June 22, 1943. C. H. WIDMAN 2,322,407

TUB CONSTRUCTION

Original Filed Oct. 19, 1939 4 Sheets-Sheet 1

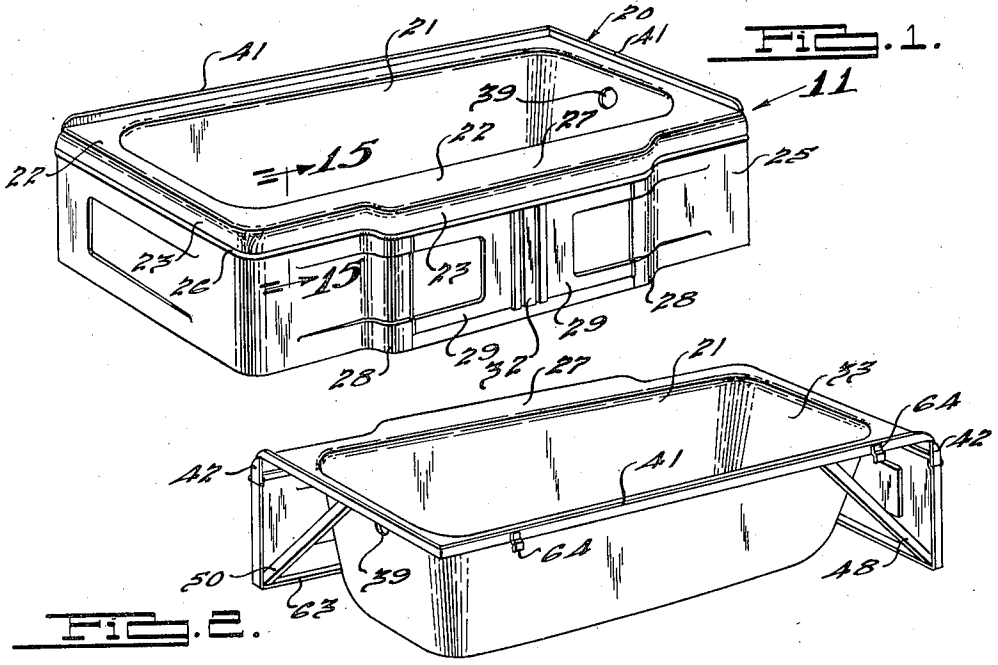

FIG. 1.

FIG. 2.

