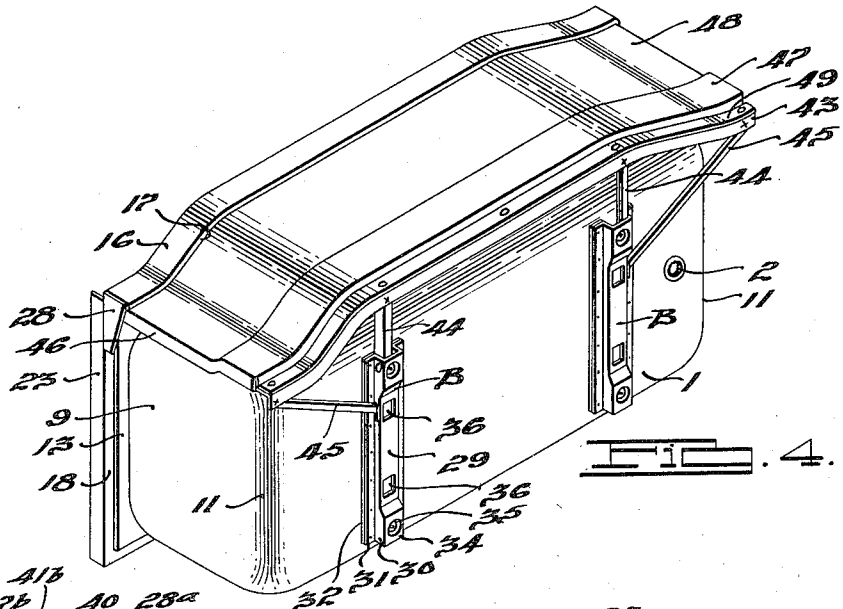

FIG. 4.

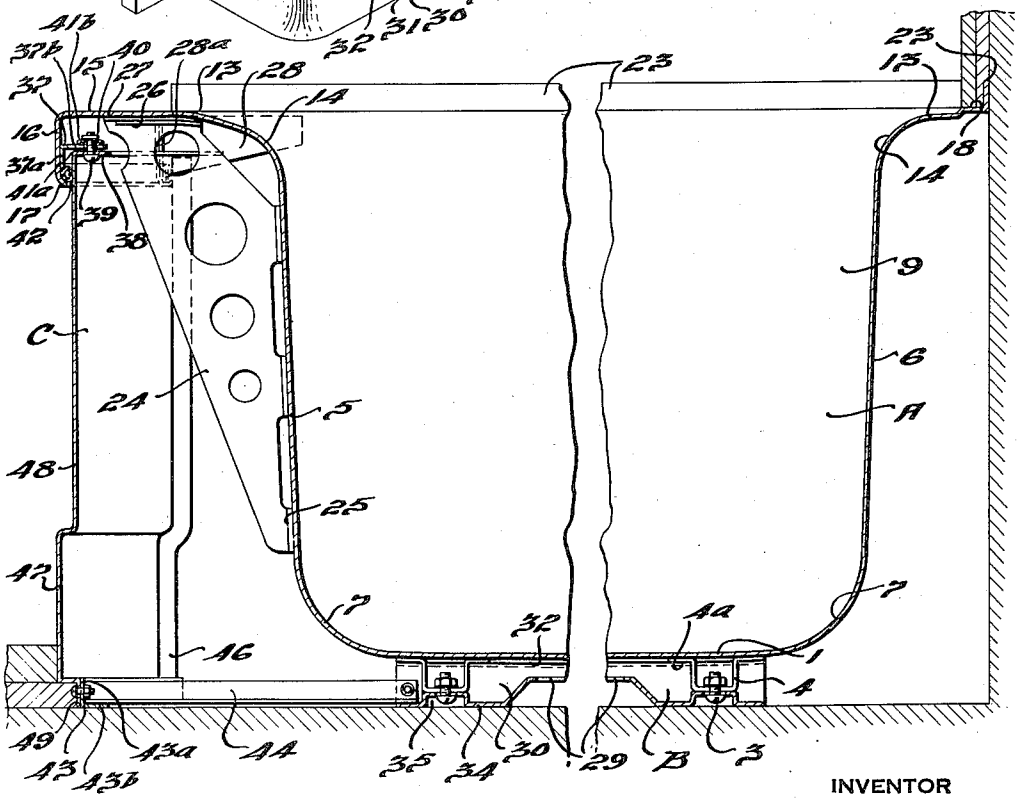

FIG. 5.