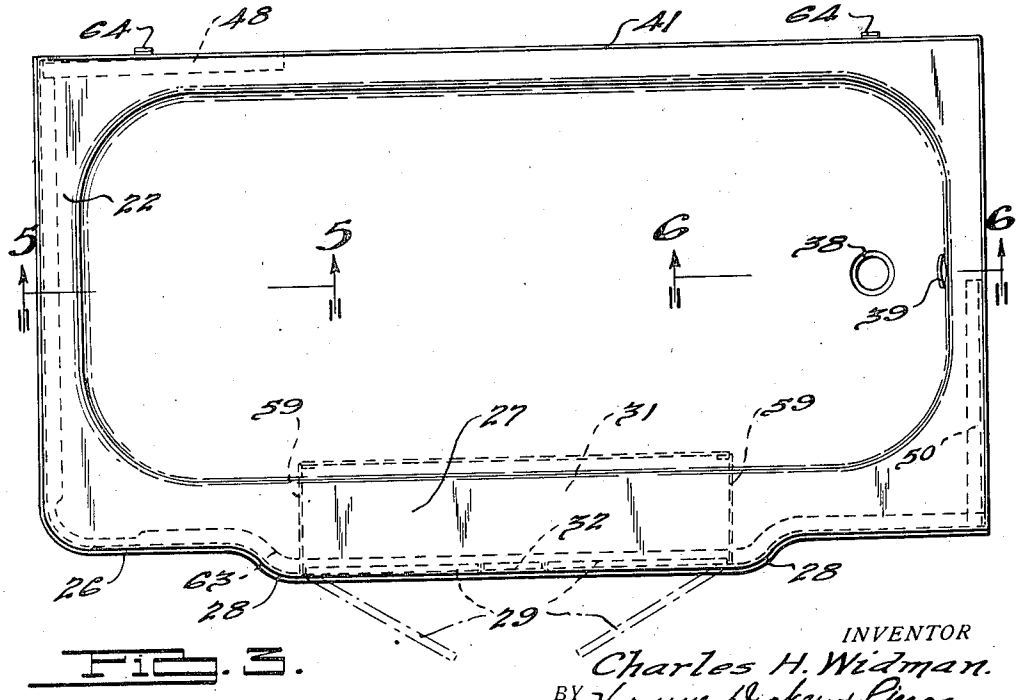

FIG. 3.

INVENTOR
Charles H. Widman.
BY Norris, Dickey & Pierce
ATTORNEYS.

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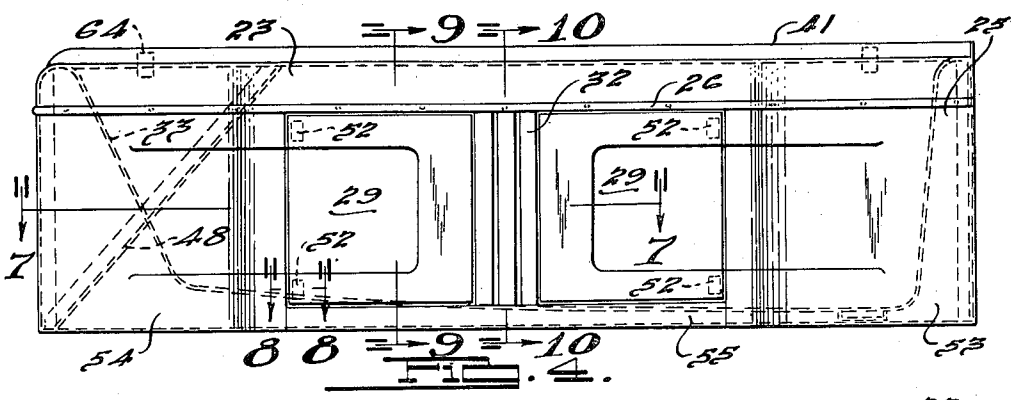

FIG. 4.

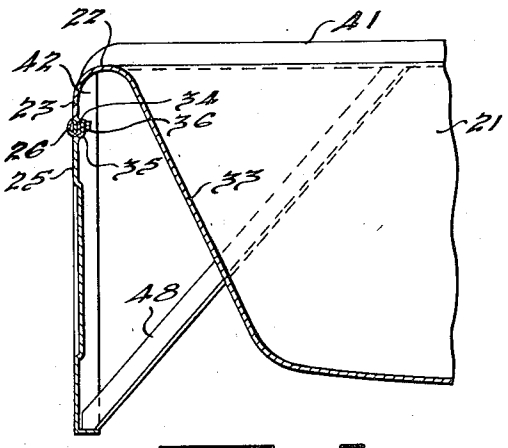

FIG. 5.

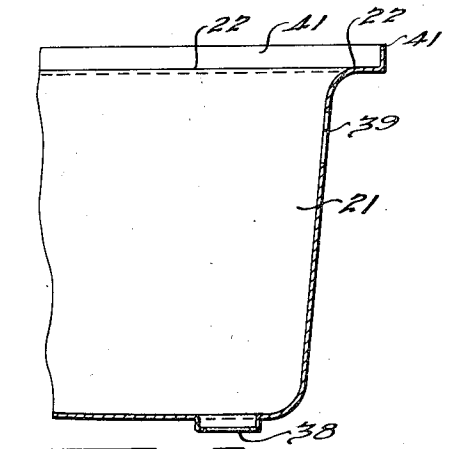

FIG. 6.

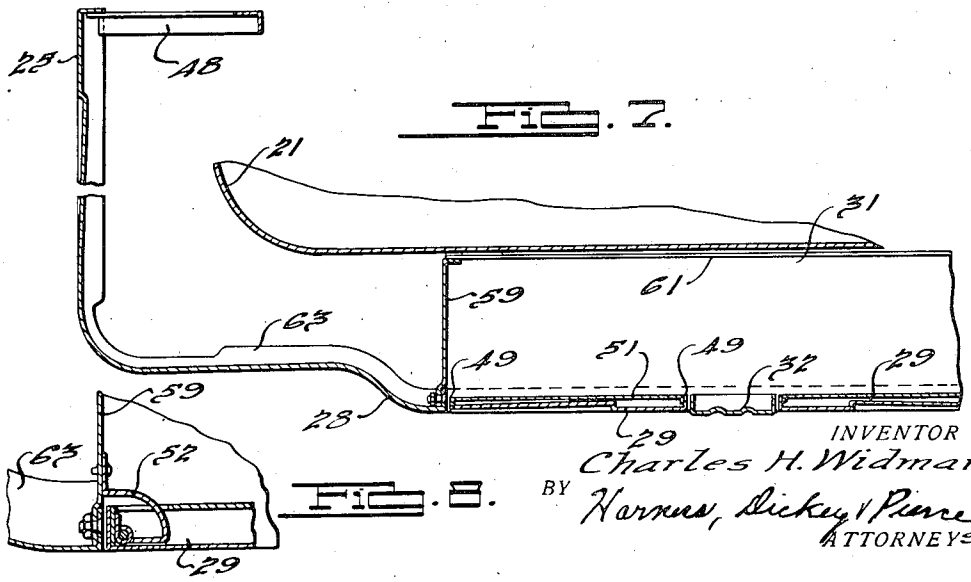

FIG. 7.

FIG. 8.

INVENTOR
Charles H. Widman.
BY Harness, Dickey & Pierce
ATTORNEYS.

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TUB CONSTRUCTION

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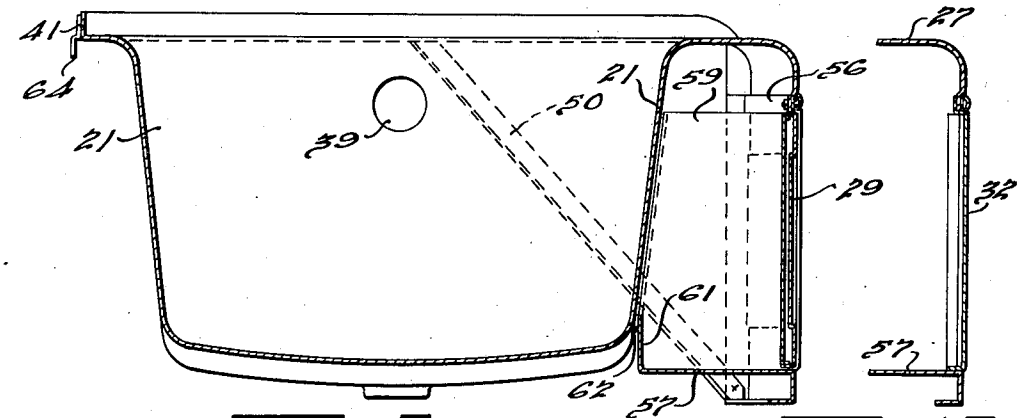

Fig. 9. Fig. 10.