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SHEET METAL BATHTUB

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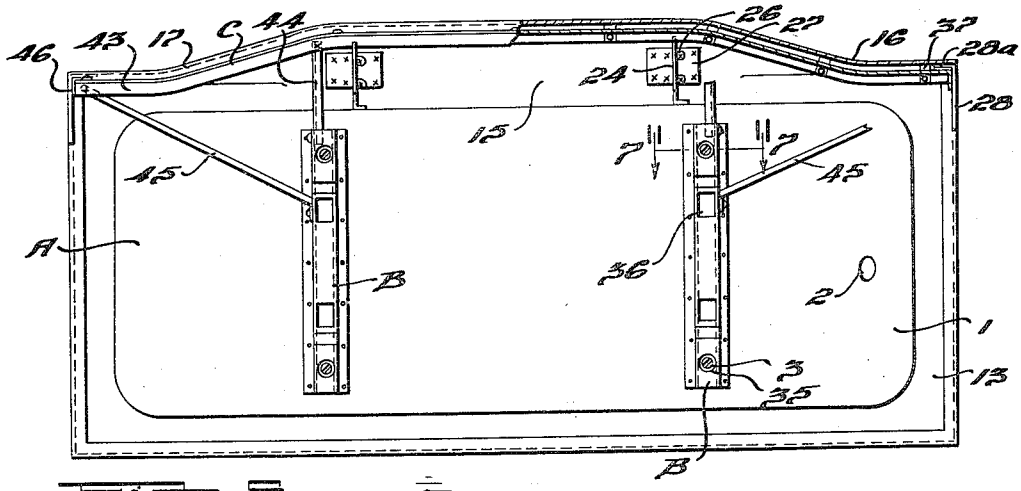

FIG. 6.

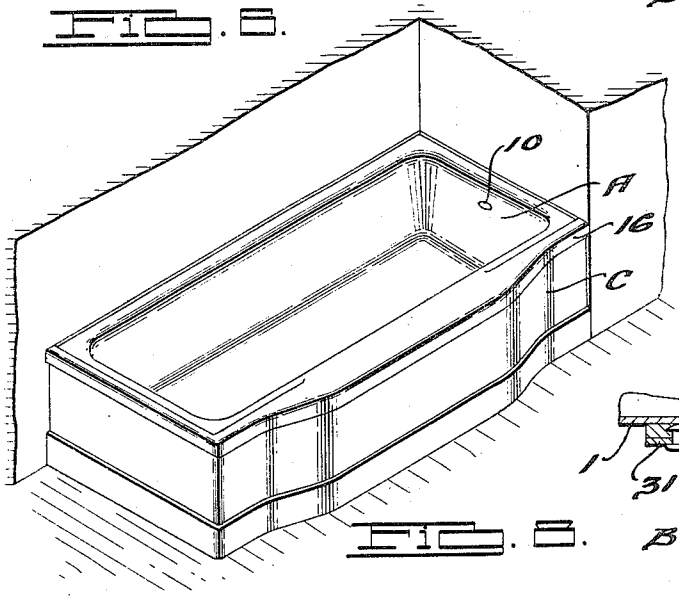

FIG. 8.

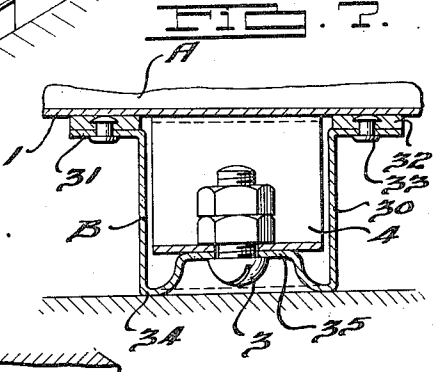

FIG. 7.