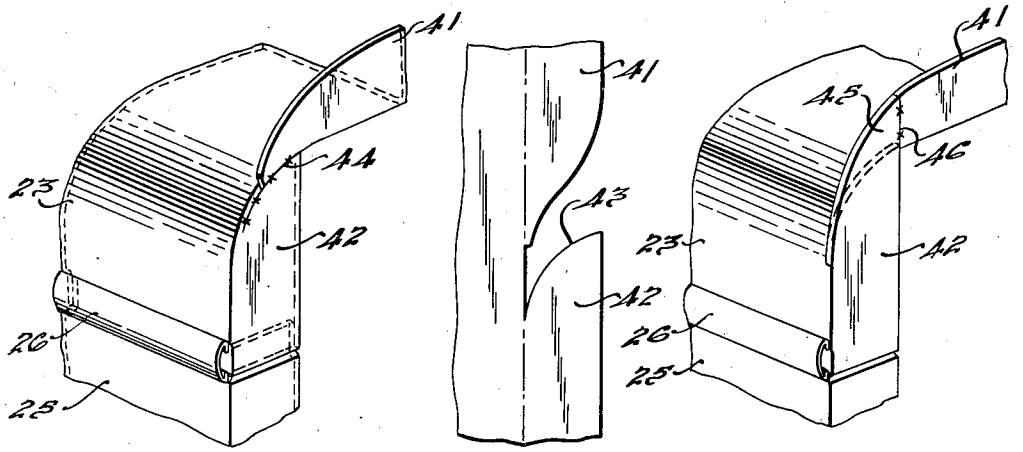

Fig. 11. Fig. 12. Fig. 13.

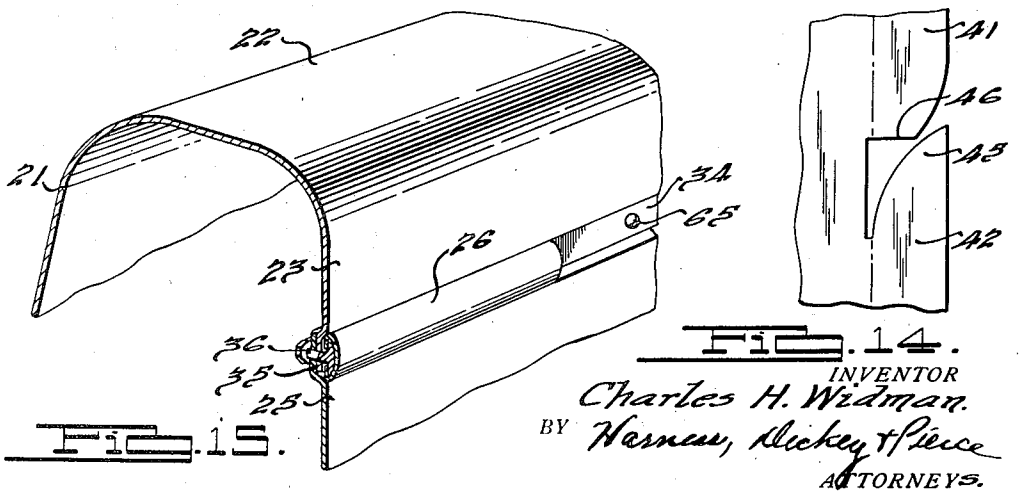

Fig. 15. Fig. 14.

INVENTOR
Charles H. Widman.
BY Harness, Dickey & Pierce
ATTORNEYS.

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TUB CONSTRUCTION

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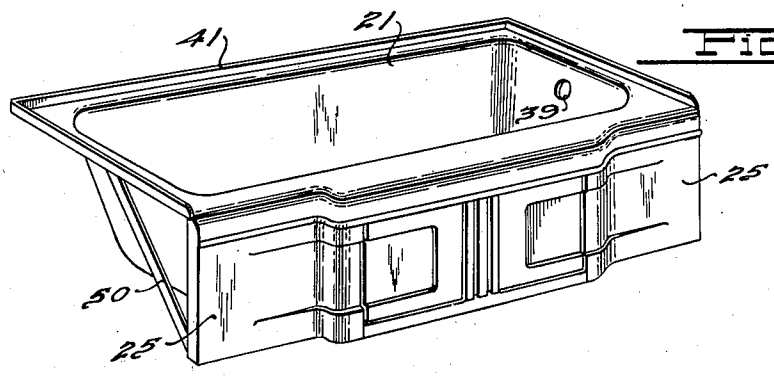
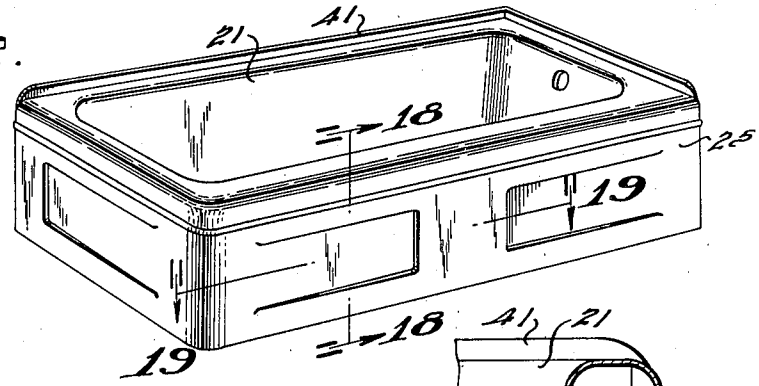
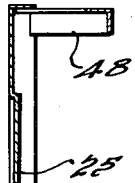


FIG. 16.

FIG. 17.





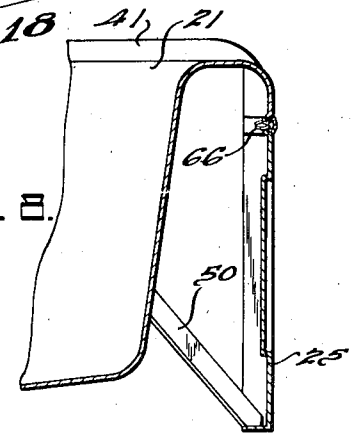
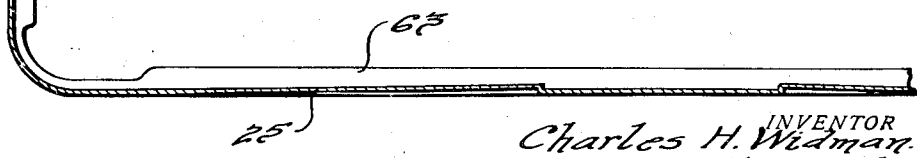


FIG. 18.

FIG. 19.



INVENTOR
Charles H. Widman.
BY Harness, Dickey & Pierce
ATTORNEYS.

Patented June 22, 1943 2,322,407

UNITED STATES PATENT OFFICE

2,322,407

TUB CONSTRUCTION

Charles H. Widman, Detroit, Mich., assignor to The Murray Corporation of America, Detroit, Mich., a corporation of Delaware

Original application October 19, 1939, Serial No. 300,227. Divided and this application November 28, 1940, Serial No. 367,556

6 Claims. (Cl. 4—173)

This application is a division of application, Serial No. 300,227, filed October 19, 1939, for Tub construction, the claims of which are the sole invention of the present applicant.

My invention relates to bath tubs, and particularly to bath tubs of the sheet metal type, embodying new and novel constructions.

While bath tubs heretofore were constructed of sheet metal, difficulty has always been experienced in drawing the tub portion to provide a desirable slope to the back and to shape the various portions in desirable blending curvatures. Heretofore, an apron was attached to the skirt on the tube flange by butt welding, which required a metal finishing operation to produce a smooth surface. When the apron was overlapped with the skirt an offset construction was provided which had certain objectionable features.

In practicing my invention, I draw the body of the tub into desired form and attach to the skirt of the flange, adjacent to the top of the tub, a depending apron which is spot welded or otherwise fixed thereto and cover the joint therebetween with a molding. The molding may be of any well known type and is preferably shaped to receive the heads of bolts or attaching fasteners which are secured in apertures through the seam of the joint. This eliminates the butt welding as well as as the metal finishing operation, which is expensive. The flange at the back wall of the tub extends upwardly while that of the downwardly projecting skirt portion is flanged inwardly. The flanges abut each other and are welded together to strengthen the corner at which a separate gusset plate was heretofore employed. The inwardly and outwardly projecting flanges are so developed as to abut along their edges and when welded together, provide material strength at the corners.

In the seat type of tub, that is to say, the tub in which the top flange is extended to form a seat, the apron is divided and provided with a pair of doors. The doors are mounted on hinges to open outwardly to expose shelf space provided inwardly of the front wall of the apron. The compartment thus provided back of the apron adds additional storage space within the bath room and is unique in that such space is available to an occupant of the tub.