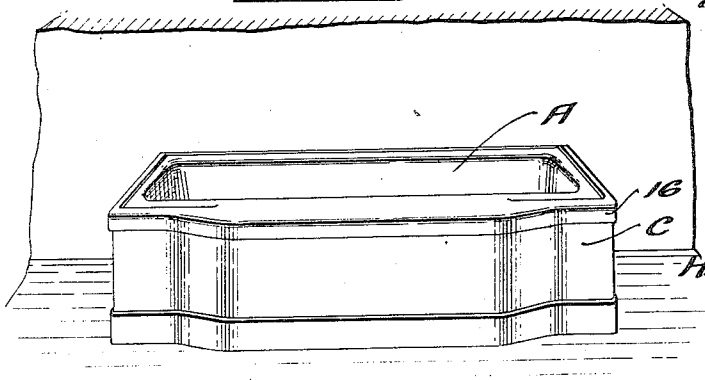

FIG. 9.

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SHEET METAL BATHTUB

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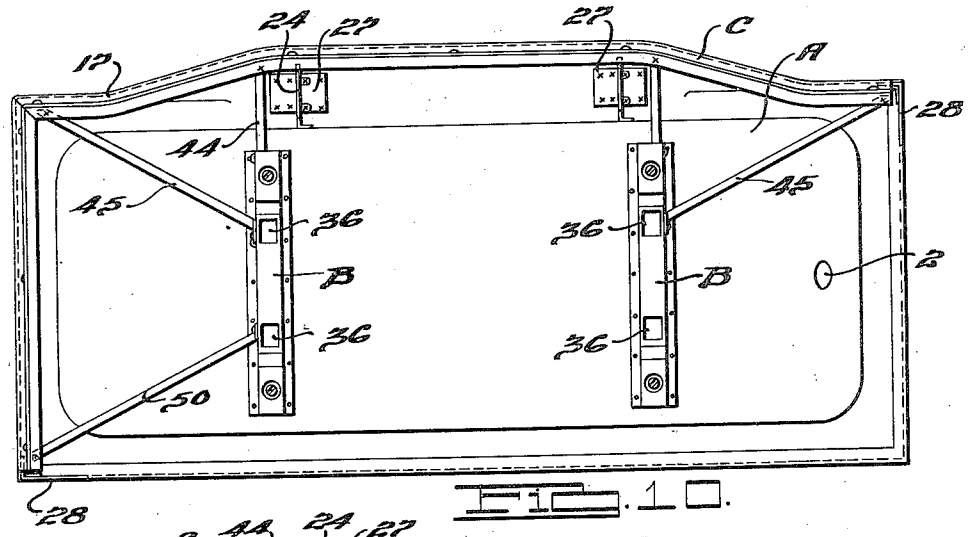

FIG. 10.

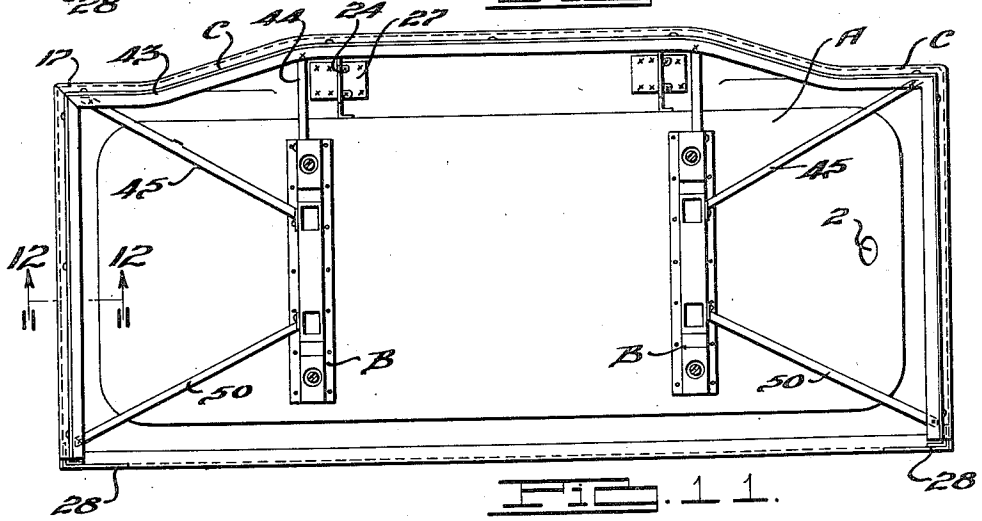

FIG. 11.