Accordingly, the main objects of my invention are: to construct bath tubs from sheet metal having a depending apron which is interrupted by an ornamental molding strip; to secure an apron to the depending skirt at the edge of the top flange of a bath tub and cover the joint therebetween with a molding strip; to spot weld an apron to the depending skirt of a bath tub and cover the joint therebetween, after a porcelain enamel operation, with a finish strip of molding; to provide between sections of an apron of a bath tub for enclosing a compartment provided back of said doors; to have the edge of the top flange about a bath tub bent upwardly and mated with the inwardly bent edge of a depending skirt in abutting aligned relation and welded to provide material strength between the skirt and flange; to attach the molding and the apron sections to the skirt of the bath tub by bolts, the heads of which are recessed within the molding; and in general, to provide a bath tub of the sheet metal type having a depending apron and ornamental molding bolted, spot welded, or otherwise secured thereto, which is simple in construction and economical of manufacture.

Other objects and features of novelty of my invention will be either specifically pointed out or will become apparent when referring, for a better understanding of my invention, to the following description taken in conjunction with the accompanying drawings, wherein:

Figure 1 is a front perspective view of a bath tub embodying features of my invention;

Fig. 2 is a rear perspective view of the bath tub illustrated in Fig. 1;

Fig. 3 is an enlarged top plan view of the bath tub illustrated in Fig. 1;

Fig. 4 is a front view in elevation, of the bath tub illustrated in Fig. 3;

Fig. 5 is an enlarged sectional view of the structure illustrated in Fig. 3, taken on the line 5—5 thereof;

Fig. 6 is an enlarged sectional view of the structure illustrated in Fig. 3, taken on the line 6—6 thereof;

Fig. 7 is an enlarged broken sectional view of the structure illustrated in Fig. 4, taken on the line 7—7 thereof;

Fig. 8 is an enlarged sectional view of the structure illustrated in Fig. 4, taken on the line 8—8 thereof;

Fig. 9 is an enlarged sectional view of the structure illustrated in Fig. 4, taken on the line 9—9 thereof;

Fig. 10 is an enlarged sectional view of the structure illustrated in Fig. 4, taken on the line 10—10 thereof;

Fig. 11 is an enlarged perspective view of a corner of the tub illustrated in Fig. 1, as viewed from point 11 thereof;

Fig. 12 is a view of the sheet metal as developed to produce the corner illustrated in Fig. 11;

Fig. 13 is a view of structure similar to that illustrated in Fig. 11, showing a modified form thereof;

Fig. 14 is a view of the sheet metal as developed to produce the corner illustrated in Fig. 13;

Fig. 15 is an enlarged broken sectional view of the structure illustrated in Fig. 1, taken on the line 15—15 thereof;

Fig. 16 is a view of structure similar to that illustrated in Fig. 1, showing an open end tub;

Fig. 17 is a view of structure similar to that illustrated in Fig. 1, showing a further form which my invention may assume;

Fig. 18 is an enlarged sectional view of the structure shown in Fig. 17, taken on the line 18—18 thereof; and,

Fig. 19 is an enlarged sectional view of the structure illustrated in Fig. 17, taken on the line 19—19 thereof.

In Fig. 1, I have illustrated a bath tub 20, having a tub portion 21 drawn from a single sheet of metal from which top flanges 22, downwardly depending skirts 23, and upstanding flanges 41 have been drawn. A depending apron 25 is formed as a separate stamping and attached to the skirt 23 by spot welding, bolting, or the like. A decorative molding 26 covers the joint between the apron 25 and the skirt 23. The rim 22 at the front of the tub is extended outwardly to form a seat 27 and the apron 25 is extended outwardly at 28 to conform to the shape of the apron 23 at the front of the tub. While the front portion of the apron 25 may be a continuous construction, I have illustrated in Fig. 1 a pair of doors 29 hinged to the edges of apron sections adjacent to the projections 28 to form a closure for a compartment 31 disposed back of the doors. A partition or pillar element 32 extends between the doors to frame the opening therefor.