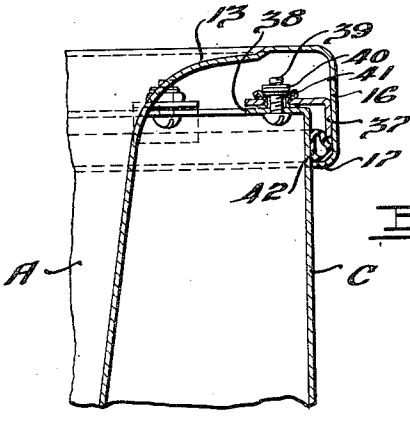

FIG. 12.

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UNITED STATES PATENT OFFICE

2,122,247

SHEET METAL BATHTUB

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Application January 7, 1936, Serial No. 57,960

14 Claims. (Cl. 4—173)

This invention relates to bathtubs and particularly, although not exclusively, to that type of bathtub known as a built-in tub by reason of the fact that frequently in the installation of the tub one or more sides thereof are set into recesses in the bathroom or are otherwise concealed by portions of the interior bathroom walls. The invention is especially applicable to bathtubs pressed or drawn from sheet metal, such as sheet steel, and preferably adapted to receive a protective as well as ornamental surface finish of vitreous enamel. In the preferred construction the bathtub proper, comprising a single walled deep drawn basin, is formed integrally and seamlessly from a single sheet of metal and in the fabrication of the tub one or more sides thereof which, after installation, are exposed to view and not concealed by the wall of the room are formed with an upper rim or ledge terminating in a depending flange or apron.

An object of the invention is to provide a tub of the single walled basin type, such as above referred to, having pressed metal exterior panelling extending along the exposed upright wall or walls of the basin and concealing the same, the panelling preferably being so constructed and installed as to provide in conjunction with the tub proper substantially a double side-walled basin.

A further object of the invention is to provide a pressed metal bathtub, particularly of the built-in type, having a double side wall construction at one or more exposed sides of the tub.

Another object of the invention is to provide a double side-walled metal bathtub composed of a plurality of sheet metal stampings adapted to be installed together into a unitary structure.

A further object of the invention is to provide a pressed metal bathtub terminating at its upper edge or edges in a rolled rim or horizontal ledge and in a full depending apron at any exposed side of the tub when installed.

Another object of this invention is to provide a sheet or pressed metal tub which is braced and supported at the places where loads are applied so that the tub will be rigid in service without having to be made of excessively heavy metal.

Another object of this invention is to provide a pressed metal bathtub having an apron formed from a sheet or blank of metal separate from the main part of the tub and secured to it in such a way that there is no danger of cracking or chipping the enamel near the fastening means.

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

Fig. 1 is a perspective view showing one embodiment of the invention and illustrating the tub built into or installed in a recess in a bathroom.

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

Fig. 3 is a section on the line 3—3 of Fig. 1 taken in the direction of the arrows.

Fig. 4 is a perspective view of the tub shown in Fig. 1 tilted onto its back to show the bottom.

Fig. 5 is a section on an enlarged scale on the line 5—5 of Fig. 1 taken in the direction of the arrows.

Fig. 6 is a bottom plan view of the tub shown in Fig. 1 with part of the apron and part of the depending rim at the front of the tub broken away.

Fig. 7 is a section on the line 7—7 in Fig. 6 taken in the direction of the arrows.

Fig. 8 is a perspective view illustrating a second embodiment of the invention, the tub in this instance being built into or installed in a corner of a bathroom.

Fig. 9 is a perspective view illustrating a third embodiment of the invention, the tub in this instance being built into or installed against a single wall of a bathroom.

Fig. 10 is a bottom plan view of the tub shown in Fig. 8.

Fig. 11 is a bottom plan view of the tub shown in Fig. 9.

Fig. 12 is a section on the line 12—12 of Fig. 11 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 drawings, 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 of limitation, and it is

not intended to limit the invention claimed herein beyond the requirements of the prior art.

In the drawings I have illustrated, by way of example, three present preferred forms of the invention applicable to bathtubs of the built-in type.