In Figs. 3 to 10, inclusive, I have illustrated the apron 25 as being formed of two sections having the doors 29 disposed therebetween. In Fig. 5, it will be noted that the tub portion 21 has the metal thereof drawn to form a sloping back 33 in a single sheet of metal. The draw dies and method of producing such sloping back is illustrated and described in the copending application of E. H. Kotcher, Serial No. 302,419, filed November 1, 1939, and assigned to the assignee of the present invention.

The rim 22 is formed downwardly into the skirt portion 23 which has an offset flange 34 mated with an offset flange 35 on the apron 25, forming a molding receiving recess. While the two flanges may be spot welded together in the particular construction having the doors 29, I utilize bolts 36, the heads of which project within the molding 26 for securing the molding within the recess and for retaining the two flanges in secured relationship. A drain opening 38 is formed at the front bottom portion of the tub 21, while an opening 39 may be provided in the top wall for the attachment of a fixture. It is to be understood that when a wall type of fixture is employed, the aperture 39 is eliminated.

The flange 22 at the back and open end of the tub is flanged upwardly at 41. A flange 42 is provided on the ends of the skirt 23 and is formed inwardly in the opposite direction to the flange 41 at the rear of the tub. The edges of the flanges 41 and 42 are so developed that when formed to desired shape they are in aligned abutting relation. This is illustrated more clearly in Figs. 11 and 12. The sheet of metal is developed as illustrated in Fig. 12 and when formed, as illustrated in Fig. 11, the flange 41 is in aligned abutting relation to the end 43 of the flange 42. The edge 43 is welded at 44 to the base of the flange 41 as illustrated in Fig. 11.

In Fig. 13, I have illustrated the flange 42 as being extended at 45 to abut against the end 46 of the flange 41, the development being illustrated in Fig. 14. Either of these constructions eliminate the use of a separate gusset plate heretofore provided to obtain strength at the top corner ends. A brace 48, as illustrated in Fig. 5, and a brace 50, as illustrated in Fig. 9, extend between the apron 25 and the underside of the flange 41 to provide strength at the ends of the apron by bracing the apron relative to the tub.

While, as pointed out hereinabove, the apron may be a unit stamping extending across the front of the tub, the modification herein illustrated employs spaced apron sections 53 and 54. The receptacle 31 is enclosed by the doors 29 disposed between the apron sections. The doors have inwardly directed flanges 49 about their edges to which are secured spaced inner panels 51 which are welded or otherwise secured thereto to form a box section construction. Concealed type of hinges 52 support the hinged ends of the doors to the apron sections and enclose the space between the ends of the sections and the central pillar 32. Suitable fastening means not herein illustrated are employed for securing the doors in closed position.

A sill portion 55 interconnects the two apron sections 53 and 54 below the doors 29. An angle member 56 may be employed above the door interconnecting the apron sections. Bolts 36 are preferably employed for joining the apron sections 53 and 54 to the sill portion 55, the angle element 56 and to the pillar 32. Bolts also are employed for interconnecting the aprons sections 53 and 54 to the skirt portion 23 of the tub, the heads of the bolts providing the support for the molding strip 37. The sill portion 55 may be extended rearwardly at 57 to form a shelf enclosed at the sides by the panels 59. An upstanding flange 61 is provided in the rear of the shelf 57 which may abut thereagainst, or be spaced therefrom. A strip 62 of rubber or other sound-deadening material may be secured along the edges of the flange 61 to deaden any sound which may occur between the flange and the metal of the tub.

As illustrated in Fig. 3, a flange 63 is formed around the base of the apron to provide a support of material width to the tub. As illustrated in Fig. 2, a pair of anchoring brackets 64 may be provided at the rear of the tub, attached to flange 41, for the purpose of securing the tub to the wall of the room.

When the apron 25 is formed of a continuous sheet of metal without the doors above described, the apron preferably has its flange 35 lapped over the offset flange 34 of the skirt 23 and welded thereto. A plurality of apertures 65 are provided through the two flanges for receiving the bolts 36 or the spring anchoring clips 66, the heads of which are disposed within the molding strip 37 to thereby anchor the molding strip within the recesses provided by the flanges. The attachment of the mold either by the clips 66 or bolts 36 securely retains the molding in position and eliminates the metal finishing operation heretofore found necessary when a butt

or seam welding was employed to join the apron to the skirt.

The molding may be enamel to conform with the enameling of the skirt and apron, or a chrome molding strip or a strip of color different from that of the enamel may be employed to provide a trim appearance to the joint.

In Fig. 16, I have illustrated a bath tub having the compartment and doors, which is similar to that illustrated in Fig. 1, with the exception that the end skirt and apron are eliminated as is desirable for tubs which are enclosed by three walls.

In Fig. 17, I have illustrated a tub similar to the tub illustrated in Fig. 1, with the exception that the doors and cabinet, and the extended width of the top flange are eliminated. In a section of the tub illustrated in Figs. 18 and 19, I have illustrated the continuous apron **25** extending along the front and the side of the tub, and provided with debossed panels which blend into the apron wall at one end. This apron has been referred to above with regard to Fig. 15, and is preferably welded to the skirt **23** with snap fasteners employed for retaining the molding in position. The flange **63** is clearly illustrated extending across the front and the side of the apron at the bottom edge to form a support.

It is to be understood that the tub illustrated in Fig. 17 may have the end skirt and apron eliminated to have the flange **41** extend entirely around the two end and rear top flanges of the tube to provide a tub which may be built into a recess having a rear and two side walls. It is to be understood that the bath tub may have the extended top flange **27** at the front central portion to form the seat, illustrated in Fig. 16, when the doors **29** are not employed. A continuous panel **25** is employed to form the apron across the front when a tub is constructed similarly to that in Fig. 16 and across the front and end when a tub is constructed similarly to that shown in Fig. 1.

While I have described and illustrated several embodiments of my invention, it will be apparent to those skilled in the art, that various changes, omissions, additions and substitutions may be made therein without departing from the spirit and scope of my invention, as set forth in the accompanying claims.

What is claimed is:

1. In a sheet metal bath tub construction, a tub proper having a flange about its top edge, a skirt extending downwardly at the front of the tub having an inwardly directed flange at one end, the end of the top flange of the tub being disposed upwardly in aligned abutting relation with the flange on said skirt and secured together at the abutted portions.

2. In a sheet metal bath tub construction, a tub proper having a flange about its top edge, a skirt extending downwardly at the front of the tub having inwardly directed flanges at its ends, and an upwardly directed flange at the edge of said top flange aligned with the end flanges of said skirt and welded thereto.

3. In a sheet metal bath tub construction, a tub proper having a flange about its top edge which is projected downwardly at the front into a skirt portion, an end flange on the skirt portion projected inwardly, and an upwardly projecting flange on the end of said tub flange disposed in aligned relation with the flange on the skirt portion and welded thereto.

4. In a sheet metal bath tub construction, a tub proper having a flanged top edge, the front portion of which is flanged downwardly into a skirt portion, a rearwardly disposed flange on the end of the skirt portion, the top flange being flanged upwardly at the end in aligned relation with the end flange of the skirt portion to which it is welded.

5. In a sheet metal bath tub construction, a tub proper having a top flange which is formed downwardly into a skirt portion and upwardly to form an end flange, an inwardly projected flange on the end of the skirt portion in aligned relation with said end flange, the upwardly directed flange and the end flange being preformed to mate with each other and welded together at the mated area.

6. In a sheet metal bath tub construction, a tub proper having a top flange, an upwardly projecting end flange on the top flange, a downwardly projecting skirt portion on the top flange, an inwardly projected flange on the end of the skirt portion, the edge of the inwardly projected flange being aligned with the edge of the upwardly projecting end flange and welded thereto.

CHARLES H. WIDMAN.