Referring to the embodiment illustrated in Figs. 1 to 7 inclusive, the body A of the tub comprises a generally rectangular substantially horizontal bottom 1 sloping slightly towards the end in which the drain outlet 2 is situated and resting on a pair of supporting saddles B, being secured to the saddles by means of U-shaped brackets 4 having the flanges 4a thereof spot welded as indicated to the bottom of the tub, the brackets in turn being bolted at 3 to the saddles.

The tub comprises vertical or upright sides 5 and 6 extending longitudinally of the tub at each side of the bottom, being connected to it by rounded corners 7 which merge smoothly and seamlessly into the surface of the bottom and the sides. Vertical or upright end sides 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 and seamlessly into the bottom and ends of the tub. The interior of the tub is thus, except for the drain and filler openings, 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 ledge 15. The edge of the flange forming the seat 15 curves down vertically to form a short depending apron flange 16, and its lower edge 17 is flanged or turned in towards the tub to reenforce the rim 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 in the plane of the flat upper surface of the seat flange 13 at the front of the tub and merge into it. The metal of the ledge 18 is bent upward around three sides of the tub in this embodiment to provide a short upstanding rim 23 extending around the outer edge of the ledge along the ends and back of the tub and terminating at the front corners 19 and 20.

In its preferred form the entire tub proper, above described, is formed of a single non-jointed sheet of metal pressed, drawn and flanged to provide a seamless unit adapted to take readily a coating of enamel. The construction, it will be seen, is such as to lend itself to economical production from sheet metal by due operations. Suitable sheet steel is preferably employed, permitting all exposed surfaces of the tub to be coated with a vitreous enamel, providing a smooth, attractive, easily cleaned, permanent and durable surfacing.

The part of the flange 13 extending across the front of the tub and forming the seat 15 is reenforced and supported by approximately triangular brackets 24. The horizontal and vertical edges of the brackets are provided with lugs, the lugs 25 at the sides of the brackets being spot welded to the side or front wall 5 of the tub and the lugs 26 at the tops being spot welded to small reenforcing plates 27 spot welded to the underside of the seat 15. Because of the depth of the brackets a load on the seat 15, such as the weight of a person sitting thereon, is well distributed over the front of the tub and causes no appreciable distortion.

The corners of the flange 13 and the ends of the apron section 16 at the front corners 19 and 20 of the tub are reenforced by vertical gussets 28 whose upper edges are welded to the underside of the flange 13 directly under the ends of the upstanding rim 23 and whose forward ends 28a are bent and spot welded to the back of the ends of the depending apron 16. The seat flange 15 and the depending apron along the front of the tub form a rigid section like an angle iron which is thus, through the gussets 28, securely and rigidly fastened to a similar rigid angle-iron-like portion formed by the flange 13 and the upstanding rim 23 around the other three sides of the tub.

The two supporting saddles B are substantially the same, the only difference being that the saddle near the drain 2 is a little lower than the other to support the sloping bottom of the tub at the right angle. Each saddle comprises a horizontal web or bottom 29, two vertical sides 30 and outwardly directed flanges 31 at the tops of the sides, the flanges being slightly curved from end to end to fit the slight transverse curve in the bottom of the tub. The tops of the flanges are covered with strips of soft material 32, such as felt, other fibrous material, or lead, secured to the flanges by countersunk split rivets 33. The soft cushioning material serves both to distribute the weight of the tub uniformly along the saddles and to deaden or damp out the sound producing vibrations of the sheet metal tub when the tub is struck, as when a bar of soap is dropped onto it.

The ends of the bottoms of the saddles are lower than the central portion to form hollow feet 34 adapted to rest on the floor. The centers of the feet are embossed upwardly to form recesses 35 for the heads of the bolts 3 by means of which the saddles B are secured to the brackets 4 which project down into them from the bottom of the tub, see Fig. 7.

A pair of openings 36 are provided in the bottom of the saddles B between the feet 34, the purpose of these openings being to allow access to the inner faces of the sides 30 of the saddles for putting on and tightening nuts on bolts which hold some of the bracing members. Two openings 36 in each saddle, instead of only one, are provided so that the same design of saddles can be used for the other forms of the invention, as will appear below.

In this embodiment of the invention, see particularly Fig. 2, the front side of the tub basin is double-walled, the outer wall being formed by the depending apron or panel C. The upper edge of this panel projects above the flanged edge 17 of the tub apron 16 and is concealed behind the latter, being offset or set back from the face of the apron 16 so that the edge of the tub can be firmly grasped by a person getting in or out of the tub. The means for fastening the apron C to the depending apron or rim 16 are concealed behind the apron or rim and comprise angle brackets 37 having their vertical legs 37a spot welded to the back of the depending rim 16 and having their horizontal legs 37b projecting back under the flange 15 at the top of the front of the tub. The

top of the apron C is formed into a backwardly projecting horizontal flange 38 which is fastened to the horizontal legs 37b of the brackets 37 by means of bolts 39 and nuts 40.

Before the apron is fastened to the brackets 37, a flanged sleeve 41 of soft material such as rubber, felt or other fibrous material or lead is placed in each bolt hole in the brackets. Then, when the parts are assembled, the flanges 41a of the soft sleeves lie between the brackets and the apron flange and most of the body 41b of each of the soft sleeves is squeezed down under the nuts 40. Thus, the apron is completely insulated from the brackets by soft material so that there will be no possibility of squeaks or other noises caused by relative movement of the apron C and flange 13 when a heavy person sits on the edge of the tub. The sleeves 41 also dampen the sound creating vibrations caused when the tub or apron is struck. Further deadening of the vibrations is secured by a piece of rubber tubing 42 interposed between the bottom of the depending rim 16 and the face of the apron C, the tubing being supported by the inturned lower edge 17 of the rim 16 and forming a sealing means.

The lower edge 49 of the apron or panel C is bolted to the vertical flange 43a of a horizontal piece of angle iron 43 whose other flange 43b is adapted to rest on the floor. The angle iron 43 is braced to the tub supporting saddles B by means of a pair of short straight angle iron braces 44 and a pair of longer diagonal angle iron braces 45 extending to the ends of the panel C. The outer ends of the braces 44 and 45 are welded on top of the bottom flange of the angle iron 43 at the base of the panel and their inner ends are bolted to the sides of the saddles B, the short braces 44 being bolted on at the end of the saddle where the nut on the inside of the saddle can be held through the open end of the saddle and the longer diagonal braces 45 being bolted on near the access holes 36 in the bottoms of the saddles.

The side edges of the panel C are stiffened by being bent back at opposite ends into the vertical flanges 46 and the central part of the panel stiffened vertically by being offset or bowed forwards to follow the outline of the seat flange 15 and by having a baseboard like portion 47 offset forwards of the upper portion 48 and forwards of the lower edge 49. Thus, the area of the apron or panel C is broken up into a plurality of flat areas at an angle to each other and bracing each other so that the apron as a whole and the several sections of it are much stiffer than a plain flat apron would be, besides being more pleasing in appearance.

The second and third embodiments of the invention, shown in Figs. 8 and 10 and in Figs. 9, 11 and 12 respectively, are similar to the first, the only difference being that the depending rim 16 on the flange 13, the panel or apron C, the resilient tubing 42 and the angle iron 43 at the base of the apron C are continued from the front around one end of the tub in the second form and around both ends of the tub in the third form, the upstanding rim 23 terminating and being connected to the depending rim 16 through gussets 28 at whichever corners of the tub the apron terminates. Additional diagonal braces 50 extending to the ends of the angle iron 43 at the back of the tub are provided to brace the ends of the apron, the access holes 36 in the saddles B allowing the braces to be fastened in the same way as the front diagonal braces 45. Thus, the second form of the invention provides a tub adapted to be built into a corner of a bathroom and the third form provides a tub adapted to be built in or against a single wall. If desired, a fourth form, with the panelling or apron extending around all four sides, may be provided as a free-standing tub. It will be understood that the panel or apron C in each of the embodiments herein illustrated is preferably stamped or pressed from a single sheet of metal, such as sheet steel of a suitable kind permitting its exposed surfaces to be coated with a vitreous enamel in the same manner as the tub proper.

I claim:—

1. A bathtub comprising a pressed metal basin having upright side walls, one of said walls having an outwardly extending rim widened to provide a seat ledge and terminating in a depending flange, brace members secured to the underside of said ledge and to said last named wall, and a pressed metal panel disposed in front of said wall and supported between the rim and the bottom of the tub.

2. A pressed sheet metal bathtub comprising a main tub portion having a horizontal rim provided with a depending flange at one side thereof and a bracket extending between the rim and the wall of the tub.

3. In a pressed sheet metal bathtub, a main tub portion, a flange surrounding the main tub portion, the flange on one side of the tub being adapted to have its edge built into a wall and the flange on an adjacent side having a depending rim, and a vertical sheet metal bracing member extending under and secured to the edge of the first named flange and having one end secured to the back of said depending rim.

4. The combination of a pressed sheet metal bathtub having an outwardly extending rim provided with a depending flange, a horizontally extending bracket secured to the back of the flange and an apron secured to the bracket.

5. The combination of a pressed sheet metal bathtub having an outwardly extending rim provided with a depending flange inturned along its lower edge, a horizontally extending bracket secured to the back of the flange above the lower edge thereof, a depending apron secured to the bracket, and an elongated resilient member between the flange and the apron and supported by the inturned edge of the flange.

6. The combination of a pressed sheet metal bathtub having an outwardly extending rim provided with a depending flange, a horizontally extending bracket spot welded to the back of the flange, and an upright apron having a horizontal flange at its top secured to the bracket.

7. The combination of an enameled pressed sheet metal bathtub having an outwardly extending rim provided with a depending flange, a plurality of horizontally extending brackets secured to the back of the flange, an enameled pressed sheet metal apron having a horizontal flange at its top, and means for securing the apron flange to the brackets comprising bolts extending through holes in the apron flange and the brackets and relatively soft spacing members around the bolts and extending between the apron flange and the brackets.

8. The combination of an enameled pressed sheet metal bathtub having an outwardly extending rim provided with a depending flange, horizontally extending brackets secured to the back of the flange, an enameled pressed sheet metal apron having a horizontal flange at its top,

and means for securing the flange of the apron to the brackets comprising bolts extending through holes in the apron flange and the brackets and relatively soft spacing members having tubular portions embracing the bolts and extending through the bolt holes in the brackets and having portions interposed between the heads of the bolts and the top of the brackets.

9. In a pressed sheet metal bathtub, a main tub portion, an outwardly turned marginal rim surrounding the main tub portion, the rim along one side of the tub having an upstanding flange adapted to be built into a wall and the rim along an adjacent side having a depending apron, and a bracing member extending beneath the upstanding flange and secured to the underside of the rim, said bracing member also being secured to the end of the depending apron.

10. A bathtub formed from a single sheet of metal and comprising a deep drawn basin having an upright side wall thereof terminating in an outwardly extending rim provided with a depending apron, and a pressed metal panel extending downwardly from said apron in spaced relation to said wall and concealing the same, said apron having an inturned flange along its lower edge effective to offset the face of the panel inwardly with respect to the face of said apron.

11. A bathtub comprising a seamless pressed metal tub basin having surrounding side walls terminating in a continuous seamless outturned rim terminating along at least one side in a depending apron turned inwardly to provide a reenforced channel-like rim structure, and a bracket extending from the rim structure to a wall of the tub basin and secured thereto.

12. A bathtub comprising a seamless pressed metal tub basin having surrounding side walls terminating in a continuous seamless outturned rim terminating along at least one side in a depending apron turned inwardly to provide a reenforced channel-like rim structure, a bracket extending from the rim structure to a wall of the tub basin and secured thereto, and a metal panel extending downwardly from the rim structure and concealing said bracket and wall.

13. A bathtub comprising a tub basin having surrounding side walls and pressed from a single metal sheet, one of said walls having an outturned rim terminating in a depending apron turned inwardly along its lower edge to provide a reenforced channel-like rim structure, said outturned rim being widened to provide a seat ledge, bracing means extending between the ledge and tub wall, and a vertical pressed metal panel concealing said bracing means and wall.

14. A bathtub comprising a tub basin having surrounding side walls and pressed from a single metal sheet, one of said walls having an outturned rim terminating in a depending apron turned inwardly along its lower edge to provide a reenforced channel-like rim structure, said outturned rim being widened to provide a seat ledge, bracing means extending between the ledge and tub wall, a vertical pressed metal panel concealing said bracing means and wall, and bracing means for supporting the ends of said rim.

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